

# University of Connecticut Undergraduate Catalog 2023-24

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Updated November 16, 2023

The University of Connecticut reserves the right to revise, amend, or change items set forth in the *Undergraduate Catalog*. Accordingly, readers of the *Undergraduate Catalog* should inquire as to whether any revisions, amendments, or changes have been made since the date of publication. The University of Connecticut reserves the right to alter or cancel course offerings. Students must satisfy all requirements of their department, school or college, and the University of Connecticut whether or not they are listed in the *Undergraduate Catalog*.

### University Accreditation

The University of Connecticut is accredited by the New England Commission of Higher Education.

### Non-Discrimination Policy

The University of Connecticut complies with all applicable federal and state laws regarding non-discrimination, equal opportunity and affirmative action, including the provision of reasonable accommodations for persons with disabilities. UConn does not discriminate on the basis of race, color, ethnicity, religious creed, age, sex, marital status, national origin, ancestry, sexual orientation, genetic information, physical or mental disability, veteran status, prior conviction of a crime, workplace hazards to reproductive systems, gender identity or expression, or political beliefs in its programs and activities. Employees, students, visitors, and applicants with disabilities may request reasonable accommodations to address limitations resulting from a disability. For questions or more information, please contact the Associate Vice President, Office of Institutional Equity, 241 Glenbrook Road, Unit 4175, Storrs, CT 06269-4175; Phone: (860) 486-2943; Email: [equity@uconn.edu](mailto:equity@uconn.edu); Website: [equity.uconn.edu](http://equity.uconn.edu).

# Academic Calendar

## Fall Semester 2023

Mon, Aug 28	Fall semester begins
Mon, Sep 4	Labor Day – No classes
Tue, Sep 5	Last day to file petitions for course credit by examination
Mon, Sep 11	Courses dropped after this date will have a “W” for withdrawal recorded on the academic record. Last day to add or drop courses without additional signatures.
Mon, Sep 18	Last day for students to make up Incomplete or Absence grades
Tue, Sep 19-Mon, Sep 25	Examinations for course credit by examination
Fri, Sep 22	Deadline to apply for graduation and to submit Final Plan of Study for conferral of a Fall 2023 degree
Tue, Sep 26	Dean’s signature required to add courses
Fri, Oct 6	Mid-semester progress reports due students from faculty
Mon, Oct 23	Registration for the Winter 2024 and Spring 2024 semester via Student Administration System begins
Mon, Nov 13	Last day to withdraw from a course Last day to place courses on or remove from Pass/Fail grading
Sun, Nov 19-Sat, Nov 25	Thanksgiving Recess
Fri, Dec 8	Last day of fall semester classes
Sat, Dec 9-Sun, Dec 10	Reading Days
Mon, Dec 11	Final examinations begin
Thu, Dec 14	Reading Day
Sun, Dec 17	Final examinations end
Sun, Dec 17	Conferral date for Fall 2023 degrees
Wed, Dec 20	Semester grades due at 4 pm

## Spring Semester 2024

Tue, Jan 16	Spring semester begins
Mon, Jan 22	Last day to file petitions for course credit by examination
Mon, Jan 29	Courses dropped after this date will have a “W” for withdrawal recorded on the academic record. Last day to add or drop courses without additional signatures.
Mon, Feb 5	Last day for students to make up Incomplete or Absence grades
Tue, Feb 6-Mon, Feb 12	Examinations for course credit by examination
Fri, Feb 9	Deadline to apply for graduation and to submit Final Plan of Study for conferral of a Spring 2024 degree
Tue, Feb 13	Dean’s signature required to add courses
Fri, Feb 23	Mid-semester progress reports due students from faculty
Fri, Mar 1	Deadline to apply for Summer 2024 graduation (it is recommended that students submit a Final Plan of Study by the end of the Spring term)
Sun, Mar 10-Sat, Mar 16	Spring Recess
Mon, Mar 18	Registration for the Summer 2024 and Fall 2024 semester via Student Administration System begins
Sat, Mar 23	Emergency closing class makeup date
Mon, Apr 8	Last day to withdraw from a course Last day to place courses on or remove from Pass/Fail grading
Fri, Apr 26	Last day of spring semester classes
Sat, Apr 27-Sun, Apr 28	Reading Days
Mon, Apr 29-Sat, May 4	Final examinations
Sat, May 4-Sun, May 5	Undergraduate commencement ceremonies
Sun, May 5	Conferral date for Spring 2024 degrees
Tue, May 7	Semester grades due at 4pm

Faculty are urged to try not to schedule exams on dates of religious observation, for more information visit [provost.uconn.edu/religious-observations/](http://provost.uconn.edu/religious-observations/).

\*Start of Summer 2024 registration has yet to be determined. For Summer and Winter term calendars, visit [summerwinter.uconn.edu](http://summerwinter.uconn.edu).

\*Please consult the online calendar for possible deadline revisions at [registrar.uconn.edu/academic-calendar](http://registrar.uconn.edu/academic-calendar).

# Academic Degree Programs

## Degrees

Bachelor of Arts  
 Bachelor of Fine Arts  
 Bachelor of General Studies  
 Bachelor of Music  
 Bachelor of Science  
 Bachelor of Science in Engineering  
 Bachelor of Social Work  
 Associate of Applied Science

## Majors

### College of Agriculture, Health and Natural Resources

Agriculture and Natural Resources  
 Allied Health Sciences  
 Animal Science  
 Diagnostic Genetic Sciences  
 Dietetics  
 Economics of Sustainable Development and Management  
 Environmental and Natural Resource Economics  
 Environmental Sciences<sup>1</sup>  
 Environmental Studies<sup>1</sup>  
 Exercise Science  
 Individualized Major  
 Landscape Architecture  
 Medical Laboratory Sciences  
 Natural Resources  
 Nutritional Sciences  
 Pathobiology  
 Sustainable Plant and Soil Systems

### School of Business

Accounting  
 Analytics and Information Management  
 Business Administration  
 Business Data Analytics  
 Finance  
 Financial Management  
 Financial Technology  
 Health Care Management  
 Management  
 Management and Engineering for Manufacturing<sup>2</sup>  
 Marketing  
 Marketing Management  
 Real Estate/Urban Economics

<sup>1</sup> The Environmental Studies and Environmental Sciences majors are offered jointly by the College of Agriculture, Health and Natural Resources and the College of Liberal Arts and Sciences.

<sup>2</sup> The Management and Engineering for Manufacturing major is offered jointly by the School of Business and the School of Engineering, and leads to a Bachelor of Science degree.

## Continuing Education

General Studies

### School of Engineering

Biomedical Engineering  
 Chemical Engineering  
 Civil Engineering  
 Computer Engineering  
 Computer Science  
 Computer Science and Engineering  
 Electrical Engineering  
 Engineering Physics  
 Environmental Engineering  
 Management and Engineering for Manufacturing<sup>2</sup>  
 Materials Science and Engineering  
 Mechanical Engineering  
 Multidisciplinary Engineering  
 Robotics Engineering

### School of Fine Arts

Acting  
 Art  
 Art History  
 Design and Technical Theatre  
 Digital Media and Design  
 Music  
 Puppet Arts  
 Theatre Studies

### College of Liberal Arts and Sciences

Africana Studies  
 American Studies  
 Anthropology  
 Applied Data Analysis  
 Applied Mathematical Sciences  
 Arabic and Islamic Civilizations  
 Biological Sciences  
 Chemistry  
 Chinese  
 Classics and Ancient Mediterranean Studies  
 Cognitive Science  
 Communication  
 Ecology and Evolutionary Biology  
 Economics  
 Engineering Physics  
 English  
 Environmental Sciences<sup>1</sup>  
 Environmental Studies<sup>1</sup>  
 French  
 Geographic Information Science  
 Geography  
 Geoscience  
 German  
 History  
 Human Development and Family Sciences  
 Human Rights

Individualized Major  
 Italian Literary and Cultural Studies  
 Journalism  
 Judaic Studies  
 Latino and Latin American Studies  
 Linguistics/Philosophy  
 Linguistics/Psychology  
 Marine Sciences  
 Maritime Studies  
 Mathematics  
 Mathematics/Actuarial Science  
 Mathematics/Actuarial Science/Finance  
 Mathematics/Physics  
 Mathematics/Statistics  
 Molecular and Cell Biology  
 Philosophy  
 Physics  
 Physiology and Neurobiology  
 Political Science  
 Psychological Sciences  
 Sociology  
 Spanish  
 Speech, Language and Hearing Sciences  
 Statistical Data Science  
 Statistics  
 Structural Biology and Biophysics  
 Urban and Community Studies  
 Women's, Gender, and Sexuality Studies

### **Neag School of Education**

American Sign Language Education  
 Biology Education  
 Chemistry Education  
 Earth Science Education  
 Elementary Education  
 English Education  
 French Language Education  
 General Science Education  
 German Language Education  
 History/Social Studies Education  
 Italian Language Education  
 Latin/Classics Language Education  
 Mandarin Chinese Language Education  
 Mathematics Education  
 Music Education  
 Physics Education  
 Spanish Language Education  
 Special Education  
 Sport Management

### **School of Nursing**

Nursing

### **School of Pharmacy**

Doctor of Pharmacy  
 Pharmacy Studies

### **School of Social Work**

Social Work

### **Ratcliffe Hicks School of Agriculture**

Animal Science  
 Plant Science  
 Urban Forestry and Arboriculture

## **Minors**

Accounting  
 African Studies  
 Africana Studies  
 Agricultural and Health Biotechnology  
 Agricultural Learning and Outreach  
 American Sign Language and Deaf Culture  
 American Studies  
 Analytics  
 Animal Science  
 Anthropology  
 Anthropology of Global Health  
 Arabic and Islamic Civilizations  
 Art History  
 Asian American Studies  
 Asian Studies  
 Astrophysics  
 Bioinformatics  
 Biological Sciences  
 Biomedical Engineering  
 Business Fundamentals  
 Business Management and Marketing  
 Cannabis Cultivation  
 Chemistry  
 Chinese  
 Classics and Ancient Mediterranean Studies  
 Climate Science  
 Cognitive Science  
 Communication  
 Computer Science  
 Construction Engineering and Management  
 Crime and Justice  
 Culture, Health, and Human Development  
 Dairy Management  
 Development Economics and Policy  
 Digital Arts  
 Digital Humanities  
 Digital Marketing and Analytics  
 Digital Public History  
 Diversity Studies in American Culture  
 Dramatic Arts  
 Ecology and Evolutionary Biology  
 Economics  
 Electronics and Systems  
 Engineering Management

English  
Entertainment Engineering  
Entrepreneurship  
Entrepreneurship and Technology Innovation  
Environmental Economics and Policy  
Environmental Engineering  
Environmental Health Specialist/Sanitarian  
Environmental Studies  
Equine Business Management  
Equine Sports Rehabilitation  
European Studies  
Film Studies  
Financial Analysis  
Food Science  
French  
Geographic Information Science  
Geography  
Geoscience  
German  
Gerontology  
Global Environmental Change  
Global Studies  
Healthcare Management and Insurance Studies  
History  
Human Development and Family Sciences  
Human Rights  
India Studies  
Industrial Design  
Information Assurance  
Information Technology  
Integrated Pest Management  
Interpreting between American Sign Language and English  
Italian Literary and Cultural Studies  
Judaic Studies  
Latin American Studies  
Latino Studies  
Linguistics  
Literary Translation  
Management  
Manufacturing  
Marine Biology  
Marine Sciences  
Maritime Archaeology  
Materials Science and Engineering  
Mathematics  
Medieval Studies  
Middle Eastern Studies  
Molecular and Cell Biology  
Music  
Nanomaterials  
Nanotechnology  
Native American and Indigenous Studies  
Neuroscience  
Nutrition for Exercise and Sport

Ornamental Horticulture  
Personal Brand Entrepreneurship  
Philosophy  
Physics  
Physiology and Neurobiology  
Political Science  
Professional Sales Leadership  
Psychological Sciences  
Public Policy  
Puppet Arts  
Real Estate  
Religion  
Social Justice Organizing  
Social Responsibility and Impact in Business  
Sociology  
Software Design  
Spanish  
Statistics  
Studio Art  
Supply Chain  
Sustainable Community Food Systems  
Sustainable Environmental Systems  
Sustainable Food Crop Production  
Therapeutic Horsemanship Education  
Turfgrass Management  
Urban and Community Studies  
Wildlife Conservation  
Women's, Gender, and Sexuality Studies  
Writing

# Admission

Address all inquiries regarding admission to the Office of Undergraduate Admissions, 2131 Hillside Road, Unit 3088, University of Connecticut, Storrs, CT 06269-3088, phone: (860) 486-3137, website: admissions.uconn.edu, e-mail: beahusky@uconn.edu.

Vern Granger, M.A., *Director of Undergraduate Admissions*

The University of Connecticut subscribes to the Code of Ethics and Professional Practices of the National Association for College Admission Counseling. It supports the efforts of secondary school officials and governing bodies to have their schools achieve regional accredited status to provide reliable assurance of the quality of the educational preparation of its applicants for admission. The University does not enter into any quid pro quo contracts, either explicit or implicit, with admitted students. Services expected shall not be a consideration in admission.

## First-Year and Transfer Student Orientation

All first-time degree seeking students attending the University of Connecticut are required to attend an Orientation program in order to register for classes.

### First-Year Student Admission

A First-Year applicant to the University of Connecticut must meet the following requirements:

- Be a graduate of an approved secondary school;
- Have completed at least sixteen units of work, of which fifteen must be college preparatory in nature;
- Be in the upper range of their high school graduating class;
- Have achieved a competitive score on the SAT or the ACT

Several schools and colleges of the University have additional special requirements. See individual school and college sections of this publication for further information.

Applications for First-Year admission must include:

- Official high school transcript or official GED;
- Official SAT or ACT scores\*;
- Personal essay;
- Application fee (non-refundable)

Please refer to the current application for admission at admissions.uconn.edu, for detailed information regarding requirements and application deadlines.

\*At UConn, we understand that one test may not accurately define a student's academic progress and potential, which is why as part of UConn's test-optional pilot, first-year applicants have the choice to submit standardized test results. No admission decision shall be impacted, and no student disadvantaged, if a standardized test score is not provided.

## Admission with Advanced Standing

### Advanced Placement and Credit (AP)

See "Academic Regulations" section of this Catalog.

### University of Connecticut Early College Experience

UConn Early College Experience (UConn ECE) provides academically motivated students with the opportunity to take UConn courses while in high school. These challenging courses allow students to preview college work, build confidence in their readiness for college, and earn college credits that provide both an academic and a financial head-start on a college degree. There are over 195 Connecticut high schools that offer UConn courses through this concurrent enrollment agreement with the University of Connecticut.

UConn ECE instructors are high school teachers certified by the University. UConn ECE courses are overseen by University faculty members from participating departments, in accordance with national accreditation standards established by the National Alliance of Concurrent Enrollment Partnerships (NACEP).

UConn ECE students are non-degree students with official University transcripts. Credits are transferable to many other institutions (see ece.uconn.edu for details). Students attending the University of Connecticut

have the choice to move credits earned through UConn ECE from their non-degree transcript to their degree transcript. A final determination must be made before the start of the student's second semester as a matriculated student at the University of Connecticut. For further information please contact: UConn Early College Experience, 368 Fairfield Way Unit-4171, Storrs, CT 06269-4171, phone: 860-486-1045, fax: 860-486-0042, website: www.ece.uconn.edu.

## Transfer Admission

A transfer student is one who has enrolled at an accredited postsecondary institution following high school graduation and has completed a minimum of twelve credits. To evaluate applications for transfer admission, primary consideration is given to the applicant's cumulative grade point average, quality of courses taken, and intended program of study at the University.

The completed application should include:

- Official transcripts from each college attended sent directly from each institution
- Official high school transcript with date of graduation or official GED
- SAT or ACT scores (waived if student is 21 or older; or if, at the time of application, two full-time semesters have been completed as a postsecondary student\*)
- Personal essay
- Application fee (non-refundable)

\*At UConn, we understand that one test may not accurately define a student's academic progress and potential, which is why as part of UConn's test-optional pilot, first-year applicants have the choice to submit standardized test results. No admission decision shall be impacted, and no student disadvantaged, if a standardized test score is not provided.

Please refer to the Undergraduate Admission website at admissions.uconn.edu, for more detailed information. Priority admission to the Storrs Campus is given to students who have completed two years of college prior to enrolling at the University. Students with fewer than two years are evaluated on a combination of high school and college work; i.e., high school average and class rank, SAT or ACT scores, and college performance (to date). Students must also be in good standing and eligible to return to the last institution of higher learning which they attended.

Prospective transfer students are advised that only a limited number of transfer students will be admitted to the majors of the Schools of Business, Education, Engineering, Nursing, and Pharmacy. Students interested in one of these fields should consider other majors as alternatives; even if admitted to an alternate program, however, students cannot be guaranteed subsequent admission to their first choice of major. Prospective transfer students are also advised that they must fulfill all graduation requirements of their major at the University. Questions about these requirements may be directed to the Dean of their School or College after admission.

The University welcomes transfers from the Connecticut community colleges and offers programs that will facilitate transfer to designated majors within the University.

### Transfer Credit

Course credits are transferred when (1) the course has been taken at a regionally accredited, degree-granting institution, (2) the grade earned is no lower than a "C," and (3) a similar course is offered by the University. College-level work given in or under the direction of an accredited college or university as part of the armed services program will be accepted for credit on the same basis as other transfer work. In addition, the University will consider for transfer courses completed at foreign universities and in study abroad programs sponsored by accredited American universities.

The number of transfer credits students receive depends upon the character, quantity, and quality of the work they have completed. Grades do not transfer; the grade point average of transfer students is computed only on the work taken at the University of Connecticut. The student's major department advisor and dean will determine whether transferred course work may be used to satisfy University of Connecticut degree requirements.

Complete transcripts of all work taken at other institutions must be submitted as a part of the admission procedure whether or not credit for such work is desired or expected. Official transcripts for any course work completed after admission to this University must be submitted as soon as this work is concluded. Students who fail to acknowledge attendance at any

college in which they have been registered automatically waive the right to have that work considered for transfer credit and may be subject to denial of admission, loss of course credit and/or suspension.

Consideration for transfer of course work is made according to the Transfer Guidelines for Evaluation adopted by the University Senate.

## Admission of Diverse Populations

### Underrepresented Students

The University recognizes the importance of intercultural understanding in education. To this end, the University has developed initiatives to encourage students from underserved populations to attend this institution. Questions should be directed to the Office of Undergraduate Admissions, 2131 Hillside Road, Unit 3088, Storrs, CT 06269-3088 or e-mail [beahusky@uconn.edu](mailto:beahusky@uconn.edu).

The H. Fred Simons African American Cultural Center, Asian American Cultural Center, Puerto Rican/Latin American Cultural Center, Rainbow Center, Women's Center, Native American Cultural Programs, and International Student and Scholar Services are among units that are available to all students interested in developing and promoting an understanding of various cultures at UConn.

### International Students

The University of Connecticut provides educational opportunities of the highest quality to all students. It makes a contribution to international education by encouraging the enrollment of students from all parts of the world. It selects, however, only those applicants who are academically, linguistically, and financially prepared for university work in this country.

Prospective international students should begin application procedures one year before intended matriculation. Prospective students are encouraged to visit [admissions.uconn.edu](http://admissions.uconn.edu) for application details and may email [beahusky@uconn.edu](mailto:beahusky@uconn.edu) with admissions-related questions.

### Students with Disabilities

The University of Connecticut is committed to achieving equal educational opportunities and full participation for persons with disabilities. It is the University's policy that no qualified person be excluded from participating in any University program or activity, be denied the benefits of any University program or activity, or otherwise be subjected to discrimination with regard to any University program or activity. This policy derives from the University's commitment to non-discrimination for all persons in employment, access to facilities, student programs, activities, and services.

For complete information regarding the University's Policies and Procedures Regarding Students with Disabilities, please refer to the website of the Center for Students with Disabilities at [csd.uconn.edu](http://csd.uconn.edu).

### Adult Students

The University especially encourages applications from adults who wish earn a baccalaureate for personal enrichment, employment opportunity, and/or skill development. Adult students apply as first-year students or transfers and enroll on either a part-time or full-time basis at any of the five University campuses. Because the educational history, motivation, and present interests of adult students differ widely from those of the average applicant, the University may waive the SAT or ACT scores for admission purposes.

Adults may enroll at the main campus in Storrs or at a regional campus located in Groton (Avery Point), Hartford, Stamford, or Waterbury. The regional campuses offer evening courses at all locations are within easy commuting distance, and provide a quality UConn education at a reasonable cost.

## New England Regional Student Program

The University of Connecticut participates in a regional cooperative program administered by the New England Board of Higher Education (NEBHE). This program, known as the New England Regional Student Program, permits qualified residents of the New England states to study with reduced tuition in certain programs at any of the state universities and the public two-year colleges and technical institutes.

For a list of approved majors and information on the current Regional Student Program tuition rate, visit [admissions.uconn.edu](http://admissions.uconn.edu). Regional Student Program information is also available on the NEBHE website at [www.nebhe.org](http://www.nebhe.org).

<b>University of Connecticut Programs Available to New England Residents at Reduced Tuition</b>	
<b>Programs</b>	<b>Eligible State Residents</b>
<b>College of Agriculture, Health and Natural Resources</b>	
Allied Health	MA, NH, RI, VT
Diagnostic Genetic Sciences*	ME, MA, NH, RI, VT
Dietetics*	ME
Landscape Architecture	ME, NH, VT
Pathobiology	ME, MA, RI, VT
Sustainable Plant and Soil Systems	ME, NH
<b>College of Liberal Arts and Sciences</b>	
Africana Studies	ME, NH, VT
American Sign Language	RI, VT
American Studies	RI, VT
Arabic and Islamic Civilizations	ME, MA, NH, VT
Chinese	ME, NH
Classics and Ancient Mediterranean Studies	ME
Cognitive Science	ME, MA, RI, VT
Geographic Information Science	RI, VT
German	ME
Human Development and Family Sciences	MA
Human Rights**	ME, MA, NH, RI, VT
Italian Literary and Cultural Studies	ME
Judaic Studies	ME, NH, RI, VT
Latin American Studies	ME, NH
Linguistics/Philosophy	ME, RI
Linguistics/Psychology	ME, RI
Marine Sciences	ME, MA, NH, RI, VT
Maritime Studies	ME, MA, NH, RI, VT
Mathematics/Actuarial Science	MA, NH, RI, VT
Mathematics/Actuarial Science/Finance	ME, MA, NH, RI, VT
Physiology and Neurobiology	ME, MA, NH, RI
Speech, Language and Hearing Sciences	NH
Statistics	MA, RI
Structural Biology and Biophysics	MA, RI
<b>School of Business</b>	
Health Care Management*	ME, MA, RI, VT
Management and Engineering for Manufacturing	ME, MA, NH, RI
Real Estate and Urban Economics*	ME, MA, NH, RI, VT

<b>School of Engineering</b>	
Biomedical Engineering	ME, NH
Chemical Engineering	VT
Engineering Physics	RI
Environmental Engineering	ME, MA, RI
Management and Engineering for Manufacturing	ME, MA, NH, RI
Materials Science and Engineering	ME, MA, NH, RI, VT
Multidisciplinary Engineering	ME, MA, NH, RI, VT
Robotics Engineering	ME, MA, RI, VT
<b>School of Fine Arts</b>	
Acting (BFA)	ME, MA, NH, VT
Digital Media and Design	MA, NH, VT
Puppet Arts	ME, MA, NH, RI, VT
Technical Theater	ME, VT
<b>School of Pharmacy*</b>	
Pharmacy Studies/Pharm.D.	ME, MA, NH, VT
* Students enrolled in the Diagnostic Genetic Sciences, Dietetics, Health Care Management, Real Estate and Urban Economics, and Doctor of Pharmacy programs will not be awarded the reduced tuition (or "Tuition Break") until their junior or senior year. First and sophomore years are not offered at reduced tuition.	
** Students majoring in Human Rights are required to maintain an additional major offered in the College of Liberal Arts and Sciences or an additional degree program in another University School or College.	
<b>Associate Degree Programs</b>	
<b>Ratcliffe Hicks School of Agriculture</b>	
Animal Science Equine and Dairy/Livestock options	MA, ME, RI, VT
Plant Science (Ornamental Horticulture and Turfgrass Management)	ME, NH, RI
Urban Forestry and Arboriculture	ME, MA, NH, RI, VT

## Continuing Education

### Bachelor of General Studies

Applicants to the Bachelor of General Studies (BGS) program must have earned an associate's degree or completed 60 credits at a regionally accredited degree granting institution. In addition, applicants must have an individual interview with a BGS Counselor and complete the BGS application.

All international applicants whose first language is not English or who do not have a transcript from an accredited university where English is the language of instruction must submit official scores from either the TOEFL or IELTS exam. A score of 213 on the computer based exam, a score of 79 on the internet-based exam, a written test score of at least 550 on the Test of English as a Foreign Language or an overall band score of 6.5 on the IELTS (International English Language Test System) is required.

International students who will study in F-1 status are also required to provide the International Student Financial Declaration Form and supporting funding documents. All new international students with F-1 status must attend a mandatory orientation session and physically check-in with International Student and Scholar Services (ISSS) at the beginning

of their program. International students should regularly check the website [www.issss.uconn.edu](http://www.issss.uconn.edu) for policy changes and updates.

Further information can be obtained from the BGS Counselor at any University regional campus by contacting one of the following:

- Avery Point (860) 405-9190, BGSAPPT@uconn.edu
- Hartford (860) 570-9310, BGSHTFD@uconn.edu
- Stamford (203) 251-8550, BGSSTAM@uconn.edu
- Storrs (860) 486-4670, BGSSTORR@uconn.edu
- Waterbury (203) 236-9932, BGSWTBY@uconn.edu

### Non-Degree Study

Non-degree study enables qualified individuals to register in credit bearing courses without being admitted to an undergraduate or graduate degree program.

To enroll in undergraduate-level credit courses, non-degree students ordinarily must either have graduated from a state-approved secondary school or have a high school equivalency diploma. A bachelor's degree is usually required for enrollment in graduate level courses as a non-degree student.

Non-degree students must complete a non-degree application. If granted permission, non-degree students can register for credit courses for which they have the necessary background and qualifications and in which space is available. All prerequisites to a course (or their equivalent) as listed in the University of Connecticut Catalogs must be met by the student prior to registration. Special permission to enroll may also be required in selected courses or academic disciplines. Ordinarily, non-degree students may register for no more than two courses or eight credits in an academic semester.

The refund policy applicable to non-degree students may vary from the refund policy in effect for degree-seeking students, and may also vary between the academic year, the summer, and special programs. Consult the appropriate course schedule for the refund policy applicable in a given term at a specific site.

To continue studying at the University of Connecticut, a non-degree student must maintain a "C" average in courses taken at the University of Connecticut. If, after 12 attempted credits, a non-degree student has not maintained a "C" average or better (i.e., a cumulative grade point average of 2.0 or better), permission to continue as a non-degree student at the University ordinarily will be suspended. A higher grade point average is usually required for graduate level courses.

Non-degree status does not constitute or guarantee admission to any degree program at the University of Connecticut. However, a non-degree student who has completed 24 credits at the University of Connecticut with a minimum grade point average of 2.7 is eligible to apply for transfer admission to an undergraduate degree program. An application and all required materials must be submitted to the undergraduate Transfer Admissions Office in accordance with their standard application procedures and deadlines ([admissions.uconn.edu/apply/transfer](http://admissions.uconn.edu/apply/transfer)). The Transfer Admissions Office handles the processing of all students, other than BGS students, moving into a degree classification. This includes students who have been enrolled at another institution prior to their non-degree study here, who wish to move from non-degree to degree classification, and are in the process of completing 24 non-degree credits; as well as non-degree students without previous college-level course work. Students are urged to check with the dean of the school or college they wish to enter to determine appropriate courses to take within the 24 credits. If admitted to regular status, a determination will be made at that time by the dean of the school or college in which the student has been accepted as to whether the credits earned as a non-degree student may be counted toward the degree. Credits from other institutions cannot be evaluated for transfer to a degree program at the University of Connecticut unless and until a person has been accepted into degree-seeking status. Regular application procedures for admission to graduate degree programs apply at all times. Ordinarily, only six credits earned in non-degree status can be used in a graduate program.

Former undergraduate degree students at the University of Connecticut may enroll as non-degree students. However, if degree-seeking status is desired, former students should seek formal readmission to degree status at the University since credits earned in non-degree status might not be accepted towards the degree.



For further information on non-degree study, check [nondegree.uconn.edu](http://nondegree.uconn.edu).

### **Senior Citizen Audits**

Individuals may attend undergraduate credit classes on a not-for-academic/audit basis as the instructor permits (Note: Individuals need to be 62 years of age or older and permanent CT residents). An auditing senior may participate in the course only as the instructor permits. The instructor may unenroll individuals not meeting the auditing criteria set forth by the instructor. Laboratory, studio-type classes and online courses are not available for senior audit. Senior citizens auditing courses must adhere to the same code of conduct as all University of Connecticut students.

All seniors planning to audit a course must get a senior audit card and application form from the Office of the Registrar, Storrs campus or Regional Campus registrar. Forms must be completed and returned with a nominal fee. Proof of identification is required at time of registration.

# Fees and Expenses

The schedule of fees that follows, as reported by the Office of the Bursar, is comprehensive and is expected to prevail during the 2023-2024 academic year, but the Board of Trustees reserves the right, at any time, to authorize changes. Revisions in the State budget may force fee changes.

**Application Fee.** An application fee must accompany the application for admission to any undergraduate school or college of the University for full-time study. The application fee is non-refundable and may not be applied to outstanding charges. For more information about the application fee, refer to the Admissions website ([admissions.uconn.edu](http://admissions.uconn.edu)).

**Enrollment Deposit.** A first-year student entering the University in the fall semester must make an enrollment deposit, which is non-refundable, by May 1. Failure to remit payment by May 1 will result in cancellation of admission. The new first-year student is encouraged to make payment as soon as the student's intention to accept admission is firm.

A transfer student entering the University in the fall semester and a first-year or transfer student entering the University in the spring semester must make an enrollment deposit, which is non-refundable, within fifteen days of receiving notice of admission. Failure to remit payment by the prescribed date will result in cancellation of admission. For more information about the enrollment deposit, refer to the Admissions website ([admissions.uconn.edu](http://admissions.uconn.edu)).

## Tuition

All students are subject to a tuition charge in addition to the mandatory fees charged to Connecticut and out-of-state students. For information about tuition for Connecticut and out-of-state students, refer to the Undergraduate Tuition and Fees page on the Office of the Bursar's website ([bursar.uconn.edu](http://bursar.uconn.edu)). Tuition is prorated for part-time undergraduate students who are registered for less than full-time as of the 10th day of classes.

Pursuant to Connecticut General Statutes, tuition is waived: (1) for any dependent child of a person whom the armed forces of the United States has declared to be missing in action or to have been a prisoner of war while serving in the armed forces after January 1, 1960, which child has been accepted for admission to the University of Connecticut, provided the person missing in action or former prisoner of war was a resident of Connecticut at the time of entering the service of the armed forces of the United States or was a resident of Connecticut while so serving; (2) for any veteran having served in the time of war, as defined in subsection (a) of section 27-103, or who served in either a combat or combat support role in the invasion of Grenada, October 25, 1983, to December 15, 1983; the invasion of Panama, December 20, 1989, to January 31, 1990; or the peace keeping mission in Lebanon, September 29, 1982, to March 30, 1984; or Operation Earnest Will (escort of Kuwaiti oil tankers), February 1, 1987, to July 23, 1987, and is a resident of Connecticut at the time of *acceptance for admission or readmission* to the University. For additional information, contact Department of Veterans Affairs and Military Programs in the Hawley Armory, Room 100B, (860) 486-2442 or refer to the Veterans Affairs and Military Programs website ([veterans.uconn.edu](http://veterans.uconn.edu)); (3) For any Connecticut resident sixty-two years of age or older who has been accepted for admission, provided this person is enrolled in a degree-granting program or, provided, at the end of the regular registration period, there is space available in the course in which the person intends to enroll; (4) for any active member of the Connecticut army or air national guard who (a) is a resident of Connecticut; (b) has been certified by the adjutant general or a designee, as a member in good standing of the guard; and (c) is enrolled or accepted for admission on a full-time or part-time basis in an undergraduate degree-granting program. If any person who receives a tuition waiver in accordance with the provisions of this subsection also receives educational reimbursement from any employer, the waiver shall be reduced by the amount of the educational reimbursement; (5) provides that any dependent child of a police officer or fire fighter killed in the line of duty is eligible for a tuition waiver at the University of Connecticut, the Connecticut State University system or a Regional Community-Technical College.

For more information on tuition waivers, please refer to the Office of the Bursar's website: Tuition Waivers, Undergraduate Students: ([bursar.uconn.edu/tuition-waivers-undergraduate-students](http://bursar.uconn.edu/tuition-waivers-undergraduate-students)).

## New England Regional Program

Please visit the New England Board of Higher Education (NEBHE) website ([www.nebhe.org](http://www.nebhe.org)) for information regarding qualifying New England Regional programs that are offered at the University of Connecticut.

New students admitted to the University who qualify for the New England Regional rate based upon their residency and their major will have New England Regional tuition rates automatically reflected in their fee bill.

Students have until the 10<sup>th</sup> day of classes to change to a qualifying program to receive the New England Regional tuition rate. Students that change after the 10<sup>th</sup> day will be eligible to receive the New England Regional tuition rate for the upcoming semester provided that they remain in the qualifying program. Students switching to a non-qualifying program on or before the 10<sup>th</sup> day of classes will be charged out-of-state tuition.

Please note that a student's change in residency, either to or from the New England region, may result in review and possible revisions of their financial aid package, including merit scholarship. Students should contact the Financial Aid Office with questions regarding financial aid revisions.

## Undergraduate Fees

All undergraduate students are subject to the following fees. Please refer to the Office of the Bursar's website ([bursar.uconn.edu](http://bursar.uconn.edu)) for the current amounts as well as descriptions of all fees.

**General University Fee.** All students attending the University of Connecticut in Storrs or the regional campuses are subject to a general University fee (GUF) each semester. This fee supports student-related programs and institutional services of those programs and varies by campus.

**Student Health and Wellness Fee.** This fee was formerly part of the general University fee. Due to the unique services offered from other GUF-funded activities including Counseling and Mental Health, Nutrition Sciences, Wellness and Prevention, Women's Health, Primary and Urgent Care, it was removed from the GUF rate and is a stand-alone fee. The SHS fee will be reviewed independently from GUF while providing no additional cost to students. For additional information see ([Studenthealth.uconn.edu](http://Studenthealth.uconn.edu)). This is a mandatory fee required of all Storrs students.

**Student Recreation Center Fee.** This fee supports the Student Recreation Center including the operations and construction of the state-of-the-art facility, opened in Fall 2019 and is not a usage fee. This is a mandatory fee required of all Storrs matriculated students. This fee cannot be waived. For more information regarding the services and programs provided by the Student Recreation Center, please visit [recreation.uconn.edu](http://recreation.uconn.edu).

**Transit Fee.** All students are subject to a transit fee each semester. The fee supports the campus shuttle bus services at Storrs, including Husky Safe rides late night service, and accessible van service. It also supports shuttle bus services at the regional campuses, and payments to the CT DOT to improve public transit to and near UConn campuses, which also includes participation in the statewide student U-Pass program. Please refer to the Transportation Services website for additional information on services ([transpo.uconn.edu](http://transpo.uconn.edu)).

**Infrastructure Maintenance Fee.** All students are subject to an infrastructure maintenance fee each semester. This fee supports the operating and maintenance costs related to UConn 2000 projects as well as preventative and deferred maintenance on University buildings.

**Technology Fee.** All students are subject to a technology fee each semester. This fee supports various IT projects directly benefiting students including, but not limited to, increased wireless capacity, UConn Virtual PC (vPC), technology and media-related library services, and access to certain University-wide software licensing agreements. This fee does not cover surcharges for online courses.

**Activity Fee.** All students are subject to an Activity fee each semester. This fee varies by campus. At all campuses, this fee supports student governmental activities. At Storrs, this fee also supports the student yearbook, student newspaper fee, Student Union (SUBOG) fee, WHUS fee, and UConn TV fee. Please refer to the Office of the Bursar website ([bursar.uconn.edu](http://bursar.uconn.edu)) for a breakdown of fees paid by Storrs students, and students at the regional campuses.

## Residence Halls

**Residence Hall Fee.** The Residence Hall fee covers occupancy while classes are in session, excluding recess periods. Detailed information regarding room rates can be found on the Residential Life website ([reslife.uconn.edu](http://reslife.uconn.edu)).

## University Meals

**Board Fee.** All students living in non-apartment undergraduate residences are required to pay for one of the resident meal plans offered by Dining Services. Students residing in undergraduate housing equipped with kitchens are not required to have meal plans. The cost will be determined by which plan is chosen. Refer to the Dining Services website ([dining.uconn.edu](http://dining.uconn.edu)) to see the current plans. Meal plans are in effect the Friday evening of move-in weekend (Convocation Dinner) for first year students. All returning students' plans begin with lunch on Saturday of move-in weekend. Then, meals are available seven days per week while classes are in session through finals week. Students should consult the Dining Services website, UCuisine, or the individual dining centers for variations to this basic schedule.

Commuters can purchase blocks of meals or meal plan points. In addition, they are welcome on an a la carte basis using credit/debit card or 'Husky Bucks' at retail outlets in several locations throughout campus and the Student Union.

## Other Fees

**Audit Fee.** Auditors pay standard undergraduate non-degree tuition and fees.

**Senior Citizens Audit Fee.** All persons 62 years of age or older who audit undergraduate courses on a space-available, not-for-credit basis, must pay a fee each semester. Instructor consent is required for all audits. Please refer to the Non-Degree Services website ([nondegree.uconn.edu](http://nondegree.uconn.edu)) for more information.

**Student Identification Card.** Each new entering student is furnished with a personalized identification (I.D.) card, which is revalidated each semester upon full payment of the University fee bill. If the student's card becomes lost or destroyed, a fee is charged for a replacement. Please refer to the One Card Office website for more information ([onecard.uconn.edu](http://onecard.uconn.edu)).

**Student Parking Fees.** Student parking fees are assessed to fifth semester resident students, commuting students, resident assistants, and graduate assistants registering a vehicle and obtaining permission to park in a designated University student parking area, and are paid directly to Parking Services. Please refer to the Parking Services website for more information ([park.uconn.edu](http://park.uconn.edu)).

**UConn Health Insurance.** UConn automatically enrolls students in the University health plan. However, if you have alternative coverage, you can waive the University plan. If you fail to complete the waiver, it is assumed that you accept coverage offered under the University-sponsored health insurance plan, and the charge for that coverage will remain on your fee bill. This waiver must be completed every year.

**Husky Book Bundle Fee:** Through a partnership with the UConn Bookstore, full-time undergraduate students will be able to rent all required course materials for a flat fee of \$285. This is an opt-out program, and the charge will be automatically included on students' semester tuition fee bill. **The waiver to opt-out will open 30 days prior to the start of the semester and remain open through the 10<sup>th</sup> day of classes.** For more information, please visit: [www.bookbundle.program.uconn.edu](http://www.bookbundle.program.uconn.edu).

**Course Credit by Examination Fee.** The fee for the examination is payable at the Office of the Bursar. Course Credit by Examination specifications may be found under "Academic Regulations."

**Online Course Fee.** All students taking online courses during summer or intersession are charged an online course fee per credit. Non-degree students taking online courses during fall or spring semesters are charged a fee per credit. Please refer to the Office of the Bursar website ([bursar.uconn.edu](http://bursar.uconn.edu)) for more information.

**Visa Compliance Fee.** This non-refundable fee is assessed to international students on F-1 and J-1 visas to fund services related to University visa sponsorship. Additional information can be found on the ISSS site ([iss.uconn.edu](http://iss.uconn.edu)).

## Summer Session, Winter Intersession, and Education Abroad

**Fees and Expenses.** The University fee for each summer session is equal to the preceding academic year in-state tuition rate. In addition, there is a one-time, non-refundable summer enrollment fee for University of Connecticut degree students and non-matriculated students. Please refer to the Summer Session website ([summersession.uconn.edu](http://summersession.uconn.edu)) for more information.

**Winter Intersession Fees and Expenses.** The University fee for each winter session is equal to the academic year's in-state tuition rate. In addition, there is a one-time, non-refundable winter enrollment fee for University of Connecticut degree students and non-matriculated students. Please refer to the Winter Intersession website ([wintersession.uconn.edu](http://wintersession.uconn.edu)) for a list of fees and expenses for Winter Intersession courses.

**Education Abroad.** Please refer to the Education Abroad website ([abroad.uconn.edu](http://abroad.uconn.edu)) for more information about the costs of studying abroad.

## Regulations

**Payment of Fees.** Collection of all fees is handled by the Office of the Bursar. The fall semester fee bill is payable prior to August 1st; the spring semester is payable prior to January 8th. Payment in full is required and no exceptions to this policy are granted for partial payment of fees, unless enrolled in a University payment plan. Failure to make payment on time will result in cancellation of the privileges accorded to a student such as, but not limited to, use of recreational facilities, access to transcripts, future registration, and other services. Students who register for additional courses after the payment due date have 10 days to make payment before considered late.

It is each student's financial responsibility to make fee payments by the specified due dates. Failure to receive a fee bill does not relieve a student of fee payment responsibility. Students are required to agree to the Student Financial Responsibility Agreement prior to each semester's registration. This agreement is a statement of the financial obligations and responsibilities each student assumes while attending UConn. Please refer to the Office of the Bursar website ([bursar.uconn.edu](http://bursar.uconn.edu)) for more information on the agreement and on failure to pay.

If a check is returned by the bank for any reason, the student is charged a returned check fee. Please refer to the Office of the Bursar website for more information.

**Late Payment Fee.** The payment of the fee bill is due in full prior to August 1st for the fall semester and January 8th for the spring semester. A late payment fee is payable by all undergraduate students whose tuition and fees are not paid in full on the published due date. Late payment fees may be assessed twice a semester. Checks returned by the bank for any reason are considered late payment. Students may have services denied if all fees have not been paid by the due date. Please refer to the Office of the Bursar website ([bursar.uconn.edu](http://bursar.uconn.edu)) for more information.

**Cancellations and Withdrawal Tuition and Fee Adjustments.** The following is general information regarding cancellations and withdrawal tuition and fee adjustments. If a student is a recipient of federal financial aid, it is critical that they also read the information under the "Return of Federal Financial Aid" section of the Office of Student Financial Aid Services website ([financialaid.uconn.edu](http://financialaid.uconn.edu)).

All undergraduate students who withdraw from the University for any reason must secure from the Dean of Students Office (DOS) acknowledgement of their withdrawal and arrange with DOS the details of their leaving. No adjustments are made unless this procedure is followed.

If a student is dismissed after a semester, payments (if any) for the next semester will be adjusted with the exception of certain non-refundable deposits.

Where notice of cancellation is received through the first day of classes of a semester, full refund (less non-refundable fees) is made if fees have been paid in full.

## Eligible Fees

- Tuition;
- Technology Fee;
- Activity Fee;

- Transit Fee;
- Residence Hall Fee (conditions apply);
- General University Fee;
- Student Health and Wellness Fee;
- Student Rec Center Fee;
- Infrastructure Maintenance Fee;
- Meal Plan (Board Fee)

### Ineligible Fees

Acceptance Fee (Enrollment Deposit), Late Payment Fee(s), Room Deposit/Reservation Fee (conditions apply), Continuous Registration Fee, Payment Plan Enrollment Fee, Husky Book Bundle Fee (if after 10th day of the semester).

### Withdrawal Tuition and Fee Adjustments Schedule

After the first day of classes, withdrawal adjustments are made only on eligible fees according to the following schedule:

Remainder of the 1 <sup>st</sup> calendar week.....	90%
2 <sup>nd</sup> week.....	60%
3 <sup>rd</sup> and 4 <sup>th</sup> week.....	50%
5 <sup>th</sup> week through 8 <sup>th</sup> week.....	25%

No fees are adjusted after the 8<sup>th</sup> week of classes.

(Calendar weeks run Monday through Sunday; whatever day of the week on which the semester begins, the following Sunday ends the first calendar week.)

### Insurance

**Mandatory Student Health Insurance.** All full-time students must provide for their own accident and illness insurance to cover medical care not provided through the Department of Health Services. Students may opt to be covered for accidents and illnesses through a personal insurance policy, a parental or family insurance policy, or a policy sponsored by the university. Supplemental Student Health Insurance for accident and sickness is available from a private student medical insurance program. Students who fail to provide proof of health insurance by filing an on-line insurance waiver may be charged and automatically enrolled in the University sponsored plan. Insurance information and enrollment for the insurance program is available at the Department of Health Services. Please call (860) 486-0745 or refer to the Student Health Services website (shs.uconn.edu) for further information.

**Education Abroad Supplemental Health Insurance.** Students choosing to study abroad through the University’s Office of Education Abroad may also be assessed an international health insurance premium that will cover them for the time period that they are abroad. This insurance is in addition to any other health insurance coverage that a student may have, including the university sponsored health insurance plan. Please call (860) 486-5022 for further information or visit the Education Abroad website (abroad.uconn.edu).

**Education Abroad and Additional Credits Registered.** Students choosing to take additional credits in addition to the Education Abroad program will be charged additional tuition and the general University fee depending on their Education Abroad program during the fall and spring semesters. Please refer to the Education Abroad website for more information. During summer and winter sessions they will also be charged regular summer and winter fees for the additional credits. Please contact the Office of the Bursar at bursar@uconn.edu if you have any questions.

**(Non-immigrant) international students.** All (non-immigrant) international students will be required, at the time of registration, to show evidence of adequate insurance coverage for accidents, illness and medical evacuation and repatriation expenses. Students should consult the International Student Advisor regarding compliance with this requirement and assistance in enrolling in an approved insurance program.

### Students Attending Under Public Laws

All public law recipients attending this University for the first time under the auspices of the Veterans Administration must have a Certificate of

Eligibility or Supplemental Certificate of Eligibility which is to be presented at the Office of Student Financial Aid Services prior to registration.

In the case of a disabled veteran, the cost of books and supplies is reimbursed by the Veterans Administration for graduate and undergraduate students.

# Student Resources

Certain University policies and regulations affecting most students are included in this *Catalog*. Other regulations are set forth in various materials provided to all new students. In general, students are expected to meet the University's academic requirements, attend classes regularly, conduct themselves as responsible members of the community, and meet their financial obligations to the University and to the residence groups to which they are assigned.

## Support for Academic Success

The University provides many services to support the academic success of its students. Several of those programs are described below.

### Academic Advising

Academic advising at UConn supports the University's Mission by helping every student grow intellectually and become a contributing member of the state, national, and world communities. Advising contributes to the mission by providing exceptional support and resources that empower students to develop and implement sound educational plans and to develop greater identity, agency, and purpose as they identify and reach their goals.

Academic advising is a critical component of the educational experience, developed through collaborative mentoring relationships between students and advisors. With leadership, support, and guidance from the Office of Undergraduate Advising, undergraduate advising programs are administered by advising centers directors in schools and colleges in Storrs as well as by student and academic services directors at the regional campuses.

Academic advisors support students as they seek to meet their academic goals and complete degree requirements. Students and advisors should both know the academic requirements published in the University *Catalog* and departmental plans of study. Although the advisor is responsible for making appropriate academic recommendations, the student is responsible for their own academic progress.

Meeting regularly with an advisor promotes academic success by helping to ensure educational goals align with post-graduation goals and aspirations. It also provides an opportunity for the student to discuss success-related opportunities, identify challenges and determine necessary campus resources and next steps. Effective advising includes:

- Supporting students in a process of self-assessment to identify their individual strengths, talents, and interests
- Empowering students to develop meaningful educational plans, including relevant experiential learning and co-curricular activities
- Knowing and understanding University requirements, school/college requirements, and major requirements
- Gaining familiarity with the University's curricular, co-curricular, and career resources
- Being accessible on a regular basis, through office hours, email, or phone/online meetings

Undergraduate Advisory Centers				
School/College/Center	Contact Person	Location	Website	Email
Office of Undergraduate Advising	Erin Ciarimboli	John W. Rowe Center, Room 424	advising.uconn.edu	advising@uconn.edu
Academic Center for Exploratory Students	Micah Heumann	John W. Rowe Center, Room 111	aces.uconn.edu	aces@uconn.edu
Agriculture, Health and Natural Resources	Meagan Ridder	W. B. Young Building, Room 206	cahnr.uconn.edu	cahnrdean@uconn.edu

Business	Brandy Nelson	School of Business, Room 248	undergrad.business.uconn.edu	undergrad.business@uconn.edu
BGS/Non-Degree	James Hill	John W. Rowe Center, Room 111	bgs.uconn.edu	BGSstorr@uconn.edu
Education	Ann Traynor	C. B. Gentry Building, Room 306	education.uconn.edu	neag-neagadvising@uconn.edu
Engineering	Whitney Losapio	Engineering II Building, Room 304A	enr.uconn.edu	ENGR-ugprograms@uconn.edu
Fine Arts	Amanda Wilde	Fine Arts Building,	sfa.uconn.edu	amanda.wilde@uconn.edu
Liberal Arts and Sciences Academic Services Center	Rebecca Bacher	John W. Rowe Center, Room 130	clasadvising.uconn.edu	clasasc@uconn.edu
Nursing	Lindsay Darcy	Storrs Hall, Room 101D	nursing.uconn.edu	Lindsay.darcy@uconn.edu
Pharmacy	Megan Delaney	Pharmacy/Biology Building, Room 327	pharmacy.uconn.edu	pharmacy@uconn.edu
Ratcliffe Hicks	Meagan Ridder	W. B. Young Building, Room 206	rhsa.uconn.edu	cahnracademics@uconn.edu
Social Work	Henry Cantu	Hartford School of Social Work Building	ssw.uconn.edu	henry.cantu@uconn.edu

**Academic Achievement Center.** The Academic Achievement Center (AAC) assists students in attaining their academic and personal goals by providing a comprehensive, personalized array of programs, resources, and services that enhance skill development, effective decision-making, and personal transitions to and within the university setting. Students can visit by drop-in or appointment. Each student can work with a trained coach for a one-on-one session. Students are welcome to return and meet with a coach as often as they want. Professional staff are available by appointment. Please call or email Leo Lachut to schedule an appointment. Website: [achieve.uconn.edu](http://achieve.uconn.edu). Email: [aac@uconn.edu](mailto:aac@uconn.edu). Location: John W. Rowe Center for Undergraduate Education, Room 217. Phone: (860) 486-4889.

**Academic Center for Exploratory Students.** ACES is committed to assisting all students through an equitable and inclusive individualized approach to academic advising. We provide students with accurate and reliable information, help them to explore and identify their educational interests, and equip them with the appropriate tools to choose their major(s) with confidence. We engage students in the process of personal and professional growth, equipping them with transferable skills that will serve them beyond their time in ACES and at the university. We empower students to make their own decisions and provide support by connecting them with the resources, information and guidance needed to be successful. Home to The Major Experience (see The Major Experience below). Website: [aces.uconn.edu](http://aces.uconn.edu). Contact Micah Heumann at [aces@uconn.edu](mailto:aces@uconn.edu). Location: John W. Rowe Center for Undergraduate Education, Room 111. Phone: (860) 486-1788.

**Center for Academic Programs.** The Center for Academic Programs (CAP) increases access to higher education for high-potential high school and university students who are first-generation to college and/or from underserved populations. Website: [cap.uconn.edu](http://cap.uconn.edu). Contact Tadarrayl Starke at [cap@uconn.edu](mailto:cap@uconn.edu). Location: John W. Rowe Center for Undergraduate Education, Room 231. Phone: (860) 486-4040.

**Center for Career Development.** We serve as a university-wide career readiness resource that prepares students for post-graduation success. Our mission is to deliver comprehensive, innovative, and inclusive programs and services for all students. We cultivate connections to campus and community partners promoting opportunities for students to become contributing members of the state, national and world communities. The office serves as the clearinghouse for internships and cooperative education, which are an important part of the educational and career development process. Website: [career.uconn.edu](http://career.uconn.edu). Contact Beth Settje at: [career@uconn.edu](mailto:career@uconn.edu). Location: Wilbur Cross Building, Room 202. Phone: (860) 486-3013.

**Center for Students with Disabilities.** The Center for Students with Disabilities (CSD) is vested by the University with the authority to engage in an interactive process with each student and determine appropriate accommodations on an individualized, case-by-case, class-by-class basis. This practice is in accordance with Section 504 of the Rehabilitation Act of 1973 and Title II of the Americans with Disabilities Act (ADA) as amended (2008), which provides that no qualified person will be denied access to, participation in, or the benefits of, any program or activity operated by the University because of a disability. Website: [csd.uconn.edu](http://csd.uconn.edu). Contact Jennifer Lucia at [csd@uconn.edu](mailto:csd@uconn.edu). Location: Wilbur Cross Building, Room 204. Phone: (860) 486-2020.

**Dean of Students Office.** The primary function of the Dean of Students Office is to provide a place where students come to work with staff to identify possible solutions to challenges they face as they navigate campus life. They provide support without judgment and recognize that every student experience is unique. Website: [dos.uconn.edu](http://dos.uconn.edu). Email Fany Hannon at [dos@uconn.edu](mailto:dos@uconn.edu). Location: Wilbur Cross Building, Room 203. Phone: (860) 486-3426.

**Experiential Global Learning.** Experiential Global Learning (EGL) programs are accessible, integral components of life-transformative undergraduate and graduate curricula. Designed by faculty, practitioners, and community leaders, these programs provide students with collaborative opportunities to learn and practice knowledge and critical understanding, skills, values, and attitudes on intercultural competencies in a global context, whether they are delivered virtually, locally or internationally. Website: [egl.uconn.edu](http://egl.uconn.edu). Contact Laura Hills at [egl@uconn.edu](mailto:egl@uconn.edu). Location: John W. Rowe Center for Undergraduate Education, Room 117. Phone: (860) 486-5022.

**International Student and Scholar Services.** International Student and Scholar Services (ISSS) provides immigration and cross-cultural advising, services, and programs to help international students and exchange visitors accomplish their academic and professional goals at UConn. Website: [iss.uconn.edu](http://iss.uconn.edu). Email: [international@uconn.edu](mailto:international@uconn.edu). Location: Storrs: Arjona Building, Room 109. Stamford: Room 301F. Hartford: Graduate Business Learning Center, 100 Constitution Plaza, Room 415. Phone: (860) 486-3855.

**Institute for Student Success.** The Institute for Student Success (ISS), within Undergraduate Education and Instruction, provides students with the tools for success. ISS consists of four units: The Academic Center for Exploratory Students which oversees The Major Experience, and Bachelor of General Studies Program; First Year Programs, Learning Communities, and the Academic Achievement Center which oversees UConn Connects; the Louis Stokes Alliance for Minority Participation; and the Center for Academic Programs which oversees Student Support Services, McNair Scholars and Fellows, and High School Initiatives. Website: [iss.uconn.edu](http://iss.uconn.edu). Location: 368 Fairfield Way, John W. Rowe Center for Undergraduate Education. Contact Tadarayl Starke at (860) 486-6709.

**Language and Cultural Center.** Students can find support for second language and culture. The Department of Literatures, Cultures, and Languages offers tutoring by graduate students who are heritage speakers of their respective languages. Website: [languages.uconn.edu](http://languages.uconn.edu). Location: Oak Hall East SSB, Room 207. Phone: (860) 486-3313.

**Learning Community Program.** Learning Communities provide cohorts of first- and second-year students with opportunities to investigate areas of interest through guided courses and co-curricular activities. With over 30 Learning Communities to choose from, such as EcoHouse, Global House, or Innovation House, students complete a first year experience (FYE) or sophomore seminar course as a cohort. Learn about Learning Community options and how to apply here: [lc.uconn.edu](http://lc.uconn.edu). Contact David Ouimette at [david.ouimette@uconn.edu](mailto:david.ouimette@uconn.edu).

**Louis Stokes Alliance for Minority Participation.** This program supports historically underrepresented students in the STEM fields. Enrollment in the program is reserved to a select and highly committed group of students with a declared major in a STEM field. Website: [lsamp.uconn.edu](http://lsamp.uconn.edu). Location: John W. Rowe Center for Undergraduate Education, Room 203. Contact Mike Petro at: (860) 486-0653.

**McNair Scholars Program.** The McNair Scholars Program prepares talented, highly motivated UConn undergraduate students for doctoral studies in science, technology, engineering, and math (STEM) disciplines. McNair is open to low-income, first-generation college students or those from populations underrepresented in STEM graduate fields who are seeking to pursue a Ph.D. Scholars are paired with faculty mentors for academic enrichment, research, and internships. Website: [cap.uconn.edu/msp](http://cap.uconn.edu/msp). Location: John W. Rowe Center for Undergraduate Education, Room 204. Contact Renee Gilberti at (860) 486-5146.

**Office of First Year Programs and Learning Communities.** With courses, a personal support network, interactive online resources, and unique living/learning experiences, First Year Programs helps new students achieve success from the start. Website: [fyp.uconn.edu](http://fyp.uconn.edu). Contact David Ouimette at [fyp@uconn.edu](mailto:fyp@uconn.edu). Location: John W. Rowe Center for Undergraduate Education, 2nd Floor. Phone: (860) 486-3378.

**Office of National Scholarships and Fellowships.** The Office of National Scholarships (ONSF) advises and mentors students at the University of Connecticut who are competing for prestigious, nationally-competitive scholarships and fellowships. ONSF is part of UConn Enrichment Programs and is open to all graduate and undergraduate students at the University, including students at the regional campuses. Website: [onsf.uconn.edu](http://onsf.uconn.edu). Location: John W. Rowe Center for Undergraduate Education, Room 419; Contact Caroline McGuire at (860) 486-4223.

**Office of Undergraduate Research.** The Office of Undergraduate Research (OUR) provides research-related opportunities and information to interested students. OUR is an enrichment opportunity for all undergraduates in all majors on all UConn campuses. Website: [ugradresearch.uconn.edu](http://ugradresearch.uconn.edu). Contact Caroline McGuire at [our@uconn.edu](mailto:our@uconn.edu). Location: John W. Rowe Center for Undergraduate Education, Fourth Floor. Phone: (860) 486-4223.

**Pre-Law Advisement.** The Pre-Law Advising Office is committed to working with students and alumni to prepare for law school and legal careers. Website: [prelaw.uconn.edu](http://prelaw.uconn.edu). Email: [prelaw@uconn.edu](mailto:prelaw@uconn.edu). Location: John W. Rowe Center for Undergraduate Education, Room 419; Contact Krista Rogers at 860-486-4223.

**Pre-Medical/Pre-Dental Advisement.** The Pre-Medical and Pre-Dental Advising Office provides resources and advising to UConn students and alumni interested in pursuing professional careers as doctors of medicine and dental medicine. Website: [premed.uconn.edu](http://premed.uconn.edu). Email: [premed\\_predental@uconn.edu](mailto:premed_predental@uconn.edu). John W. Rowe Center for Undergraduate Education, Room 419.

**Quantitative Learning Center Tutoring.** The Q Center provides online and in-person tutoring services at all campuses, focusing on lower-division (but not exclusive to) Q courses in Chemistry, Mathematics, Physics, and Statistics. Website: [qcenter.uconn.edu](http://qcenter.uconn.edu). Email: [qcenter@uconn.edu](mailto:qcenter@uconn.edu). Central location: Homer Babbidge Library. Website: [qcenter.uconn.edu](http://qcenter.uconn.edu). Phone: (860) 486-1961.

**Student Health and Wellness.** Housed in three sites around campus, Student Health and Wellness provides medical care, mental health services, a full pharmacy and programs, resources and services to support student health. Our services are fully accredited by the Accreditation Association of Ambulatory Health Care and the International Association of Counseling Services. Website: [studenthealth.uconn.edu](http://studenthealth.uconn.edu). Email: [studenthealth@uconn.edu](mailto:studenthealth@uconn.edu). Locations: Medical Care and Pharmacy, Hilda May Williams Building, 234 Glenbrook Road. Phone: (860) 486-4700; Mental Health, Arjona, 4<sup>th</sup> Floor, 337 Mansfield Road, Phone: (860) 486-4705; Health Promotion, Wilson Hall, 626A Gilbert Road, Phone: (860) 486-9431.

**Student Support Services.** Student Support Services (SSS) increases access to the University of Connecticut for first-generation, low-income and/or underserved students with the goal of their retention and graduation. Accepted students participate in a five-week summer program designed to introduce them to the rigors of university academics prior to the fall semester of their first year. Students are assigned to a Counselor or Regional Coordinator who provides them with advising, support, and advocacy during the summer program and throughout their tenure at the university.

Website: [cap.uconn.edu/sss/about](http://cap.uconn.edu/sss/about). Location: John W. Rowe Center for Undergraduate Education, Suite 231. Contact Taddaryl Starke at (860) 486-4030.

**The Major Experience, TME.** TME is a student-centered program dedicated exclusively to major exploration. It is a university-wide collaboration with partners resources such as the Academic Center for Exploratory Students, Center for Career Development, and UConn's academic schools/colleges. TME is designed to encourage the intentional exploration of majors in a holistic and interactive manner. Using a personalized approach, students are given the appropriate tools and support to choose a major(s) with confidence and, once declared, make the most of their time in that program. TME helps students explore majors by facilitating peer-to-peer connections through TME Student Mentors, providing a Making Major Decision Course, encouraging networking with faculty and staff, offering personal guidance from Exploratory Advisors and Career Coaches, providing access to an assortment of valuable tools, and partnering with various University departments, programs, and resources. Website: [tme.uconn.edu](http://tme.uconn.edu). Location: John W. Rowe Center for Undergraduate Education, Room 111. Contact Micah Heumann at (860) 486-1788.

**UConn American English Language Institute.** UCAELI offers a full-service intensive English program for students of English as a second language. Website: [ucaeli.uconn.edu](http://ucaeli.uconn.edu). Email: [register-ucaeli@uconn.edu](mailto:register-ucaeli@uconn.edu). Location: John W. Rowe Center for Undergraduate Education, Room 218. Phone: (860) 486-2127.

**UConn Compass.** UConn Compass is an involvement program that promotes student engagement through co-curricular involvement. The program helps students to explore opportunities available at the University and helps them connect with campus life in a positive manner. Website: [community.uconn.edu/uconn-compass](http://community.uconn.edu/uconn-compass). Email: [community@uconn.edu](mailto:community@uconn.edu). Location: Wilbur Cross Building, Room 301. Phone: 860-486-8402.

**UConn Connects.** UConn Connects is the University's largest volunteer mentoring program offered by the Academic Achievement Center (AAC). It is an academic intervention program, designed to provide students with skills and support needed for academic success. Student participants are provided with the opportunity to meet weekly with a faculty, staff, graduate or undergraduate peer mentor. Connects Mentors are knowledgeable about important university resources and are trained to assist students with developing effective strategies for success. Students at the University may participate in the UConn Connects program on a semester-by-semester basis. Website: [achieve.uconn.edu](http://achieve.uconn.edu). Contact Leo Lachut at [uconnconnects@uconn.edu](mailto:uconnconnects@uconn.edu). Location: John W. Rowe Center for Undergraduate Education, Room 217. Phone: (860) 486-4889.

**Vergnano Institute for Inclusion (VII).** The (VII) is dedicated to increasing the number of underrepresented students in engineering and other STEM fields and runs a number of programs in an effort to work towards this goal. The programs are designed to facilitate the outreach, recruitment, retention, and overall success of all members of the School of Engineering community. Website: <https://inclusion.engr.uconn.edu>. Contact Stephanie Santos at [enr-inclusion@uconn.edu](mailto:enr-inclusion@uconn.edu). Location: School of Engineering, EII, 191 Auditorium Road, Unit 3187, Room 320. Phone: (860) 486-5536.

**Veterans Resources.** The Office of Veterans Affairs and Military Programs provides support for our veterans, guardsmen, reservists, active duty, and dependents as they adjust to the academic and social terrain at the University. Specific information regarding veterans' financial aid is available through the Office of Veterans Affairs and Military Programs. Their office is located in Hawley Armory, Room 100B. Website: [veterans.uconn.edu](http://veterans.uconn.edu). Contact Alyssa Kelleher at [veterans@uconn.edu](mailto:veterans@uconn.edu). Phone: (860) 486-2442.

**Writing Center.** A faculty-led staff of tutors from disciplines across the university available to support students at all stages of the writing process. Services online and in-person. Website: [writingcenter.uconn.edu](http://writingcenter.uconn.edu). Email: [writingcenter@uconn.edu](mailto:writingcenter@uconn.edu). Central location: Homer Babbidge Library, Phone: (860) 486-4387.

## Academic Records

**Confidentiality of Records.** The Family Educational Rights and Privacy Act of 1974, as amended, protects the privacy of educational records, establishes the students' rights to inspect their educational records, provides guidelines for correcting inaccurate or misleading data through informal and formal hearings, and permits students to file complaints with the Family

Policy Compliance Office of the U.S. Department of Education concerning alleged failures of the institution to comply with this Act. In compliance with this Act, the University of Connecticut publishes detailed FERPA information at [ferpa.uconn.edu](http://ferpa.uconn.edu) and sends notification to students via email.

**Graduation Rate.** The Student Right to Know Act of 1990 requires each institution to make available the graduation rates, within six years, of entering first-year classes. For students who entered the University of Connecticut as first-year students in Fall 2016, the graduation rate by the summer of 2022 was 83% for those who entered at Storrs, and 62% for those who entered at a regional campus. Non-graduates may have completed degrees at other institutions.

**Certifications.** Students needing certification of enrollment or academic status for loan deferments, job procurement, scholarships, insurance, international student I.D. cards, licensing exams, admission to graduate school or other purposes may obtain the necessary documentation from the Office of the Registrar or through the use of the Student Administration System via the internet.

**Official Transcript Requests.** Students at Storrs and the regional campuses who attended after 2002 can request official transcripts of their academic records via their Student Administration System account. Students who attended prior to 2002 can submit requests via an online portal; links are available at [registrar.uconn.edu/transcripts](http://registrar.uconn.edu/transcripts).

Transcripts can be delivered via email or by paper mail. See [registrar.uconn.edu/transcripts](http://registrar.uconn.edu/transcripts) for information about fees and additional delivery options.

Official transcripts may be withheld if financial or other obligations to the University remain unmet. The University cannot honor telephone or ordinary email requests for transcripts, and official transcripts cannot be faxed.

**Unofficial Transcripts.** Any student can obtain an unofficial transcript via a computer that has internet access by logging on to the Student Administration System using their unique NetID and password. Unofficial transcripts are also available at the Office of the Registrar at Storrs or at any of the regional campuses; however, students should call the regional campus registrar in advance to make arrangements for transcript pickup.

## Financial Aid

The primary role of the Office of Student Financial Aid Services (OSFAS) is to reduce the financial barriers that limit access to a higher education at the University of Connecticut. This is accomplished through providing financial aid offers to eligible students that consist of scholarships, grants, loans, and part-time employment. While students and parents are primarily responsible for funding a UConn education, the OSFAS makes every effort to provide assistance in the event that income from family, wages, savings, and other financial resources are insufficient to cover the cost of a UConn education.

### How to Apply for Financial Aid

Complete the Free Application for Federal Student Aid (FAFSA) at [studentaid.gov](http://studentaid.gov). UConn's on-time deadline is February 15th and the Federal School Code is 001417. Students whose applications are received after the deadline may not be eligible for certain types of financial aid.

**Submit required documentation.** In the event that the U.S. Department of Education selects your FAFSA for verification, be prepared to submit documentation in order to substantiate the data reported on your FAFSA.

You will be notified, by Inceptia, UConn's third-party servicer, via your email if additional documentation is required to continue processing your financial aid application. Follow the instructions in the communication to create and/or access your Verification Gateway account to complete verification. Additional information about the verification process is available at [financialaid.uconn.edu/eligibility](http://financialaid.uconn.edu/eligibility).

**Accept your aid offer.** Upon notification via your email account that your financial aid offer is ready for review/action, access the Student Administration System to accept/decline your financial aid offer and complete all steps, by choosing the Financial Aid tile on the homepage.

**Maintain Satisfactory Academic Progress.** Federal Regulations require the OSFAS to review the academic progress of students who apply for and/or receive financial assistance. All aid recipients are required to maintain a designated grade point average (GPA) and satisfactorily complete a

percentage of the number of credit hours attempted. A complete text of these requirements is available at [financialaid.uconn.edu/sap](http://financialaid.uconn.edu/sap).

For more information about the financial aid process, eligibility requirements, important deadlines, and options for undocumented students, please visit [financialaid.uconn.edu](http://financialaid.uconn.edu).

## Student Identification

**Net ID.** HuskyCT and University email each require the use of a Net identification number and a password. The NetID and password become important tools to be used to register for classes, obtain grade transcripts and schedules, and change contact information. Questions regarding NetID and password should be referred to the ITS Help Center.

**Student Administration System.** Each student is assigned a randomly selected, unique USER ID number, which is used primarily by administrative offices as an identifier in the Student Administration System.

**One Card.** Each student is issued a photo identification card. The card is used to obtain services such as dining, residential life, and library. It is also the identifier used to gain entrance to some campus social events. The initial card is obtained at the One Card Office, as are replacements.

**Social Security Number.** The social security number (SSN) is collected to enable the University to comply with federal requirements mandated under IRS tax laws and the Title IV student aid legislation and for other administrative purposes. The University assigns each student a unique identifier that is not the SSN that is used for most administrative purposes. If the SSN appears incorrectly on any University document, the undergraduate student must present a social security card indicating the correct number to the Office of the Registrar.

**Reporting Name and Address Changes.** Undergraduate students must report any change of name and commuting or permanent address at the time such change occurs to the Office of the Registrar. Legal name changes require official documentation. Students may elect to use a chosen name that differs from their legal name. For information on how to submit this request please contact the Office of the Registrar and/or the ITS Help Center.

Changes to current mailing address and telephone number can be made through use of the Student Administration System.



# Academic Regulations

By accepting admission, the student assumes responsibility for knowing and complying with the regulations and procedures set forth by the University.

## University Requirements

The Board of Trustees awards the degrees of Bachelor of Arts, Bachelor of Science in Engineering, Bachelor of Fine Arts, Bachelor of General Studies, Bachelor of Music, Bachelor of Science, and Bachelor of Social Work to students who have completed the degree requirements of a school or college. Students can find their degree requirements in the section of the *Undergraduate Catalog* devoted to their school or college.

### Required Credits

The University requires all students to complete at least 120 credits toward the degree. Some schools require more than 120 degree credits for graduation.

### Required GPA

The University requires that all students have a cumulative grade point average (GPA) of at least 2.0 at the time of graduation. However, some of the schools and colleges require higher averages. Students should refer to their school or college requirements to determine the minimum cumulative GPA required.

### University-Wide Residence Requirement

It is expected that advanced course work in the major will be completed in residence. Students must earn a minimum of thirty credits in residence toward a degree at the University, though particular schools and colleges may require more. Courses taken at the University and through the University's Education Abroad and Early College Experience programs are all deemed in-residence. Students desiring to transfer credits should be aware of residence requirements in the individual schools and colleges, and should request necessary permissions in advance. Students seeking exceptions to any additional residence requirements of a school or college must petition the dean or director of the appropriate program from which they will earn their degree.

### Immunization Requirements

The University has immunization requirements that apply to most students. Please see the Student Health and Wellness website for more information: [studenthealth.uconn.edu](http://studenthealth.uconn.edu).

### Time Limit

All students wishing to apply toward a degree the credits earned more than eight years before graduation must have permission from the dean of the school or college concerned. The permission, if granted, applies only to the current school or college.

### Applicability of Requirements

Students graduating from a school or college must meet the requirements as they were at the time the student entered, or as they were at any subsequent time. Candidates who transfer from a school or college and then return must meet the requirements as they were at the time the student returned, or as they were at any subsequent time. Students who withdraw (except those on official leave of absence) or are dismissed from the University and later return must meet the requirements as they were at the time the student returned, or as they were at any subsequent time.

### Exemptions from, and Substitutions for, University Requirements

Students seeking an exemption from a University requirement, or wishing to substitute another course for the course prescribed, should consult their academic dean. To effect a change, the dean must recommend the change, and the Vice Provost for Academic Affairs must approve it. Transfer students wanting exemptions or substitutions should request them of their academic dean as they enroll.

## Course and Credit Information

### Course Numbers

Course numbers show the level of the material presented. The numbers and the academic levels follow:

0000-0999	Courses in the Ratcliffe Hicks School of Agriculture, may not be taken for degree credit by Baccalaureate students.
1000-1999	Introductory courses, usually with no prerequisites, primarily intended for First-Year Students and Sophomores.
2000-2999	Courses, usually with no more than one prerequisite, primarily intended for Sophomores.
3000-3999	Advanced undergraduate courses primarily intended for Juniors and Seniors.
4000-4999	Advanced undergraduate courses primarily intended for Seniors.
5000-5999	Entry-level and intermediate Graduate courses.
6000-6999	Advanced Graduate courses.
7000-7999	Law School courses.
8000-8999	Medical School courses.
9000-9999	School of Dental Medicine courses.

Unless their school or college has more stringent requirements, undergraduate seniors with a cumulative grade point average of 2.6 or above may take 5000-level courses. Other undergraduates must have the permission of the instructor and the student's academic dean to enroll in a 5000-level course.

### Consent Courses

Many University courses require consent of the instructor for enrollment. The course directory section of this *Catalog* specifies the required signatures.

### Enrollment Requirements

#### Prerequisites and Corequisites

The term prerequisite implies a progression from less advanced to more advanced study in a field. Students must satisfy the prerequisite(s) before registering for the course, unless exempted by the instructor. Corequisite courses must be taken concurrently. When a course is listed as both a prerequisite and a corequisite, it may be taken prior to or concurrently with the other course.

Prerequisites taken out of sequence within a single department shall not count towards degree credit unless the head of the department offering the course grants an exception. For example, assume that courses A and B are in the same department and A is prerequisite to B. If the instructor permits the student to take B without having taken A, and the student passes B, the student may not take A for credit without permission. The student seeking credit for A must have the permission of the head of the department offering the course. The department head must notify the Registrar in writing.

#### Restricted Credits

Students should read carefully the course descriptions in the *Undergraduate Catalog* before they register because some of the course credits may not count toward graduation. Some examples of credit-restricted courses are:

- Only six credits from PHIL 1101, 1102, 1103, 1104, 1105, 1106, 1107
- Not both STAT 1000 and STAT 1100

Students who have had three or more years of a foreign language in high school cannot receive credit for the elementary language courses in that same language. However, transfer students who were placed in an elementary language course through a proficiency exam at another institution of higher learning may contact the Literatures, Cultures and Languages Department Head about permission to receive credit for the elementary language courses.

Course restrictions also apply to independent study courses (see Independent Study, Special Topics, and Variable Topics courses), repeated courses (see Repeating courses), and prerequisites taken out of sequence (see Prerequisites).

In credit-restricted courses, the earned credits are reduced on the transcript. However, full credit will be used in the determination of full-time status and in the calculation of grade point averages.

### Recommended Preparation

Denotes that the instructor will assume that students know material covered in the course(s) listed. Students who register for a course without the recommended background may experience difficulties and are encouraged to consult with the instructor prior to registration.

### Satisfying Course Requirements by Examination

A student may, with the permission of their academic dean, meet school or college course requirements by examination. The student earns no credit. The department offering the course gives the examination.

### Independent Study, Special Topics and Variable Topics Courses

Students wishing to study a subject independently, for credit, must find an instructor to supervise the project. The instructor and the student then agree on the number of credits the student may earn. Without special permission, students may not register for or earn toward the degree more than six credits each semester in any one or combination of independent study, special topics, and variable topics courses. To increase this limit, students must consult with their advisor and get the permission of their academic dean. Please see [registrar.uconn.edu/forms](http://registrar.uconn.edu/forms) for the appropriate forms.

### Repeating Courses

Any student who is regularly registered for courses and who satisfies the requirements shall receive credit except that no student shall receive credit for the same course twice, unless it is specifically stated, as in a variable content course. Courses with the same number that cover the same course content cannot be counted more than once for credit. The parenthetical phrases (Formerly offered as...) and (Also offered as...) that follow a course title as a cross reference indicate that a student may not take both the course and the cross-referenced course. A student is regularly registered for a course only if he or she has conformed to all university or college regulations or requirements applying to registration for the course.

A student may repeat a course previously taken one time without seeking permission in order to earn a higher grade. The student may take the course a third time with the permission of the dean of the school or college in which the student is enrolled and the instructor of the course. Under no circumstances may a student take a course more than three times.

When a student repeats a course, credit shall be allowed only once. Furthermore, in the computation of the grade point average, the registered credit and grade points for the most recent taking of the course shall be included in the GPA calculation and the registered credit and grade for the prior taking of the course shall remain on the transcript, but shall be removed from the GPA calculation.

The student should note that repeating a course that was previously passed can have negative consequences. For example, if a student fails a course previously passed, the student would lose credit for the first, passed, attempt and not earn credit for the second, failed, attempt. Repeating a previously passed course may also have an effect on financial aid. Students considering repeating previously passed courses should consult their advisors and Student Financial Aid Services staff.

When a student repeats a course after receiving a degree, the student's transcript will indicate a grade, but no registered credit, for the repeated course. The grade and registered credit recorded for the course prior to receipt of the degree shall continue to be included in the GPA and credit calculations.

A student must have department head permission to repeat a course that is listed as a prerequisite or corequisite for any course that the student has passed. For example, a student who received a "D" in CHEM 1127Q and subsequently passed CHEM 1128Q may not retake CHEM 1127Q without permission.

### Earning Course Credits by Examination

The student should obtain a *Petition for Course Credit by Examination* from the Office of the Registrar or [registrar.uconn.edu/forms](http://registrar.uconn.edu/forms), pay the Credit by Examination fee at the Bursar's Office, and take the form to the instructor of the course and the department head for review of the student's academic qualifications and approval to take the exam. The student must then take the form to the student's academic dean for final approval. When all approvals

have been obtained, the student must take the form to the academic department to arrange for the examination.

When acceptable candidates apply, departments arrange examinations once a semester, as shown in the University calendar. The course instructor prepares and grades the examination. The student writes the answers unless the material makes an oral or performance examination more appropriate. Examinations in laboratory courses test the student's mastery of laboratory techniques. Students may not elect the Pass/Fail option when taking an examination for course credit. Posted grades are from "A" to "D-" with the corresponding grade points, and if the student fails the examination, the Registrar does not record a grade. If the department permits, students may review past examinations.

Students may not:

- take an examination for credit if they previously covered a substantial portion of the material in a high-school or college course for which the University granted credit.
- earn credits by examination for any course they have failed, by examination or otherwise.
- earn credits by examination for ENGL 1003, 1004, or for 1000-level foreign language courses. Schools and Colleges may exclude other courses from course credit by examination.
- earn by examination more than one-fourth of the credits required for the degree.

### Advanced Placement

Various academic deans have approved Advanced Placement Examinations as a basis for granting advanced standing to students at the time of admission. The department teaching the subject matter covered by the test determines whether the student (1) receives full credit for a specific course, or (2) may use a specific course in meeting prerequisite requirements for more advanced courses or in fulfilling course requirements for graduation, or (3) neither of the preceding alternatives. See the College Board AP Examination Transfer Guidelines chart for more information.

### College Board AP Examination Transfer Guidelines

Course equivalencies noted in the table below are granted for AP Exam scores of 4 or 5 except where otherwise noted. Score exceptions appear in parentheses next to the description of the exam.

AP Exam	UConn Course Equivalent	Credits
Art: Drawing	ART 1030	3
Art: 2-D Design	ART/Studio 1000-level	3
Art: 3-D Design	ART/Studio 1000-level	3
Art History	ARTH 1137 and 1138	6
Biology	BIOL 1107 and 1108	8
Chemistry	CHEM 1127Q and 1128Q	8
Chinese Language and Culture	CHIN 1114	4
Computer Science	CSE 1010	3
Economics: Macroeconomics	ECON 1202	3
Economics: Microeconomics	ECON 1201	3
English Language or English Literature	ENGL 1011	4
Environmental Science	NRE 1000	3
French Language and Culture	FREN 3267	3
Human Geography	GEOG 1000	3
German Language (4)	Placement into 2000-level course	None
German Language (5)	GERM 3233	3
Comparative Government and Politics	POLS 1202	3
U.S. Government and Politics	POLS 1602	3
American History	HIST 1502	3

European History	HIST 1400	3
World History	HIST 1201	3
Italian Language and Culture	ILCS 3239	3
Latin	CAMS 2000-level	3
Mathematics AB	MATH 1131Q	4
Mathematics BC (3)	MATH 1131Q	4
Mathematics BC (4 or 5)	MATH 1131Q and 1132Q	8
Music	MUSI 1011	3
Physics 1	PHYS 1201Q	4
Physics 2	PHYS 1202Q	4
Physics C Electric and Magnetic	PHYS 1502Q	4
Physics C Mechanics	PHYS 1501Q	4
Precalculus	MATH 1060Q	3
Psychology	PSYC 1000-level	3
Spanish Language	SPAN 3178	3
Spanish Literature	Spanish Literature 2000-level	3
Statistics	STAT 1100Q	4

### Earning Course Credits through Concurrent Enrollment Programs

Students who have earned college credits while in high school through a concurrent enrollment program, also known as dual enrollment, should request an official transcript from the issuing institution and meet with their academic advisor regarding the transferability of the credits.

### UConn Early College Experience (ECE)

UConn ECE Students coming to any UConn campus for their undergraduate career will automatically have all non-degree work (Pending Classes) from UConn ECE noted on the non-degree portion of an official UConn transcript.

Students, need to meet with an academic advisor to decide one of two options: (1) elect to move UConn ECE credit to the degree portion of the official undergraduate transcript (accept the credit) or (2) leave the credit on the non-degree portion (reject the credit). Refer to the Pending Class Rules section of [nondegreedecisions.uconn.edu](http://nondegreedecisions.uconn.edu) and the department specific deadline before making a decision about moving credits.

The deadline to accept or reject UConn ECE credits is typically at the end of the first semester on campus, depending on the college or program. In most cases, if a decision is not selected, **the credit is automatically moved to the official undergraduate transcript**. Once a decision has been made to accept or reject credits, or they are automatically accepted, the decision/action is **irreversible**.

Note: Credits on the degree portion of an official undergraduate transcript are counted towards GPA calculation and credit total towards graduating. Credits on the non-degree portion are not included in GPA calculation or credit total towards graduating, but they will appear on the official UConn transcript under the Non-degree Career section.

Visit [nondegreedecisions.uconn.edu](http://nondegreedecisions.uconn.edu) for additional information and deadlines.

### Transfer Credits for Continuing Students

Students who wish to take courses elsewhere and apply the credits toward their degrees should consult their advisor, their academic dean and the Transfer Admissions Office beforehand. Otherwise, the credits may not apply toward the student's degree. The student must complete the Prior Approval Process and submit an official transcript as soon as coursework is completed to the Transfer Admissions Office. Students must meet the University-wide residence requirements, as well as the residence requirements of their individual school or college.

Transfer courses must have a grade of "C" (2.0 on 4.0 scale) or above in order to transfer. Grades and grade points do not transfer. If the student

earns grades of "P," "CR," or the like, for work completed elsewhere, the student must provide the Transfer Admissions Office with official letter grade equivalents to have the work evaluated.

## Registration

All students must register on the dates announced and pay the succeeding semester fee bills as due. Failure to pay by the payment deadlines may result in sanctions, including, but not limited to cancellation of courses and removal from residence halls. Before registering, students must consult their academic advisors.

Students may take courses at any campus: Avery Point, Hartford, Stamford, Storrs, and Waterbury. However, students must be registered for the majority of their credits at their home campus. The home campus is the campus to which the student was admitted unless an authorized campus change has taken place.

### Placement Testing

Depending on the student's preparation and course of study, some schools and colleges require entering students to take tests in mathematics, foreign languages and English.

### Full-Time and Part-Time Registration

Full-time students register for at least 12 credits and continue to carry at least 12 credits through the end of the semester or the summer term.

Courses with restricted credits (see Credit Restrictions) have all credits counted in computing the Semester Credit Load, but only unrestricted credits count toward the degree. Unresolved marks from a previous semester and/or courses currently being audited are not counted in computing the Semester Credit Load.

Part-time students are those enrolled for fewer than 12 credits. Enrolling for fewer than 12 credits requires the written approval of the student's academic dean. Part-time students must obtain permission from the Dean of Students or designee to participate in any extra-curricular activity involving intercollegiate competition. Students considering taking fewer than 12 credits should consult their advisor and read carefully the rules governing scholastic probation and dismissal, financial aid and housing. They also should ask if their part-time status will affect their social security, their insurance and related matters.

### Maximum Number of Credits Students May Take Per Semester

To register for more than the maximum credits listed below, the student must obtain permission from the student's advisor and academic dean.

- Engineering, Fine Arts, and Pharmacy: 19 (21 if fifth semester or above and earned 2.6 SGPA or above the previous semester)
- All other schools and colleges: 17 (18 if earned 2.6 SGPA or above the previous semester or taking National Defense courses)

For various reasons, including academic standing, students' allowed credit totals may be restricted to 13 or 14 credits.

In all schools and colleges, except Engineering, Fine Arts, and Pharmacy, a first-year student or sophomore in the Honors Program who has, or will have, earned a minimum of 18 credits at the time of enrollment and has met the minimum excess credit requirement for the University may register for or be enrolled in a maximum of 19 credits. Honors juniors and seniors who have earned a grade point average of at least 3.0 for the last semester for which grades are available, may enroll in up to 21 credits.

A form for obtaining permission to take more than the maximum number of credits is available from the Registrar at: [registrar.uconn.edu/forms](http://registrar.uconn.edu/forms).

For five or six-week Summer Session, the maximum is eight credits. For three-week sessions, the maximum is four credits. For the Summer Divergent Early, Summer Divergent Late, and Summer Spanning sessions, the maximum is 12 credits.

### Undergraduate Schedule Revision Regulations

Registration information can be found on the website of the Office of the Registrar at [registrar.uconn.edu/registration](http://registrar.uconn.edu/registration). Within the following regulations, students may revise their course schedules on days and at hours specified by the Office of the Registrar. Though classes may be scheduled on weekends, these are not factored into the following regulations.

Students must consult with their academic advisor prior to adding or dropping courses. After the second week of classes, any and all adjustments to the student's schedule must be filed with the Registrar. See tables about adding and dropping courses for further clarification.

If a particular course requires consent, a student must obtain that consent before adding the course.

Students may add courses during the first 10 days of classes without special permissions. In exceptional cases only, a student may add courses after the tenth day of classes with the consent of the student's advisor, the course instructor, and the head of the department or program offering the course. After the fourth week, the permission of the student's academic dean or dean's designee is also required for adding classes.

Students may drop courses before the end of the tenth day of classes. When a student drops a course during the first two weeks of classes, the Registrar does not place the course on the student's record. After the tenth day of classes and through the eleventh week, a student may drop one course for any reason with permission from the student's advisor. When a student drops a course after the second week, the Registrar places the course on the student's record with a 'W' (for withdrawal). No student is permitted to drop a course after the eleventh week of classes or to drop more than one course after the first 10 days of classes unless, on the recommendation of the advisor, an exception is made by the dean or designee of the school or college in which the student is enrolled. Exceptions are made only for extenuating circumstances beyond the student's control. Poor academic performance is not considered a sufficient reason for dropping a course after the eleventh week. Exceptions to transcript notations can be made only by the Provost or designee.

A student who withdraws from a full-year course at the close of the first semester shall receive credit for the work of the first semester if the student has passed the course, unless it is announced in the catalog that the course must be taken in its entirety, in which case the credit shall be withheld until the course is completed.

Students at the University's regional campuses are subject to all regulations governing adding and dropping courses except that course instructors act for the department heads and the regional campus director or designee acts for the dean.

For courses of fewer than 14 weeks duration, the add/drop periods will be adjusted and determined by the Registrar.

Course seats are non-transferable. Students cannot transfer/sell their course seat(s) to any other student.

### Adding Courses

Semester Period	Add
First and second weeks of classes	Registration
Third and fourth weeks of classes	Advisor, Instructor, and Department Head offering the course
After the fourth week	All of the above and the Dean

### Dropping Courses

Semester Period	Single Drop	Two or More Drops
First and second weeks of classes	Registration with NO "W" grade *	Registration with NO "W" grade *
Third through eleventh weeks of classes	Advisor with "W" grade	Advisor and Dean with "W" grade
After the eleventh week	Exceptions made only for extenuating circumstances	

\* Students should be made aware of the rules of their individual schools and colleges for using the Registration System.

### Section Changes

Section changes require the same authorization as other add/drop transactions.

## Registration in Courses Labeled "Credits and Hours by Arrangement"

The student and the instructor agree on the number of credits the student expects to earn and the student enters the number of credits when registering. If the number of credits a student expects to earn changes during the semester, the instructor must report the change to the Office of the Registrar as soon as possible, by email or memo.

### Auditing Courses Without Credit

Students wanting to have the fact that they were exposed to the material in a course recorded on their academic record, but not receive either credit or a grade, may choose to audit a course. The student may participate in the course as the instructor permits. In place of a grade, the record will show "AU."

All students planning to audit a course must get a Course Audit Form from the Office of the Registrar or registrar.uconn.edu/forms, complete it, and file it with the Registrar. To complete the card, they must consult their advisor and get the instructor's consent. Students changing a course from credit to audit after the second week of classes receive both "W" (for Withdrawal) and "AU" marks on their academic records. No student is permitted to change a course from credit to audit after the eleventh week of classes unless the dean makes an exception. Exceptions are made only for extenuating circumstances beyond the student's control. The instructor may disenroll a student not meeting the auditing criteria set forth by the instructor.

Part-time students must pay the same fee to audit a course as they would pay if they took the course for credit.

### Failure to Register

Students must enroll in a course to attend the class. Instructors with unenrolled students in a class should tell the students they should add the course to attend. Unenrolled students will earn no credit for courses or parts of courses completed. Students who have paid their fees may register late with the permission of the student's advisor, instructors, department heads of the departments offering the courses and the student's academic dean.

### Improper Registration

Students who discover they are not eligible for a course in which they have enrolled, should consult their advisor and drop the course as soon as possible. Upon recommendation of an advisor, instructor, department head or dean, the Registrar may remove students from courses for which students are not eligible to enroll.

### Denial of Space for Non-Attendance

A student who is enrolled in, but does not attend any classes or laboratory meetings during the first ten days of classes may be denied a place in the course. Such non-attendance, or non-attendance later in the semester, does not constitute withdrawal; the student must officially drop the course by regular procedures or risk being assigned a failing grade.

## Grade Information

### Class Attendance

The instructor describes the computation of the grades and the relation between grades and attendance at the beginning of the semester. Where grades depend on classroom participation, absences may affect the student's grade. However, if a student were absent and the instructor reduced the grade, the reduction would be due to lack of class participation, not the student's absence. Except for final examinations, instructors have final authority in permitting students to submit assignments late or make up examinations.

### Final Examinations

Instructors of undergraduate courses shall provide a clear form of assessment of student work that shall be consistent with and sufficient for the learning goals of the course.

During the semester or term, assessments shall be held only during regularly scheduled class periods. If instructors, due to exceptional circumstances, believe they need to hold assessments outside of regularly scheduled class periods, they must seek approval from the Vice-Provost for Academic Affairs prior to the start of registration. Sections of courses for which

such exception has been granted shall carry a footnote to that effect in the published Schedule of Classes which clearly states the date and time of the assessment on the syllabus. In the event of student absences from assessments given during the semester, decisions regarding possible make-up assessments shall be the prerogative of the instructor.

Final in-class examinations may not be given during the last week of classes. Other types of assessments (for example, but not only, portfolios, performances, projects, presentations, etc.) may be due in the last week of classes, but should be clearly delineated on the syllabus from the first week of classes.

The format of assessments during finals week remains at the discretion of the instructor, including whether to assign a final assessment or not. In the event an instructor chooses not to schedule a final assessment, they must notify the Registrar to allow rescheduling of the classroom. During the final assessment period, instructors may have other types of assessments due, but only if they are clearly delineated on the syllabus from the first week of classes.

Instructors are required to administer final course assessments in the places and at the days and times scheduled by the Registrar; these will not necessarily be identical to those at which the class normally meets. Instructors seeking a final assessment period greater than two hours must seek approval from their department head and dean or designee prior to the start of registration; sections of courses for which such exception has been granted shall carry a footnote that specifies the time-extension for the final assessments in the published Schedule of Classes, and be clearly stated clearly states the date and time on the syllabus. For online final assessments, although faculty may choose to make assessments available for an extended period of time, students must be allowed the opportunity to take the assessments during the time scheduled by the University.

Each instructor shall determine for his or her own courses the weight to be assigned to the final assessment in computing the semester grade of a student. Each instructor in charge of a course will assume responsibility for proctoring in-class assessments, including those during finals week.

#### Absences from Final Examinations

A student who is prevented by extenuating circumstances from completing a scheduled final assessment must apply to the Dean of Students Office for validation that will authorize the student's instructor to give a substitute assessment. A student whose absence is excused by the Dean of Students Office shall have an opportunity to complete a substitute assessment without penalty. A student whose absence from a scheduled final assessment is not excused in this way shall receive a failure for this assessment.

#### Rescheduling Final Examinations

A student whose final assessment schedule includes four assessments in two consecutive calendar days, three assessments in one calendar day, or three assessments in consecutive time blocks spanning parts of two consecutive days may request a note of permission from the Dean of Students Office to reschedule one exam. The Dean of Students Office will determine which of the bunched assessments may be rescheduled. The student must present the Dean of Students Office note of permission to reschedule the final assessment to the instructor of the course.

#### Grades, Grade Points, Credits, and Skills

Instructors grade undergraduate courses based on the following letter and point system. These grades are used to calculate students' Grade Point Averages.

Explanation	Final Grades	Grade Points	Course Credits	Skills
Excellent	A	4.0	yes	yes
	A-	3.7	yes	yes
Very Good	B+	3.3	yes	yes
Good	B	3.0	yes	yes
	B-	2.7	yes	yes
	C+	2.3	yes	yes
Average	C	2.0	yes	yes
Fair	C-	1.7	yes	yes

Poor	D+	1.3	yes	yes
	D	1.0	yes	yes
Merely Passing	D-	0.7	yes	yes
Failure	F	0	no	no
Pass/Fail Pass	P@	N/A	yes	no
Pass/Fail Failure	F@	N/A	no	no
Satisfactory	S	N/A	yes	no
Unsatisfactory	U	N/A	no	no
Audit	Au	N/A	no	no
Withdrawal	W	N/A	no	no
Continuing Registration	N/A	N/A	N/A	N/A

#### Grade Point Formulas

Grade points for courses graded "A"- "F" are the product of the course credits and the points per credit for the grade earned. For example, given a "B-" for a 3-credit course, points earned for the course are 8.1 (2.7 x 3). For any period, the total grade points for the courses graded "A"- "F" divided by the total credits give the grade point average. The term GPA includes all courses graded "A"- "F" in a semester or summer session. The cumulative GPA averages all courses graded "A"- "F."

If a student repeats a course that may not be repeated for credit, the Registrar records the grades for both attempts. If the repeat occurred prior to Summer Session 2002, both attempts are included in the GPA calculations. If the repeat occurred after Spring 2002, only the second attempt is included in the GPA calculations although both grades appear on the transcript. The student should note that when a lower grade is earned on the second attempt, the lower grade is the one that is used in the calculations.

Students withdrawing from a full-year course at the close of the first semester will, if they have passed the first part of the course, receive credit for the work of the first semester, unless the course description states otherwise.

#### The Dean's List

At the end of each semester the Dean of each school and college names to the Dean's List those students who (1) were registered for at least 12 credits calculable for grade points, (2) received no grade below "C," including the actual letter grade awarded in any course under the Pass/Fail option, (3) earned at least 3.0 times as many grade points as the number of calculable credits recorded by the Registrar, and (4) were in at least the upper quartile of their school or college.

Undergraduate students whose disabilities warrant the adjustment of carrying less than a full-time course load per semester can be determined eligible for Dean's List status. The Center for Students with Disabilities will notify the Registrar each semester regarding students who are eligible.

Annually, at the conclusion of the Spring semester, the deans of the various schools and colleges shall issue a list of those degree-seeking students who did not attain full-time status at any time during the previous 12 months, but who, during this 12 month period (including summer and intersession sessions) (a) were registered for a total of at least twelve calculable credits, (b) received no mark below "C" nor received a "U" in any course, (c) earned at least a 3.0 grade point average, and (d) were in the upper quartile of their respective school or college based on the Spring data. These students will receive the distinction: "Dean's List (Part-time)."

#### Satisfactory/Unsatisfactory (S/U)

The S/U grade option is determined by the faculty; it is not a student-driven option. This course designation is available only for courses that have been approved as such by the Senate Curricula and Courses Committee. Instructors assign a grade of "S" to represent satisfactory work or "U" to represent unsatisfactory work. These courses may or may not award credit, but in neither case will grade points be awarded. No course used to fulfill the General Education Requirements may be assigned an S/U grade.

## Pass/Fail Option

The University Senate, the schools, the colleges and some programs have restricted the credits placed on Pass/Fail in various ways. Thus, students planning to place a course on Pass/Fail should consider the consequences carefully. The advantage to the student is that the grade for a course placed on Pass/Fail does not affect their grade point average. However, they should discuss with their advisor the immediate, the long-term, the direct, and the indirect effects.

A student who is not on scholastic probation may elect a maximum of 12 credits (not including credits on P/F recorded in spring 2020) to be distributed over not more than one course per semester and three courses total, to be recorded as “P” for Pass or “F” for Fail on his or her permanent record. Students who are selecting a course for the Pass/Fail option or want to convert a Pass/Fail back to a graded basis must do so by the eleventh week of the semester. Students seeking to put a course on Pass/Fail after the eleventh week of the semester must get approval from the student’s advisor and by the Dean or designee of the school or college in which the student is enrolled. Approvals are given only for extenuating circumstances beyond the student’s control; poor academic performance is not an extenuating circumstance. For courses taught outside of the fall and spring semesters, these deadlines will be adjusted in a pro-rated fashion by the Registrar.

During the semester, the student completes the course and is graded in the usual way by the instructor; and the instructor submits a letter grade. This letter grade is translated into a “P” (“D-” or above) or remains an “F.” In neither event will a course taken under the Pass/Fail option be included in the computation of the semester or cumulative grade point average, but a grade below “C” makes the student ineligible for the Dean’s List. The individual schools and colleges have the privilege of adopting the Pass/Fail option with or without supplementary restrictions. Students are referred to the detailed statements of the various schools in the *Undergraduate Catalog* for such restrictions.

### Restrictions on Pass/Fail Courses

Students who convert to a Pass/Fail and then revert the course back to a graded basis cannot again convert the course back to a Pass/Fail. Courses placed on Pass/Fail may only be used as electives; they may not be used to satisfy the General Education Requirement, the major or related requirements, the skill requirements, the minor requirements, or any school or college course requirement. Pass/Fail credits may not be acceptable when a student changes majors or schools within the University. Pass/Fail credits may not be transferable to another institution.

Students working on a degree at another institution need written approval from their dean, or other official, at the other institution to place a course on Pass/Fail.

The Registrar does not place a student on the Dean’s List if the instructor’s grade for a Pass/Fail course is less than “C.” Note that at least 12 credits must contribute to the semester grade point average placing a student on the Dean’s List. As the Pass/Fail marks have no grade points, the instructor’s grade does not contribute to the grade point averages. Note also that at least 54 credits must contribute to the grade point average for students to graduate cum laude or higher.

### Restriction by School or College

Listed below are the Pass/Fail supplementary restrictions imposed by each school and college.

1. In the School of Business, students may not elect the Pass/Fail option for any of the departments of the School.
2. In the School of Education, students may not elect the Pass/Fail option for courses offered in the School of Education which are required for certification as a teacher.
3. In the School of Engineering, no course taken on Pass/Fail may be counted for credit toward graduation.
4. In the School of Pharmacy, no specifically required courses (all courses for which no alternate choice is given in the curricular listings) can be taken on Pass/Fail.
5. In the Ratcliffe Hicks School of Agriculture students may only place one course on the Pass/Fail option.

## Temporary Grades

Temporary grades signify that credit has not been earned in that course, and may subject the student to scholastic probation or dismissal. Temporary grades shall not prevent the calculation of either the semester or the cumulative grade point average.

### Temporary Grades Related to Incomplete Work

An instructor may assign a temporary grade for a course when student work is not completed within the semester.

Temporary Grade	Conditions for Assigning a Temporary Grade
N No basis for grade	A student has completed few or no assessments and no make-up schedule has been agreed upon with the instructor; the instructor has no basis for a grade.
I Incomplete Grade	A student has not completed all of the assessments but work completed is of passing quality and a make-up schedule has been agreed upon with the instructor.
X Final assessment absence	A student did not submit a final assessment and might by means of a satisfactory performance on the assessment complete the course with a passing grade. If in the opinion of the instructor such a student would fail the course regardless of the result of the assessment, the student shall be given a grade of “F.”

The student must complete all outstanding work on a schedule determined by the instructor and by the end of the third week of the following semester. Exceptions to this deadline are made by the Dean of Students or designee with the consent of the instructor.

Once the student submits the outstanding work or completes the final assessment, the instructor must submit a change of grade within 10 working days.

If the student does not submit outstanding work by the agreed upon deadline and has not been granted an exception, the instructor will calculate the student’s grade based on work completed for the course.

Passing grades will replace temporary grades on the transcript. For students who do not complete the missing work and therefore fail the course, the temporary grade will be retained on the transcript and followed by “F.”

### Temporary Grades Related to Course Scheduling

An instructor should assign a temporary grade of “Y” to students enrolled in a course that extends beyond the standard semester schedule. The “Y” is intended as a placeholder until the course is complete, at which time the instructor will replace the “Y” grade with a permanent grade. If a student has work outstanding, the “Y” grade should be changed to a temporary grade that reflects the type of work outstanding.

### Extensions for I and X Grades

In exceptional instances, after consulting the instructor, the Dean of Students or designee may extend the time for completing courses marked “I” or “X.”

## Academic Assessment of Students

The authority to determine a student’s grade in a course lies with the instructor of record. In order to minimize student misunderstandings, course requirements must be stated in the syllabus for the course. Instructors shall provide, in writing on the first day of class, syllabi and schedules if not included in syllabi, to students in their courses, including internships and independent studies. Instructors shall specify what will be taught; when and how it will be taught; when and how learning will be assessed; if, when, and how missed assessments (for which medical documentation cannot be required) will be handled; how grades will be assigned, and (for distance education courses) how student identity will be authenticated.

## Mid-Semester and Semester Grade Reports

Instructors of 1000 and 2000-level courses must submit mid-semester grades for all enrolled students through the Student Administration System during the mid-semester grading period which spans the sixth through eighth week of the semester. The Registrar alerts the students, their advisors, and others, such as the First Year Programs Office, as appropriate, via the University’s e-mail system. They are designed to be of diagnostic aid to the

student. If a student is doing unsatisfactory work, the full responsibility for improvement is left to the student. The student is strongly advised, however, to confer with his or her advisor, with the instructors concerned, and with others qualified to assist him or her in improving his or her standing in the University. The mid-semester report grade information is not part of the student's permanent file.

Students have access to semester grade reports in the Student Administration System. These include all courses for which the student is registered, the credit value of each course, and the student's grade in each course.

### **Changes of Course Grades**

Grades are part of the student's permanent record; they should never be changed for reasons unrelated to course requirements or quality of work. Once the grade in the course has been submitted, an instructor may neither accept additional work nor give additional examinations.

Instructors should change grades for the following reasons: a computational error, clerical error, and the discovery of overlooked components in a student's body of work. In cases when the instructor concludes that a course grade ought to be changed, the instructor determines a corrected grade and initiates the grade change process. The head of the department or program offering the course and the dean of the school or college in which the course is taught will be notified of a grade change to ensure consistency.

### **Appeals of Assigned Course Grades**

If a student believes that an assigned course grade is in error, the student has 10 working days from the posting of the grade or the last day grades are to be posted, whichever is later, to ask the instructor to review the grade. Allowable reasons for a grade change request comprise computational errors, clerical errors, and the discovery of overlooked components in a student's body of work.

If the instructor does not respond to the student within five working days (or sooner if extenuating circumstances merit a more expedited review), the student should contact the department head in which the course is offered.

If the instructor agrees that a grade change is justified, the instructor will initiate the grade change using procedures described by the Registrar.

If the instructor notifies the student that the original grade is correct, the student has 10 working days to appeal the decision to the head of the department in which the course is offered. The department head will seek input from the instructor and the student to determine the merits of the grade appeal and provide a decision within 10 working days from date of the appeal.

If, after this review, the instructor and the department head agree that a grade change is justified, the instructor will initiate the grade change according to the procedures described by the registrar.

If the instructor and the department agree that a grade change is not justified, the department head shall notify the student in writing with a copy to the instructor. If the student is dissatisfied with the appeal decision, the student has 10 working days to request, through the dean of the school or college in which the course is taught, a review by the Faculty Grade Change Review Committee Panel (see below).

If the department head thinks that a grade change is justified but the instructor does not agree, the department head shall request, within 10 working days, through the dean of the school or college in which the course is taught, a review by the Faculty Grade Change Review Committee.

### **Faculty Grade Change Review Committee**

Each school or college shall appoint a standing Faculty Grade Change Review Committee (FGCRC) composed of a minimum of three full-time faculty members or assign the responsibilities of grade appeals to a standing committee within the school or college. If, due to exigency, a grade appeal must be resolved and the standing committee is not available, the dean or the dean's designee of the school or college will convene an ad hoc FGCRC of three full-time faculty members to hear the appeal.

The FGCRC should perform an administrative review to determine if there are sufficient grounds to proceed with an appeal hearing. If so, the FGCRC shall schedule a hearing within 10 working days of notification of a case. Both the student appealing the grade and the course instructor must be present, either in person or via electronic communication, at the hearing. The student will speak first and state the grounds for the grade appeal,

followed by the instructor's response. Both parties must present supporting evidence related to the grade appeal and may request testimony of others. The FGCRC may request input from the department head.

If the FGCRC agrees (by a majority vote) that a grade change is warranted, the FGCRC chair will send a grade change notification to the registrar. If, however, the FGCRC does not agree that a grade change is warranted, the instructor's grade stands. The FGCRC's decision shall be considered final. The FGCRC will send a written report of the decision to the instructor, the student, the department head, and the dean of the school or college offering the course within 10 days of the decision.

## **Program and Campus Changes**

### **Change of School**

Students wishing to change from one school or college to another should consult their advisor and the dean of the school or college the student wishes to enter. Students may get a School Change Petition from the office of a dean or from the Office of the Registrar or [registrar.uconn.edu/forms](http://registrar.uconn.edu/forms). The applicant should give the completed Petition to the dean of the school or college the applicant wishes to enter.

Students who transfer out of a school or college may no longer continue under the requirements of that school or college. If they transfer back into that school or college they may no longer continue under earlier requirements. When students change schools their catalog year for the second school is the year of the change, unless the dean of the school to which they transfer makes an exception.

### **Change of Major within a School or College**

The policies and procedures for major changes within a school or college are determined by each school or college. Students should consult with their academic advisor to learn about the changes available to them.

### **Change of Campus**

Most University programs require completion of 54 earned credits in order to change from a regional campus to the Storrs campus. Rare exceptions to the campus change requirements are made for extenuating circumstances only and require approval from the Student Services Center at the student's regional campus. Storrs students who wish to change to a regional campus should contact the Office of the Registrar. The Campus Change form is available at [registrar.uconn.edu/forms](http://registrar.uconn.edu/forms).

## **Graduation**

### **Application for Degrees**

To graduate, candidates must apply to graduate by the due dates specified by the Office of the Registrar. Candidates apply through the Student Administration System. This application is essential for graduation. Candidates failing to file the application on time may not: (1) be granted a degree on the date expected even though they fulfilled all other requirements for the degree; (2) have their names printed in the Commencement Program; (3) have their names listed in hometown newspapers as graduating; or (4) receive information about and tickets for the Commencement ceremony.

Additional information pertinent to graduation is available through the Steps to a Successful Graduation website: [registrar.uconn.edu/graduation](http://registrar.uconn.edu/graduation).

### **Tentative and Final Plans of Study**

Except for students in the Schools of Nursing and Pharmacy, all students must consult with their advisors in completing a tentative Plan of Study form. The Plan of Study describes how the student intends to satisfy the requirements for the degree. Students should get the form from the dean of their school or college, consult with their advisor and file the completed form with their major department.

Students must submit a final Plan of Study during the first four weeks of the semester in which the student expects to graduate. The major advisor and the department head must approve the Plan of Study before the Registrar receives it. The approval(s) indicate the advisor and department head believe the student meets degree requirements. The student's record is still subject to audit by Degree Audit to ensure the student has met all requirements. Degree Audit will notify the student if a problem is discovered with the final Plan of Study and once the review has been completed.

## Minors

A minor is available only to a matriculated student currently pursuing a baccalaureate degree. While not required for graduation, a minor provides an option for the student who wants an academic focus in addition to a major. Unless a higher standard is noted in the description of a specific minor program, completion of a minor requires that a student earn a “C” (2.0) grade or better in each of the required courses for that minor. The same course may be used to meet both major and minor course requirements unless prohibited by the department or program offering the minor as stated in the *Undergraduate Catalog*. Substitutions to minor requirements require the approval of the head or designee of the department or program offering the minor. All substitutions for minors in the College of Agriculture, Health, and Natural Resources must be approved at the dean’s level. Substitutions for minors in the School of Engineering must be approved at the Dean’s level. Substitutions for minors in the School of Fine Arts must be approved by the Director of Advising. Substitutions to minor requirements offered by departments or programs in the College of Liberal Arts and Sciences require approval by the department or program and the dean or dean’s designee. A plan of study for the minor signed by the department or program head, director, or faculty designee must be submitted to the Office of the Registrar during the first four weeks of the semester in which the student expects to graduate. All available minors are listed in the “Academic Degree Programs” section and described in the “Minors” section of this *Catalog*.

## General Graduation Honors

Graduating seniors are eligible for cum laude designations on diplomas and transcripts if their complete academic records show at least 54 calculable credits at the University and meet the following criteria:

- cum laude: at least a 3.0 total GPA (grade point average) and a class rank in the 75th percentile or above in the student’s school or college.
- magna cum laude: at least a 3.4 total GPA (grade point average) and a class rank in the 85th percentile or above in the student’s school or college.
- summa cum laude: at least a 3.7 total GPA (grade point average) and a class rank in the 95th percentile or above in the student’s school or college.

General graduation honors for students meeting requirements at the conclusion of the summer sessions or the fall semester will be based on the grade point average cut-off points used for the previous spring semester to establish class rank in each school or college.

## Conferring of Degrees

The Board of Trustees awards degrees only to students in good standing who have met their obligations to the University. Students who do not complete requirements for the degree by one conferral date may qualify for the next conferral date by satisfactorily completing all graduation requirements.

The Board of Trustees confers degrees three times annually: Commencement Day in May, August 24 and the Sunday following the end of final exams in December. Candidates meeting the requirements before the conferral date and needing verification may ask for a “Completion Letter” from the Office of the Registrar.

## Commencement

The University has one Commencement ceremony in May each year, following the Spring semester. Students who received degrees at the end of the previous summer or fall semester and students who anticipate completing degree requirements by the May Commencement or the following August may participate.

## Diplomas

Students do not receive their diplomas at Commencement. The Registrar mails them to graduates by the third month after conferral. Diplomas may be withheld if financial or other obligations to the University remain unmet. Graduates who have not received their diploma by the end of the periods noted above should inform the Office of the Registrar.

## Double Majors

A student may concurrently complete majors in a single school or college. To do so, a student must meet all requirements for each major as stipulated by the relevant school and college. One major must be designated as the

primary major. If the majors normally result in different degrees (e.g., Bachelor of Arts vs. Bachelor of Science), the primary major will determine the single degree awarded.

## Additional Degree

A student may earn an additional baccalaureate degree either concurrently or after receiving another baccalaureate degree. To do so, all requirements for each degree must be met and at least 18 credits more than the highest minimum requirement of any of the degrees must be presented for each additional degree. One degree must be designated as the primary degree if the degrees are being pursued concurrently. These additional credits must be 2000-level, or above, courses in the additional degree major or closely related fields and must be completed with at least a 2.0 grade point average. The requirement of 18 additional credits is waived for students who complete the requirements of both a teacher preparation degree in the Neag School of Education and a bachelor’s degree in another school or college.

## Scholastic Standards

### Undergraduate Earned Credit Semester Standing

The University of Connecticut charts a student’s educational progress by semester standing based on earned credits rather than the traditional designations of first-year student, sophomore, junior, and senior. However, semester standing may be related to these traditional terms. Standing is based on earned credits, not on numbers of semesters attended. Courses in progress are not counted. Standing is advanced after minimum credits indicated on the Semester Standing chart have been earned.

Traditional	Semester Standing	Earned Credits
First-Year	1	0 - 11
	2	12 - 23
Sophomore	3	24 - 39
	4	40 - 53
Junior	5	54 - 69
	6	70 - 85
Senior	7	86 - 99
	8	100+
	9	117 - 133 (Pharmacy)
	10	134+ (Pharmacy)

## Scholastic Probation

Scholastic probation is an identification of students whose scholastic performance is below University standards. The student and the student’s counselor are informed that a marked academic improvement in future semesters is necessary to obtain the minimum scholastic standards.

Students are on scholastic probation for the next semester in which they are enrolled if their academic performance is such that they are included in any of the following conditions:

1. Students who have earned 0-11 credits (considered to be first semester standing) and who have earned less than a 1.8 semester grade point average.
2. Students who have earned 12-23 credits (considered to be second semester standing) and who have earned less than a 1.8 semester grade point average.
3. Students who have earned 24 credits or more (considered to be third semester or higher) and who have earned less than a 2.0 semester grade point average or cumulative grade point average.

The end of the semester is defined as the day when semester grades must be submitted to the Registrar. This must occur no later than seventy-two hours after the final examination period ends.

Incomplete and Absent grades (“I,” “X,” and “N”) do not represent earned credit. A student placed on probation with unresolved grades will be relieved of probation status if satisfactory completion of the work places his or her academic performance above the probation standards.



Any student placed on academic probation because of a cumulative grade point average less than 2.0 shall be removed from probation when the cumulative grade point average reaches 2.0 or above.

Warning letters will be sent to students in good standing who have completed their first or second semester with less than a 2.0 semester grade point average.

### **Dismissal**

A student who fails to meet these minimum scholastic standards for two consecutively registered semesters (Fall and Spring or Spring and Fall) is subject to dismissal. However, no student with at least a 2.3 semester grade point average after completing all courses for which he or she is registered at the end of a semester shall be subject to dismissal; the student will be continued on scholastic probation if such status is warranted.

Students who are subject to dismissal but who, for extraordinary reasons, are permitted to continue may be subjected by the Vice Provost for Academic Affairs to other conditions for their continuance.

When a student is dismissed from the University for scholastic reasons only, any certificate or transcript issued must contain the statement "Dismissed for scholastic deficiency but otherwise entitled to honorable dismissal."

Dismissal involves non- residence on the University campus and loss of status as a candidate for a degree effective immediately upon dismissal.

A student who has been dismissed from the University for academic reasons may not register for courses at the University as a non-degree student without the approval of a non-degree advisor.

Students who have been dismissed may, during a later semester, request an evaluation for readmission to the University by applying to the Dean of the school or college into which entry is sought. Readmission will be considered favorably only when the evaluation indicates a strong probability for academic success. In their first regular semester after readmission, dismissed students will be on scholastic probation and may be subjected by the Office for Undergraduate Education to other conditions for their continuance. Students who have left the University for a reason other than academic dismissal are readmitted under the same scholastic standing status as achieved at the time of separation from the University.

Students who are subject to dismissal or who have been dismissed can find more information about scholastic policies and procedures on the Scholastic Standing website at [scholasticstanding.uconn.edu](http://scholasticstanding.uconn.edu).

### **Leave of Absence**

A leave of absence is a special status assigned to students who have been granted permission by the Dean of Students Office or designee to interrupt their studies and resume them in a subsequent semester specified by mutual agreement. A leave of absence is granted in conjunction with a Voluntary Separation (usually a cancellation). Leaves are not granted for more than three full semesters or to students who wish to interrupt their studies for less than one full semester.

Requests for leaves are considered only after the student has personally consulted a representative of the Dean of Students Office or designee and frequently a representative of the student's school or college. Leaves are granted only to students in good academic standing and who know the specific semester in which they plan to return. Students on academic probation or who have outstanding incomplete work are seldom granted a leave of absence.

### **Cancellation and Withdrawal**

Students may voluntarily leave the University through one of two possible actions - cancellation of registration or withdrawal. Both actions are finalized in the Dean of Students Office. A personal interview with a staff member in the Dean of Students Office, would be appropriate for any student considering voluntary separation. The interview may help the student realize alternatives and/or options which would allow the student to continue at the University. If a personal interview is not desired, or not possible, written notice must be given to the Dean of Students Office. No student is considered officially separated and no refunds of fees or deposits can be made unless the student has contacted (interview or letter) the Dean of Students Office.

### **Cancellation**

Students presently enrolled may cancel their registration for the subsequent semester, while planning to complete the current one. Students may also cancel their registration during the summer and midyear vacations if they do not intend to return for the following semester. Cancellations must take place prior to the first day of classes of a semester. The date of cancellation will not appear on the student's official transcript.

### **Withdrawal**

To withdraw officially means to voluntarily terminate enrollment during a semester which is in progress. Students may withdraw between the first day of classes and the last day before finals week begins. (See the University Calendar for dates.) Students who officially withdraw will not receive credits, grades, or "W's" for courses taken during the semester. Only the date of withdrawal will be entered on the student's official transcript. Students who merely leave the University or stop attending classes, without officially withdrawing, should expect to receive Fail "F" grades in all courses in which they are registered at the close of the semester other than those for which grades have previously been submitted.

No student who withdraws after the end of the sixth week of a semester will be permitted to register for a subsequent semester without the permission of the Dean of Students Office or designee. It is understood that when such permission is sought the Dean or designee will ascertain the standing of the student at the time when he or she withdrew. For purposes of application for readmission such students shall be treated as a dismissed student if his or her standing at the time of withdrawal is such that if it were continued to the end of the semester he or she would then be subject to dismissal.

All students withdrawing from the University for any reason must complete the proper forms through the Dean of Students Office or designee. If the withdrawing student lives on campus s/he must also complete the proper forms through the Residential Life Office.

### **University Suspension or Expulsion**

University suspension or expulsion may be incurred as a result of unsatisfactory conduct. Students who are suspended or expelled are not entitled to any refund of University fees including room and board fees.

#### **University Suspension**

Separation from the University for a designated period of time after which the student shall be eligible to apply for readmission to the University. Readmission to the University is not guaranteed. Conditions for consideration of readmission may be specified. A student's reacceptance into his/her school or college is at the discretion of the school or college. A student who is on suspension is prohibited from participating in any University activity or program. The individual may not be in or on any University owned or leased property without securing prior approval from the Director of Community Standards or designee. A notation of "Suspension" shall be placed on the student's official transcript until graduation. However, the student may petition the Director of Community Standards for earlier removal of the notation upon completion of the suspension. The University of Connecticut will not accept credits earned at another institution during a period of suspension.

#### **University Expulsion**

Permanent separation from the University. A student who has been expelled is prohibited from participating in any University activity or program. The individual may not be in or on any University owned or leased property. A permanent notation of "Expulsion" shall be placed on the student's transcript.

For complete rules, regulations and procedure consult Responsibilities of Community Life: The Student Code.

### **Readmission**

All students seeking readmission to the University, including those seeking readmission to regional campuses must apply through the Dean of Students Office.

If a student is applying to be readmitted for a fall semester, it is strongly encouraged that the student submit a completed application between December 1st and January 15th. These applications will be given priority review in March. Applications that are received between January 15th and July 1st may not be reviewed until July.

If a student is applying to be readmitted for a spring semester, it is strongly encouraged that the student to submit a completed application between August 1st and September 15th. These applications will be given priority review in October. Applications that are received between September 15th and December 1st may not be reviewed until December.

The attention of such students is called to the following University regulations:

1. A student who wishes to apply toward a degree credits earned more than eight years before graduation must obtain permission from the dean of the school or college concerned and the Office for Undergraduate Education.
2. All readmitted students (except those who are on an official leave of absence returning to their previous school or college) must satisfy the academic requirements of the school or college to which readmitted as stated in the catalog effective at the time of readmission unless a subsequent catalog is elected.
3. Undergraduate students who have been separated from the university for at least eight consecutive semesters may be eligible for academic renewal upon readmission. Questions about this should be directed to the Dean of Students Office.

A student in good standing who leaves the University at the end of a semester and is out of residence for one or more semesters may re-enter at the beginning of any later semester upon application to the Dean of Students Office or designee. The attention of such students is called to the fact that special permission is needed to count courses taken more than eight years before graduation.

### **Supplementary Scholastic Standards**

In addition to the minimum scholastic standards described above and applicable to all University students, there may be additional requirements. Refer to specific information in the description of each College, School, and program.

# Academic and Scholarly Integrity

All members of the university community, including administrators, faculty, staff, and students, have a shared responsibility to uphold the highest ethical standards of academic, scholarly, and professional integrity and to report any violations of those standards of which they are aware.

## Instructor Expectations

To foster a culture of academic integrity, instructors are responsible for communicating the expectations for academic and scholarly integrity to students and for engaging in practices that mitigate violations of this policy. Specifically, instructors are expected to:

- include a link to the Academic, Scholarly, and Professional Integrity and Misconduct policy as part of course syllabi or documentation for any other academic/scholarly activity and include any additional unit-specific expectations.
- review academic and scholarly integrity policy and any other disciplinary- or activity-specific expectations.
- provide clear guidance for all assignments, activities, and assessments, including noting what resources can be used and whether collaboration is permitted.
- ensure individuals engaged in research, creative, or professional activities understand the standards, protocols, and guidelines to which they must adhere.
- adhere to the University processes for reporting misconduct, engaging in the review process, and assigning consequences to address violations, which should include opportunities for education and remediation.

## Student Expectations

To uphold the principle of academic and scholarly integrity in all aspects of their intellectual development and engagement at the University, students are expected to:

- be responsible for their own work and their own actions related to all academic and scholarly endeavors.
- assume they are to do independent work and seek clarification prior to collaborating with others or using outside resources.
- understand and abide by the standards, protocols, and guidelines to which they must adhere in research, creative, or professional activities.

If students witness or become aware of a violation of academic or scholarly integrity, they are encouraged to communicate this to the appropriate university representative (e.g., faculty, staff, advisor).

A cumulative record is maintained of all academic or scholarly integrity violations and such record will be reviewed and considered as part of subsequent incidences. Individuals engaged in research are expected to follow all standards, rules and regulations that guide the proper conduct of research or creative activity.

## Enforcement

Violations of this policy and its related procedures may result in appropriate disciplinary measures in accordance with University By-Laws, General Rules of Conduct for All University Employees, applicable collective bargaining agreements, and the University of Connecticut Student Code.

Student misconduct is governed by the University's Student Code, which is administered under the direction of the Division of Student Affairs. Enforcement of its provisions is the responsibility of the Director of Community Standards (for undergraduate students), The Graduate School (for graduate students), and the Office of the Vice President for Research (for research misconduct). At the Health Center, student misconduct other than academic and scholarly misconduct is governed by the Health Center Code of Conduct. Identified misconduct will be routed to the appropriate unit.

Faculty misconduct is also governed by the State Code of Ethics and misconduct is addressed by the appropriate university administrative unit(s) (e.g., School/College, Provost Office, Office of the Vice President of Research, Human Resources).

# General Education Requirements

The General Education Curriculum provides academic breadth with a set of intellectually rigorous and challenging courses. Every undergraduate student in a baccalaureate degree program in the University, on all campuses, must complete the General Education Curriculum. The General Education Curriculum comprises four content areas, four competencies, and Environmental Literacy.<sup>1</sup>

Every student must meet a set of core requirements to earn a baccalaureate degree, though some schools and colleges may add to the requirements listed here. To avoid delaying the progress of their degree, students should always consult the requirements listed for their particular school or college before registering. The school or college may refer the student to these General Education Requirements when the requirements and choices duplicate those listed here.

## Content Areas

Students must pass at least six credits of coursework in each of four content areas: Content Area One, Arts and Humanities; Content Area Two, Social Sciences; Content Area Three, Science and Technology; and, Content Area Four, Diversity and Multiculturalism. Content Area courses may be counted toward the major.

Students must pass at least seven content area courses of at least three credits for a total of at least 21 credits. However, up to three credits of repeatable one-credit courses may be included in Content Areas One and Four.

The courses fulfilling Content Areas One, Two, and Three must represent at least six different subjects as designated by subject code (e.g., ANTH or WGSS). The courses within each of these content areas must be from two different subjects. In Content Area Three, one of the courses must be a laboratory course of at least four credits. However, this laboratory requirement is waived for students who have passed a laboratory course in the biological and/or physical sciences. In Content Area Four, at least three credits shall address issues of diversity and/or multiculturalism outside of the United States.

An individual course may be approved for and count for one Content Area, two Content Areas, or three Content Areas if one of the three is Content Area 4. An Environmental Literacy course may be approved for and count for one Content Area or two Content Areas if one is Content Area 4.

No more than six INTD credits may be used to complete the General Education Curriculum.

### Content Area One - Arts and Humanities

Arts and Humanities courses provide a broad vision of artistic and humanist themes. These courses enable students themselves to study and understand the artistic, cultural and historical processes of humanity. They encourage students to explore their own traditions and their places within the larger world so that they, as informed citizens, may participate more fully in the rich diversity of human languages and cultures.

AAAS 1000	Pathways to Asian American Studies
AAAS 1001	Pathways to Asian Studies
AAAS 2101	The Pacific in World History
AAAS 2136	Asian Theatre and Performance
AAAS 2136W	Asian Theatre and Performance
AAAS 2201	Introduction to Asian American Studies
AAAS 2222	Race, Gender, Sexuality, and the Power of Looking
AAAS 2305	Modern Japanese Literature

<sup>1</sup> Undergraduate students with Bachelor's degree from institutions that have been accredited by regional accreditation agencies are exempt from the University General Education Requirements but not the 2000-level and above W course within the major nor any additional general education requirements of a School/College.

AAAS 2688	Foreign Relations of China Since 1949
AAAS 2688W	Foreign Relations of China Since 1949
AAAS 2841	Empire and Nation in Southeast Asia
AAAS 2842	History of Vietnam
AAAS 3375	Indian Art and Popular Culture: Independence to the Present
AAAS 3531	Japanese Americans and World War II
AAAS 3554	Immigrants and the Shaping of American History
AAAS 3712	The Middle East Crucible
AAAS 3820	History of Modern Chinese Political Thought
AAAS 3822	Modern China
AAAS 3845	The Vietnam War
AFRA 1100	Afrocentric Perspectives in the Arts
AFRA 2222	Race, Gender, Sexuality, and the Power of Looking
AFRA 2621	Cuba in Local and Global Perspective
AFRA 2752	Africa in Global History
AFRA 3132	African-American Women Playwrights, 1900 to the present
AFRA 3206	Black Experience in the Americas
AFRA 3619	History of the Caribbean
AFRA 3619W	History of the Caribbean
AMST 1002	Sing and Shout! The History of America in Song
AMST 1700	Honors Core: American Landscapes
AMST 2200	Literature and Culture of North America before 1800
AMST 2201	Introduction to Asian American Studies
AMST 2204	Jewish Culture in American Film
AMST 2207	Empire and U.S. Culture
AMST 2274W	Disability in American Literature and Culture
AMST 2276	American Utopias and Dystopias
AMST 2276W	American Utopias and Dystopias
AMST 2400	City and Community in Film
AMST 2810	Crime, Policing, and Punishment in the United States
AMST 3267W	Race and the Scientific Imagination
AMST 3531	Japanese Americans and World War II
AMST 3570	History and Theory of Digital Art
ANTH 1001W	Anthropology Through Film
ANTH 3401	World Religions
ANTH 3450W	Anthropological Perspectives on Art
ARAB 1751	Traditional Arab Literatures, Cultures, and Civilizations
ARAB 1771	Modern Arabic Culture
ARAB 2751	Arabic Folk Tales and Mirrors for Princes
ARAB 3550W	Classical Arabic Literature
ARAB 3751	Al-Andalus: Music, Literature, and Science in Muslim Spain
ARAB 3771	Cinema in the Middle East and North Africa
ARIS 1170	Women's Contemporary Writing in the Arab World
ARIS 1170W	Women's Contemporary Writing in the Arab World
ARIS 1211	Introduction to Islam

ARIS 3710	Islamic Art History	DRAM 1811	Dance Appreciation
ARIS 3710W	Islamic Art History	DRAM 2134	Honors Core: Sports as Performance
ART 1000	Art Appreciation	DRAM 2135	History of Popular Theatre and Live Entertainment
ART 3375	Indian Art and Popular Culture: Independence to the Present	DRAM 2136	Asian Theatre and Performance
ARTH 1128	Global Perspectives on Western Art: Renaissance to the Present	DRAM 2136W	Asian Theatre and Performance
ARTH 1137	Introduction to Art History: Prehistoric - 14th Century	DRAM 2150	Devising Theatre for Social Justice I
ARTH 1138	Introduction to Art History: 15th Century - Present	DRAM 2203	The Holocaust in Print, Theater, and Film
ARTH 1140	Introduction to Asian Art	DRAM 3132	African-American Women Playwrights, 1900 to the present
ARTH 1141	From Sun Gods to Lowriders: Introduction to Latin American Art	ECON 2101	Economic History of Europe
ARTH 1162	Introduction to Architecture	ECON 2101W	Economic History of Europe
ARTH 2020	Global Jerusalem	ECON 2102	Economic History of the United States
ARTH 2222	Race, Gender, Sexuality, and the Power of Looking	ECON 2102W	Economic History of the United States
ARTH 3570	History and Theory of Digital Art	ECON 2103	Honors Core: Deep Roots of Modern Societies
ARTH 3575	Human Rights, Digital Media, Visual Culture	ECON 2120	Honors Core: Rights and Harms
ARTH 3575W	Human Rights and Visual Culture	ENGL 1101	Classical and Medieval Western Literature
ARTH 3710	Islamic Art History	ENGL 1101W	Classical and Medieval Western Literature
ARTH 3710W	Islamic Art History	ENGL 1103	Renaissance and Modern Western Literature
CAMS 1101	Greek Civilization	ENGL 1103W	Renaissance and Modern Western Literature
CAMS 1102	Roman Civilization	ENGL 1401	Topics in Horror
CAMS 1103	Classical Mythology	ENGL 1503	Introduction to Shakespeare
CAMS 2020	Pyramids, Pirates, and the Polis: The Ancient Mediterranean	ENGL 1616	Major Works of English and American Literature
CAMS 3326	Ancient Rome: Emperors and Barbarians	ENGL 1616W	Major Works of English and American Literature
CHIN 1121	Traditional Chinese Culture	ENGL 2100	British Literature I
CHIN 1122	Modern Chinese Culture	ENGL 2101	British Literature II
CHIN 3230	Language and Identity in Greater China	ENGL 2107	The British Empire, Slavery, and Resistance
CHIN 3230W	Language and Identity in Greater China	ENGL 2200	Literature and Culture of North America before 1800
CHIN 3250W	Advanced Chinese	ENGL 2201	American Literature to 1880
CHIN 3270	Chinese Film	ENGL 2201W	American Literature to 1880
CLCS 1002	Reading Between the Arts	ENGL 2203	American Literature Since 1880
CLCS 1101	Classics of World Literature I	ENGL 2203W	American Literature Since 1880
CLCS 1102	Classics of World Literature II	ENGL 2207	Empire and U.S. Culture
CLCS 1103W	Languages and Cultures	ENGL 2274W	Disability in American Literature and Culture
CLCS 1110	Introduction to Film Studies	ENGL 2276	American Utopias and Dystopias
CLCS 2010	Media Literacy and Data Ethics	ENGL 2276W	American Utopias and Dystopias
CLCS 2201	Intercultural Competency Towards Global Perspectives	ENGL 2305	Modern Japanese Literature
CLCS 2204	Jewish Culture in American Film	ENGL 2401	Poetry
CLCS 2301	Jewish Humor	ENGL 2405	Drama
CLCS 2609	Fascism and its Opponents	ENGL 2407	The Short Story
CLCS 3211	Indigenous Film World Wide	ENGL 2408	Modern Drama
DMD 2010	History of Digital Culture	ENGL 2408W	Modern Drama
DMD 2020	Design Thinking	ENGL 2409	The Modern Novel
DMD 3570	History and Theory of Digital Art	ENGL 2411	Popular Literature
DRAM 1101	Introduction to the Theatre	ENGL 2411W	Popular Literature
DRAM 1110	Introduction to Film	ENGL 2413	The Graphic Novel
DRAM 1501	Introduction to World Puppetry	ENGL 2413W	The Graphic Novel
		ENGL 2605	Capitalism, Literature, and Culture
		ENGL 2605W	Capitalism, Literature, and Culture
		ENGL 2607	Literature and Science

ENGL 2609	Fascism and its Opponents	GERM 3258	Germans in Africa, Blacks in German-Speaking Countries, Colonial and Post-Colonial Perspectives
ENGL 2635E	Literature and the Environment	GERM 3261W	German Film and Culture
ENGL 2640	Studies in Film	GERM 3264W	German Cinema in Cross-Cultural Perspective
ENGL 2640W	Studies in Film	HEJS 1103	Who Are the Jews? Jewish Identity through the Ages
ENGL 2730W	Travel Writing	HEJS 2104	Modern Jewish Thought
ENGL 3220	Jewish American Literature and Culture	HEJS 2200	Israel: History and Society
ENGL 3220W	Jewish American Literature and Culture	HEJS 2203	The Holocaust in Print, Theater, and Film
ENGL 3267W	Race and the Scientific Imagination	HEJS 2204	Jewish Culture in American Film
ENGL 3320	Literature and Culture of India	HEJS 2301	Jewish Humor
ENGL 3629	Holocaust Memoir	HEJS 3201	Selected Books of the Hebrew Bible
ENGL 3633W	The Rhetoric of Political Discourse in Literature and Society	HEJS 3301	The Jewish Middle Ages
ENGL 3640	British Film	HEJS 3362	The Black Death: Medieval and Modern Responses to Catastrophe
ENGL 3640W	British Film	HEJS 3401	Jewish American Literature and Culture
FINA 1001	Earthtones: Vocal Ensemble	HEJS 3401W	Jewish American Literature and Culture
FINA 1100	Afrocentric Perspectives in the Arts	HEJS 3419	Jewish Responses to the Holocaust
FREN 1169	Modernity in Crisis: France and the Francophone World From 1850 to Today	HEJS 3629	Holocaust Memoir
FREN 1171	French Cinema	HIST 1100	The Historian as Detective
FREN 1176	Literature and Cultures of the Postcolonial Francophone World	HIST 1100W	The Historian as Detective
FREN 1177	Magicians, Witches, Wizards: Parallel Beliefs and Popular Culture in France	HIST 1200	World History, 1200-1800
FREN 3210	French Art and Civilization	HIST 1201	Modern World History
FREN 3211W	Contemporary France	HIST 1203	Women in History
FREN 3218	Francophone Studies	HIST 1206	Living Through War in World History Since 1500
FREN 3224	Issues in Cultural Studies, the Media, and the Social Sciences	HIST 1250	Sports in History
FREN 3234	Romanticism, Realism, Fin de Siecle: 19th-Century Literature	HIST 1300	Western Traditions Before 1500
FREN 3235	French Modernity	HIST 1400	Modern Western Traditions
FREN 3261	From the Holy Grail to the Revolution: Introduction to Literature	HIST 1450	Global History of the Second World War
FREN 3262	From the Romantics to the Moderns: Introduction to Literature	HIST 1501	United States History to 1877
FREN 3267	Grammar and Culture	HIST 1501W	United States History to 1877
FREN 3268	Grammar and Composition	HIST 1502	U.S. History Since 1877
FREN 3268W	Grammar and Composition	HIST 1502W	U.S. History Since 1877
FREN 3270W	French Literature and Civilization in English	HIST 1570	Migrant Workers in Connecticut
GEOG 1200	Global Urbanization	HIST 1600	Introduction to Latin America and the Caribbean
GERM 1140W	German Literature in English	HIST 1600W	Introduction to Latin America and the Caribbean
GERM 1169	Contemporary Germany in Europe	HIST 1800	The Roots of Traditional Asia
GERM 1171	The German Film	HIST 1801	History of Asia in the World to 1500
GERM 1175	Human Rights and German Culture	HIST 1805	Key Words in East Asian History and Culture
GERM 1920	Cyborgs, Robots, and Androids in the German Imaginary	HIST 2020	Pyramids, Pirates, and the Polis: The Ancient Mediterranean
GERM 2400E	The Environment in German Culture	HIST 2101	The Pacific in World History
GERM 3251	German Culture and Civilization	HIST 2205	Personality and Power in History
GERM 3252W	Studies in Early German Literature	HIST 2205W	Personality and Power in History
GERM 3254W	Studies in 19th Century German Literature	HIST 2206	History of Science
GERM 3255	Studies in 20th Century German Literature	HIST 2207	Empire and U.S. Culture
GERM 3255W	Studies in 20th Century German Literature	HIST 2210E	History of the Ocean
		HIST 2222E	Global Environmental History
		HIST 2401	Europe in the Nineteenth Century
		HIST 2401W	Europe in the Nineteenth Century

HIST 2402	Europe in the Twentieth Century	HRTS 3200W	International Human Rights Law
HIST 2402W	Europe in the Twentieth Century	HRTS 3220	Philosophical Foundations of Human Rights
HIST 2412	From Revolution to Nihilism: Ideas and Ideologies in Nineteenth-Century Europe	HRTS 3220W	Philosophical Foundations of Human Rights
HIST 2412W	From Revolution to Nihilism: Ideas and Ideologies in Nineteenth-Century Europe	HRTS 3250	Human Rights and New Technologies
HIST 2413W	From Nietzsche to Neo-liberalism: Ideas and Ideologies in Twentieth-Century Europe	HRTS 3250W	Human Rights and New Technologies
HIST 2507	New England and the Caribbean Plantation Complex, 1650-1900	HRTS 3575	Human Rights, Digital Media, Visual Culture
HIST 2621	Cuba in Local and Global Perspective	ILCS 1101	The Italian Renaissance
HIST 2650	History of Urban Latin America	ILCS 1149	Cinema and Society in Contemporary Italy
HIST 2688	Foreign Relations of China Since 1949	ILCS 1158	Italian American Experience in Literature and Film
HIST 2688W	Foreign Relations of China Since 1949	ILCS 1160	Culture of Fascist Italy
HIST 2752	Africa in Global History	ILCS 1168	Adaptation: Italian Literature into Film
HIST 2810	Crime, Policing, and Punishment in the United States	ILCS 1170	Introducing Italy through Its Regions
HIST 2841	Empire and Nation in Southeast Asia	ILCS 3248	The Italian Novella
HIST 2842	History of Vietnam	ILCS 3248W	The Italian Novella
HIST 2845	Global History of Capitalism	ILCS 3255W	Dante's Divine Comedy in English Translation
HIST 2845W	Global History of Capitalism	ILCS 3258W	Cinematic Representations of Italian Americans
HIST 3105	History through Film	ILCS 3260W	Italian Cinema
HIST 3206	Black Experience in the Americas	INDS 3375	Indian Art and Popular Culture: Independence to the Present
HIST 3326	Ancient Rome: Emperors and Barbarians	INTD 3260	The Bible, the Holy Land, and History
HIST 3362	The Black Death: Medieval and Modern Responses to Catastrophe	JAPN 2305	Modern Japanese Literature
HIST 3419	Jewish Responses to the Holocaust	JOUR 1002	The Press in America
HIST 3531	Japanese Americans and World War II	JOUR 2010	Journalism in the Movies
HIST 3540E	Environmental History of the Americas	LAND 2210E	The Common (Shared) Landscape of the USA: Rights, Responsibilities and Values
HIST 3540WE	Environmental History of the Americas	LING 1010	Language and Mind
HIST 3554	Immigrants and the Shaping of American History	LLAS 1009	Latino Literature, Culture, and Society
HIST 3607	Latin America in the Colonial Period	LLAS 1009W	Latino Literature, Culture, and Society
HIST 3609	Latin America in the National Period	LLAS 1190	Introduction to Latin America and the Caribbean
HIST 3619	History of the Caribbean	LLAS 1190W	Introduction to Latin America and the Caribbean
HIST 3619W	History of the Caribbean	LLAS 1570	Migrant Workers in Connecticut
HIST 3635	History of Modern Mexico	LLAS 2507	New England and the Caribbean Plantation Complex, 1650-1900
HIST 3660W	History of Migration in Las Americas	LLAS 2621	Cuba in Local and Global Perspective
HIST 3674	History of Latinos/as in the United States	LLAS 3220	History of Latinos/as in the United States
HIST 3675	Latina History and Biography	LLAS 3607	Latin America in the Colonial Period
HIST 3705	The Modern Middle East from 1700 to the Present	LLAS 3609	Latin America in the National Period
HIST 3710	Islamic Art History	LLAS 3619	History of the Caribbean
HIST 3710W	Islamic Art History	LLAS 3619W	History of the Caribbean
HIST 3712	The Middle East Crucible	LLAS 3635	History of Modern Mexico
HIST 3820	History of Modern Chinese Political Thought	LLAS 3660W	History of Migration in Las Americas
HIST 3822	Modern China	LLAS 3675	Latina History and Biography
HIST 3845	The Vietnam War	MAST 1200	Introduction to Maritime Culture
HRTS 2150	Devising Theatre for Social Justice I	MAST 2210E	History of the Ocean
HRTS 2170W	Bioethics and Human Rights in Cross-Cultural Perspective	MAST 2507	New England and the Caribbean Plantation Complex, 1650-1900
HRTS 2203	The Holocaust in Print, Theater, and Film	MUSI 1001	Music Appreciation
HRTS 3200	International Human Rights Law	MUSI 1002	Sing and Shout! The History of America in Song
		MUSI 1003	Popular Music and Diversity in American Society
		MUSI 1004	Non-Western Music

MUSI 1005	Honors Core: Music and Nature, Music and the Environment
MUSI 1006	Earthtones: Vocal Ensemble
MUSI 1022	Introduction to Music History II
MUSI 1112	University Symphony Orchestra
MUSI 1115	Jazz Ensembles
MUSI 1120	Jazz Combos
MUSI 3407W	History of Jazz
NRE 1235E	Environmental Conservation
NURS 2175	Global Politics of Childbearing and Reproduction
PHIL 1101	Problems of Philosophy
PHIL 1102	Philosophy and Logic
PHIL 1103	Philosophical Classics
PHIL 1104	Philosophy and Social Ethics
PHIL 1105	Philosophy and Religion
PHIL 1106	Non-western and Comparative Philosophy
PHIL 1107	Philosophy and Gender
PHIL 1108E	Environmental Philosophy
PHIL 1109	Global Existentialism
PHIL 1165W	Philosophy and Literature
PHIL 1175	Ethical Issues in Health Care
PHIL 2170W	Bioethics and Human Rights in Cross- Cultural Perspective
PHIL 2410	Know Thyself
PHIL 3220	Philosophical Foundations of Human Rights
PHIL 3220W	Philosophical Foundations of Human Rights
POLS 1002	Introduction to Political Theory
POLS 2023	Political Theory in Film
POLS 2023W	Political Theory in Film
SCI 2206	History of Science
SPAN 1007	Major Works of Hispanic Literature in Translation
SPAN 1008	Christians, Muslims and Jews in Medieval Spain
SPAN 1009	Latino Literature, Culture, and Society
SPAN 1009W	Latino Literature, Culture, and Society
SPAN 1010	Contemporary Spanish Culture and Society through Film
SPAN 1020	Intersections of Art, Fashion, Film, and Music in Modern Spain
SPAN 1030	Religion in Latin America: A Historical Survey
SPAN 3232	Literature of Crisis in Modern Spain
SPAN 3250	Film in Spain and Latin America
SPAN 3267W	The Spanish-American Short Story
URBN 1200	Global Urbanization
URBN 2400	City and Community in Film
URBN 2650	History of Urban Latin America
WGSS 1121	Women in History
WGSS 1170	Women's Contemporary Writing in the Arab World
WGSS 1170W	Women's Contemporary Writing in the Arab World
WGSS 2204	Feminisms and the Arts
WGSS 2217	Women, Gender and Film

WGSS 2217W Women, Gender and Film

WGSS 3675 Latina History and Biography

\* This course has fewer than three credits.

### Content Area Two - Social Sciences

The social sciences examine how individuals, groups, institutions, and societies behave and influence one another and the natural environment. Courses in this group enable students to analyze and understand interactions of the numerous social factors that influence behavior at the individual, cultural, societal, national, or international level. They use the methods and theories of social science inquiry to develop critical thought about current social issues and problems.

AFRA 2250	Racial Disparities in Health
AFRA 2461	Race, Gender, and U.S. Health Care
AFRA 3152	Race, Ethnicity, and Nationalism
ANTH 1000	Peoples and Cultures of the World
ANTH 1000W	Peoples and Cultures of the World
ANTH 1006	Introduction to Anthropology
ANTH 1010E	Global Climate Change and Human Societies
ANTH 1500	Great Discoveries in Archaeology
ANTH 2000	Social Anthropology
ANTH 2000W	Social Anthropology
ANTH 2400	Honors Core: Analyzing Religion
ANTH 3152	Race, Ethnicity, and Nationalism
ANTH 3230	Propaganda, Disinformation, and Hate Speech
ANTH 3230W	Propaganda, Disinformation, and Hate Speech
ANTH 3340E	Culture and Conservation
ARE 1110E	Population, Food, and the Environment
ARE 1150	Principles of Applied and Resource Economics
ARE 2235	Marine Economics and Policy
COMM 1000	The Process of Communication
DMD 2620	Human Development, Digital Media, and Technology
ECON 1000	Essentials of Economics
ECON 1101	Economics Through Film
ECON 1107E	Honors Core: Economics, Nature, and the Environment
ECON 1108	Game Theory in the Natural and Social Sciences
ECON 1179	Economic Growth and the Environment
ECON 1200	Principles of Economics (Intensive)
ECON 1201	Principles of Microeconomics
ECON 1202	Principles of Macroeconomics
EDCI 1100	If You Love It, Teach It
EDCI 2100	Power, Privilege, and Public Education
ENGR 2300	Engineering for Human Rights
ENVE 1000E	Environmental Sustainability
EPSY 1450W	Mind, Body, Health
EPSY 1830	Critical and Creative Thinking in the Movies
EPSY 2450	Whole Child, School, and Community: Linking Health and Education
EPSY 2450W	Whole Child, School, and Community: Linking Health and Education



EPSY 2810	Creativity: Debunking Myths and Enhancing Innovation	POLS 3023	Politics and Literature
EVST 1000E	Introduction to Environmental Studies	POLS 3023W	Politics and Literature
EVST 3340E	Culture and Conservation	POLS 3208	Politics of Oil
GEOG 1000	Introduction to Geography	POLS 3208W	Politics of Oil
GEOG 1700	World Regional Geography	POLS 3211	Politics of Water
GEOG 2000	Globalization	POLS 3211W	Politics of Water
GEOG 2100	Economic Geography	POLS 3237	Democratic Culture and Citizenship in Latin America
GEOG 2200	Introduction to Human Geography	POLS 3237W	Democratic Culture and Citizenship in Latin America
GEOG 2320E	Climate Change: Current Geographic Issues	POLS 3240E	Environmental and Climate Justice
GEOG 2350E	Geography of Energy for Sustainability	POLS 3250	The Political Economy of East Asia
GEOG 2400E	Introduction to Sustainable Cities	POLS 3250W	The Political Economy of East Asia
HDFS 1060	Close Relationships Across the Lifespan	POLS 3413	International Security
HDFS 1070	Individual and Family Development	POLS 3413W	International Security
HDFS 2142E	Exploring Conservation and Sustainability with Preschoolers	POLS 3603WQ	Congressional Apportionment and Redistricting
HDFS 2620	Human Development, Digital Media, and Technology	POLS 3610	American Politics in Film
HDFS 3141	Developmental Approaches to Intergroup Relations and Victimization	POLS 3610W	American Politics in Film
HDFS 3311	Parenthood and Parenting	POLS 3615	Electoral Realignment
HDFS 3540	Child Welfare, Law and Social Policy	POLS 3615W	Electoral Realignment
HRTS 1007	Introduction to Human Rights	PP 1001	Introduction to Public Policy
HRTS 2100	Human Rights and Social Change	PSYC 1101	General Psychology II
HRTS 2100W	Human Rights and Social Change	PSYC 1103	General Psychology II (Enhanced)
HRTS 2200	Introduction to Genocide Studies	PUBH 1001	Introduction to Public Health
HRTS 2300	Engineering for Human Rights	SLHS 1150	Introduction to Communication Disorders
HRTS 3230	Propaganda, Disinformation, and Hate Speech	SLHS 1150W	Introduction to Communication Disorders
HRTS 3230W	Propaganda, Disinformation, and Hate Speech	SOCI 1001	Introduction to Sociology
LING 1020	Language and Environment	SOCI 1001W	Introduction to Sociology
LING 1030	The Diversity of Languages	SOCI 1251	Social Problems
LING 2850	Introduction to Sociolinguistics of the Deaf Community	SOCI 1251W	Social Problems
LING 3610W	Language and Culture	SOCI 1501	Race, Class, and Gender
LLAS 1000	Introduction to Latina/o Studies	SOCI 1501W	Race, Class, and Gender
LLAS 3525	Latino Sociology	SOCI 1701	Society in Global Perspective
LLAS 3525W	Latino Sociology	SOCI 1701W	Society in Global Perspective
MAST 1300E	People and Society in the Maritime Environment	SOCI 2250	Racial Disparities in Health
MAST 2460E	Maritime Politics	SOCI 2310	Introduction to Criminal Justice
NURS 1500	Introduction to Correctional Health Care	SOCI 2461	Race, Gender, and U.S. Health Care
POLS 1202	Introduction to Comparative Politics	SOCI 2701E	Sustainable Societies
POLS 1207	Introduction to Nonwestern Politics	SOCI 2705E	Sociology of Food
POLS 1402	Introduction to International Relations	SOCI 2709E	Society and Climate Change
POLS 1402W	Introduction to International Relations	SOCI 2709WE	Society and Climate Change
POLS 1602	Introduction to American Politics	SOCI 3459	Aging and Society
POLS 1602W	Introduction to American Politics	SOCI 3459W	Aging and Society
POLS 2221	Introduction to Government and Politics in the Middle East and North Africa	SOCI 3525	Latino Sociology
POLS 2221W	Introduction to Government and Politics in the Middle East and North Africa	SOCI 3525W	Latino Sociology
POLS 2460E	Maritime Politics	SOCI 3823	The Sociology of Law: Global and Comparative Perspectives
		SOCI 3823W	The Sociology of Law: Global and Comparative Perspectives
		SPSS 1060	The Great American Lawn: History, Culture, and Sustainability

URBN 1300	Exploring Your Community
URBN 1300W	Exploring Your Community
URBN 1400	Site and Sound: Understanding Cities Through Popular Music
URBN 1400W	Site and Sound: Understanding Cities Through Popular Music
URBN 1600	Cities of Imagination
URBN 3400E	Urban Parks and Sustainability
WGSS 1105	Gender and Sexuality in Everyday Life
WGSS 2124	Gender and Globalization
WGSS 3253	Gender Representations in U.S. Popular Culture
WGSS 3253W	Gender Representations in U.S. Popular Culture

### Content Area Three - Science and Technology

These courses acquaint students with scientific thought, observation, experimentation, and formal hypothesis testing, and enable students to consider the impact that developments in science and technology have on the nature and quality of life. Knowledge of the basic vocabulary of science and technology is a prerequisite for informed assessments of the physical universe and of technological developments.

AH 1030	Interdisciplinary Approach to Obesity Prevention
ANSC 1645	The Science of Food
ANTH 2200	Race and Human Biological Diversity
BME 1401	Honors Core: Computational Molecular Biology
CHEG 1200	Introduction to Food Science and Engineering
COGS 2201	Foundations of Cognitive Science
CSE 1401	Honors Core: Computational Molecular Biology
DMD 2010	History of Digital Culture
EEB 2100E	Global Change Ecology
EEB 2202	Evolution and Human Diversity
EEB 2208E	Introduction to Conservation Biology
EEB 2222E	Plants in a Changing World
EEB 2250	Introduction to Plant Physiology
EEB 3205E	Current Issues in Environmental Science
ENGL 2614	Writing with Algorithms
ERTH 1000E	The Human Epoch: Living in the Anthropocene
ERTH 1010	Dinosaurs, Extinctions, and Environmental Catastrophes
ERTH 1051	Earth's Dynamic Environment (Lecture)
ERTH 1055	Geoscience and the American Landscape
ERTH 1070	Natural Disasters and Environmental Change
ERTH 2800	Our Evolving Atmosphere
GEOG 1010	New Digital Worlds of Geographic Information Science
GEOG 1070	Natural Disasters and Environmental Change
GEOG 1300E	Climate, Weather, and the Environment
GEOG 2300E	Introduction to Physical Geography
KINS 2227	Exercise Prescription
LING 2010Q	The Science of Linguistics
MARN 1001E	The Sea Around Us
MARN 1002E	Introduction to Oceanography
MARN 3000E	The Oceans and Global Climate
MAST 1001E	The Sea Around Us

MCB 1401	Honors Core: Computational Molecular Biology
MCB 1405	Honors Core: The Genetics Revolution in Contemporary Culture
NRE 1000E	Environmental Science
NUSC 1030	Interdisciplinary Approach to Obesity Prevention
NUSC 1165	Fundamentals of Nutrition
NUSC 1645	The Science of Food
PHAR 1000	Drugs: Actions and Impact on Health and Society
PHAR 1001E	Toxic Chemicals and Health
PHAR 1005	Molecules in the Media
PHYS 1020Q	Introductory Astronomy
PHYS 1030Q	Physics of the Environment
PHYS 1040QE	Cosmic Origins of Life
PSYC 1100	General Psychology I
SPSS 1060	The Great American Lawn: History, Culture, and Sustainability
SPSS 1150	Agricultural Technology and Society
SPSS 2120	Environmental Soil Science

### Content Area Three - Laboratory Courses

ANTH 2600	Microscopy in Applied Archaeobotany Research
BIOL 1102	Foundations of Biology
BIOL 1103	The Biology of Human Health and Disease
BIOL 1107	Principles of Biology I
BIOL 1108	Principles of Biology II
BIOL 1110	Introduction to Botany
CHEM 1122	Chemical Principles and Applications
CHEM 1124Q	Fundamentals of General Chemistry I
CHEM 1127Q	General Chemistry I
CHEM 1128Q	General Chemistry II
CHEM 1137Q	Enhanced General Chemistry I
CHEM 1138Q	Enhanced General Chemistry II
CHEM 1147Q	Honors General Chemistry I
CHEM 1148Q	Honors General Chemistry II
ERTH 1050	Earth's Dynamic Environment
GEOG 1302	GIS Modeling of Environmental Change
MARN 1003E	Introduction to Oceanography with Laboratory
MCB 1200	Virus Hunters
MCB 1201	Virus Hunting: Applied Bioinformatics
MCB 2612	Honors Core: Microbe Hunters - Crowdsourcing Antibiotic Discovery
PHYS 1010Q	Elements Of Physics
PHYS 1025Q	Introductory Astronomy with Laboratory
PHYS 1035Q	Physics of the Environment with Laboratory
PHYS 1075Q	Physics of Music
PHYS 1201Q	General Physics I
PHYS 1202Q	General Physics II
PHYS 1401Q	General Physics with Calculus I
PHYS 1402Q	General Physics with Calculus II
PHYS 1501Q	Physics for Engineers I
PHYS 1502Q	Physics for Engineers II

PHYS 1600Q	Introduction to Modern Physics
PHYS 1601Q	Fundamentals of Physics I
PHYS 1602Q	Fundamentals of Physics II

### Content Area Four - Diversity and Multiculturalism

In this interconnected global community, individuals of any profession need to be able to understand, appreciate, and function in cultures other than their own. Diversity and multiculturalism in the university curriculum contribute to this essential aspect of education by bringing to the fore the historical truths about different cultural perspectives, especially those of groups that traditionally have been under-represented. These groups might be characterized by such features as race, ethnicity, gender, sexual identities, political systems, or religious traditions, or by persons with disabilities. By studying the ideas, history, values, and creative expressions of diverse groups, students gain appreciation for differences as well as commonalities among people.

AAAS 1000	Pathways to Asian American Studies
AAAS 2201	Introduction to Asian American Studies
AAAS 2210	Sociological Perspectives on Asian American Women
AAAS 2210W	Sociological Perspectives on Asian American Women
AAAS 2222	Race, Gender, Sexuality, and the Power of Looking
AAAS 3212	Asian American Literature
AAAS 3531	Japanese Americans and World War II
AAAS 3554	Immigrants and the Shaping of American History
AFRA 1100	Afrocentric Perspectives in the Arts
AFRA 2214	African American Literature
AFRA 2214W	African American Literature
AFRA 2222	Race, Gender, Sexuality, and the Power of Looking
AFRA 2461	Race, Gender, and U.S. Health Care
AFRA 2520	White Racism
AFRA 3050	African-American Art
AFRA 3050W	African-American Art
AFRA 3106	Black Psychology
AFRA 3131	African-American Theatre
AFRA 3132	African-American Women Playwrights, 1900 to the present
AFRA 3152	Race, Ethnicity, and Nationalism
AFRA 3213	Eighteenth- and Nineteenth-Century African American Literature
AFRA 3213W	Eighteenth- and Nineteenth-Century African American Literature
AFRA 3215	Twentieth- and Twenty-First Century African American Literature
AFRA 3215W	Twentieth- and Twenty-First Century African American Literature
AFRA 3217	Studies in African American Literature and Culture
AFRA 3217W	Studies in African American Literature and Culture
AFRA 3642	African-American Politics
AMST 1002	Sing and Shout! The History of America in Song
AMST 1201	Introduction to American Studies

AMST 2201	Introduction to Asian American Studies
AMST 2204	Jewish Culture in American Film
AMST 2207	Empire and U.S. Culture
AMST 2274W	Disability in American Literature and Culture
AMST 3267W	Race and the Scientific Imagination
AMST 3531	Japanese Americans and World War II
AMST 3570	History and Theory of Digital Art
ANTH 2000	Social Anthropology
ANTH 2000W	Social Anthropology
ANTH 2200	Race and Human Biological Diversity
ANTH 3150	Migration
ANTH 3150W	Migration
ANTH 3152	Race, Ethnicity, and Nationalism
ANTH 3202W	Illness and Curing
ANTH 3902	North American Prehistory
ANTH 3904	Ethnohistory of Native New England
ARTH 2222	Race, Gender, Sexuality, and the Power of Looking
ARTH 3050	African-American Art
ARTH 3050W	African-American Art
ARTH 3570	History and Theory of Digital Art
ARTH 3640	Mexican and Chicano Art from Muralism to La Raza
ARTH 3640W	Mexican and Chicano Art from Muralism to La Raza
ARTH 3645	From Revolution to Reggae: Modern and Contemporary Caribbean Art
ARTH 3645W	From Revolution to Reggae: Modern and Contemporary Caribbean Art
CLCS 2204	Jewish Culture in American Film
CLCS 2301	Jewish Humor
COMM 3321	Latinas and Media
DMD 2620	Human Development, Digital Media, and Technology
DMD 3570	History and Theory of Digital Art
DRAM 3130	Women in Theatre: Gender Identity and Expression on the Stage
DRAM 3131	African-American Theatre
DRAM 3132	African-American Women Playwrights, 1900 to the present
DRAM 3133	Latina/o Theatre
EDCI 2100	Power, Privilege, and Public Education
EDLR 2001	Contemporary Social Issues in Sport
ENGL 1201	Introduction to American Studies
ENGL 1601W	Race, Gender, and the Culture Industry
ENGL 2207	Empire and U.S. Culture
ENGL 2214	African American Literature
ENGL 2214W	African American Literature
ENGL 2274W	Disability in American Literature and Culture
ENGL 3015W	Writing Across Cultures
ENGL 3210	Native American Literature

ENGL 3212	Asian American Literature	HIST 3660W	History of Migration in Las Americas
ENGL 3213	Eighteenth- and Nineteenth-Century African American Literature	HIST 3674	History of Latinos/as in the United States
ENGL 3213W	Eighteenth- and Nineteenth-Century African American Literature	HIST 3675	Latina History and Biography
ENGL 3215	Twentieth- and Twenty-First Century African American Literature	HRTS 2520	White Racism
ENGL 3215W	Twentieth- and Twenty-First Century African American Literature	ILCS 1158	Italian American Experience in Literature and Film
ENGL 3217	Studies in African American Literature and Culture	ILCS 3258W	Cinematic Representations of Italian Americans
ENGL 3217W	Studies in African American Literature and Culture	INTD 2245	Introduction to Diversity Studies in American Culture
ENGL 3218	Ethnic Literature of United States	INTD 3584	Seminar in Urban Problems
ENGL 3218W	Ethnic Literatures of the United States	LING 1030	The Diversity of Languages
ENGL 3220	Jewish American Literature and Culture	LING 2850	Introduction to Sociolinguistics of the Deaf Community
ENGL 3220W	Jewish American Literature and Culture	LLAS 1000	Introduction to Latina/o Studies
ENGL 3267W	Race and the Scientific Imagination	LLAS 1009	Latino Literature, Culture, and Society
ENGL 3605	Latina/o Literature	LLAS 1009W	Latino Literature, Culture, and Society
ENGL 3609	Women's Literature	LLAS 1570	Migrant Workers in Connecticut
ENGL 3611	Women's Literature 1900 to the Present	LLAS 2011W	Introduction to Latino-American Writing and Research
ENGL 3613	LGBTQ+ Literature	LLAS 2507	New England and the Caribbean Plantation Complex, 1650-1900
EPSY 1100	Introduction to Special Education	LLAS 3210	Contemporary Issues in Latino Studies
FINA 1100	Afrocentric Perspectives in the Arts	LLAS 3220	History of Latinos/as in the United States
HDFS 2001	Diversity Issues in Human Development and Family Sciences	LLAS 3232	Latina/o Literature
HDFS 2620	Human Development, Digital Media, and Technology	LLAS 3264	Latinas and Media
HDFS 3141	Developmental Approaches to Intergroup Relations and Victimization	LLAS 3270	Latino Political Behavior
HDFS 3261	Men and Masculinities	LLAS 3525	Latino Sociology
HEJS 1103	Who Are the Jews? Jewish Identity through the Ages	LLAS 3525W	Latino Sociology
HEJS 2204	Jewish Culture in American Film	LLAS 3660W	History of Migration in Las Americas
HEJS 2301	Jewish Humor	LLAS 3675	Latina History and Biography
HEJS 3301	The Jewish Middle Ages	MAST 2507	New England and the Caribbean Plantation Complex, 1650-1900
HEJS 3401	Jewish American Literature and Culture	MUSI 1002	Sing and Shout! The History of America in Song
HEJS 3401W	Jewish American Literature and Culture	MUSI 1003	Popular Music and Diversity in American Society
HIST 1203	Women in History	MUSI 3407W	History of Jazz
HIST 1503	Introduction to American Studies	NURS 1175W	The End of Life: A Multicultural Interdisciplinary Experience
HIST 1570	Migrant Workers in Connecticut	NURS 2100W	Fostering a Culture of Health through Health Equity and Interprofessional Collaboration
HIST 2207	Empire and U.S. Culture	NURS 3070	Culturally Informed Communication with Spanish-Speaking Healthcare Consumers
HIST 2507	New England and the Caribbean Plantation Complex, 1650-1900	PHIL 1107	Philosophy and Gender
HIST 2570	American Indian History	POLS 2602W	Religion and Politics in America
HIST 2845	Global History of Capitalism	POLS 3642	African-American Politics
HIST 2845W	Global History of Capitalism	POLS 3662	Latino Political Behavior
HIST 3204W	Science and Social Issues in the Modern World	PSYC 2101	Introduction to Multicultural Psychology
HIST 3531	Japanese Americans and World War II	PSYC 2701	Social Psychology of Multiculturalism
HIST 3540E	Environmental History of the Americas	PSYC 3102	Psychology of Women
HIST 3540WE	Environmental History of the Americas	PSYC 3106	Black Psychology
HIST 3554	Immigrants and the Shaping of American History	SLHS 1150	Introduction to Communication Disorders
		SLHS 1150W	Introduction to Communication Disorders
		SOCI 1251	Social Problems

SOCI 1251W	Social Problems
SOCI 1501	Race, Class, and Gender
SOCI 1501W	Race, Class, and Gender
SOCI 2210	Sociological Perspectives on Asian American Women
SOCI 2210W	Sociological Perspectives on Asian American Women
SOCI 2310	Introduction to Criminal Justice
SOCI 2461	Race, Gender, and U.S. Health Care
SOCI 2501	Sociology of Intolerance and Injustice
SOCI 2501W	Sociology of Intolerance and Injustice
SOCI 2503	Prejudice and Discrimination
SOCI 2503W	Prejudice and Discrimination
SOCI 2520	White Racism
SOCI 2651	Sociology of the Family
SOCI 2651W	Sociology of the Family
SOCI 2680	Sociology of Sexualities
SOCI 2680W	Sociology of Sexualities
SOCI 3525	Latino Sociology
SOCI 3525W	Latino Sociology
SOCI 3601	Sociology of Gender
SOCI 3601W	Sociology of Gender
SPAN 1009	Latino Literature, Culture, and Society
SPAN 1009W	Latino Literature, Culture, and Society
URBN 1300	Exploring Your Community
URBN 1300W	Exploring Your Community
URBN 1400	Site and Sound: Understanding Cities Through Popular Music
URBN 1400W	Site and Sound: Understanding Cities Through Popular Music
WGSS 1105	Gender and Sexuality in Everyday Life
WGSS 1121	Women in History
WGSS 2204	Feminisms and the Arts
WGSS 2217	Women, Gender and Film
WGSS 2217W	Women, Gender and Film
WGSS 2680	Sociology of Sexualities
WGSS 2680W	Sociology of Sexualities
WGSS 3102	Psychology of Women
WGSS 3260	Latinas and Media
WGSS 3609	Women's Literature
WGSS 3611	Women's Literature 1900 to the Present
WGSS 3613	LGBTQ+ Literature
WGSS 3675	Latina History and Biography
WGSS 3718	Feminism and Science Fiction
WGSS 3718W	Feminism and Science Fiction

### Content Area Four International

AAAS 1001	Pathways to Asian Studies
AAAS 2101	The Pacific in World History
AAAS 2136	Asian Theatre and Performance

AAAS 2136W	Asian Theatre and Performance
AAAS 2305	Modern Japanese Literature
AAAS 2841	Empire and Nation in Southeast Asia
AAAS 2842	History of Vietnam
AAAS 3375	Indian Art and Popular Culture: Independence to the Present
AAAS 3712	The Middle East Crucible
AAAS 3820	History of Modern Chinese Political Thought
AAAS 3822	Modern China
AAAS 3845	The Vietnam War
AFRA 2621	Cuba in Local and Global Perspective
AFRA 2752	Africa in Global History
AFRA 3206	Black Experience in the Americas
AFRA 3619	History of the Caribbean
AFRA 3619W	History of the Caribbean
AH 2330	Italy's Mediterranean Food and Our Health
AH 5330	Italy's Mediterranean Food and Our Health
ANTH 1000	Peoples and Cultures of the World
ANTH 1000W	Peoples and Cultures of the World
ANTH 1001W	Anthropology Through Film
ANTH 1006	Introduction to Anthropology
ANTH 1010E	Global Climate Change and Human Societies
ANTH 1500	Great Discoveries in Archaeology
ANTH 2400	Honors Core: Analyzing Religion
ANTH 3028	Indigenous Rights and Aboriginal Australia
ANTH 3028W	Indigenous Rights and Aboriginal Australia
ANTH 3030	Peoples of the Pacific Islands
ANTH 3153W	Human Rights in Democratizing Countries
ANTH 3340E	Culture and Conservation
ANTH 3401	World Religions
ARAB 1751	Traditional Arab Literatures, Cultures, and Civilizations
ARAB 1771	Modern Arabic Culture
ARAB 2751	Arabic Folk Tales and Mirrors for Princes
ARAB 3751	Al-Andalus: Music, Literature, and Science in Muslim Spain
ARAB 3771	Cinema in the Middle East and North Africa
ARIS 1170	Women's Contemporary Writing in the Arab World
ARIS 1170W	Women's Contemporary Writing in the Arab World
ARIS 1211	Introduction to Islam
ARIS 3710	Islamic Art History
ARIS 3710W	Islamic Art History
ART 3375	Indian Art and Popular Culture: Independence to the Present
ARTH 1128	Global Perspectives on Western Art: Renaissance to the Present
ARTH 1141	From Sun Gods to Lowriders: Introduction to Latin American Art
ARTH 2020	Global Jerusalem
ARTH 3630	Alternative Modernities: Visual Culture of Latin America

ARTH 3630W	Alternative Modernities: Visual Culture of Latin America	GEOG 2000	Globalization
ARTH 3710	Islamic Art History	GEOG 2200	Introduction to Human Geography
ARTH 3710W	Islamic Art History	GEOG 2350E	Geography of Energy for Sustainability
CAMS 2020	Pyramids, Pirates, and the Polis: The Ancient Mediterranean	GEOG 2400E	Introduction to Sustainable Cities
CHIN 1121	Traditional Chinese Culture	GERM 1169	Contemporary Germany in Europe
CHIN 1122	Modern Chinese Culture	GERM 1171	The German Film
CHIN 3230	Language and Identity in Greater China	GERM 1175	Human Rights and German Culture
CHIN 3230W	Language and Identity in Greater China	GERM 1920	Cyborgs, Robots, and Androids in the German Imaginary
CHIN 3250W	Advanced Chinese	GERM 3251	German Culture and Civilization
CHIN 3270	Chinese Film	GERM 3258	Germans in Africa, Blacks in German-Speaking Countries, Colonial and Post-Colonial Perspectives
CHIN 3280	Networking in China	GERM 3261W	German Film and Culture
CLCS 1101	Classics of World Literature I	HEJS 2104	Modern Jewish Thought
CLCS 1102	Classics of World Literature II	HEJS 2200	Israel: History and Society
CLCS 1103W	Languages and Cultures	HEJS 2203	The Holocaust in Print, Theater, and Film
CLCS 2010	Media Literacy and Data Ethics	HEJS 3362	The Black Death: Medieval and Modern Responses to Catastrophe
CLCS 2201	Intercultural Competency Towards Global Perspectives	HEJS 3419	Jewish Responses to the Holocaust
CLCS 3211	Indigenous Film World Wide	HEJS 3629	Holocaust Memoir
DRAM 1501	Introduction to World Puppetry	HIST 1200	World History, 1200-1800
DRAM 2135	History of Popular Theatre and Live Entertainment	HIST 1206	Living Through War in World History Since 1500
DRAM 2136	Asian Theatre and Performance	HIST 1450	Global History of the Second World War
DRAM 2136W	Asian Theatre and Performance	HIST 1600	Introduction to Latin America and the Caribbean
DRAM 2203	The Holocaust in Print, Theater, and Film	HIST 1600W	Introduction to Latin America and the Caribbean
EEB 2202	Evolution and Human Diversity	HIST 1800	The Roots of Traditional Asia
ENGL 1301	Major Works of Eastern Literature	HIST 1801	History of Asia in the World to 1500
ENGL 2301	Anglophone Literatures	HIST 1805	Key Words in East Asian History and Culture
ENGL 2301W	Anglophone Literatures	HIST 2020	Pyramids, Pirates, and the Polis: The Ancient Mediterranean
ENGL 2305	Modern Japanese Literature	HIST 2101	The Pacific in World History
ENGL 3120	Irish Literature in English to 1939	HIST 2222E	Global Environmental History
ENGL 3122	Irish Literature in English since 1939	HIST 2456	Power and Resistance: History of Eastern Europe
ENGL 3122W	Irish Literature in English since 1939	HIST 2621	Cuba in Local and Global Perspective
ENGL 3318	Literature and Culture of the Third World	HIST 2752	Africa in Global History
ENGL 3319	Topics in Postcolonial Studies	HIST 2841	Empire and Nation in Southeast Asia
ENGL 3320	Literature and Culture of India	HIST 2842	History of Vietnam
ENGL 3629	Holocaust Memoir	HIST 3206	Black Experience in the Americas
EVST 3340E	Culture and Conservation	HIST 3362	The Black Death: Medieval and Modern Responses to Catastrophe
FREN 1169	Modernity in Crisis: France and the Francophone World From 1850 to Today	HIST 3419	Jewish Responses to the Holocaust
FREN 1171	French Cinema	HIST 3607	Latin America in the Colonial Period
FREN 1176	Literature and Cultures of the Postcolonial Francophone World	HIST 3609	Latin America in the National Period
FREN 1177	Magicians, Witches, Wizards: Parallel Beliefs and Popular Culture in France	HIST 3619	History of the Caribbean
FREN 3211W	Contemporary France	HIST 3619W	History of the Caribbean
FREN 3218	Francophone Studies	HIST 3635	History of Modern Mexico
FREN 3224	Issues in Cultural Studies, the Media, and the Social Sciences	HIST 3705	The Modern Middle East from 1700 to the Present
GEOG 1200	Global Urbanization	HIST 3710	Islamic Art History
GEOG 1700	World Regional Geography	HIST 3710W	Islamic Art History
		HIST 3712	The Middle East Crucible

HIST 3820	History of Modern Chinese Political Thought
HIST 3822	Modern China
HIST 3845	The Vietnam War
HRTS 1007	Introduction to Human Rights
HRTS 2100	Human Rights and Social Change
HRTS 2100W	Human Rights and Social Change
HRTS 2200	Introduction to Genocide Studies
HRTS 2203	The Holocaust in Print, Theater, and Film
HRTS 3028	Indigenous Rights and Aboriginal Australia
HRTS 3028W	Indigenous Rights and Aboriginal Australia
HRTS 3153W	Human Rights in Democratizing Countries
HRTS 3200	International Human Rights Law
HRTS 3200W	International Human Rights Law
ILCS 1149	Cinema and Society in Contemporary Italy
ILCS 1160	Culture of Fascist Italy
ILCS 1168	Adaptation: Italian Literature into Film
ILCS 3248	The Italian Novella
ILCS 3248W	The Italian Novella
ILCS 3260W	Italian Cinema
INDS 3375	Indian Art and Popular Culture: Independence to the Present
JAPN 2305	Modern Japanese Literature
LING 1020	Language and Environment
LING 3610W	Language and Culture
LLAS 1190	Introduction to Latin America and the Caribbean
LLAS 1190W	Introduction to Latin America and the Caribbean
LLAS 2621	Cuba in Local and Global Perspective
LLAS 3607	Latin America in the Colonial Period
LLAS 3609	Latin America in the National Period
LLAS 3619	History of the Caribbean
LLAS 3619W	History of the Caribbean
LLAS 3635	History of Modern Mexico
MAST 1300E	People and Society in the Maritime Environment
MAST 2100W	Ports of Passage
MUSI 1004	Non-Western Music
MUSI 3421W	Music, Culture, and Difference in Globalization
NRE 2600E	Global Sustainable Natural Resources
NRE 3305	African Field Ecology and Renewable Resources Management
NURS 2175	Global Politics of Childbearing and Reproduction
NUSC 1167	Food, Culture and Society
PHIL 1106	Non-western and Comparative Philosophy
PHIL 1109	Global Existentialism
POLS 1202	Introduction to Comparative Politics
POLS 1207	Introduction to Nonwestern Politics
POLS 1402	Introduction to International Relations
POLS 1402W	Introduction to International Relations
POLS 2023	Political Theory in Film
POLS 2023W	Political Theory in Film

POLS 2221	Introduction to Government and Politics in the Middle East and North Africa
POLS 2221W	Introduction to Government and Politics in the Middle East and North Africa
POLS 3040	Power, Politics and Art
POLS 3472	South Asia in World Politics
POLS 3472W	South Asia in World Politics
SOCI 1701	Society in Global Perspective
SOCI 1701W	Society in Global Perspective
SOCI 2509	Sociology of Anti-Semitism
SOCI 2509W	Sociology of Anti-Semitism
SOCI 3823	The Sociology of Law: Global and Comparative Perspectives
SOCI 3823W	The Sociology of Law: Global and Comparative Perspectives
SPAN 1007	Major Works of Hispanic Literature in Translation
SPAN 1008	Christians, Muslims and Jews in Medieval Spain
SPAN 1010	Contemporary Spanish Culture and Society through Film
SPAN 1020	Intersections of Art, Fashion, Film, and Music in Modern Spain
SPAN 1030	Religion in Latin America: A Historical Survey
SPAN 3250	Film in Spain and Latin America
SPSS 1125	Insects, Food and Culture
URBN 1200	Global Urbanization
WGSS 1170	Women's Contemporary Writing in the Arab World
WGSS 1170W	Women's Contemporary Writing in the Arab World
WGSS 2105	Gender and Science
WGSS 2105W	Gender and Science
WGSS 2124	Gender and Globalization
WGSS 2255	LGBTQ Sexualities, Activism, and Globalization
WGSS 2255W	LGBTQ Sexualities, Activism, and Globalization
WGSS 3255	Sexual Citizenship
WGSS 3255W	Sexual Citizenship

## Competencies

The General Education Curriculum includes competencies in information literacy, quantitative skills, second language proficiency, and writing. The coursework required to demonstrate Information Literacy is established by each major field of study. Quantitative Literacy is established by completing two courses that are designated for this purpose as Q courses. One Q course must be a MATH or STAT course. Second Language competency is established by either 1) passing the third-year high school level course in a language other than English, or 2) attaining a Seal of Biliteracy, or 3) the second semester course in the first-year sequence of college level study in a language other than English. Writing competency is established by passing two courses that are designated for this purpose as W courses, one of which must be in the major field of study at the 2000-level or above. First-year writing courses are prerequisites for W courses.

### Information Literacy Competency

Information literacy involves a general understanding of how information is created, disseminated and organized, and an ability to access, evaluate, synthesize and incorporate information into written, oral, or media presentations. Basic information literacy is taught to all first-year students as an integral part of ENGL 1007/1010/1011, in collaboration with the staff of the University Libraries. Each major program has considered the information literacy competencies required of its graduates and built

those expectations into the upper-level research and writing requirements in the major. Further details are given under the description of each major elsewhere in this catalog.

### **Quantitative (Q) Competency**

All students must pass two Q courses, which may also satisfy Content Area requirements. One Q course must be from Mathematics or Statistics. Students should discuss with their advisor how best to satisfy these requirements based on their background, prior course preparation and career aspirations. Students whose high school algebra needs strengthening should be encouraged to complete MATH 1011Q: Introductory College Algebra and Mathematical Modeling, as preparation for other Q courses. To receive credit for MATH 1011Q, it must be taken before successful completion of another Q course. In some cases, advisors may recommend postponing registration in a Q course until after the student has completed a semester of course work at the University.

### **Second Language Competency**

Second Language competency is established by either 1) passing the third-year high school level course in a language other than English, or 2) attaining a Seal of Biliteracy, or 3) the second semester course in the first-year sequence of college level study in a language other than English. When the years of study have been split between high school and earlier grades, the requirement is met if the student has successfully completed the third-year high school level course. With anything less than that, the student must pass the second semester course in the first year sequence of college level study in a single language.

### **Writing (W) Competency**

All students must take either ENGL 1007 or 1010 or 1011. Students passing ENGL 2011 are considered to have met the ENGL 1007 or 1010 or 1011 requirement. Additionally, all students must take two writing-intensive (W) courses, which may also satisfy Content Area requirements. One of these must be at the 2000-level and associated with the student's major. Approved courses for each major are listed in their sections of this catalog. (Note: ENGL 1007 or 1010 or 1011 is a prerequisite to all writing-intensive courses).

### **Environmental Literacy**

Students must pass at least one course of at least three credits in Environmental Literacy. Environmental Literacy courses are designated for this purpose as E courses. Environmental Literacy courses may be counted towards the major.



# Honors Program

The Honors Program provides an honors education for academically talented and highly motivated students at all University of Connecticut campuses. The program enriches the academic experience of undergraduates in all majors by offering the challenges of in-depth study and opportunities for independent projects and/or research. Participation in the Honors Program further influences the quality and character of a student's learning through exploration, creativity and talent development, and leadership development in a supportive community of their peers.

## Admission

### First-year Honors Admissions

Qualified entering first-year students are invited to join the Honors Program upon admission to UConn Storrs or UConn Stamford based on a holistic review of the undergraduate first-year application. Candidates are expected to have strong high school academic and co-curricular records, including evidence of leadership and engagement beyond the classroom.

### Honors Admissions for Sophomore and Junior Entry

Current first and second-year students at any University of Connecticut campus with excellent academic and co-curricular records may apply for the Honors Program according to the guidelines and timetable listed on the Honors Program web site. Students are admitted for their sophomore year based on their credentials and the availability of space in the Honors Program. Students entering their junior years are admitted based on their credentials and the approval of their major department. The Honors Program will accept applications from students transferring to UConn from other colleges for their sophomore or junior years.

## The Honors Experience

### Academics

Honors students deeply engage in their majors and broaden their experiences through the completion of Honors credits from a variety of disciplines. Honors credit for course work may be attained through Honors courses, including interdisciplinary Honors Core courses; Honors course conversions (independent Honors projects supervised by course instructors); graduate courses; and independent research or scholarship. Early in their undergraduate careers, Honors students typically choose from a variety of special Honors sections of courses offered to satisfy UConn's General Education Requirements and/or to build strong foundations in their academic disciplines. As students progress in their programs of study, they further emphasize Honors work in the major and related areas, eventually completing an Honors thesis or creative project that meets the standards of their major department.

### Community and Engagement

An active living-learning environment is fostered through the First-year Honors Learning Community, Honors residence options for upper-division students, and multiple Honors student organizations. Honors students are encouraged to participate in social and community service activities; seminars with visiting scholars, artists, and persons in public life; and many activities offered through the other units in Enrichment Programs: the Individualized and Interdisciplinary Studies Program, the Office of National Scholarships and Fellowships, the Office of Undergraduate Research, the Pre-Med/Pre-Dental Advising Office, and the Pre-Law Advising Office. The Honors Program co-sponsors several education abroad and study away experiences in conjunction with other units and departments at UConn.

### Benefits

Students enrolled in the Honors Program receive priority registration, special library privileges, and permission to exceed semester credit limits after earning 18 credits and completing their first semester at UConn. All students enrolled in the Honors Program are assigned Honors advisors in their majors.

## Continuation in Honors

Honors students are expected to participate fully in Honors Program courses and activities, and participation in the Honors Program is recorded on a student's transcript each semester. First-year Honors students must enroll

in specially-designed Honors First-Year Seminars in the fall. Academic and participation records are reviewed annually for compliance with Honors Program GPA and Honors credit requirements. A student's continuation as an Honors student for the junior and senior year is subject to the review of an Honors preliminary plan of study and approval of the Honors Program and the major department.

## Awards

The Honors Program confers two awards at graduation. The Honors Scholar in the Major designation signifies an in-depth experience in the student's field of study. The University Honors Laureate designation incorporates a broader Honors experience across multiple disciplines. Both awards are notated on recipients' diplomas and transcripts, included in the University Commencement program, and recognized at the Honors Medals Ceremony, where students receive medals to wear during Commencement.

### Honors Scholar in the Major

To graduate as Honors Scholars in the Major, enrolled Honors Program students must earn a cumulative GPA of at least 3.40, and they must complete at least fifteen approved Honors credits in their major or related areas. Twelve of these must be earned at the 2000-level or above, including at least three toward the supervised Honors thesis or creative project. Students must demonstrate engagement with their field of study and submit a departmentally-approved Honors thesis or creative project to the Honors Program office. Beyond the minimum University-wide Honors requirements, departments may add specific and/or additional major requirements that must be met in order for students to graduate with the designation of Honors Scholar. These requirements often involve certain prescribed Honors courses and seminars taken in preparation for writing the Honors thesis. Honors Scholars should inquire with their department or program about specific departmental Honors requirements.

### University Honors Laureate

The University Honors Laureate designation recognizes both depth and breadth in Honors work, as well as engagement and involvement in a variety of communities. To graduate with the University Honors Laureate (UHL) designation, students must complete the requirements for the Honors Scholar in the Major award plus earn a total of at least 30 Honors credits which meet the UHL distribution requirements. Students must also meet published co-curricular requirements.

# University Scholar Program

Each year up to thirty juniors are selected for the University Scholar Program through an application process sponsored by the Honors Program. All undergraduate Honors and non-Honors students from all campuses may apply. This challenging and prestigious program allows students to design and pursue an in-depth research or creative project and to craft a learning plan that supports their interests and academic goals during their final three semesters. Graduation as a University Scholar recognizes a student's extraordinary engagement with self-reflective learning and research or creative endeavors. It is the highest academic honor bestowed upon undergraduates by the University of Connecticut.

Students interested in applying to the Program are encouraged to begin planning no later than the second semester of their sophomore year. Program applicants must first submit a "letter of intent," and then an application consisting of an overall statement of interests, a learning plan, a project plan, and additional documentation. As part of the application process, applicants must assemble an advisory committee of three full-time faculty members who will guide them during their final three semesters. In late fall, the University Scholar Oversight and Selection committee selects recipients for this award according to the creativity, rigor, clarity, feasibility, and thoughtfulness of the applicants' proposed project and learning plans. Detailed guidelines and deadlines are available on the University Scholar website.

Upon completion of the approved University Scholar project and plan of study and the submission of appropriate forms to the Honors Program Office, students earn the title of University Scholar. Students in the University Scholar Program receive awards in an amount set by the Provost or designee for every remaining semester (up to three semesters) that they enroll in their undergraduate program. University Scholars may be granted other benefits such as permission to enroll in graduate courses, priority registration, priority housing, and special library privileges. University Scholars are also relieved from the maximum credit load during any given semester. Participation in the University Scholar Program is noted on students' academic transcripts at entry and for each semester enrolled. Graduation as a University Scholar is recognized at commencement and on the academic transcript and diploma.

For more information, contact the University Scholar Program, University of Connecticut, John W. Rowe CUE-Building, Room 419, Unit 4147, Storrs, CT 06269, Phone: 860-486-4223.

# College of Agriculture, Health and Natural Resources

Indrajeet Chaubey, Ph.D., *Dean*

Kristen Govoni, Ph.D., *Associate Dean for Academic Programs*

In 1862, Congress passed the Morrill Land Grant Act providing grants of federal land to each state. Funds from the sale of these lands were used in establishing a college teaching agriculture and related subjects in each state. Subsequent federal acts have enlarged the responsibilities of these colleges. Today they continue to serve agriculture and society in many ways through a variety of educational programs. The University of Connecticut is the land-grant university in Connecticut. The College of Agriculture, Health and Natural Resources offers instruction at both undergraduate and graduate levels. Research and experimental work is carried on through the Storrs Agricultural Experiment Station. Educational and service programs are conducted throughout the State by the Cooperative Extension System. The College of Agriculture, Health and Natural Resources is supported by both federal and state appropriations and contributions from the private sector.

Agriculture has evolved to engage scientists concerned with food, people, and health in a manner that is economically viable and environmentally sustainable. The College of Agriculture, Health and Natural Resources maintains strong programs in fields such as agricultural biotechnology, allied health sciences, animal science, diagnostic and environmental sciences, health promotion, landscape architecture, medical laboratory sciences, nutritional biochemistry, pathobiology, pre-veterinary study, resource economics, and wildlife management.

The College has extensive facilities and operations to supplement and enhance instruction, learning experiences, and research. Laboratories, plants, animals, greenhouses and other related resources – both on and off campus – allow students to apply knowledge and skills in real-world, professional environments. The Agricultural Biotechnology complex, Center for Land Use Education and Research, Center for Environmental Health, Nayden Rehabilitation Clinic, Korey Stringer Institute and Athletic Training Learning Laboratory, Connecticut Institute of Water Resources, Connecticut State Climate Center, Food Marketing Policy Center, and the Wildlife Conservation Research Center are all integral components of the College of Agriculture, Health and Natural Resources.

The following departments offer undergraduate instruction in the College: Agricultural and Resource Economics, Allied Health Sciences, Animal Science, Kinesiology, Natural Resources and the Environment, Nutritional Sciences, Pathobiology and Veterinary Science, and Plant Science and Landscape Architecture. The Directory of Courses section of this Catalog describes the course offerings of these departments. Other courses are offered under the departmental listing Agriculture and Natural Resources.

The four-year curriculum leads to the Bachelor of Science degree for all majors except Environmental Studies, which leads to a Bachelor of Arts degree.

## Admission Requirements

Students may enter the College of Agriculture, Health and Natural Resources directly upon admission to UConn as a first-year or transfer student. New students who select Allied Health Sciences will be admitted as Allied Health Sciences majors and advised by the Department of Allied Health Sciences. Professional majors in the Department of Allied Health Sciences (Dietetics, Diagnostic Genetic Sciences, and Medical Laboratory Sciences) are competitive junior/senior year programs with additional admission procedures and requirement as outlined below. Students planning to apply to the Exercise Science program should refer to specific information in the Exercise Science description.

See Admission to the University and New England Regional Student Program.

**Scholarships.** Over \$600,000 in scholarships and awards are available to students in the College of Agriculture, Health and Natural Resources.

**Advisors Assigned by Major:** Departmental Advisors are assigned to students upon entry into the College of Agriculture, Health and Natural Resources according to a student's major and area of special interest. Advisors assist students in the selection of appropriate courses and help them develop an individualized program of study that will meet educational and career goals. The office of the Associate Dean for Academic Programs and the Academic Advisory Center of the College of Agriculture, Health and Natural Resources also support students and advisors.

## Bachelor's Degree Requirements

Upon recommendation of the faculty the degree of Bachelor of Science or Bachelor of Arts is awarded by vote of the Board of Trustees to students who have met the following requirements: (1) earned a total of 120 degree credits; (2) earned at least a 2.0 cumulative grade point average for the number of calculable credits for which they have been registered; (3) earned at least a 2.0 cumulative grade point average for all courses included in the 36 credit numbered 2000 or above requirement for the major; (4) met all the requirements of the University of Connecticut, the College of Agriculture, Health and Natural Resources, and their individual major as outlined below.

### General Education Requirements

All students in the College of Agriculture, Health and Natural Resources must meet the University-wide General Education Requirements (GER) as described in the "General Education Requirements" section of this Catalog.

### Science and Mathematics Requirements

Students in the College of Agriculture, Health and Natural Resources must pass at least two courses in Content Area 3, including at least one course from the list of four-credit laboratory courses; and at least two Quantitative (Q) courses, including at least one course in Mathematics or Statistics. Ordinarily, these requirements will be met by completing University general education courses and/or courses required by the Major. However, if a student receives a waiver from general education courses (e.g. based on completion of a previous baccalaureate degree) he or she must still complete the science and quantitative courses, as listed above.

### 36 Credit Requirement for All Majors

Students in all majors of the College of Agriculture, Health and Natural Resources must successfully complete at least 36 credits of courses in or relating to their major. Courses for this 36-credit group may be taken from specific major requirements (as listed below for some majors), or may be selected according to a student's individual educational and career goals. This group of courses must:

1. be numbered 2000 or above
2. be approved by the student's advisor and department head
3. include at least 30 credits taken at the University of Connecticut
4. be taken in two or more departments
5. include at least 15 credits from departments in the College of Agriculture, Health and Natural Resources, which must be taken at the University of Connecticut
6. have a combined grade point average of at least 2.0
7. not include more than six credits (combined) of independent study, internship, or field studies (if included, these credits must be taken at the University of Connecticut)
8. not be taken on Pass/Fail
9. not include more than six credits of S/U coursework

**Residence Requirement.** It is expected that advanced course work in the major will be completed at the University of Connecticut. However, students may be eligible to use up-to six credits from other institutions in the 36-credit group if approved by their advisor and department head. These credits must be identified as courses comparable to specific University of Connecticut courses and cannot include internships, special topics, or non-specific discipline credits. Transfer students must complete at least 30 credits of 2000-level or higher course work at the University of Connecticut, including at least 15 credits in College of Agriculture, Health and Natural Resources courses.

### Plan of Study

Students should work closely with their advisors to review requirements, recommended courses, and career goals. Each student should prepare a

tentative plan of study, outlining all courses, with an academic advisor as early as possible, but in no case later than at the start of the junior year. A final plan of study, approved by the major advisor and the department head, must be filed with the Degree Auditor no later than the end of the tenth week of the semester prior to graduation. Professional majors in the Department of Allied Health Sciences do not require a plan of study.

### Specific Course Requirements for Individual Majors

Students must complete specific courses for individual majors as outlined below. Many courses may be used to meet more than one requirement.

## Undergraduate Majors

Students in most majors have a great deal of latitude in the choice of courses and may emphasize a range of options to meet personal objectives. Students may prepare for career opportunities in such diverse activities as research, production, distribution, business and industry, public service, health sciences, professional service, education, communications, product development, international development, environmental protection, and community resource development. In addition to formal course work students may participate in independent study projects, field internships, cooperative education, and practicums. Students may also prepare for formal education beyond the baccalaureate degree.

Advisors are available to discuss requirements, recommended courses, and career opportunities of the various majors with current and prospective students.

## Agriculture and Natural Resources

The Agriculture and Natural Resources major is an interdisciplinary major designed for students who want broad training in agricultural, environmental, and/or health sciences, with content that does not readily align with any one department or major. Students work with advisors to develop and complete a personalized and interdepartmental baccalaureate program based on their educational and career interests and goals. Courses selected for this major will include both introductory and advanced material from multiple departments in the College of Agriculture, Health and Natural Resources, as well as prerequisite and related knowledge and experiences in other disciplines.

### Requirements

**Biology:** One course from BIOL 1107, 1108, 1110.

**Chemistry:** One course from CHEM 1122, 1124Q, 1127Q, 1137Q.

**Additional Science or Mathematics:** One additional course (minimum three credits) from BIOL, CHEM, EARTH, MARN, or PHYS, or one extra MATH or STAT course beyond those required for general education requirements.

**Introductory Agriculture and Natural Resources:** Two 1000 level courses (minimum three credits each) representing two departments in CAHNR.

**36 Credit Group:** Agriculture and Natural Resources majors must meet all the requirements listed under the 36 Credit requirements for all CAHNR majors, which must include at least 24 credits (combined total) from departments in CAHNR. These credits must include at least three credits of course work from each of four (4) distinct departments in CAHNR.

**Writing Competency:** Students must pass one 2000-level or above W course in any department of the College of Agriculture, Health and Natural Resources.

**Information Literacy Competency:** Satisfied by meeting the Writing Competency Requirement.

**Career Statement:** Agriculture and Natural Resources majors must submit a statement describing how courses relate to their desired career. This statement and courses for the major must be approved by advisor and College of Agriculture, Health and Natural Resources Associate Dean as early as possible in order to confirm the courses approved for the final Plan of Study.

A minor in Agricultural Biotechnology is described in the “Minors” section.

## Allied Health Sciences

The Allied Health Sciences major leads to a Bachelor of Science degree. Students may elect to pursue the major with or without a concentration. The major offers a general (Standard) plan and four concentrations in Health Sciences, Healthcare Administration, Public Health and Health Promotion, and Occupational and Environmental Health and Safety. Please refer to information under the “Required courses by concentration” section for detailed information related to the major and concentrations.

### Admission

First-Year students are admitted into the Department of Allied Health Sciences as Allied Health Sciences (AHS) majors (standard plan). Students are advised in the Department of Allied Health Sciences. Following discussions with their advisor, students may remain in the standard plan, may further define their major by petition into a concentration within the Allied Health Sciences major, or may apply to a Professional Program (admission to a concentration within the AHS major or to a professional program is not automatic; refer to respective program admission information).

Students not admitted to the University as Allied Health Sciences majors may apply into this major during the first two weeks of each semester (does not apply to professional program application; see professional program admission information).

Students who apply to the Allied Health Sciences major as a second major for additional degree or double major will be subject to department review and admission decision consistent with the admission requirements.

University readmission applicants who declare the AHS major will be subject to department review and admission decision consistent with the procedure applied to current non-AHS students applying to the major.

Students who apply to the Allied Health Sciences major with admission requirement coursework in transfer must provide the department with an official transcript from the credit-granting institution as part of their application documentation.

Admission to the Allied Health Sciences major is competitive. The following requirements must be met for consideration of admission into the Allied Health Sciences major. Admission requirements must be complete at the time of application to be considered for admission. In progress courses do not fulfill the requirements.

1. Be in good academic standing with a cumulative GPA of 2.0 or higher and not on probation or eligible for dismissal.
2. Completion of the following courses (no substitutions):
  - a. CHEM 1000-level with lab (transfer chemistry course must be equivalent to a UConn chemistry with lab)
  - b. BIOL 1107 (preferred) or 1108 STAT 1000Q or 1100Q; or MATH 1060Q or higher (math requirement varies with concentration)

Factors considered with application include but are not limited to successful completion of science and math courses, progress through undergrad career, advanced coursework taken, and personal statement.

Students may need additional semesters to complete requirements depending on how coursework meets program requirements and course availability at the time of registration.

Concentrations can be declared at time of application or after admission into the major.

### Declaring Concentration:

Admission to the Health Sciences, Public Health and Health Promotion, or Occupational and Environmental Health and Safety concentrations within the Allied Health Sciences major requires a cumulative GPA of 2.0 or higher, academic good standing, and successful completion of one college level (1000 level or higher) course in each of the following: biology, chemistry, and math or statistics as listed in the admission requirements.

Admission into the Healthcare Administration concentration requires a 3.0 cumulative GPA or higher, academic good standing, and successful completion of the following: chemistry and biology as listed in the admission requirements; ARE 1150 or ECON 1201 or 1202; and MATH 1070Q or 1131Q.

**Important Note:** Course requirements vary by concentration. Adding, removing, or changing a concentration WILL impact meeting the major requirements. Not all AH-coded courses can be used to satisfy all plans.

Students bear the responsibility to ensure courses taken to meet the major requirements are consistent with courses listed on the approved list for the declared plan. Students are advised to take this into consideration when considering a concentration change. Students are advised to meet with their faculty advisor in a timely manner (i.e. by junior year) to determine appropriateness of making concentration changes and how doing so may impact major course completion and requirements for graduation. Do not assume substitutions can or will be made.

To satisfy the general education requirements for information literacy competency, Allied Health Sciences majors must meet the University's entrance expectations. To satisfy the general education requirement for writing in the major, Allied Health Sciences students must pass the writing in the major course as indicated by concentration. To satisfy the Environmental Literacy competency, students may complete the requirement as either a GER, Elective, AH major or Related cognate course.

The course requirements listed below are those of the Department of Allied Health Sciences and may also satisfy the University's General Education requirements.

### Required courses by concentration:

Students majoring in Allied Health Sciences (AHS) must complete required courses and the 36-credit major requirement as indicated below. Required coursework varies by concentration (Refer to the concentration plan of study for a list of approved courses); do not assume substitutions can or will be approved. In addition, student must complete university general education requirements (in some cases, major requirements may also be used to satisfy university general education requirements).

### 36 Credit Major Requirement

Students majoring in Allied Health Sciences (AHS) (with or without a concentration) must complete 36 credits of course work meeting the following requirements:

1. Numbered 2000 level or above
2. Include a minimum of 30 credits completed at the University of Connecticut
3. Approved by the student's advisor and department head
4. Include coursework from two or more departments
5. Include at least 15 credits from departments in CAHNR, which must be taken at the University of Connecticut
6. Courses cannot be taken on pass/fail
7. Have a combined grade point average of at least 2.0
8. Cannot include more than six credits (combined) of research, internship, independent study, instructional assistant, or international study taken at the University of Connecticut
9. Cannot include more than eight credits of courses used to satisfy requirements for a minor
10. Cannot include more than six credits of Satisfactory or Unsatisfactory (S/U) coursework
11. Cannot include more than six credits in transfer credit with advisor and department head approval

The 36-credit major and graduation requirements to the Allied Health Science:

Students must complete required coursework by concentration. Required coursework numbered 2000-level or above may also be used to satisfy the 36-credit requirement. The number of courses and credits vary by concentration as indicated within each concentration description. Students are required to take additional related coursework to complete the minimum 36-credit requirement. Students are advised to consult with their advisor in advance of enrollment. Do not assume all 2000-level or above courses will satisfy this requirement. Approval by advisor and department head is required. Students pursuing graduate admissions may use graduate program admission requirements to meet this requirement provided they are 2000-level or above (e.g. PNB 2264, 2265; CHEM 2241, etc.). Please note that including graduate admission prerequisites in the 36-credit group does not imply graduate programs can/will accept them; minimum grade and/or GPA may apply. Students may also take additional 2000-level or above concentration courses to meet this requirement.

### Allied Health Sciences Standard Plan

The Allied Health Sciences major without a concentration is designed specifically for students who would like to pursue a broad-based baccalaureate degree in Allied Health or who would like to pursue *graduate* health programs that require a baccalaureate degree for admission. Working with an advisor, students design a flexible plan of study that they can tailor to meet their professional and personal goals. Students combine University General Education and required coursework in Allied Health with coursework from departments across the university to tailor their baccalaureate degree to meet requirements for employment or admission to various graduate programs, including but not limited to Athletic Training, Physical Therapy, Occupational Therapy, Post-Baccalaureate Nursing and Physician Assistant programs.

#### Required courses

**1000-level:** AH 1100; BIOL 1107; CHEM 1122 or 1124Q or 1127Q; CHEM 1125Q or 1128Q or PHYS 1010Q; COMM 1000 or 1100; MATH 1060Q or higher; NUSC 1165; PHIL 1000-level; PSYC 1100; PSYC 1101 or 1103; STAT 1000Q or 1100Q.

**2000-level and above:** AH 2001, 4239, 4240W; one 2000 level or higher psychology course; and five courses from the following list of AH/CAHNR options, three of which must be AH-coded: AH 2330, 3000, 3005, 3021, 3025, 3030, 3060, 3101, 3121, 3133, 3173, 3175E, 3203, 3231, 3234, 3275, 3278, 3320, 3570, 3571, 3573, 3574, 4092, 4093, 4242, 4243, 4244, 4297W, 4501, 4503, 4530; ARE 2260; DGS 3226, 4234; KINS 2200, 2227, 3222, 3320, 4500; NUSC 2200, 3230, 4236, 4250; PATH 3700, 4000, 4203, 4300. Other courses may be used to meet this requirement pending advisor and department head approval.

**Writing in the major:** AH 4239 and 4240W.

#### Related 36-credit major courses

In addition to the 2000-level and above required courses, related courses used to meet the Allied Health Sciences (no concentration) 36-credit requirement may be from departments across the university including courses in Allied Health not used to meet other program requirements. Courses should relate to career goals and interests. Students are advised to discuss course options with their faculty advisor as not all courses may satisfy this requirement.

### Health Sciences Concentration

The Health Sciences (HESCI) concentration in Allied Health Sciences prepares students interested in health specialties which involve laboratory procedures for diagnostic purposes or who are looking to pursue allied health fields requiring a strong health science and pathology background. This concentration is also designed for students seeking admission to post-baccalaureate (graduate) programs such as, but not limited to, Medical or Dental School, Epidemiology, Optometry, Pathology Assistant, Pharmacy, or the Department of Allied Health Sciences Post-Baccalaureate Diagnostic Genetic Sciences or Medical Laboratory Sciences Certificate Programs.

#### Required courses

**1000-level:** AH 1100; BIOL 1107; CHEM 1124Q or 1127Q; CHEM 1125Q or 1128Q; COMM 1000 or 1100; MATH 1060Q or higher; PHIL 1000-level; PHYS 1201Q and 1202Q or PHYS 1401Q and PHYS 1402Q or PHYS 1501Q and 1502Q; PSYC 1100; STAT 1000Q or 1100Q.

**2000-level and above:** CHEM 2241 and 2242 or 2443, 2444, and 2445; AH 2001, 4239 and 4240W; and five courses from the following list of AH/CAHNR options, three of which must be AH-coded: AH 3005, 3021, 3025, 3030, 3060, 3121, 3133, 3175E, 3203, 3320, 4092, 4243, 4297W; DGS 3226, 4234; KINS 4500, 4510; NUSC 4236, 4250; PATH 3700, 4000, 4203, 4300. Other courses may be used to meet this requirement pending advisor and department head approval.

**Writing in the major:** AH 4239 and 4240W.

#### Related 36-credit major courses

In addition to the 2000-level and above required courses, related courses used to meet the Health Sciences concentration 36-credit requirement must be from the following subject areas: Allied Health Sciences major/Health Sciences concentration course list BIOL, CHEM, MCB, PHYS, PNB. Other science-based courses may be used to meet this requirement pending advisor and department head approval.

## Healthcare Administration Concentration

The Healthcare Administration (HADM) concentration in Allied Health Sciences prepares students interested in administration and managerial positions in hospitals, clinics, government planning and regulatory agencies, health maintenance organizations, hospital associations, consulting firms, computer vendors, health insurance companies, and hospital equipment and supplies manufacturers, etc. This concentration is also designed for students seeking admission into graduate programs such as the Department of Allied Health Sciences Master's Program in Health Promotion as well as for those looking to enroll in graduate programs such as Public Health, Health Administration, Health Insurance Studies, Health Policy and Law, and others.

### Required courses

**1000-level:** AH 1100; BIOL 1107; CHEM 1122 or 1124Q or 1127Q; CHEM 1125Q or 1128Q or PHYS 1010Q; COMM 1000 or 1100; ARE 1150 or ECON 1201; ECON 1202; MATH 1070Q or higher; PHIL 1000-level; PSYC 1100; PSYC 1101 or 1103; PUBH 1001; STAT 1000Q or 1100Q.

**2000-level and above:** AH 2001, 4239 and 4240W; ACCT 2001; BADM 2101, 3730; HCMI 3240, 3243; PSYC 2600; and five additional courses from the following list of AH/CAHNR course options, three of which must be AH-coded: AH 3000, 3005, 3278, 3570, 3571, 3573, 3574, 4244, 4297W, 4501; ARE 3221, 3222. Other courses may be used to meet this requirement pending advisor and department head approval.

**Writing in the major:** AH 4239 and 4240W.

### Related 36-credit major courses

This requirement is fulfilled with the required courses in this concentration.

## Public Health and Health Promotion Concentration

The Public Health and Health Promotion (PHHP) concentration in Allied Health Sciences prepares students interested in working in a setting such as health and social service agencies, work site health promotion programs, government health agencies, hospital wellness programs, business, industry, and educational settings that emphasize health and wellness. This concentration is also designed for students seeking admission into graduate programs such as the Department of Allied Health Sciences Master's Program in Health Promotion as well as for those looking to enroll in graduate programs such as Public Health, Gerontology, Health Education, Health Administration, Health Policy and Law, Health Psychology, or the Department of Allied Health Sciences Post-Baccalaureate Certificate in Health Promotion and Health Education.

### Required courses

**1000-level:** AH 1100; BIOL 1107; CHEM 1122 or 1124Q or 1127Q; CHEM 1125Q or 1128Q or PHYS 1010Q; COMM 1000 or 1100; MATH 1060Q or higher; NUSC 1165; PHIL 1000-level; PSYC 1100; PSYC 1101 or 1103; PUBH 1001; STAT 1000Q or 1100Q.

**2000-level and above:** AH 2001, 3005, 3175E, 3231, 4239, 4240W, 4244; one 2000 level or higher psychology course; PUBH 3001; and two courses from the following list of AH/CAHNR options. AH 3000, 3021, 3025, 3030, 3101, 3133, 3203, 3234, 3320, 4242, 4243, 4297W, 4501, 4503, 4530;; ARE 2260, 2464, 3222; KINS 2227, 3320; NUSC 2200, 3230; PATH 3700, 4203. Other courses may be used to meet this requirement pending advisor and department head approval.

**Writing in the major:** AH 4239 and 4240W.

### Related 36-credit major courses

In addition to the 2000-level and above required courses, related courses used to meet the Public Health and Health Promotion concentration 36-credit requirement may be from departments across the university including courses in Allied Health Sciences. Courses should relate to career goals and interests. Students are advised to discuss course options with their faculty advisor as not all courses may satisfy this requirement.

## Occupational and Environmental Health and Safety Concentration

The Occupational and Environmental Health and Safety (OEHS) concentration in Allied Health Sciences prepares students for careers in occupational safety and environmental health by acquiring knowledge to enhance safe work conditions and practices and minimize disease and

injuries. OEHS professionals identify, evaluate, control and communicate health and safety hazards (chemical, physical, biological and ergonomic) related to the workplace, homes, schools and recreational and outdoor environments. Further, they promote health and safety by recommending safer working conditions and lifestyle practices. The concentration also provides a foundation for professional certification in individual OEHS disciplines such as safety, industrial hygiene, and ergonomics and it uniquely positions students for graduate studies in OEHS and related disciplines.

### Required courses

**1000-level:** AH 1100; ARE 1150 or ECON 1000; BIOL 1107; CHEM 1124Q or 1127Q; CHEM 1125Q or 1128Q; COMM 1000 or 1100; MATH 1060Q or 1131Q or higher; NRE 1000E; PHIL 1000-level; PHYS 1010Q or PHYS 1201Q or higher; PUBH 1001; STAT 1000Q or 1100Q.

**2000-level and above:** AH 2001, 3278, 3570, 3571, 3573, 3574, 4239, 4240W; and a minimum of six credits (or two additional courses) of the following courses: AH 3173, 3175E, 3275. Other courses may be used to meet this requirement pending advisor and department head approval.

**Writing in the major:** AH 4239 and 4240W.

### Related 36-credit major courses

In addition to the 2000-level and above required courses, related courses used to meet the Occupational and Environmental Health and Safety concentration 36-credit requirement may be from departments across the university including courses in Allied Health Sciences. Courses should relate to career goals and interests. Pre-approved courses that may be used to meet this requirement: AH 3005, 3021, 3025, 3101, 4092, 4501; MEM 2211; NRE 3245E; PUBH 3001. Students are advised to discuss course options with their faculty advisor as not all courses may satisfy this requirement.

## Animal Science

This major provides six areas of interest leading to the B.S. degree: Pre-professional (veterinary medicine or graduate training), Animal Biotechnology, Business/Service, Equine Science, Food Science, and Production Management. For detailed information, please refer to [animalscience.uconn.edu](http://animalscience.uconn.edu).

Animal Science majors must pass all courses from Group A, at least one course from Group B, at least one course from Group C, and one additional course from either Group B or C. No single class can satisfy more than one requirement.

**Group A:** (All of the following): ANSC 1001, 1111, 3121, 3122, 3194; PATH 2100; BIOL 1107 and 1108; CHEM 1122 or 1127Q or both 1124Q and 1125Q; CHEM 2241 or CHEM 2443 and 2444; one of the following: ANSC 4341, MCB 2000, MCB 2610

**Group B:** ANSC 2251, 2271, 3261, 3272, 3273

**Group C:** ANSC 3311, 3313, 3316, 3323, 3343, 3641, 4311, 4341 (unless used to fulfill Group A requirement)

To satisfy the general education requirement for information literacy, students must pass ENGL 1007 or 1010 or 1011 or 2011 and one of the following courses: ANSC 3194, 3261, 3312W, 3314W, 3317W, 3324W, 3344W, 3642W, 4312W, 4342W, or 4662W.

To satisfy the general education requirement for writing in the major, students must pass at least one of the following: ANSC 3312W, 3314W, 3317W, 3324W, 3344W, 3642W, 4312W, 4342W, or 4662W.

The Department of Animal Science offers minors in Animal Science, Dairy Management, Food Science, and Therapeutic Horsemanship Education. These are described in the "Minors" section of this Catalog.

## Applied and Resource Economics

*This major is no longer accepting new students. For other majors offered by this department, see (Economics of Sustainable Development and Management) and (Environmental and Natural Resource Economics).*

## Athletic Training

Athletic Training became a graduate degree program in 2019. Students entering the University of Connecticut will not be eligible to earn a bachelor's degree in Athletic Training. Students who wish to pursue a degree in Athletic Training can complete an undergraduate degree in

Exercise Science to prepare to make application to the Master of Science Athletic Training program.

## Diagnostic Genetic Sciences

The Diagnostic Genetic Sciences (DGS) major is an educational and clinical training program in genetic and genomic testing leading to a Bachelor of Science degree. Genetic and genomic testing information is used for screening, diagnosing, prognosticating and monitoring many human diseases. Diagnostic genetic scientists are credentialed professionals critical to the research, application and translation of genetics and genomics to personalized or precision medicine. Students in the DGS professional degree program complete requirements for diagnostic molecular sciences which is accredited by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS) (5600 N. River Rd, Suite 70, Rosemont IL 60018-5119; 773-714-8880). The DGS curriculum includes on-campus didactic and laboratory coursework and an off-site clinical and research internship at an affiliated laboratory. Graduates are eligible to sit for the American Society for Clinical Pathology (ASCP) Board of Certification examination in molecular biology (MB) immediately upon graduation.

### Requirements

The course requirements listed below may also be used to satisfy the University's General Education requirements.

**Mathematics and Science Courses** - CHEM 1124Q and 1125Q or CHEM 1127Q and 1128Q; CHEM 2241 or CHEM 2443; BIOL 1107; MATH 1060Q or 1125Q or above; MCB 2400 or 2410, 2610; STAT 1000Q or 1100Q.

**Professional Courses** - AH 2001, 3021, 3121, 4241; DGS 3100, 4234W, 4235, 4236; MLSC 4500; four related cognates, 2000 level or above, as approved by their DGS advisor. Molecular Practicum Courses: DGS 4402, 4503, 4604, 4850 or 4997; and one of the following: DGS 4510, 4512, 4513, 4515.

**Writing in the Major** - DGS 4234W.

**Information Literacy** - Competencies will be met through successful completion of program major courses.

**Supplemental Academic Standards.** The Department of Allied Health Sciences requires a cumulative grade point average of not less than 2.2 in order to gain admission to the professional majors. Thereafter, students must maintain the following standards of scholastic achievement to continue in the professional major. Students who fail to maintain the minimum grade point averages or minimum course standard in any of these areas are subject to dismissal from the professional program and in some cases the Department of Allied Health Sciences.

1. Students must maintain a minimum semester grade point average of 2.2.
2. Students must maintain a minimum cumulative grade point average of 2.2.
3. Students must maintain a minimum major grade point average of 2.2. Major GPA includes all courses offered with the following departmental designations: AH, DGS, and MLSC.
4. Students must obtain a "C" or better in all courses required for graduation that are in the Department of Allied Health Sciences (AH, DGS, and MLSC).
5. No student may take a course in the Department of Allied Health Sciences for which another course in the department is a prerequisite unless that student has earned a grade of "C" or better in that prerequisite course.
6. No course in the Department of Allied Health Sciences may be repeated more than once (for a total of two times).

For information about admission and clinical placement requirements, please see "Department of Allied Health Sciences Professional Majors" at the end of the College of Agriculture, Health and Natural Resources section of this catalog.

### Diagnostic Genetic Sciences Certificate Program

The Department of Allied Health Sciences also offers a Diagnostic Genetic Sciences Certificate. Please see the University of Connecticut Graduate Catalog for more information.

## Dietetics

The Dietetics major leads to a Bachelor of Science degree. **4+1 FastTrack Dietetics B.S./Health Promotion Sciences M.S.**

Dietetics is able to provide undergraduate students a FastTrack (4+1) B.S. in Dietetics and M.S. in Health Promotion Sciences. The FastTrack allows students accepted into the Undergraduate Coordinated Dietetics Program in Allied Health Sciences at UConn to complete the baccalaureate degree in Dietetics, the Plan B M.S. degree in Health Promotion Sciences, and the hours of supervised practice approved by the Accreditation Council for Education in Nutrition and Dietetics (ACEND), 120 South Riverside Plaza, Suite 2190, Chicago, IL 60606-6695, (800) 877-1600, all within five years plus an externship. When all requirements are successfully completed the student may sit for the Commission on Dietetics Registration national registration examination.

Students are accepted into the program as early as their 5th semester of undergraduate study based on their academic performance and the completion of prerequisite courses, as well as personal background and/or experiences revealing a commitment to dietetics and health promotion sciences.

The program combines theory in the classroom with supervised practice in clinical dietetics, community nutrition, and food service sites off campus to prepare students to sit for the National Registration Examination for Dietetics and earn the credential of Registered Dietitian Nutritionist. In 2024, entrance into the profession will be at the Master's level. A minimum of a Master's degree must be earned to sit for the national examination. Dietitians assess nutritional needs, plan individualized dietary plans, provide counseling and evaluate nutritional care for individuals and groups. While fulfilling requirements of their B.S. degree, FastTrack students simultaneously complete coursework toward the M.S. in Health Promotion Sciences. Please see the Graduate Catalog for requirements.

### Requirements

The course requirements listed below may also be used to satisfy the University's General Education requirements.

**Mathematics and Science Courses** - CHEM 1124Q and 1125Q or CHEM 1127Q and 1128Q; BIOL 1107; STAT 1000Q or 1100Q; MCB 2000, 2610; PNB 2264 and 2265; CHEM 2241; NUSC 1165, 1167, 2200, 3233, 3234.

**Social Sciences** - One 1000-level or higher course in either psychology or sociology.

**Professional Courses** - AH 4241, 4242, 4244, undergraduate health related elective as approved by advisor; DIET 3150, 3155, 3215, 3230, 3231W, 3235, 3250, 3255, 3272, 3296 or 4296, 4272, 4350, 4370, 4415.

**Graduate Courses** - AH 5005, 5351, 6305, 5319.

**Writing in the Major** - DIET 3231W.

**Information Literacy** - Competencies will be met through successful completion of program major courses.

### Dietetic Internship

The Dietetic Internship is a certificate program administered by the Department of Allied Health Sciences' Dietetics major in collaboration with Hartford Hospital. The internship provides the student with the performance requirements for entry-level dietitians through a minimum of 1200 hours of supervised practice. The Dietetic Internship is accredited by the Academy of Nutrition and Dietetics Commission on Accreditation for Dietetics Education, 120 South Riverside Plaza, Suite 2000, Chicago, IL 60606-6695, (800) 877-1600. Students enrolled in this program are required to take six credits of didactic coursework at the graduate level to ensure competency. Upon completion of the Dietetic Internship, the student is eligible to take the National Registration Examination for Dietetics administered by the Commission on Dietetic Registration of the Academy of Nutrition and Dietetics. Students must pass this examination in order to be a Registered Dietitian. In 2024, entrance into the profession will be at the Master's level. A minimum of a Master's degree must be earned to sit for the national examination. For information about graduation rates, the median debt of students who completed the program, and other important information, see the Department of Allied Health Sciences website at <https://dietetics.alliedhealth.uconn.edu/cp/>.

**Supplemental Academic Standards.** The Department of Allied Health Sciences requires a cumulative grade point average of not less than 2.2 in order to gain admission to the professional majors. Thereafter, students must maintain the following standards of scholastic achievement to continue in the professional major. Students who fail to maintain the minimum grade point averages or minimum course standard in any of these areas are subject to dismissal from the professional program and in some cases the Department of Allied Health Sciences.

1. Students must maintain a minimum semester grade point average of 2.2.
2. Students must maintain a minimum cumulative grade point average of 2.2.
3. Students must maintain a minimum major grade point average of 2.2. The Dietetics Major GPA includes all courses offered with the following departmental designations: AH, DIET, and the following NUSC courses: 2200, 3233, and 3234.
4. Students must obtain a "C" or better in all courses required for graduation that are in the Department of Allied Health Sciences. Courses vary with program.
5. No student may take a course in the Department of Allied Health Sciences for which another course in the department is a prerequisite unless that student has earned a grade of "C" or better in that prerequisite course.
6. No course in the Department of Allied Health Sciences may be repeated more than once (for a total of two times).

For information about admission and clinical placement requirements, please see "Department of Allied Health Sciences Professional Majors" at the end of the College of Agriculture, Health and Natural Resources section of this catalog.

## Economics of Sustainable Development and Management

The B.S. degree in Economics of Sustainable Development and Management prepares students to use economic analysis and quantitative methods to understand and evaluate decision problems faced by individuals, firms, and public agencies. Students will learn how to apply economic analysis to the organization and operation of businesses and industries, the economic development process, and its application to specific regions and communities. The curriculum incorporates business management, marketing and finance, production, investment choices, international trade, consumer behavior, sustainable development, economics of the food system, economic analysis of policies and programs that target human wellbeing, including health and nutrition, and the economics of poverty.

### Competency Requirements

All Economics of Sustainable Development and Management majors must pass ARE 1150 or ECON 1200 or ECON 1201; ARE 2150, ARE 2155; and a minimum of 15 additional credits of ARE courses at the 2000 level or above. Students must also pass either ARE 2261W or ARE 2435W to fulfill their writing in the major requirement. The advanced information literacy requirement is fulfilled with either ARE 2261W or ARE 2435W. The courses used to satisfy the 15 additional credit ARE minimum can also be used to fulfill the CAHNR 36-credit requirement and the concentrations.

Students in this major may choose no concentration, one concentration, or two concentrations from the following: Business Management and Marketing and Development Economics and Policy. The requirements for each concentration are listed below.

### Business Management and Marketing Concentration

Majors choosing a concentration in Business Management and Marketing must take a total of at least 18 credits from the courses listed below. At least 12 credits must be taken from the Core Courses and up to six credits must be taken from the Elective Courses.

**Core Courses:** ARE 2210, 2215, 3221, 3222, 3223, 3333.

**Elective Courses:** ARE 2260, 2464, 3225, 4205, 4217, 4279 or 4476; ECON 2411; with approval of advisor up to three credits of any 3000-level or above course.

With approval of advisor, additional courses in ARE or in related fields can be used to fulfill the CAHNR 36-credit requirement for the major with this area of concentration.

### Development Economics and Policy Concentration

Majors choosing a concentration in Development Economics and Policy must take a total of at least 18 credits from the courses listed below. At least 12 credits must be taken from the Core Courses and up to six credits must be taken from the Elective Courses.

**Core Courses:** ARE 2260, 2464, 3305E, 3333, 4279 or 4476, 4305.

**Elective Courses:** ARE 2434E, 4205, 4444; ANTH 3325; ECON 2440, 2456, 2474, 3421W, 3473, 3479; GEOG 3200; POLS 3406, 3410; SOCI 2901; WGSS 2267, 3216; with approval of advisor up to three credits of any 3000-level or above course.

With approval of advisor, additional courses in ARE or in related fields can be used to fulfill the CAHNR 36-credit requirement for the major with this area of concentration.

**Note:** Students can add one or more minors offered by the ARE Department except for the minor(s) with the same name as the chosen concentration.

Minors in Business Management and Marketing, Environmental Economics and Policy, Development Economics and Policy, and Equine Business Management are described in the Minors section.

## Environmental and Natural Resource Economics

The B.S degree in Environmental and Natural Resource Economics prepares students to use economic analysis and quantitative methods to understand and evaluate complex interactions between economic markets, societal values, human needs and wants, and government policies. After graduation, students will be able to apply their acquired analytical and quantitative skills in a variety of jobs and for graduate school preparation. Environmental and Natural Resource Economists work for firms and consulting companies in the private sector, and for public agencies. The curriculum incorporates economics into the study of pollution (air, water, and land), waste disposal and recycling, business and consumer behavior, sustainable development, climate change and adaptation, pollution control, energy, renewable resources, environmental justice, poverty, economic valuation of environmental protection, benefit cost analysis, and policy evaluation. Students are encouraged to enroll in independent study to work individually with a faculty member on a chosen topic related to environmental and natural resource economics. Students can also receive academic credit through internships and participation in study abroad programs. For detailed information, please refer to are.uconn.edu.

### Competency Requirements

All Environmental and Natural Resource Economics majors must pass ARE 1150 or ECON 1200 or ECON 1201; ARE 2150, ARE 2155; and a minimum of 15 additional credits of ARE courses at the 2000 level or above. Students must also pass either ARE 2261W or ARE 2435W to fulfill their writing in the major requirement. The advanced information literacy requirement is fulfilled with either ARE 2261W or ARE 2435W. The courses used to satisfy the 15 additional credit ARE minimum can also be used to fulfill the CAHNR 36-credit requirement.

Students choosing this major must take a total of at least 18 credits from the courses listed below. At least 12 credits must be taken from the Core Courses and up to six credits must be taken from the Elective Courses.

**Core Courses:** ARE 2434E, 3333, 3438E, 4438E, 4444, 4462E.

**Elective Courses:** ARE 2235, 2464, 3305E, 3436, 4217, 4305; GEOG 2320E, 2400E, 2500, 3340; NRE 3245E; with approval of advisor up to three credits of any 3000-level or above course.

With approval of advisor, additional courses in ARE or in related fields can be used to fulfill the CAHNR 36-credit requirement for the major.

**Note:** Students can add one or more minors offered by the ARE Department except for the Environmental Economics and Policy minor.

Minors in Business Management and Marketing, Development Economics and Policy, and Equine Business Management are described in the Minors section.



## Environmental Sciences

The major in Environmental Sciences is based in the physical and biological sciences, but also includes course work in selected areas of the social sciences. The major leads to a Bachelor of Science degree, and may be adopted by students in either the College of Agriculture, Health and Natural Resources or the College of Liberal Arts and Sciences. This curriculum offers a comprehensive approach to the study of environmental problems, including not only a rigorous scientific background, but also detailed analyses of the social and economic implications of environmental issues. The complexity and interdisciplinary nature of environmental science is reflected in the core requirements of the major. These courses, assembled from several different academic departments representing two colleges, provide both breadth and depth, preparing students for careers that deal with environmental issues and for graduate study in environmental sciences and related fields.

### Required courses in Basic (Natural) Sciences

- BIOL 1107 and 1108 or 1110;
- CHEM 1124Q, 1125Q, 1126Q or 1127Q, 1128Q;
- MATH 1131Q, 1132Q;
- PHYS 1201Q, 1202Q, or 1401Q, 1402Q;
- STAT 1000Q or 1100Q or 3025Q;
- NRE 1000E.

ARE 1150; ECON 1200 or 1201; EARTH 1050; GEOG 2300E; and MARN 1002 are prerequisites for several upper division course concentration options. It is the student's responsibility to ensure that all pre-requisites in the catalog for concentration courses have been satisfied.

### Required Sophomore Seminar Course

ENVS 2000

### Required Capstone Course

NRE 4000W (three credits). Completion of NRE 4000W satisfies the writing in the major and information literacy exit requirements.

### Required Internship or Research Experience

1-6 credits of internship and/or research experience. Internship and/or research experience must be approved by the student's advisor.

Students are required to complete a minimum of 36 credits of approved courses, at the 2000-level or higher. Approved courses include: ENVS 2000; NRE 4000W; 1-6 credits of internship or research experience, and a minimum of 24-credits within a declared concentration.

### Area of Concentration

All students majoring in Environmental Sciences must declare and fulfill the requirements of a concentration in a discipline associated with the program before graduation. Approved concentrations are listed below.

#### Sustainable Systems Concentration

Students must complete at least two courses from each of the following Knowledge Competencies. The same course cannot be used to fulfill more than one knowledge competency.

**Resource Management:** EEB 2208; GEOG 3340; MARN 3030; NRE 2010, 2215E, 2345, 2600E, 3105, 3125, 3305, 3335, 3345/W, 3500, 3535, 4255, 4335, 4575; SPSS 2100E. **Ecological Systems:** EEB 2100E, 2222, 2244/W, 3247, 4230W; EEB 3230/MARN 3014; NRE 2455, 4205, 4340.

Students must complete at least one course from each of the following Knowledge Competencies.

**Build Systems:** AH 3175; ENVS/EVST/ENVE 3110; GEOG 2400; LAND 3230WE; NRE 3265, 4425; SPSS 3550. **Governance and Policy:** AH 3174; ARE 2235, 3434E, 3437E, 4438E, 4462E; ECON/MAST 2467; ENVS/EVST/ENVE 3100; GEOG 3320W; MAST/POLS 3832; NRE 3000, 3201, 3245E; POLS 3412; SOCI 3407/W. **Ethics, Values, and Culture:** ANTH 3339; ENGL 2635E, 3240E, 3715E; GEOG 3410; GERM 2400; HIST 3540E, 3542; HIST/MAST 2210E; JOUR 3046; LAND 2210E; PHIL 3216; SOCI 2701, 2705, 2709W, 3407/W. **Economics and Business:** ARE 2235, 4305, 4438E, 4444, 4462E; ECON/MAST 2467; ECON 3466E, 3473.

### Global Change Concentration

Students must complete at least two courses from each of the following Knowledge Competencies. The same course cannot be used to fulfill more than one knowledge competency.

**Climate Change and its Impacts:** EARTH 3010, 4850; GEOG 3400, 4300; MARN 3000E; NRE 2600E, 3115, 3146, 4170; SPSS 2100E, 2500E. **Land and Ocean Use and its Impacts:** EEB 2100E, 2222, 2208; EARTH 3020; EARTH/MARN 3230; GEOG 3310, 3410; MARN 3001, 3030, 4066; NRE 2215E, 2345, 2600E, 3105, 3115, 4255, 4340; NRE 4135/EARTH 4735. **Natural Science:** CHEM 4370, 4371; EEB 2244/W, 2245/W, 3247; EEB 3230/MARN 3014; EEB/GSCI 4120; EARTH 4110, 4210, 4720; GEOG 2300E; MARN 2002, 2060, 4030W, 4060, 4202Q; NRE 2455, 3125, 3145, 4205; SPSS 2120, 3420.

Students must complete at least one course from each of the following Knowledge Competencies.

**Methods:** CE 2251; CE/ENVE 3530/EARTH 3710; EEB 3266, 4100, 4230W, 4262; EARTH 4430, 4510, 4710, 4810; EARTH/NRE 4735; GEOG 3500Q; GEOG/EARTH 4230; GEOG/MARN 3505; MARN 4202Q; NRE 2000, 2010, 3305, 3345/W, 3535, 4335, 4475, 4535, 4544, 4545, 4575, 4665; PHYS 2400; STAT 2215Q, 3025Q. **Governance and Policy:** AH 3174; ARE 2235, 3434E, 3437E, 4438E, 4462E; ECON/MAST 2467; ENVS/EVST/ENVE 3100; EVST/POLS 3412; GEOG 3320W; MAST/POLS 3832; NRE 3000, 3201, 3245E; SOCI 3407/W.

### Environmental Health Concentration

Students must pass all of the following: AH 3021, 3175; ANSC 4341; NRE 4340.

Students must pass two of the following: AH 3275; ENVS/EVST/ENVE 3110; EARTH 4710; MARN 3030; MCB 2400; NRE 3115, 4255; PATH 3700, 4300; SPSS 2120.

Students must pass one of the following: AH 3570, 3571, 3573, 3574; PSYC 3105.

Students must pass at least one of the following: EEB 3245; ECON 2451/W; GEOG 3240.

Note: A B.S. in Environmental Sciences can also be earned through the College of Liberal Arts and Sciences. For a complete description of the major in that college, refer to the Environmental Sciences description in the "College of Liberal Arts and Sciences" section of this *Catalog*.

## Environmental Studies

The Environmental Studies major is an interdisciplinary program designed to provide students with the knowledge, skills, and perspectives needed to understand the interactions between human society and the environment. Understanding the ethical and cultural dimensions of our relationship with the environment, as well as the challenges of protecting it, requires insights from multiple perspectives, including the humanities, the social sciences, and the natural sciences. Core courses in the major ensure familiarity with basic principles from these three areas. With this shared core of knowledge, majors will focus their studies on an area of special interest, taking electives and related courses that allow greater specialization. Among the many possibilities are environmental sustainability, issues concerning public policy and environmental justice, and the literary and philosophical legacy of human encounters with the non-human world. A capstone course will allow each student to research a distinct perspective on a contemporary environmental issue. A major in Environmental Studies might lead to a career in a variety of fields, including public policy, environmental education, eco-tourism, marketing or consulting, journalism, or advocacy.

The major leads to a Bachelor of Arts degree in the College of Liberal Arts and Sciences (CLAS) or the College of Agriculture, Health and Natural Resources (CAHNR). The student's choice of colleges should be made in consultation with faculty and advisors based upon the student's interests and career goals.

### Requirements:

#### Introductory Courses

All majors must take four introductory courses:

- BIOL 1102 or, for those seeking a more advanced background, BIOL 1108;

- EVST 1000E
- ERTH 1050 or 1051, GEOG 2300E, or NRE 1000.

**STAT 1000Q or 1100Q or equivalent. Core Courses (18 credits)** All majors must take two of the following courses from each core.

Students cannot apply more than one course per department to count within a particular core. Additional core courses taken in the same department can be applied to the additional major requirements beyond the core requirements.

#### Humanities Core

PHIL 3216/W; GERM 2400; HIST 2210E or 3540E or 3542; ENGL 3240E or 3635 or 3715E or JOUR 3046.

#### Social Sciences Core

ARE 3434E or ARE 4462E or ECON 3466E; GEOG 2400 or 3350; NRE 3000 or 3245E; POLS/EVST 3412; SOCI 2701 or 2709W.

#### Natural Science Core

AH 3175; EEB 2208; ERTH 3010; GEOG 3400; NRE 4170.

#### Capstone Research Project

EVST 4000W (three credits). All majors must complete a capstone research project, which fulfills the Writing in the Major and the Information Literacy requirements for the major.

Additional requirements for the major: In addition, environmental studies majors in CAHNR must take an additional 15 credits of courses at the 2000 level or above to meet the 36-credit major requirement. These courses must be designed to form a coherent set of additional courses that will provide the student with a focus or additional depth in an area of interest related to the major. They must be chosen in consultation with the student's faculty advisor and be approved by the advisor. Courses listed above that are not used to meet the core requirements may be used to meet this requirement.

#### \*Other areas of recommended preparation (not required):

- **Physical Science:** CHEM 1122, 1127Q; PHYS 1030Q/1035Q.
- **Earth Science:** ERTH/GEOG 1070; MARN 1002/1003.
- **Economics:** ARE 1110, 1150; ECON 1179, 1200, 1201.

Note: A B.A. in Environmental Studies can also be earned through the College of Liberal Arts and Sciences. For a complete description of the major in that college, refer to the Environmental Studies description in the "College of Liberal Arts and Sciences" section of this Catalog.

## Exercise Science

The Exercise Science major is an undergraduate degree program integrating the fields of exercise physiology, biomechanics, sport performance, and sport psychology, and leads to a Bachelor of Science degree upon completion. All students in the Exercise Science major complete a core set of requirements followed by a specific plan associated with one of the following concentrations: Exercise Science; Sports Health; Sports Performance; or Pre-Medical Science. Students will work with program advisors to determine the best concentration for career planning purposes.

All concentrations have immediate employment opportunities in a variety of settings upon graduation. In addition, the Exercise Science concentration will prepare students for graduate studies in a variety of sports medicine or rehabilitation professions, such as physical therapy, athletic training, and occupational therapy, by incorporating most prerequisites for these programs into the standard curriculum. Alternatively, the Sports Health concentration also prepares students for graduate programs in Athletic Training. The Pre-Medical Science concentration is designed to prepare students for applying to Physician Assistant graduate programs or medical schools. The Sports Performance concentration prepares students for immediate entry into the sports/fitness/health industries, or for graduate studies in Exercise Science/Physiology.

#### Admission

Students not admitted to the University as a first year Exercise Science major may apply into this major. Current UConn students may apply during the first two weeks of each semester based upon the admission requirements below. Students may apply to transfer into Exercise Science from another institution. Transfer students will be evaluated for admission based upon the admission requirements below.

Admission to the Exercise Science major is competitive. The following requirements must be met for consideration for admission into the Exercise Science major. Course requirements for admission must be complete at the time of application for the student to be considered for admission.

- Cumulative GPA of a 2.7 or higher.
- Be in good academic standing (not on probation or eligible for dismissal).
- Earned at least a "C" in BIOL 1107 and CHEM 1127Q.

#### Exercise Science Required Coursework and Requirements by Plan

All students in the Exercise Science major, regardless of their concentration, will be required to pass the following core requirements:

- KINS 1100, 1160 (when taken as Free Weight Training), 1160 (when taken as First Aid/CPR), 2227, 3320, 3522, 3530/W, 3545/W, 4205/W, 4500, 4510/W.
- BIOL 1107
- CHEM 1127Q
- COMM 1100
- MATH 1060Q or 1131Q
- NUSC 1165
- PHYS 1201Q
- PNB 2264, 2265
- PSYC 1100
- STAT 1000Q or 1100Q

Students are also required, regardless of their concentration plan, to complete two writing intensive courses (W course) within the Department of Kinesiology. All students must take KINS 4205W, and then one of the following courses to satisfy the W requirement: KINS 3099W, 3530W, 3545W, 3697W, or 4510W.

#### Concentrations within Exercise Science

##### Exercise Science

All core requirements for the major and the following courses: BIOL 1108; CHEM 1128Q; CHEM 2241 or 2443; MCB 2000 or 3010; PHYS 1202Q; and 12 related/cognate credits from related coursework from any of the following departments: CHEM, KINS, MCB, NUSC, PNB, PATH, PSYC. Other courses may be used to meet this requirement pending advisor and department head approval.

##### Sports Health

All core requirements for the major and the following courses: AH 2001; HDFS 1070; KINS 2200, 3212, 3222; NUSC 4250; PSYC 1101, 2400; and 12 related/cognate credits from related coursework from any of the following departments: AH, CHEM, KINS, MCB, NUSC, OPIM, PATH, PNB, PSYC. Other courses may be used to meet this requirement pending advisor and department head approval.

##### Sports Performance

All core requirements for the major and the following courses: ACCT 2001; HDFS 1070; KINS 3212, 3222; NUSC 2200, 4250; PSYC 1101; and 12 related/cognate credits from related coursework from any of the following departments: AH, CHEM, KINS, MCB, NUSC, OPIM, PATH, PNB, PSYC. AH, NUSC, and OPIM are encouraged for this concentration. Other courses may be used to meet this requirement pending advisor and department head approval.

##### Pre-Medical Science

All core requirements for the major and the following courses: BIOL 1108; CHEM 1128Q; PHYS 1202Q; and the following related requirements: CHEM 2443, 2444, 2445; MCB 2000, 2210, 2400, 2410, and 2610. Please refer to aamc.org and premed.uconn.edu for guidance on pre-medical requirements to include in the Plan of Study. Please also contact the departmental pre-med advisor through your major advisor. The schedule of courses should be designed with preparation for the MCAT (medical college admissions test) timing in mind for students intending to apply to medical school.

## Exercise Science/Athletic Training 3+2 (B.S./M.S.)

The accelerated 3+2 program leads to a Bachelor of Science degree (B.S.) in Exercise Science and a Master of Science in Athletic Training (M.S.). The five-year (3+2) program facilitates students to complete degree requirements for the Exercise Science major in three years through the Exercise Science Sports Health concentration before completing their final two years in the Professional Phase and earning a Master of Science in Athletic Training degree.

*Students must also maintain a "B" average in the core prerequisite courses outlined in the M.S.A.T. admissions requirements.*

### Admission

Students will be admitted to the 3+2 accelerated program (Exercise Science undergraduate major) as first-year students with continuance into the M.S.A.T. program upon completion of the B.S. degree in Exercise Science. Transfer admissions to the accelerated program will be considered in accordance with the Exercise Science major (twice per year – October 1 and February 1 application deadlines). Transfer applicants should be in good academic standing at the time of application, with those who hold a 3.0 or higher given stronger consideration. Admission is highly competitive, with preference given to students with strong preparation in mathematics and science and demonstrated interest in athletic training as a professional career. Students will be pre-admitted to the M.S.A.T. program when accepted to the 3+2 accelerated track and assigned a specific advisor who will guide them through their undergraduate degree. Students will need to maintain all prerequisite requirements for the M.S.A.T. degree and complete the process of applying to the Graduate School in order to have the GRE requirements waived, and admittance to the M.S.A.T. program guaranteed.

## Individualized Major

The Individualized Major program allows students to create a major that is not otherwise offered at the University of Connecticut. Students pursuing an Individualized Major must meet all university-level and college-level requirements for graduation and complete at least 36 credits numbered 2000 or above. Requirements for declaring and completing an Individualized Major are listed below:

- Students must be in good academic standing with a minimum GPA of 2.5 to declare an Individualized Major.
- Students must submit a proposed statement of purpose and identify three faculty members who are willing to serve as an advisory committee.
- An Individualized Major has a minimum of 36 credits numbered 2000 or above courses which must: be from two or more departments; include at least 18 credits from departments in the College of Agriculture, Health and Natural Resources; be approved by the student's advisory committee; be taken at the University of Connecticut; have a combined Grade Point Average of at least 2.5; include no more than six credits of Independent Study and Internship; not to be taken on Pass/Fail; meet all requirements of the "36 Credit Group" of the College of Agriculture, Health and Natural Resources.

The writing in the major and information literacy requirements will be satisfied by meeting these requirements for any of the majors within the College of Agriculture, Health and Natural Resources.

## Landscape Architecture

This major provides instruction in site planning and design, landscape history, landscape architectural graphics and presentation. It includes the use of plants and other features to enrich exterior spaces. Through seminars, studio projects and internships, students learn to apply theory to actual case studies. The program is accredited by the American Society of Landscape Architects. For detailed information, please refer to [plantscience.uconn.edu](http://plantscience.uconn.edu).

**Landscape Architecture majors** must pass the following courses:

1. BIOL 1108 or 1110
2. CHEM 1122 or 1124Q or 1127Q
3. LAND 2110, 2120, 2210, 2220, 2410, 3130, 3230WE, 3310, 3311, 3312, 3420, 3430, 4294, 4340, 4440, and 4450; SPSS 2120, 3410
4. One of the following: EEB 4272; NRE 2415; SPSS 2430, 4210

**Supplementary Scholastic Standards.** Accreditation and space restrictions necessitate that the number of students in the Program of Landscape

Architecture be limited. All students choosing the landscape architecture major will be evaluated after they have taken introductory landscape architecture courses LAND 2110 and 2210. Minimum requirements for continuance in the Program of Landscape Architecture are a cumulative grade point average of 2.5 or better and a grade of 3.0 "B" or better in both introductory courses. For students meeting these requirements, faculty evaluation of a portfolio of work produced in introductory courses, student essay and GPA will determine final acceptance into the Program.

Thereafter students must maintain a cumulative grade point average of 2.5 or better, and must earn grades of 2.7 "B-" or better for all major (LAND) courses. Students who receive more than one grade below 2.7 "B-" in major (LAND) courses may be dismissed from the major. Courses may be retaken if space allows, with permission of the instructor, but no course in the Program of Landscape Architecture may be repeated more than once (for a total of two times).

Students successfully completing these courses will have met their general education exit requirements for information literacy.

Landscape Architecture majors must take LAND 3230WE to fulfill their requirement for writing in the major.

## Medical Laboratory Sciences

Medical Laboratory Scientists apply biological and chemical principles to perform, interpret, and correlate laboratory analyses on body fluids and tissues. Medical Laboratory Scientists are responsible for selecting appropriate methods and implementing quality assurance for tests designed to promote health, and prevent, diagnose and treat diseases.

The Medical Laboratory Sciences major leads to a Bachelor of Science degree. The MLS Program is accredited by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS), 5600 North River Road, Suite 720, Rosemount, IL 60018-5119, phone (773) 714-8880. Graduates are eligible for the National Board of Certification examination administered by the American Society for Clinical Pathology (ASCP) immediately upon graduation.

### Requirements

The course requirements listed below may also be used to satisfy the University's General Education requirements.

**Mathematics and Science Courses.** CHEM 1124Q and 1125Q or CHEM 1127Q and 1128Q; CHEM 2241 or CHEM 2443 and 2444; BIOL 1107; MATH 1040Q or 1060Q or 1125Q or above; STAT 1000Q or 1100Q; MCB 2000 and 2610; 2400 or 2410; AH 3025 or PNB 2264 and 2265 or 2274 and 2275.

**Professional Courses.** AH 2001, 3121, 4241; DGS 4234, 4235; MLSC 3301, 3333, 3365, 4094W, 4301, 4302, 4311, 4312, 4321, 4322, 4341, 4342, 4351, 4352, 4371, 4372, 4500.

**Writing in the Major.** MLSC 4094W.

**Information Literacy.** Competency will be met through successful completion of program major courses.

**Supplemental Academic Standards.** The Department of Allied Health Sciences requires a cumulative grade point average of not less than 2.2 in order to gain admission to the professional majors. Thereafter, students must maintain the following standards of scholastic achievement to continue in the professional major. Students who fail to maintain the minimum grade point averages or minimum course standard in any of these areas are subject to dismissal from the professional program and in some cases the Department of Allied Health Sciences.

1. Students must maintain a minimum semester grade point average of 2.2.
2. Students must maintain a minimum cumulative grade point average of 2.2.
3. Students must maintain a minimum major grade point average of 2.2. Major GPA includes all courses offered with the following departmental designations: AH, DGS and MLSC.
4. Students must obtain a "C" or better in all courses required for graduation that are in the Department of Allied Health Sciences (AH, DGS, MLSC).
5. No student may take a course in the Department of Allied Health Sciences for which another course in the department is a prerequisite

unless that student has earned a grade of “C” or better in that prerequisite course.

- No course in the Department of Allied Health Sciences may be repeated more than once (for a total of two times).

### Medical Laboratory Sciences Certificate Program

The Department of Allied Health Sciences also offers a Medical Laboratory Sciences Certificate. See the University of Connecticut Graduate Catalog for more information.

For information about admission and clinical placement requirements, please see “Department of Allied Health Sciences Professional Majors” at the end of the College of Agriculture, Health and Natural Resources section of this catalog.

## Natural Resources

This major, offered by the Department of Natural Resources and the Environment, prepares students for careers related to the management of natural resources. Students develop skills in applying modern technology, concepts and principles dealing with sustainable development, environmental protection and resource conservation. In addition to core requirements, all students must complete one or more of the following concentrations: Environmental Sustainability and Conservation (including the option for a pre-approved Education Abroad experience), Fisheries and Wildlife Conservation, Forest Resources, or Water Resources and Climate. (For detailed information, please refer to [nre.uconn.edu](http://nre.uconn.edu).)

**Competency Requirements:** Students successfully completing the courses listed below will have met their General Education information literacy exit requirements for this major. Students passing NRE 4000W will satisfy the writing competency requirement within the major.

All Natural Resources majors must pass the following core requirements: NRE 1000E, 2000, 2010, 3000, 4000W, 4094; BIOL 1107 or 1108 or 1110; CHEM 1122 or 1124Q or 1127Q; MATH 1060Q or 1131Q; SPSS 2120 and 2125 or EARTH 1050; PHYS 1201Q or 1401Q; STAT 1100Q.

At least one course in the 36-credit group must come from a department other than NRE.

### Environmental Sustainability and Conservation

All of the following: ARE 1150 or ECON 1201; NRE 1235, 2600E; NRE 3245E or ARE 3434E.

One course from each of the following four groups (the same course cannot be used to fulfill more than one group) or Education Abroad (12 credits or equivalent completed abroad of courses pre-approved by NRE):

**Sustainability Concepts:** ANTH 3339; ENVE 1000E; NRE 3265, 3675; SOCI 2701, 3407/W; SPSS 2100.

**Economics and Social Science:** ANTH 3339; ARE 2235, 4438E, 4444; ECON 2467, 3466E; GEOG 3320W, 3340, 3410; PHIL 3216; POLS 3239, 3412, 3847; SOCI 2701, 3407/W.

**Natural Resources/Ecologic Science:** EEB 2244/W, 3247; EEB 3230/MARN 3014; MARN 3000E; NRE 2455, 3105, 3125, 3145, 3146, 4180, 4205, 4370; SPSS 2500.

**Resource Conservation and Management:** NRE 2550, 3305, 3335, 4165, 4170, 4255, 4335, 4475, 4665.

### Fisheries and Wildlife Conservation

All of the following: EEB 2214, 2244/W; NRE 2345, 3335 or 4335, 3345/W or 3385W or 4575, 4370.

One course from each of the following two groups (the same course cannot be used to fulfill more than one group).

Taxonomy or organismal-level group: ANSC 1111, 3121; EEB 3254, 3265, 4200, 4215, 4250, 4260 or 4261; NRE 3693 (approved by advisor), 4340; PSYC/EEB 3201; PATH 2100, 4300.

Habitat or ecosystem-level group: EEB 3247; NRE 2455, 3105, 3693 (approved by advisor), 4205.

### Forest Resources

All of the following: NRE 2415, 2455, 3125, 3500, 4475.

One of the following: NRE 3535, 4544, 4575.

One of the following: NRE 3425, 4425.

Two of the following: NRE 2345, 2550, 3105, 3245E, 3265, 3690, 3693, 4180.

### Water Resources and Climate

All of the following: NRE 2215E, 3125, 3145 or 3146.

Five additional courses from among the following groups, including at least one from the Hydrologic Science group and at least one from the Biological/Ecological Science group (whichever of NRE 3145 or 3146 is used to fulfill the above requirement cannot be used to also fulfill this requirement):

**Hydrologic Science:** ENVE 3120; EARTH 3020; GEOG 3310; MARN 3000E; NRE 4135, 4165, 4255, 5115.

**Biological/Ecological Science:** EEB 3204, 3247; NRE 3105, 4205, 4340.

**Atmospheric Science:** GEOG 3400; NRE 3115, 3145, 3146, 4170, 4180.

**Policy:** ARE 3434E; NRE 3245E.

**Related Skills:** AH 3275; NRE 3535, 4544, 4575.

A minor in Wildlife Conservation is described in the “Minors” section.

## Nutritional Sciences

Students majoring in Nutritional Sciences pursue one of three tracks: Nutritional Sciences, Didactic Program in Dietetics or Pre-Medical Profession. Each area follows a different curriculum including non-departmental courses, in order to best prepare students for their future goals. Students preparing to become registered dietitians follow the Didactic Program in Dietetics which is accredited by the Accreditation Council for Education in Nutrition and Dietetics (ACEND) 120 South Riverside Plaza., Suite 2190, Chicago, IL 60606-6995. (800) 872-5327.

The Nutritional Sciences curriculum is generally more flexible than the Dietetic curriculum. Students in this option integrate the Nutritional Sciences core requirements with additional courses in the laboratory or behavioral sciences. A minor in Nutrition for Exercise and Sport and a minor in Food Science are described in the Minors section.

For detailed information, please refer to the Department of Nutritional Sciences website.

**Admission requirements.** Students not admitted to the University as Nutritional Sciences majors may petition into this major. The following petition requirements must be met for consideration of a major change into the Nutritional Sciences major:

- Earned at least a “C” in CHEM 1124Q or 1127Q
- Earned at least a “B” in NUSC 1165

**Nutritional Sciences majors must successfully pass the following courses:** NUSC 1165, 2200, 4236, and either 4237W or 4296W; BIOL 1107; CHEM 1124Q and 1125Q or CHEM 1127Q and 1128Q; CHEM 2241, or 2443 and 2444; PNB 2264 and 2265, or BIOL 1108 and PNB 2250, or BIOL 1108 and PATH 2100; MCB 2000 or 3010.

In addition to the courses listed above, a minimum of six credits, numbered 2000 level or above, must be earned from courses in the Department of Nutritional Sciences. Credits earned in field experiences and independent studies cannot be used to meet this six-credit requirement.

Students must successfully pass either NUSC 4237W or 4296W to fulfill their writing in the major requirement and the advanced information literacy requirement. There are no advanced requirements for computer technology.

A minor in Nutrition for Exercise and Sport and a minor in Food Science are described in the “Minors” section.

**Didactic Program in Dietetics.** Nutritional Science students preparing to apply for a dietetics internship in preparation to become registered dietitians may enroll in the Didactic Program in Dietetics at the University of Connecticut, which is currently granted accreditation by:

Accreditation Council for Education in Nutrition and Dietetics (ACEND) 120 South Riverside Plaza, Suite 2190, Chicago, IL 60606-6995; (800) 872-5327.

To declare a concentration in the Didactic Program in Dietetics within the Nutritional Sciences major, students must have a cumulative GPA of 3.0 or higher, and have successfully completed the following courses:

- NUSC 1165 and NUSC 2200 with a “B” grade or higher;

- CHEM 1124Q and 1125Q or 1127Q and 1128Q; and; BIOL 1107, with a “C” grade or higher.

To earn a verification statement, students must meet the above grade requirements; complete the core requirements for all Nutritional Sciences majors (including MCB 2000, PNB 2264 and 2265) and earn a Didactic Program in Dietetics GPA of at least 3.0 by successfully completing the following courses with a “C” grade or higher:

- NUSC 1167, 3150, 3230, 3233, 3234, 3245, 3250, 3271, 3272, 4100, 4272;
- CHEM 2241 or 2443 and 2444;
- MCB 2610;
- AH 4242 or EPSY 3010; AH 4244;
- STAT 1000Q or 1100Q;
- SOCI 1001 or PSYC 1100.

#### 4+1 Nutritional Sciences B.S./M.S. Programs

The department also offers accelerated 4 + 1 programs, allowing students in all three undergraduate tracks to complete a Bachelor of Science and Master of Science degree in five years. Please see The Graduate Catalog for requirements for the M.S. degree.

### Pathobiology

*Effective for the 2022-23 catalog, the PVS subject code was changed to PATH.*

Students majoring in Pathobiology focus on animal health and diseases and their relationship to people and the environment. Students can prepare to enter veterinary medical schools or medical schools. Pathobiology majors also pursue careers in biotechnology, biomedical sciences, para-veterinary medicine, and many diverse laboratory and research positions in health fields, and agriculture and natural resources. For detailed information, please refer to [patho.uconn.edu](http://patho.uconn.edu).

**Pathobiology majors** must pass the following courses: PATH 1000, PATH 2100 or PNB 2264-2265 or PNB 2274-2275; PATH 3100 and PATH 4300; MCB 2610; One course in Biochemistry: MCB 2000 or MCB 3010; One course in Genetics: MCB 2400, 2410, or ANSC 3121; One course in Nutrition, Immunology, or Cell Biology: ANSC 1111, NUSC 1165, MCB 2210, 4211, or AH 3121; One of the following courses: PATH 2301, 3201 or 3201W, 3341, 3501, 3700, 4203/5203.

Students must pass either PATH 3094W or 3201W to fulfill their writing in the major requirement. The advanced information literacy requirement is fulfilled by passing PATH 3094W or 3201W.

### Sustainable Plant and Soil Systems

The Sustainable Plant and Soil Systems major, with concentrations in Environmental Horticulture, Sustainable Agriculture, and Turfgrass Science, focuses on the science and practices associated with sustainable plant production and/or use within managed systems. Courses emphasize practices and concepts related to reducing environmental impact during production and in managed land use systems.

Concentrations focus on the production of ornamental and edible crops in controlled environments, greenhouses, nurseries and on farms; management practices for built landscapes and surfaces used for recreational and sporting activities; and the selection and management of ornamental trees, shrubs, grasses, native species, and plants and soils that perform ecosystem services in recreational, urban, and suburban settings to meet functional and aesthetic requirements. The program emphasizes hands-on learning and developing and applying knowledge to solve contemporary problems in individual and team approaches. Students have the opportunity to gain real-world experience through internships.

All students in this major must complete the following courses: BIOL 1108 or 1110; CHEM 1122 or 1124Q or 1127Q; SPSS 1120, 2120, 2125, 2110W or 3660W, and 4210.

The writing in the major requirement is satisfied by SPSS 2110W or 3660W.

### Environmental Horticulture Concentration

Students in this concentration must complete the following courses:

1. SPSS 3640;
2. Two of the following: SPSS 3810, 3820, 3830;

3. Two of the following: SPSS 2430, 3410, 3560;
4. Three of the following: SPSS 3440, 3540, 3550, 3610, 3660, 3670, 4650.

### Sustainable Agriculture Concentration

Students in this concentration must complete the following courses:

1. SPSS 2100, 2500, 3610, 3620, 3840, 3990;
2. Two of the following: SPSS 3810, 3820, 3830.

### Turfgrass Science Concentration

Students in this concentration must complete the following courses:

1. SPSS 1100, 1115, 3150, 3620, 3990;
2. Three of the following: SPSS 3810, 3820, 3830, 3840;
3. One of the following: SPSS 2430, 3410, 3550.

Students successfully completing these courses will have met their general education exit requirements for information literacy.

### Double Major Option

Students may elect to complete requirements for two major fields of study offered by the College of Agriculture, Health and Natural Resources. A student selecting this option must submit a Double Major Declaration indicating primary and secondary majors. This declaration must include a tentative plan of study and requires approval by the advisors and department heads for both respective major areas of study and the Associate Dean. The approved declaration will be submitted to the Degree Auditor. The student's final plan of study will include a double major attachment to verify that the requirements have been met for both the primary and secondary majors. The transcript will identify both majors.

**Primary Major.** Students must meet all requirements as listed under “Requirements for a Major” (36 credit group) and all individual major requirements as listed above.

**Secondary Major.** Students must meet all individual major requirements as listed above and successfully complete additional course work numbered 2000 or above *not* used as part of the 36 credit group for the primary major. This group of courses must:

1. total at least 24 credits
2. be numbered 2000 or above
3. be approved by student's advisor and department head
4. be taken at the University of Connecticut
5. include at least 15 credits of College of Agriculture, Health and Natural Resources courses
6. average at least a 2.0 Grade Point Average
7. not include more than six credits of Independent Study and Internship
8. not be taken on Pass/Fail
9. not include more than six credits of S/U coursework

### Allied Health Sciences Professional Majors

The Dietetics, Diagnostic Genetic Sciences and Medical Laboratory Sciences majors are professional majors in the Department of Allied Health Sciences. For program descriptions, please refer to the program listed alphabetically under the College of Agriculture, Health and Natural Resources. General admission and program information is described in this section.

Dietetics, Diagnostic Genetic Sciences, and Medical Laboratory Sciences are competitive junior/senior programs with additional admission requirements, certifications, and health documentation as listed below. Please contact the department for questions and further information on requirements that may vary for each program.

The admission requirements and mandatory documentation and certifications listed below are *only* required of students admitted to the Dietetics, Diagnostic Genetic Sciences and Medical Laboratory Sciences majors. No other students need to complete this documentation unless required to do so as part of an optional internship course.

### Admission - Dietetics, Diagnostic Genetic Sciences, or Medical Laboratory Sciences

Admission for the Professional majors is competitive. The Professional majors in the Department of Allied Health Sciences are junior/senior

programs. Students apply to their major(s) of choice in the spring of their sophomore year. To apply, students must have earned a minimum of 60 credits, by time of matriculation, completed all University General Education requirements, except the one W skill course within the major, and satisfied the prerequisite science courses of the major of application. Students are advised to complete all application procedures as early as possible in their fourth semester, but no later than February 1 annually. Admission is for the fall semester.

**First-Year Student Admission:** First-Year Students are not admitted directly into the professional majors. Students may elect to complete admission requirements and university general education as an Allied Health Sciences major or choose another first-year admit major at the university.

**Guaranteed Admission Policy.** Although first-year students are not admitted directly into the professional majors, the Department of Allied Health Sciences has a Guaranteed Admission Offer. This offer provides first-year students with direct admission in the junior year to the professional major of their choice if the student fulfills the criteria described under each major below. The Guaranteed Admission Offer is made to provide students with a clear and supportive environment in which to complete admission prerequisites and achieve their academic goals in the Department of Allied Health Sciences.

In order to qualify for Guaranteed Admission to the Professional majors in Diagnostic Genetic Sciences, Dietetics, or Medical Laboratory Sciences a student must: (1) have entered the University as a first-year student; (2) apply to the major within two years of their first-year student admission; (3) complete three successive semesters of full time study of required course work at the University of Connecticut; (4) earn an Overall Grade Point Average of a minimum of a 3.2 for Diagnostic Genetic Sciences or must earn an Overall Grade Point Average of a minimum of a 3.0 for Dietetics, or Medical Laboratory Sciences, and (5) meet all Admission Requirements and file a Department of Allied Health Sciences Application by the deadline. Students meeting all of these criteria are guaranteed admission to the major.

University of Connecticut students who do not meet the Guaranteed Admission Offer will be reviewed competitively on a space available basis. Transfer Applicants to the professional majors will be reviewed on a space available basis once matriculated University of Connecticut students have been reviewed and offers of admission have been confirmed.

**Transfer Admission.** University transfer admission requires a minimum 2.7 GPA even though professional program admission requires a minimum 2.2 GPA. Transfer students must first be admissible to the University before an offer of admission can be extended by the Department of Allied Health Science. Transfer students may require an additional year to complete requirements depending on how their prior coursework transfers and course availability at time of registration. Students are encouraged to take prerequisites at the University of Connecticut to expedite admission to a professional program.

#### **Additional Clinical Placement Requirements**

Students in each of the Professional Majors of Diagnostic Genetic Sciences, Dietetics and Medical Laboratory Sciences must complete all required clinical experiences. Failure to complete all required clinical experiences will prevent graduation from the Professional Major.

All clinical experiences must be completed at a Program approved facility. Each facility has its own requirements that must be met before accepting a student for clinical placement. The student is responsible for meeting the facility's requirements. The Programs are not responsible for securing clinical placements for students who are unable to a clinical facility's placement requirements.

Common clinical facility requirements include, but are not limited to, the following:

**Successfully completing a background screening.** Background screenings may include checking state and federal criminal records and sex offender registries. If the background screening shows a criminal record or listing as a sex offender, the student may not be able to secure a clinical placement.

**Successfully passing drug screenings.** Drug screenings may occur at one or more times during the program. If the drug screening test is positive, the student may not be able to secure a clinical placement or may be removed from a clinical placement. This includes, but is not limited to, prescribed medical marijuana or opiates.

**Demonstration of immunization (i.e. tuberculosis, measles, varicella, hepatitis B and influenza) and physical examination.** A record of previous immunization is not sufficient to fulfill these requirements. Students unable to demonstrate, through written documentation, being current with immunizations may not be able to secure a clinical placement. Additionally a physical examination is required. Titers and physical examination may be done through the student's personal physician or the University's student health service.

**Certification in first aid and cardiopulmonary resuscitation (CPR for health care providers) (for Dietetics and some DGS and MLS students).** Students must maintain certification throughout enrollment in clinical experiences. Students unable to demonstrate, through written documentation, being certified in CPR and first aid may not be able to secure a clinical placement.

**Clinical education certification.** The Department of Allied Health Sciences will provide annual mandatory educational sessions to students to be in compliance with both the OSHA Bloodborne Pathogen Standards and are knowledgeable of the requirements for compliance with the Health Insurance Portability and Accountability Act (HIPAA). Students who fail to provide written documentation of meeting both of the above OSHA and HIPAA requirements will not be allowed in the clinical setting.

**Medicare exclusion waiver.** Students who fail to provide written documentation of the Medicare Exclusion Waiver will not be allowed in the clinical setting.

The student will be responsible for any and all expenses and fees associated with fulfilling the background screening, drug screening, immunization and physical examination, and certification in CPR and first aid requirements.

**Fees and Expenses.** Students can expect fees to approximate those of other University students. The professional majors and internship students have added expenses for texts, uniforms and/or clinical travel. Students on clinical placement or doing an internship as part of their major are responsible for all expenses associated with the clinical/internship. Students are responsible for their own transportation to the clinical agencies/internship sites. They should allow for transportation expenses, which could include parking fees, cost of gasoline and cost of air travel/bus/train where necessary. Students are required to pay full fees and tuition during off-campus clinical affiliations and internships. During periods spent full-time in the affiliated areas off-campus, if applicable it is the responsibility of the students to find living quarters and to provide their own maintenance.

**Insurance.** It is mandatory that students in the Department of Allied Health Sciences' Professional majors carry comprehensive health insurance, either privately or through the University. Additionally, all students in the professional majors or relevant internships are required to carry specific professional liability (malpractice) insurance under the blanket University policy. Students will automatically be billed for this on the University fee bill.

#### **Pre-Physical Therapy, Pre-Medical, and other Health Related Pre-professional Programs**

Students preparing for professional careers in physical therapy, human medicine, dentistry, physician's assistant and other post-baccalaureate health programs may major in Allied Health Sciences, Kinesiology, Nutritional Sciences, or Pathobiology, as well as many other science-based majors throughout the University. Pre-professional programs in the College of Agriculture, Health and Natural Resources are offered as structured options within majors, rather than as official, stand-alone majors. This allows students to consider multiple career goals without compromising their eligibility for admission into competitive professional programs. Physical Therapy at the University of Connecticut is offered at the graduate level. (Consult the Graduate Catalog for more information regarding admission requirements for the University of Connecticut's Doctorate in Physical Therapy Program).

**Pre-Veterinary Medicine.** Students aspiring to become veterinarians generally major in either Animal Science or Pathobiology at the University of Connecticut. Animal Science includes the study of animal genetics, physiology, nutrition, medicine, products, and behavior. Pathobiology is the study of normal and abnormal biological processes in animals, including courses in anatomy, physiology, diseases, histology, virology, and microbiology. In both majors, the structured curriculum for pre-

veterinary students includes courses required for veterinary college admission. Knowledgeable advisors, professional experience, networking opportunities, and – of course – students’ success in rigorous course requirements have resulted in a great track record for UConn graduates being admitted to veterinary schools and colleges.

**Honors Programs.** University honors programs are available to qualified students in the College. Please refer to the section of this *Catalog* designated “Honors Programs” for further information.

**Exemptions and Substitutions.** Students requesting an exemption from any University and/or College requirement, or a substitution for a course or requirement, should consult their advisors. Such exemptions or substitutions must be approved by the Department Head and the Associate Dean of the College and may also require approval from the Provost’s Office.

**Field Trips and Transportation Costs.** Many courses require off-campus field trips. Students should budget money for participation.

**Graduate Programs.** Most departments provide graduate programs for students interested in greater specialization beyond the baccalaureate. The study may lead to a Master of Science or Doctor of Philosophy degree. Students planning for a graduate program should secure a comprehensive background in the basic sciences.

# School of Business

John Elliott, Ph.D., *Dean*

Nora Madjar, Ph.D., *Associate Dean*

Undergraduate education in business is designed to impart a broad base of general knowledge, within which students pursue additional knowledge to become exceptional managerial and business leaders. The curricula seek to expand capacities, perspectives, and skills of students who wish direct preparation for careers in either business firms or the public service.

In addition to the business programs leading to the Bachelor of Science, a Management and Engineering for Manufacturing bachelor's degree program is offered jointly with the School of Engineering and is described at the end of the list of business majors in this section of the *Catalog*.

## Credit Limitation Policy for Non-Business Majors

Students not admitted to a School of Business major are limited to enrolling in no more than 18 credits of 3000 and 4000 level coursework offered by the School of Business. The 18 credit limit applies to all 3000 and 4000 level Business coursework in ACCT, BADM, BUSN, BLAW, FNCE, HCMI, MEM, MENT, MKTG, and OPIM, with the exception of the following course numbers in any department: 3882, 3892, 4881, 4891, 4882, 4892, 4893, and 4899. Coursework at the 1000 and 2000-level are not counted toward the 18-credit limit.

## Business Minor Limitation Policy

Minors in business disciplines are described in the Minors section. Students may earn only one minor that includes coursework in a business discipline at the 3000- or 4000-level. (Coursework in a business discipline is defined as any course offered using subject code ACCT, BADM, BUSN, BLAW, FNCE, HCMI, MEM, MENT/MGMT, MKTG, or OPIM.) A student may earn a second minor offered by the School of Business only if it does not include School of Business coursework at the 3000- or 4000-level. Thus, an additional minor may be earned if it is offered jointly by the School of Business and another School or College, and all coursework used to satisfy that second minor is from non-Business coursework. The Personal Brand Entrepreneurship minor can be earned in combination with any other School of Business minor(s) because it does not require any coursework at the 3000- or 4000-level.

Minors open to some business majors include: Accounting; Analytics; Digital Marketing & Analytics; Entrepreneurship; Entrepreneurship and Technology Innovation; Healthcare Management and Insurance Studies; Information Assurance; Management; Personal Brand Entrepreneurship; Professional Sales Leadership; Real Estate; and Social Responsibility and Impact in Business. Please see the minor description to know which minors are restricted for particular majors. Minors open to non-business majors include: Accounting; Analytics; Business Fundamentals; Construction Engineering and Management; Digital Marketing & Analytics; Engineering Management; Entrepreneurship; Entrepreneurship and Technology Innovation; Healthcare Management and Insurance Studies; Information Assurance; Personal Brand Entrepreneurship; Professional Sales Leadership; Real Estate; Social Responsibility and Impact in Business; Software Design; and Supply Chain. Please see minor descriptions to know which minors are restricted to particular majors.

**Regional Plan.** In conformity with plans approved by the Board of Trustees of the six New England land grant universities for regionalization of certain fields of specialized education, three majors in the School of Business at the University of Connecticut are identified as regional programs. The Real Estate and Urban Economic Studies major is open to students from all the New England states; the Health Care Management major is open to students from all the New England states except New Hampshire; the Management and Engineering for Manufacturing major is open to students from all the New England states except Vermont. To implement this policy, first priority in admission to the School is given to qualified applicants from those New England states that are members of the compact. Regional students will pay a reduced tuition. Consult the website [www.nebhe.org](http://www.nebhe.org) for information.

**Accreditation.** The School of Business is fully accredited by the AACSB International - The Association to Advance Collegiate Schools of Business, a specialized accrediting body recognized by the Council on Postsecondary Accreditation and the U.S. Department of Education.

## Admission and Degree Requirements

### Admission Requirements

See Admission to the University. The School of Business admits qualified students into a major in the School directly as first-year students. Students not admitted into the School of Business at the time of entry to the University may apply for admission to a major through School of Business procedures. Admission is competitive. Decisions will be based on several criteria including the applicant's academic record, courses completed, and space availability at the campus to which they are applying.

Current School of Business students may request a change to another business major offered at their campus by submitting an application to the School of Business Undergraduate Programs Office and meeting the admission criteria for that major. For the 2023-2024 academic year, only first year student applications will be accepted to the Financial Technology major. Individuals who have already completed a bachelor's degree should contact the M.B.A., the M.S. in Accounting, the M.S. in Business Analytics and Project Management, the M.S. in Financial Risk Management, or the M.S. in Human Resource Management programs to consider a graduate degree rather than another undergraduate degree.

### Transfer Students

Students at other post-secondary institutions, who are not currently attending or who have never attended the University as an undergraduate degree seeking student, must file a separate University application with the Transfer Admissions Office, 2131 Hillside Road, Unit 3088, Storrs, CT 06269-3088. Students who have completed a minimum of 40 credits may submit an application. Students wishing to transfer directly into the School of Business must have made substantial progress toward completing first year-sophomore, 1000-2000 level requirements; particularly courses which are prerequisites for Common Body of Knowledge/Entry Level Business courses (ENGL 1007 or 1010 or 1011; ACCT 2001; MATH 1070Q and 1071Q; ECON 1201 and 1202, or 1200; STAT 1000Q or 1100Q) and must successfully complete these courses by the end of the term in which they complete 54 credits (or the term after they are admitted to the School of Business). Number of credits earned, grade point average in all courses taken, and space availability are key considerations in admissions decisions.

Transfer applicants not accepted directly into the School of Business at the time of entry to the University may apply for admission following the Current UConn Students procedures outlined below once they meet the minimum criteria. For transfer students applying in the first semester at UConn, decisions are made on a space-available basis after completion of one full semester at the University.

### Current UConn Students

Current University of Connecticut non-business undergraduate students who are seeking admission to business majors, and current business students seeking admission to a business major not at their campus, must submit an application. Students seeking admission to School of Business majors have met the following minimum criteria at the time of application:

- Earned at least 40 credits (as represented on a University of Connecticut transcript);
- Successfully completed, or be currently enrolled at the University of Connecticut in, ENGL 1007 or 1010 or 1011; ACCT 2001; MATH 1070Q and 1071Q; ECON 1201 and 1202, or 1200; STAT 1000Q or 1100Q, or their approved equivalents (pass/fail courses do not meet minimum requirements);
- Met all other School of Business Scholastic Standing Requirements. If an applicant has previously placed any business course on pass/fail, then the earned letter grade for those courses will be considered in the application process. If admitted, the course will be returned to letter graded status for applications to be reviewed.
- Made substantial progress toward completing first year-sophomore, 1000-2000 level requirements;
- Be a currently enrolled undergraduate student at the University of Connecticut.

Number of credits earned, grade point average in all courses taken, grades earned in prerequisite and business courses, and space availability at the campus where a student is applying are key considerations in admission decisions. Students who do not successfully complete the semester of



application will have their admission rescinded, as outlined in the School of Business Scholastic Standing Requirements.

### **Campus Designation for Business Majors Policy**

Students are guaranteed access to business courses at the campus where their major is offered and the campus for which they were admitted into the School of Business. Upper division requirements for all business majors are designed to be accomplished in four semesters on the campus where the major is offered. Students are not permitted to enroll in business courses at other campuses without Dean's Designee approval. Students admitted as Undecided Business majors by campus can only change into majors offered at their campus of admission and must do so by the end of their third term. Generally, students seeking to change to a business major offered at another campus may participate in the internal admissions process at the start of each academic semester. Exceptions to these policies are limited and may be approved on a case-by-case basis by the Dean's Designee.

Overview of University of Connecticut, School of Business major offerings by Campus:

- Hartford campus majors include Business Data Analytics, Financial Management, and Marketing Management. Students admitted into Hartford-Business-Undecided must declare into a major offered at Hartford by the end of the student's third semester at UConn.
- Stamford campus majors include Business Data Analytics, Financial Management, Financial Technology, and Marketing Management. Students admitted into Stamford-Business-Undecided must declare into a major offered at Stamford by the end of the student's third semester at UConn.
- Storrs campus majors include Accounting, Analytics and Information Management, Finance, Health Care Management, Management, , Management and Engineering for Manufacturing (offered jointly with the School of Engineering), Marketing, and Real Estate and Urban Economic Studies majors. Students admitted into Storrs-Business-Undecided must declare into a major offered at Storrs by the end of the student's third semester at UConn.
- Waterbury campus majors include Business Administration and Business Data Analytics. Students admitted into Waterbury-Business-Undecided must declare into a major offered at Waterbury by the end of the student's third semester at UConn.

### **Scholastic Standing Requirements**

Students admitted to the School of Business will be reviewed at the end of each Fall and Spring semester (defined as "term" below) to determine if their academic achievement meets the requirements as established by the faculty and outlined below. Newly matriculated college students, transfer students from outside of the University of Connecticut, and current University of Connecticut students conditionally admitted to the School of Business have additional GPA standards as outlined below. Students who reach the credit calculations at the end of a summer or intersession term will be held to that GPA requirement at the conclusion of the semester immediately following. For students who reach a different GPA requirement by the end of that semester, they will be held to the higher GPA of the two requirements. All credits used to determine when a student is reviewed by credit standing as described below for a particular grade point average include course work at the University of Connecticut and course work accepted by the University of Connecticut as reflected on a student's University of Connecticut transcript. Students who fail to maintain the minimum grade point average in any of these areas or fail to complete specified courses as noted below are subject to dismissal from the School of Business.

### **Minimum School of Business Requirements for all School of Business Students**

- Students must always maintain a minimum 2.000 term grade point average.
- Students must always maintain a minimum 2.000 cumulative Business grade point average which includes all School of Business courses numbered at the 3000 level or higher plus ACCT 2001 and ACCT 2101/BADM 2101.
- Students must always maintain a minimum 2.500 cumulative grade point average, except where higher standards are required per the Additional Standards outlined below.

- Students must show substantial progress toward meeting the first year-sophomore course requirements, and must successfully complete those courses (or equivalents) that are prerequisites for the 3000/4000-level business courses (ACCT 2001; ECON 1201 and 1202, or 1200; ENGL 1007 or 1010 or 1011; MATH 1070Q and 1071Q; STAT 1000Q or 1100Q) by the end of their fourth semester.

### **Newly Matriculated College Students – Additional Standards**

In addition to the Minimum School of Business Requirements, all newly matriculated college students must meet the following GPA requirements beginning at the end of their second term at the University of Connecticut:

- Students must earn a 2.790 CGPA in any semester in which a student achieves less than 40 cumulative credits.
- Students must earn a 2.930 CGPA in any semester in which as student achieves 40 or more cumulative credits (but less than 54).
- Students must earn a 3.000 CGPA in the semester in which a student achieves 54 or more credits.

### **Transfer Students from Outside of University of Connecticut – Additional Standards**

In addition to the Minimum School of Business Requirements, all students who transfer directly into the School of Business from an outside higher education institution must meet the following GPA requirements beginning at the end of their first term at the University of Connecticut:

- Students must earn a 2.790 CGPA in any semester in which a student achieves less than 40 cumulative credits.
- Students must earn a 2.930 CGPA in any semester in which as student achieves 40 or more cumulative credits (but less than 54).
- Students must earn 3.000 CGPA in the semester in which a student achieves 54 or more credits.

### **Current University of Connecticut Students Conditionally Accepted – Additional Standards**

In addition to the Minimum School of Business Requirements, all current University of Connecticut students conditionally accepted to the School of Business on the basis of successful completion of courses for which they have indicated they were registered at the time of application must pass all of those courses by the end of that term. At the end of that term, conditionally admitted students must also earn a semester, cumulative, and business grade point average of at least a 3.000, or be subject to having their acceptance rescinded.

### **Bachelor's Degree Requirements**

Upon recommendation of the faculty, the degree of Bachelor of Science is awarded by vote of the Board of Trustees to students who have met the following requirements: (1) Earned a total of 120 credits; (2) earned at least a 2.0 GPA; (3) earned at least a 2.0 grade point average for all credits in School of Business courses numbered 2000-level and above for which they have been registered; (4) earned at least 50 percent of the business credit hours required for the business degree while a student at the University of Connecticut; (5) earned at least 24 credits in 3000-4000 level courses including MENT 4900 or 4902 and a required business course satisfying the "writing in the major" general education requirement in the School of Business at the University of Connecticut, with no more than three of these 24 credits in independent study courses and no more than three of these 24 credits in field study internship courses, and no credits from UConn Education Abroad; (6) achieved a cumulative 2.0 grade point average for the total of all departmental major courses for which they have been registered at the University of Connecticut, excluding grades and credits for independent studies and internships; (7) met all the requirements of the School of Business. See specific Bachelor of Science requirements including courses which must be taken in residence, in each major. The Management and Engineering for Manufacturing program, jointly offered by the School of Business and the School of Engineering, has its own specific requirements. Please refer to that section.

The degree in business requires a minimum of 120 degree credits of coursework. At least 60 credits presented for the degree must be composed of courses other than business, including general education and elective coursework. Any non-business course that is cross-listed with a business course is not permitted to count towards the 60-credit non-business requirement. Coursework in or cross-listed with ACCT, BADM, BUSN, BLAW, FNCE, HCMI, MEM, MENT, MGMT, MKTG, and OPIM is

restricted. Those intending to major in Accounting may face additional restrictions on non-business courses, particularly with respect to Economics courses, and should consult with the Accounting Department for additional information.

**EUROBIZ.** The School of Business and the College of Liberal Arts and Sciences offer a four to five-year, dual-degree EUROBIZ program leading to degrees in Business Administration in any business major and a B.A. in German. The program includes language courses specially designed to include business content, business courses taught partly in German, a study abroad semester in Germany, and a four- to six-month internship in a company in Germany.

This program requires the completion of all requirements in both majors, including a minimum of 138 credits. Students must be admitted to the School of Business to participate in this program and maintain the academic standards required.

**Exemption and Substitution.** Students who desire to be excused from course requirements, or to substitute other courses for those prescribed, should consult the Undergraduate Programs Office. Such exemptions or substitutions must be approved by the dean of the school.

**Transfer Credits.** The transfer of credits for 3000-4000 level courses offered by the School of Business on the basis of work done at schools that do not offer the baccalaureate or schools not accredited by the AACSB International, with the exception of specific agreements with the Connecticut Community Colleges, is permitted only by validation procedures established by academic departments within the School. Typical validation procedures may include successful completion ("C" or better) of additional prescribed course work at the University of Connecticut or the completion of a departmental examination. Students must receive departmental approval before beginning any validation procedures.

**Grades of Pass/Fail or Audit.** In the School of Business, students may not elect the Pass/Fail or Audit option for any course used to meet the general education distribution requirements, the course requirements for a major, or any course taken within any of the departments of the School.

**Plan of Study.** Major requirements are outlined in the plan of study current at the time of the student's entry or readmission into the School of Business, whichever is later.

## Curricula in Business

### I. University General Education Requirements

The University has adopted General Education requirements in a variety of curricula areas that must be satisfied as part of every bachelor's degree program. These requirements are listed in the General Education Requirements section of this *Catalog*.

### II. Business Critical Required Courses

Business students must complete the following requirements in order to prepare for professional studies that will begin in the junior year. Students should note that many of these courses also fulfill University General Education requirements.

**Note:** Please refer to the Curricula in Management and Engineering for Manufacturing listed later in this section.

ACCT 2001; ECON 1200 or both 1201 and 1202; ENGL 1007 or 1010 or 1011 or ENGL 2011; MATH 1070Q and 1071Q; or MATH 1131Q and 1132Q; or MATH 1131Q and 1070Q; or MATH 1125Q and 1126Q and 1070Q; or MATH 1125Q and 1126Q and 1132Q; or MATH 1151Q and 1152Q; or MATH 1151Q and 1132Q; or MATH 1151Q and 1070Q; or MATH 2141Q and 2142Q; or MATH 2141Q and 1152Q; or MATH 2141Q and 1132Q; or MATH 2141Q and 1070Q; STAT 1000Q or 1100Q.

**Foreign Language:** All students must have (1) passed the third year level course in high school in a single foreign language, ancient or modern; or (2) two units/levels of a single foreign language in high school PLUS an added year of college courses at a more advanced level in a single foreign language; or (3) completion of two years (four semesters) through the college Intermediate Level.

### III. Business Required Courses

Complete at least one course from each of the following four categories:

**Business Arts and Humanities:** ECON 2102/W<sup>1</sup>; HIST 1201, 1400, 1501/W<sup>2</sup>, 1502/W<sup>2</sup>, 1600/LLAS 1190, 1800, 3705.

**Business Philosophy:** PHIL 1101, 1102, 1103, 1104, 1105, 1106, 1107, 1175.

**Business Communication:** COMM 1000 or 1100<sup>3</sup>.

**Business Psychology:** PSYC 1100.

**Business International and Diversity and Multiculturalism:** Complete at least one course from the "International" category and one more course from either the "International" or "Diversity and Multiculturalism" category.

**International:** ANTH 1000/W; ANTH/HRTS 3153W; CLCS 2201; GEOG 1700, 2000; HRTS 1007; NRE 2600; PHIL 1106; POLS 1202/W<sup>4</sup>, 1207; WGSS 2124.

**Diversity and Multiculturalism:** ARE/ANTH 3152; AFRA/POLS 3642; AMST 1201/ENGL. 1201/HIST 1503; INTD 2245; PHIL 1107; SOCI 1501/W.

### Additional Requirements

A minimum of 60 credits used toward graduation requirements must be comprised of non-business courses, including general education course work. COMM 1100 is recommended for Accounting majors.

**Common Body of Knowledge.** The following Common Body of Knowledge courses are prescribed for all students in this school and should be completed in the junior year.

ACCT 2101 (to be taken no later than fifth semester); BLAW 3175; FNCE 3101; MENT 3101; BUSN 3004W (BUSN 3003W for Business Administration, Business Data Analytics, Financial Management, Financial Technology, and Marketing Management majors only), MKTG 3101; OPIM 3103, 3104.

**Capstone Requirement.** All students are required to complete a capstone course sequence. Business Administration, Business Data Analytics, Financial Management, Financial Technology, and Marketing Management majors must take MENT 4902. All other majors must take MENT 4900. All majors will complete a course in career development. Accounting majors take ACCT 3005. Financial Technology majors take BUSN 3006. All other majors take BUSN 3005.

**Competency Requirements.** All students majoring in Accounting, Analytics and Information Management, Business Administration, Business Data Analytics, Marketing Management, Finance, Financial Management, Financial Technology, Health Care Management, Management, Marketing, and Real Estate/Urban Economics must also fulfill the requirements in the two following competency categories.

**Information Literacy.** The core courses in the School will require students to acquire information about markets and companies. This empirical research is fundamental to sound decision making in a business career. This advanced level of information literacy will specifically be included in FNCE 3101, MKTG 3101, OPIM 3103, and MENT 4900 or 4902, which are all required.

**Writing in the Major.** Students are required to complete BUSN 3004W or 3003W depending on major requirements and one elective "W" course.

Students majoring in Management and Engineering for Manufacturing should consult the competency information listed with the other major requirements.

- 1 Students choosing ECON 2102/W must take care to meet the University requirement of completing Content Areas 1, 2, and 3 courses from six different departments.
- 2 HIST 1501/W or 1502/W recommended for students who have not completed high school level courses in American Government and American History.
- 3 COMM 1100 does not fulfill Content Area 2, but is recommended for accounting majors. COMM 1000 is recommended for students interested in pursuing a COMM minor.
- 4 POLS 1202/W recommended for students who have not completed a High School level course in American Government.

## Accounting

The undergraduate (four year) program consists of the Bachelor of Science (BS) degree in Business with a major in Accounting. The BS degree combines a general background in business with an appropriate number of Junior-Senior accounting and business law courses to prepare students for successful entry into an accounting career.

**Bachelor of Science Requirements.** Accounting majors are required to achieve a cumulative 2.0 grade point average for the total of all Accounting (ACCT) courses for which they have been registered at the University of Connecticut, excluding grades and credits for independent studies and internships.

**Residence Requirement.** In addition to the School of Business residence requirements for all majors, an Accounting major must complete ACCT 3005 and ACCT/BADM 3201, 3202, 3260, and 4243 in residence at the University of Connecticut. Education Abroad courses may not be used to meet this requirement.

**Required Major Courses.** In addition to the courses outlined in the Common Body of Knowledge and Capstone Requirements, Accounting majors must take: ACCT 3005, 3201, 3202, 3221, 3260, 4203, 4243; BLAW 3277.

**Professional Certification.** Students majoring in accounting may choose a curriculum that prepares them for professional examinations which are part of the certification procedures that lead to designation as a Certified Public Accountant (CPA) or Certified Management Accountant (CMA). Students preparing for the CPA examination should also apply for the MS in Accounting Program. The MS in Accounting is a 30-credit program designed to meet the 150-hour education requirement to earn the CPA designation in Connecticut. Students preparing for the CMA examination should consult with their accounting advisor regarding the appropriate elective courses to take.

**Internships in Accounting.** Many students who major in accounting participate in an internship.

Internship opportunities in our program are available in the spring and summer, generally based on when the student will graduate. During the period of internship, the students are employed and supervised by firms and participate in various types of accounting or auditing work.

Participation in these programs usually occurs during the sixth or seventh semester or the summer between the student's junior and senior year. This experience contributes to the development and growth of the students who are chosen for the work.

## Analytics and Information Management

### *Formerly offered as Management Information Systems*

The objective of this major is to train students in the development and use of business information systems and analytics. Graduates will be strong in the traditional functional areas of business (accounting, marketing, finance, and management) and will have a solid understanding of the development of business information systems and analytics.

#### **Bachelor of Science Requirements**

Analytics and Information Management majors are required to achieve a cumulative 2.0 grade point average for the total of all Operations and Information Management (OPIM) courses for which they have been registered at the University of Connecticut, excluding grades and credits for independent studies and internships.

#### **Residence Requirement**

In addition to the School of Business residence requirements for all majors, an Analytics and Information Management major must complete OPIM 3203, 3204, 3207, 3211 in residence at the University of Connecticut. Education Abroad courses may not be used to meet this requirement.

#### **Required Major Courses**

In addition to the courses outlined in the Common Body of Knowledge and Capstone Requirements, Analytics and Information Management majors must take: OPIM 3203, 3204, 3207, and 3211; choose one three-credit additional OPIM 3000+ level course.

#### **Optional Concentrations**

Additionally, Analytics and Information Management majors may complete one concentration in Business Intelligence, Application Development, IT Security, or Supply Chain Management.

To complete a concentration in Business Intelligence, a student must receive a grade of "C" or better in two of followings courses: OPIM 3301, 3302, 5603, or 5604.

To complete a concentration in Application Development, a student must receive a grade of "C" or better in two of followings courses: OPIM 3401, 3402, or 3403.

To complete a concentration in IT Security, a student must receive a grade of "C" or better in the two followings courses: OPIM 3701 and 3702.

To complete a concentration in Supply Chain Management, a student must receive a grade of "C" or better in two of followings courses: OPIM 3601, 3602, 5111, 5112, or 5113.

No Analytics and Information Management major may count more than 27 OPIM credits, with the exception that Honors students may take up to 30 OPIM credits in the major.

#### **Internships in Analytics and Information Management**

Many students who major in Analytics and Information Management take part in an internship, usually during the summer following their junior year. During the internship, the students work in various organizations and learn to develop information systems that aid business processes and work with various technologies. This experience provides them with real world knowledge of applications of information systems in business settings, and contributes to their development and growth in their chosen field. The credits from the field study internship (OPIM 4881) may be used to fulfill the one three-credit additional OPIM 3000+ level course requirement.

## Business Administration

The Bachelor of Science in Business Administration (BA) major is only available to students at the Waterbury regional campus. The objective of the BA major is to provide a generalized interdisciplinary business degree. An advisor approved focus is also possible based on the availability of courses.

**Bachelor of Science Requirements.** BA majors are required to achieve a cumulative 2.0 grade point average in all business courses for which they have been registered at the University of Connecticut, excluding grades and credits for independent studies and field study internships.

**Residence Requirement.** Business Administration majors must complete the School of Business residence requirements for all majors. These include earning at least 50 percent of the business credit hours required for the business degree while a student at the University of Connecticut and earning at least 24 credits in 3000-4000 level courses including MENT 4902 and BUSN 3003W, with no more than three of these 24 credits in independent study courses and no more than three of these 24 credits in field study internship courses. No credits from UConn Education Abroad may fulfill this requirement.

**Required Major Courses.** In addition to the courses outlined in the Common Body of Knowledge and Capstone Requirements, Business Administration majors must take five three-credit 3000- or 4000-level School of Business courses.

## Business Data Analytics

The Bachelor of Science in Business Data Analytics (BDA) major is only open to students at the Hartford, Stamford, and Waterbury regional campuses. The objective of the BDA major is to provide a business degree with a special emphasis in the application of information technology to data analytics. An advisor approved focus is also possible based on the availability of courses.

**Bachelor of Science Requirements.** BDA majors are required to achieve a cumulative 2.0 grade point average for the total of all Operations and Information Management (OPIM) courses for which they have been registered at the University of Connecticut, excluding grades and credits for independent studies and field study internships.

**Residence Requirement.** In addition to the School of Business residence requirements for all majors, a BDA major must complete OPIM 3505, 3510, and 3511 in residence at the University of Connecticut. Education Abroad courses may not be used to meet this requirement. For students

admitted to graduate-level courses, OPIM 5604 completed in residence at the University of Connecticut may be used in place of OPIM 3511.

**Required Major Courses.** In addition to the courses outlined in the Common Body of Knowledge and Capstone Requirements, BDA majors must take: OPIM 3505, 3510, 3511 and three three-credit 3000-4000 level School of Business electives. For students admitted to graduate-level courses, OPIM 5604 may be used in place of OPIM 3511, but credit is not given for both to satisfy the major requirements; OPIM 5270 and/or 5603 may be used to fulfill elective credit. A maximum of six credits may be used from graduate level courses.

## Finance

The Finance major prepares students for careers in the financial services industry and in the finance areas of companies. The major requirements permit students to tailor a curriculum to suit individual interests in finance, health care management, and real estate.

**Bachelor of Science Requirements.** Finance majors are required to achieve a cumulative 2.0 grade point average for the total of all Finance (FNCE) and Healthcare Management and Insurance Studies (HCMI) courses for which they have been registered at the University of Connecticut, excluding grades and credits for independent studies and internships.

**Residence Requirement.** In addition to the School of Business residence requirements for all majors, a Finance major must complete 12 of the 18 credits (four of the six courses) used to satisfy required major courses below in residence at the University of Connecticut. Education Abroad courses may not be used to meet this requirement and may not be used to meet the optional concentration requirement.

**Required Major Courses.** In addition to the courses outlined in the Common Body of Knowledge and Capstone Requirements, Finance majors must take 18 additional credits: FNCE 3302, 4302, 4304, and 4305; one additional three-credit Focus course from FNCE 4209, 4301, 4303, 4306, 4307, 4308, 4309, 4430; and one additional three-credit course from either the Focus course list or from FNCE 3332, 3333, 4319, 4893, 4895; HCMI 3221, 3240.

**Optional Concentrations.** Additionally, Finance majors may complete one concentration in Corporate Finance, Valuation and Portfolio Management, or Quantitative Finance. To complete a concentration in Corporate Finance, a student must complete FNCE 4209 and 4430. To complete a concentration in Valuation and Portfolio Management, a student must complete FNCE 4301 and 4303. To complete a concentration in Quantitative Finance, a student must complete FNCE 4308 and 4309. Students must receive a grade of "C" or better in both required courses to complete a concentration. Education Abroad courses may not be used to meet the concentration requirement.

## Financial Management

The Bachelor of Science in Financial Management (FM) major provides a business degree with a focus on professional financial services practice. The curriculum is designed to prepare students to take the first level of the Certified Financial Analyst (CFA) exams that lead to the CFA professional designation for finance and investment professionals. This major is only open to students at the Hartford and Stamford campuses.

**Bachelor of Science Requirements.** Financial Management majors are required to achieve a cumulative 2.0 grade point average for the total of all Finance (FNCE) courses for which they have been registered at the University of Connecticut, excluding grades and credits for independent studies and field study internships.

**Residence Requirement.** Financial Management majors must complete the School of Business residence requirements for all majors. Education Abroad courses may not be used to meet this requirement.

**Required Major Courses.** In addition to the courses outlined in the Common Body of Knowledge and Capstone Requirements, Financial Management majors must take: FNCE 3303, 4209, 4302, 4410, and 4440; and choose two 3-credit courses from FNCE 3230, 3715, 4301, 4303, 4305, 4306, 4420, 4430.

## Financial Technology

The objective of this major is to train students in financial technology. Graduates will be strong in the traditional functional areas of business

(accounting, marketing, finance, and management) and will have a solid understanding of the integration of technology and its application in financial services and related industries. This major is only open to students at the Stamford regional campus.

### Bachelor of Science Requirements

Financial Technology majors are required to achieve a cumulative 2.0 grade point average for the total of all Finance (FNCE) and Operations and Information Management (OPIM) courses for which they have been registered at the University of Connecticut, excluding grades and credits for independent studies and internships.

### Residence Requirement

In addition to the School of Business residence requirements for all majors, a Financial Technology major must complete FNCE 3240, 3303, 4230; OPIM 3510, 3511, 3806; and two additional Financial Technology courses in residence at the University of Connecticut. Education Abroad courses may not be used to meet this requirement.

### Required Major Courses

In addition to the courses outlined in the Common Body of Knowledge and Capstone Requirements, Financial Technology majors must take: FNCE 3240, 3303, 4230; OPIM 3510, 3511, 3806; choose two additional three-credit courses from FNCE 4306, 4308, 4319, 5721, OPIM 3402, 3505, 3512, 3702.

### For students admitted to Accelerated M.S. Financial Technology

FNCE 5710 may be used in place of FNCE 3303, and/or FNCE 5711 may be used in place of FNCE 3240, but in either case credit is not given for both to satisfy the major requirements.

### For students admitted to Accelerated M.S. in Business Analytics and Project Management

OPIM 5604 may be used in place of OPIM 3511, and/or OPIM 5270 may be used in place of OPIM 3512, but in either case credit is not given for both to satisfy the major requirements.

## Health Care Management

The objective of the baccalaureate program with a major in Health Care Management is to provide a conceptual and a practical understanding of the health care management field. This academic program has been designated by the New England Board of Higher Education as a New England Regional Student Program. Qualified residents from New England states other than New Hampshire may enroll in the Health Care Management Program at reduced tuition since the major is not offered at other state universities in the region.

**Bachelor of Science Requirements.** Health Care Management majors are required to achieve a cumulative 2.0 grade point average for the total of all Healthcare Management and Insurance Studies (HCMI) and Finance (FNCE) courses for which they have been registered at the University of Connecticut, excluding grades and credits for independent studies and internships.

**Residence Requirement.** Health Care Management majors must complete the School of Business residence requirements for all majors. Education Abroad courses may not be used to meet this requirement.

**Required Major Courses.** In addition to the courses outlined in the Common Body of Knowledge and Capstone Requirements, Health Care Management majors must take an additional 18 credits: HCMI 3221, 3240, 3243, and 4250, plus two additional three-credit courses from HCMI 4225, 4243, 4325, 4326, or 4448.

**Internships in Health Care Management.** Students may schedule an Internship in Health Care Management. Internships are usually done during the summer following the junior year of study. The internship option of the program provides students with the opportunity to obtain experience within an area of health care. Students normally participate in conducting a health care management or insurance project in a health care organization either in Connecticut, another state or another country depending on geographical preference. While students are responsible for securing internship sites, the Programs in Health Care Management may provide guidance in site selection.

## Management

*Effective for the 2022-23 catalog, the MGMT subject code was changed to MENT.*

At the core of the Management major is coursework with an emphasis on leadership, entrepreneurial thinking and strategic vision, three of the most prized assets of any successful business leader. Management majors are prepared to understand the “big picture” rather than focus on highly specialized, often rapidly changing, areas of study. Such preparation is especially crucial for those who see themselves as leaders or who see themselves working in the world of business. Management requires an ability to think and act on one’s own with a confidence that only comes from an ability to see and appreciate what most highly focused specialists cannot.

**Bachelor of Science Requirements.** Management majors are required to achieve a cumulative 2.0 grade point average for the total of all Management (MENT) courses for which they have been registered at the University of Connecticut, excluding grades and credits for independent studies and internships.

**Residence Requirement.** Management majors must complete the School of Business residence requirements for all majors. Education Abroad courses may not be used to meet this requirement.

**Required Major Courses.** Management majors must complete a total of 15 MENT credits (five three-credit MENT courses) and three credits consisting of one 3000/4000-level course in management or business, in addition to the courses outlined in the Common Body of Knowledge and Capstone Requirements. Management majors may concentrate in Entrepreneurship by completing the Entrepreneurship Concentration courses below.

**Entrepreneurship Concentration Courses.** Of the 15 MENT credits (five three-credit MENT courses), required for the Management major, the Entrepreneurship concentration requires two of the five courses to consist of MENT 3234 and 3235.

Students must complete two more three-credit 3000-level or above MENT courses with entrepreneurship content from the following list or a department-approved course with entrepreneurship content. MENT 3741, 3742, 3882, 3982, 4741, 4742, 4292. For more information, contact the Undergraduate Programs Office, School of Business, room 248, undergrad.business@uconn.edu or (860) 486-2315, or the Management Department, School of Business, room 336, mgmt@business.uconn.edu or (860) 486-3638.

## Marketing

The Marketing major provides business students with the analytical tools for the following strategic decisions for the firm: which markets and customers to serve, with which products and services, and how it will compete. Students study the management of customers, distribution channels, products and brands, communications, and pricing and the use of information for marketing decisions.

**Bachelor of Science Requirements.** Marketing majors are required to achieve a cumulative 2.0 grade point average for the total of all Marketing (MKTG) courses for which they have been registered at the University of Connecticut, excluding grades and credits for independent studies and internships. A letter grade of “C” or higher must be achieved in each individual course fulfilling the Digital Marketing & Analytics or Professional Sales Leadership concentrations.

**Residence Requirement.** In addition to the School of Business residence requirements for all majors, a Marketing major must complete MKTG 3208, 3260, and 4362 in residence at the University of Connecticut. Education Abroad courses may not be used to meet this requirement.

**Required Major Courses.** In addition to the courses outlined in the Common Body of Knowledge and Capstone Requirements, Marketing majors must take MKTG 3208, 3260, 4362; and six credits consisting of two 3000-4000 level courses in marketing. A maximum of three (3) credits of MKTG 4881, 4882, or 4899 can be counted toward this requirement.

**Optional Concentrations.** Additionally, marketing majors may complete one concentration in either Digital Marketing & Analytics, Professional Sales Leadership, or Social Responsibility and Impact in Business. To complete a concentration in Digital Marketing & Analytics, a student must complete MKTG 3661, 3665, and one 3000/4000 level MKTG course, receiving a grade of “C” or “S” or better in each course. To complete a

concentration in Professional Sales Leadership, a student must complete MKTG 3452, 3454, and one 3000/4000-level MKTG course, receiving a grade of “C” or “S” or better in each course. To complete a concentration in Social Responsibility and Impact in Business, a student must complete MKTG 3252, 3254, and one 3000/4000 level MKTG course, receiving a grade of “C” or “S” or better in each course.

No Marketing major may count more than 22 3000/4000-level Marketing credits beyond MKTG 3101 toward those credits presented for degree requirements.

**Internships in Marketing.** The Marketing Department offers two for-credit internship programs: Marketing (MKTG 4881) and Professional Sales (MKTG 4882). These internships are designed to provide students with professional experience in the world of marketing and sales, build valuable professional relationships, and open the door for future employment opportunities. Internship courses are offered during summer session, fall semester, and winter intersession, with field work usually completed in the summer before senior year or the winter before the student’s last semester. For more information, visit the Marketing Department website.

## Marketing Management

### *Formerly offered as Digital Marketing & Analytics*

The Marketing Management major equips students with the knowledge and skills to develop and implement marketing strategies. The major consists of a core business base and a set of courses that treat marketing as an integrated part of a firm’s overall strategy. The major provides students with sufficient depth in both the analytical and strategic aspects of marketing to successfully use these tools to meet marketing and firm objectives. The marketing management curriculum is designed to provide School of Business students with a solid grounding in marketing principles, consumer behavior, and marketing research. This major is only open to students at the Hartford and Stamford regional campuses.

**Bachelor of Science Requirements.** Marketing Management majors are required to achieve a cumulative 2.0 grade point average for the total of all Marketing (MKTG) courses for which they have been registered at the University of Connecticut, excluding grades and credits for independent studies and internships.

**Residence Requirement.** In addition to the School of Business residence requirements for all majors, a Marketing Management major must complete the two required Marketing courses, MKTG 3208 and 3260 and one of the three 3-credit required 3000-4000 MKTG electives, in residence at the University of Connecticut. Education Abroad and NSE courses may not be used to meet this requirement.

**Required Major Courses.** In addition to the courses outlined in the Common Body of Knowledge and Capstone Requirements including MKTG 3101, Marketing Management majors must take two required Marketing courses: MKTG 3208 and 3260, and nine credits consisting of three 3000-4000 level courses in marketing.

No Marketing Management major may count more than 22 marketing credits beyond MKTG 3101 toward those credits presented for degree requirements.

Choices of electives should be made in consultation with their advisors based upon the students’ interests and career goals.

**Optional Concentration.** Additionally, Marketing Management majors may complete a concentration in Digital Marketing & Analytics. To complete a concentration in Digital Marketing & Analytics, a student must complete MKTG 3661 and 3665, and one (1) three credit MKTG 3000/4000-level elective, receiving a grade of “C” or better in each course.

### **Internships in Marketing**

The Marketing Department offers a for-credit internship course (MKTG 4881) for Marketing Management majors. Internships are designed to provide students with professional experience in the world of marketing, build valuable professional relationships, and open the door for future employment opportunities. Internship courses are offered during summer session, fall semester, and winter intersession, with field work usually completed in the summer before senior year or the winter before the student’s last semester. For more information, visit the Marketing Department website.

## Real Estate and Urban Economic Studies

The objective of the baccalaureate program with a major in real estate and urban economic studies is to provide both a theoretical foundation and a practical understanding of the field as preparation for a career as a real estate professional. This nationally recognized academic program has been designated by the New England Board of Higher Education as a New England Regional Student Program. This allows qualified residents from other New England states to enroll in the real estate program at reduced tuition since the major is not offered at other state universities in the region.

**Bachelor of Science Requirements.** Real Estate and Urban Economic Studies majors are required to achieve a cumulative 2.0 grade point average for the total of all Finance (FNCE) courses for which they have been registered at the University of Connecticut, excluding grades and credits for independent studies and internships.

**Residence Requirement.** Real Estate majors must complete the School of Business residence requirements for all majors. Education Abroad courses may not be used to meet this requirement.

**Required Major Courses.** In addition to the courses outlined in the Common Body of Knowledge and Capstone Requirements, Real Estate majors must take: FNCE 3230; choose two three-credit Primary courses from FNCE 3332, 3333, 3334, 3335, 3336; BLAW 3274; and two additional three-credit courses from the above list or from: FNCE 3302, 4209, 4304, 4305; ECON 3439; or MKTG 3260.

**Internships in Real Estate.** Students interested in a career in real estate may apply for a summer internship. During the period of the internship, the students are employed and supervised by real estate firms and portfolio managers under the direction of staff of the Center for Real Estate and Urban Economic Studies.

Participation in the internship program occurs during the summer between the student's junior and senior year. A written report based on their involvement provides the basis for earning course credit as FNCE 4881, Field Study Internship. The internship provides meaningful practical experience in the field of real estate and helps students clarify their career goals.

## Management and Engineering for Manufacturing

*Jointly offered by the Schools of Business and Engineering granting a single joint Bachelor of Science degree from the Schools of Engineering and Business.*

Requirements for all Management and Engineering for Manufacturing students, both through the School of Business and through the School of Engineering, are the same. Students must work very carefully with a Management and Engineering for Manufacturing advisor. Completion of all major requirements also fulfills all School of Business, School of Engineering, and ABET requirements.

Management and Engineering for Manufacturing majors are required to complete the following:

**Expository Writing:** ENGL 1007 or 1010 or 1011 (or for Honors Scholars ENGL 2011)

**Quantitative Analysis:** MATH 1131Q and MATH 1132Q; MATH 2110Q and 2410Q; and STAT 1000Q or 1100Q

### Other Required Courses:

- History Requirement: HIST 1201, 1400, 1501/W, 1502/W, 1600 (LLAS 1190/W), 1800, 3705, or ECON 2101/W
- Ethics Requirement: PHIL 1104
- Economics Requirement: ECON 1200, or ECON 1201 and 1202
- International Requirement: ANTH 1000/W; GEOG 1700, 2000; HRTS 1007; POLS 1202, 1207; WGSS 2124
- Engineering Science Requirement: CHEM 1127Q; PHYS 1501Q and 1502Q
- Additional Content Area Four course

ACCT 2001, 2101; BLAW 3175; CE 2110 and 3110; CSE 1010 or 1100; ECE 2000; ENGR 1000; FNCE 3101; ME 2233, 3221, 3227, and 3263; MEM 1151, 2211, 2212 or 2213, 3221, 3231, 4225, 4971W, and 4972W; MENT 3101 and 4900; MKTG 3101; MSE 2101; OPIM 3652 or ENGR

3215; OPIM 3603 or 5270; a Business Technical Elective course (three credits); an Engineering Technical Elective course (three credits).

Neither OPIM 3103 nor OPIM 3104 may be used to fulfill business-elective credit by MEM majors. ME 3222 may not be used to fulfill engineering-elective credit by MEM majors.

The Business Technical Elective must be from a 3000-level or higher course from one of the following five departments in the School of Business: Accounting, Finance, Management, Marketing, or Operations and Information Management.

The Engineering Technical Elective must be from a 3000-level or higher course from the School of Engineering or from the following list of Allied Health courses: AH 3270, 3570, or 3574.

MEM students who have completed CSE 1010 or 1100 will not be required to take OPIM 3103 and will satisfy the requirements for courses that will have OPIM 3103 as a requisite.

The Management and Engineering for Manufacturing undergraduate program educational objectives are that our alumni/ae: practice their profession with solid engineering and business knowledge and skills and have a total enterprise vision of world class manufacturing and service organizations; compete successfully using lean manufacturing and quality management principles in the design, manufacture of products, and development of services; and apply high professional standards, with up to date knowledge and personal skills, integrating global factors in their approach to engineering and business decisions.

**Information Literacy.** In addition to the basic competency achieved in ENGL 1007/1010/1011 or equivalent, all students will receive instructions on how to conduct an effective search for information in the library and how to conduct an effective search on the web for applicable engineering topics in course ENGR 1000 or equivalent. As the student progresses in their program, various courses will require assignments to increase their information literacy competency. The advanced level of information technology competency will be achieved at the completion of MEM 4971W and 4972W.

**Writing in the Major.** MEM 4971W and 4972W are the senior design project courses for the program. All students must write reports on their projects. These courses provide opportunities to write professional reports with appropriate feedback and criticism from two faculty members. The report writing provides instruction in proper report structure for professional work in practice.

Students are encouraged to seek faculty-supervised manufacturing summer internships prior to their junior and senior years. Such internships may be shown on the student records by registering for MEM 3281, with instructor and advisor approval.

MEM students have available a one-semester exchange program with the Industrial Engineering and Management program from Lund University, Sweden.

## Concentration in Naval Science and Technology

The concentration in Naval Science and Technology is designed to expose students to engineering concepts and topics of importance to the Navy and industries that support naval science and technology. It is focused on facilitating interactions between students and naval professionals as well as hands-on and experiential activities related to senior design projects or independent study projects that have naval science and technology connections.

To complete this concentration, students must complete nine credits of Naval Science and Technology Coursework topics, distributed as follows:

1. At least three credits of ENGR 3109.
2. Six credits from the following courses (or four if using Senior Design): MEM 3295, 3299, 4971W, 4972W, 4296.

Students electing to complete the concentration must do so in their primary major, and as such select elective coursework from their primary discipline. Students electing to use their Senior Design course sequence must have their project topic approved by both their departmental senior design coordinator and either the director of the Navy STEM Program or the Associate Dean for Undergraduate Education.

Students electing to use Special Topics courses or Independent Study/Research courses must have the course or research topic approved by both

their department and either the director of the Navy STEM Program or the Associate Dean for Undergraduate Education. Other courses relevant to naval science and technology may be considered for the concentration by petition to the director of the Navy STEM Program or the Associate Dean of Undergraduate Education. Students may not apply courses used in this concentration to fulfill requirements for other concentrations or minors.

The concentration in Naval Science and Technology is restricted to U.S. citizens.

### **Admission to the Management and Engineering for Manufacturing Major**

Students who apply to the Management and Engineering for Manufacturing major with admission requirement coursework in transfer must apply through the School of Engineering at [ppc.engr.uconn.edu](http://ppc.engr.uconn.edu). Admission to the Management and Engineering for Manufacturing (MEM) major is competitive. The following requirements must be met for consideration of admission into the MEM major. The following admission requirements must be complete at time of application to be considered for admission:

1. Be in good academic standing (not on probation or eligible for dismissal).
2. Have earned 24 credit hours.
3. Have completed each of the following areas with no grades less than a C (no substitutions).
  - MATH 1131Q; or both MATH 1120Q and 1121Q; or both MATH 1125Q and 1126Q.
  - One of the following: CHEM 1127Q or 1147Q, PHYS 1501Q, or other lab science.
  - One of the following: ACCT 2001; ECON 1200, 1201, 1202; STAT 1000Q, 1100Q.
4. To be admitted to the MEM Program, students must have demonstrated academic success and the potential to maintain a strong enough cumulative GPA to remain in the program.

Incoming first-year students may be admitted into the major by the Office of Undergraduate Admissions at the time of enrollment at UConn, based on their credentials at the time of enrollment. Similarly, a first-semester student enrolled in the School of Business or the School of Engineering may freely transfer into the MEM program via [ppc.engr.uconn.edu](http://ppc.engr.uconn.edu), but only prior to the completion of the first semester. After the end of the first semester, all admissions to MEM are subject to the above restrictions.

#### **Supplemental Academic Standards**

After admission into the Management and Engineering for Manufacturing program, students must maintain a high standard of scholastic achievement to continue in the major program. Any student having completed 24 or more credit hours must maintain a minimum 2.79 cumulative grade point average. A student failing to meet this standard is subject to dismissal from the program.

The Management and Engineering for Manufacturing program is accredited by the Engineering Accreditation Commission of ABET, [www.abet.org](http://www.abet.org).

### **Field Study Internships**

Internship experiences provide students an opportunity for supervised field work in areas of business and government. Regular internship programs are available on a limited basis in accounting, analytics and information management, real estate, health systems care management, and management. Individual internships may be arranged in other departments and majors within the School of Business; these are subject to availability and departmental restrictions.

**Pre-Law Studies.** Business students who plan to apply for admission to a school of law may arrange for pre-legal curricular counseling through the Undergraduate Programs Office in the School of Business.

# Continuing Education

Peter Diplock, Ph.D., *Associate Vice Provost*

Jim Hill, Ph.D., *Director*

## Bachelor of General Studies

The Bachelor of General Studies (BGS) degree is designed for returning adults. A student needs at least 60 college credits or an associate's degree from a degree granting regionally accredited college to be considered for admission to the program.

### Admission Requirements

1. An associate's degree or at least 60 college credits from a degree granting regionally accredited college or university. Transfer students with a minimum GPA of 2.7 or a 3.0 in their last 12 credits will meet the criteria for admission.
2. An interview with an academic counselor.
3. Official transcripts from all high schools and degree granting regionally accredited colleges and universities previously attended.
4. Completion of the admission application.

### Requirements for the Degree Completion Program for Bachelor of General Studies

1. Earn a minimum of 120 credits towards graduation.
2. Fulfill the University of Connecticut General Education Requirements.
3. Fulfill the University-wide residency requirement.
4. Earn 30 or more credits at the 2000-level or above from either courses taken at the University of Connecticut or courses that transfer at that level into the University of Connecticut.
5. A University of Connecticut grade point average of at least 2.0.
6. Students are expected to complete degree requirements within eight years of admission unless an extension of time to complete the program is given by the Program Director.

**Writing in the Major.** The University's writing requirement can be met by any 2000-level or above W course within the General Studies major.

**Information Literacy.** Students in the program fulfill this competency area through successful completion of GPS 4278/W, AMST 3265W, or another pre-approved information literacy course.

## Bachelor of General Studies (BGS) Requirements

### Major: General Studies

Students in this major select courses from multiple disciplines and academic departments, and work with their academic advisor to establish a coherent plan of study. Students require 30 credits at the 2000-level and above, and may not have more than 21 credits at the 2000-level and above in any one academic department on their final plan of study. Students may also pursue one or more minors as part of their plan of study.



# School of Engineering

Kazem Kazerounian, Ph.D., *Dean*

Daniel Burkey, Ph.D., *Associate Dean*

Whitney L. Losapio, *Director of Advising*

## Degrees Offered and Accreditation

### Bachelor of Science in Engineering

The School of Engineering offers four-year programs leading to Bachelor of Science in Engineering (B.S.E.) degrees in:

- Biomedical Engineering\* (128 credits)
- Chemical Engineering\* (128 credits)
- Civil Engineering\* (128 credits)
- Computer Science and Engineering\*# (126 credits)
- Computer Engineering\* (126 credits)
- Electrical Engineering\* (126 credits)
- Engineering Physics (132 credits)
- Environmental Engineering\* (128 credits)
- Materials Science and Engineering\* (129 credits)
- Mechanical Engineering\* (128 credits)
- Multidisciplinary Engineering (128 credits)
- Robotics Engineering (126 credits)

### Bachelor of Science

The School of Engineering offers four-year programs leading to Bachelor of Science (B.S.) degrees in:

- Bachelor of Science (B.S.) degree (120 credits) in Computer Science#
- Bachelor of Science (B.S.) degree (138 credits) in Management and Engineering for Manufacturing\* (jointly offered with the School of Business) and accredited by the Association to Advance Collegiate Schools of Business (AACSB)

The programs shown above that are asterisked (\*), are accredited by the Engineering Accreditation Commission of ABET, [www.abet.org](http://www.abet.org). The programs shown above with the pound sign (#) are accredited by the Computing Accreditation Commission of ABET.

The School of Engineering and the College of Liberal Arts and Sciences offer five-year, dual degree programs in German (Eurotech), French (Technopole France), Spanish (Engineering Spanish Program), and Chinese (AsiaTech). The programs include courses taught in the respective languages specifically designed to include engineering content. During the fourth year, students study abroad, taking coursework taught in their major's language during the first semester and complete an internship during their second semester.

Students who wish to concentrate their elective work in a second field within the School of Engineering may elect a double major program. Students seeking to double major should consult with their assigned academic advisor, and may need to meet with multiple faculty or staff advisors to co-create a plan of study.

The School of Engineering also offers Minors in Bioinformatics, Biomedical Engineering, Computer Science, Construction Engineering and Management, Electronics and Systems, Engineering Management, Environmental Engineering, Information Assurance, Information Technology, Materials Science and Engineering, Nanomaterials, and Nanotechnology. Please refer to the "Minors" section of this publication for these and other relevant minor descriptions.

## Admission Requirements

See Admission to the University section of this publication. All students admitted to the School of Engineering are required to take a math placement exam prior to attending orientation and registering for their first semester. Based on the survey results, students may be required to take additional preparatory course work that may not be counted toward graduation. Students not admitted into the School of Engineering at the time of entry to the University may apply for admission to a major through the School of Engineering. Admission is competitive. Decisions will be based on several criteria including the applicant's academic record, courses completed, and

space availability. Students in the School may request a change to their major later by submitting an application to the School of Engineering and meeting the admission criteria for that major.

**Supplementary Scholastic Standards.** To be in good academic standing in the School of Engineering, students must maintain a 2.5 cumulative GPA after completing 24 or more credits. Students must maintain a minimum 2.3 cumulative GPA to continue in the School of Engineering. Students who fall below a 2.3 cumulative GPA after 24 credits in residence will be removed from the School of Engineering and moved to the Academic Center for Exploratory Students. Residence means courses completed at one of the UConn campuses and does not include Early College Experience or non-degree courses. Students will have the opportunity to appeal this decision. If a student's cumulative GPA falls between 2.3 and 2.499, they will be considered on academic probation for the School of Engineering. Students on academic probation will be reduced to a 14-credit load until the cumulative GPA improves to at least 2.5. Students may stay in the School of Engineering while on academic probation with the reduced credit load.

**Scholarships.** The School of Engineering offers academic merit based scholarships to first-year and continuing students. The University offers merit based scholarships to eligible incoming first-year students.

**Faculty Advisors, Professional Advisors and Academic Support.** Advising in the School of Engineering is mandatory for every student, every semester. Academic advising in the School of Engineering is done jointly by trained professional staff and faculty advisors. Typically, first- and second-year students are assigned to a professional staff advisor in order to assist students in their transition to college, aid students in navigating the University, and collaborate in course selection and academic planning. Faculty advisors typically meet with engineering students with junior or senior standing in order to assist students in their course selection, counsel them in meeting their educational and career goals, and provide discipline-specific mentorship. Faculty advisors and professional staff advisors are assigned to students entering the School of Engineering according to the student's major. The School of Engineering provides additional content-specific academic support via the Engineering Tutoring Center. The Engineering Tutoring Center is staffed by undergraduate engineering students and provides 40+ hours of weekly tutoring to all students on a walk-in basis.

## School Academic Requirements

Students in the School of Engineering must complete the following requirements:

**General Education Requirements.** The University has adopted General Education Requirements in a variety of curricular areas, which must be satisfied as part of every bachelor's degree program. Additionally, each student must demonstrate competency in the University of Connecticut's five fundamental areas. These requirements appear in the "General Education Requirements" section of this *Catalog*.

Additionally, all engineering students are required to complete:

- A *Plan of Study* form submitted during the first semester of the junior year
- MATH 1131Q and 1132Q, ENGR 1000 and CSE 1100 or 1010
- All majors are required to complete PHIL 1104
- All majors, except B.S. in Computer Science majors, are required to complete CHEM 1127Q and PHYS 1501Q and 1502Q or PHYS 1201Q, PHYS 1202Q and PHYS 1230 or PHYS 1401Q and PHYS 1402Q
- The University writing (W) course requirement is fulfilled through required major-specific W course work. Some programs have the required two W courses specified in the curriculum. If there are not two W courses in the program, each student must take a minimum of one W course outside the major to satisfy the University's General Education writing requirements.

**Credit Restrictions.** Students should read carefully the course descriptions in the Undergraduate Catalog before they register because some of the course credits may not count toward graduation. The following courses may not be counted for credit toward graduation in the School of Engineering: MATH courses numbered 1110Q and below. No course taken on a Pass/Fail basis may be counted for credit toward the required credits for graduation nor toward any course requirements for the School of Engineering.

**Major Requirements and Normal Sequences.** In addition to the University General Education requirements and the School requirements listed above, the requirements for the specific majors are listed in the following pages. Additionally, students successfully completing these courses will have met their general education information literacy exit requirement for this major. Full program details, normal/updated course sequences, and accreditation requirements can be found in the respective *Guide to Course Selection* for each major.

**Accreditation Graduation Requirements.** These requirements are for the following programs: Biomedical Engineering, Chemical Engineering, Civil Engineering, Computer Engineering, Computer Science and Engineering, Electrical Engineering, Environmental Engineering, Management and Engineering for Manufacturing, Materials Science and Engineering, Mechanical Engineering, Multidisciplinary Engineering, and Robotics Engineering.

### ABET Requirements

1. Math/Science Credits - Minimum of 30 credits (any CA 3 class) including all courses from BIOL, CHEM, EEB, EARTH, GEOG, MARN, MATH, MCB, NUSC, NRE, PHYS, PNB, and STAT (unless restricted by program or school). SPSS courses may be used to satisfy this requirement if approved by the Office of the Dean.
2. Engineering Credits - Minimum of 45 credits from BME, CE, CHEG, CSE, ECE, ENGR, ENVE, ME, MEM, MSE, excluding ENGR 1000 and other classes as noted.

**Accreditation Documentation Statements.** The program educational objectives are intended to be statements that describe the expected accomplishments of graduates during the first several years following graduation from the program. Each program's educational objectives are listed within the actual program.

## Biomedical Engineering

### Bachelor of Science in Engineering

Biomedical Engineering majors may pursue one of the following four tracks: Biomaterials and Tissue Engineering, Computational and Systems Biology, Biomechanics and Mechanobiology, or Systems, Imaging and Instrumentation. All Biomedical Engineering majors are required to complete the following:

- BIOL 1107;
- BME 3120, 3900, 4900, 4910/W;
- CHEM 1128Q or 1148Q;
- CE 2110;
- ECE 2001;
- ENGR 1166;
- MATH 2110Q or 2130Q or 2143Q; MATH 2210Q; MATH 2410Q or 2420Q or 2144Q;
- MSE 2001 or 2101;
- PNB 2264 or 2274;
- STAT 3025Q;
- BME electives (six credits; taken from designated list of BME courses for each track);

### Tracks

#### Biomaterials and Tissue Engineering

BME 3400 (or ECE 3101); BME 3500, 3600, 3700, 4710; CHEM 3563; MCB 2210, Track Elective (three credits from the Track Elective list for Biomaterials and Tissue Engineering), Elective (three credits, from BME or Track Elective list for Biomaterials and Tissue Engineering).

#### Computational and Systems Biology

BME 3400 (or ECE 3101); BME 3401 (or CSE 3810), 4400 (or BME 3100), 4401 (or BME 4810); CSE 1729; MCB 2210, 2400 (or 2410); STAT 3965 or MATH 3170, Track Electives (six credits from the Track Elective list for Computational and Systems Biology).

#### Biomechanics and Mechanobiology

BME 3600, 3620; CE 2120, 3110; ME 2233, 3227 (or 3255), 3250, Track Electives (six credits from the Track Elective list for Biomechanics and

Mechanobiology), Elective (three credits, from BME or Track Elective list for Biomechanics and Mechanobiology).

### Systems, Imaging and Instrumentation

BME 3400 (or ECE 3101); BME 3500, 4201, 4500; ECE 3111, 3201 (or CSE 2301); STAT 3965 or MATH 3170, Track Elective (three credits from the Track Elective list for Systems, Imaging and Instrumentation), Elective (three credits, from BME or Track Elective list for Systems, Imaging and Instrumentation).

No more than three credits of independent study (BME 4999) can count toward the 6-9 credits of BME electives.

The professional requirements and electives are specified in the *Biomedical Engineering Guide to Course Selection* [www.bme.uconn.edu](http://www.bme.uconn.edu).

The Biomedical Engineering undergraduate program educational objectives are that our alumni/ae: will be engaged in professional practice as engineers and/or scientists in occupational settings primarily involving human health and well-being; will advance in their professional careers; and will engage in professional development, or post-graduate education, to continuing their self-development in biomedical engineering or other related fields.

The Biomedical Engineering program is accredited by the Engineering Accreditation Commission of ABET, [www.abet.org](http://www.abet.org).

## Chemical Engineering

### Bachelor of Science in Engineering

Chemical Engineering majors are required to complete the following:

- CHEG 2103, 2111, 3112, 3123, 3124, 3145, 3151, 4139, 4140, 4143W, and 4147;
- CHEG Electives (six credits minimum);
- CHEM 1128Q (or 1148Q), 2443, 2444, 2446;
- ENGR 1166; MATH 2110Q and 2410Q;
- Professional/Engineering Requirements (nine credits); Professional requirements are satisfied by any 2000 level engineering, science or math courses, except ME 2233, due to the significant overlap in content. Engineering requirements are satisfied by any 2000 level engineering course, except ME 2233, due to the significant overlap in content;
- Elective courses (five credits).

Selection of Professional Requirements courses must include engineering design work as detailed in the *Chemical Engineering Guide to Course Selection*. At least three credits of Professional Requirements must be outside of Chemical Engineering. A maximum of six credits of independent chemical engineering research credits may be applied toward degree requirements.

The Chemical Engineering undergraduate program educational objectives are that our alumni/ae: our graduates will be gainfully employed in chemical engineering or related career paths including industrial, academic, governmental and non-governmental organizations. Our graduates will continue their professional development by engaging in professional activities and/or training to enhance their careers and/or pursue post-graduate studies.

Students admitted as first-year students to the school of engineering may transfer, at most, one core (non-elective) 3000 (CHEG 3112, 3123, 3124, 3128, 3145, 3151) or 4000 (CHEG 4139, 4140, 4142, 4143W, 4147) level chemical engineering course from an ABET accredited program at another university. Students transferring to UConn after their first year from another university will have previous credits earned transferred via the University transfer credit rules, but any credits earned once at UConn are subject to the same restriction above.

The Chemical Engineering program is accredited by the Engineering Accreditation Commission of ABET, [www.abet.org](http://www.abet.org).

## Civil Engineering

### Bachelor of Science in Engineering

Civil Engineering majors are required to complete the following:

- CE 2110, 2211, 2251; CE 2411/ENVE 2411; CE 2710, 3110, 3220, 3510; CE 3520 or ENVE 3200; CE 3610, 4900W and 4920W;
- ENVE 2310E, 3120;

- CHEM 1128Q or 1148Q;
- ENGR 1166;
- MATH 2110Q and 2410Q;
- Professional Requirements courses (21 credits);
- Science elective (minimum of three credits);
- Elective courses (as needed to reach 128 credits total).

The science elective may be satisfied by: BIOL 1107; CHEM 2241, 2443; EEB 2208; EARTH 1050, 1051; GEOG 1300, 1302, or 2300E; MARN 1002; NRE 1000, 1235, 2215E, 3105, 3145. Other courses in areas complementary to Civil Engineering, such as biology, ecology, geology, or natural resources, may also be approved.

The professional requirements are satisfied by 21 credits of 2000-level or higher courses in engineering, science, mathematics, or statistics, including AH 3275; MENT 5335; OPIM/BADM 3603; or up to three credits of ART 3670. No more than one science course at the 2000-level may be used. Any number of engineering, mathematics or statistics courses at the 2000-level may be used. At least one course each from four of the following different technical areas must be selected:

**Construction Engineering and Management:** CE 4210, 4220

**Environmental Engineering:** ENVE 3220, 4310

**Geotechnical Engineering:** CE 4510, 4530, 4541, 4560; ENVE 4540

**Structural Engineering:** CE 3630, 3640

**Geodetic/Site Engineering:** CE 2500, 4410

**Transportation Engineering:** CE 4710, 4720, 4730, 4740, 4750

**Water Resources Engineering:** ENVE 4810, 4820

No course that was used to meet another requirement for the Civil Engineering program may double count as a Professional Requirement. This includes university general education requirements and requirements for the School of Engineering or the Civil Engineering Program, for example, the science elective. Courses taken from the above list but not used to fulfill the four technical area requirements may be used to satisfy remaining professional requirements.

The Civil Engineering undergraduate program educational objectives are to prepare our alumni/ae with the knowledge and skills needed to:

- Actively contribute to the practice and profession of engineering, including management and administration, in the public, private or academic sectors in the technical areas of construction, environmental, geotechnical, structural, transportation, and water resources engineering;
- Follow a path towards leadership in the profession that can include licensure as professional engineers who design and construct solutions to civil engineering problems in the natural and built environments; and
- Practice life-long learning through post-graduate and professional education.

The Civil Engineering program is accredited by the Engineering Accreditation Commission of ABET, [www.abet.org](http://www.abet.org).

## Computer Engineering

*Offered jointly by the Departments of Computer Science and Engineering and Electrical and Computer Engineering*

### Bachelor of Science in Engineering

Computer Engineering majors are required to complete the following:

- CSE 2050, 3100, 2301, 2500, 3150 or 3160, 3666, 4300, 4302 (or ECE 5402/CSE 5302);
- ECE 2001, 3101, 3201, 3401 (or ECE 5401), 3421, 4900W, 4901, 4902;
- MATH 2110Q, 2210Q and 2410Q;
- STAT 3345Q;
- Professional Requirements courses (nine credits);
- Design Laboratory courses (six credits including ECE 3411);
- Elective course (three credits).

Further details and course sequences are given in the Computer Engineering Guide to Course Selection.

**Naval Science and Technology:** The concentration in Naval Science and Technology is designed to expose students to engineering concepts and topics of importance to the Navy and industries that support naval science and technology. It is focused on facilitating interactions between students and naval professionals as well as hands-on and experiential activities related to senior design projects or independent study projects that have naval science and technology connections.

All Computer Engineering majors must also complete nine credits of Naval Science and Technology Coursework topics, distributed as follows:

- At least three credits of ENGR 3109.
- Six credits from the following courses with at least one course outside the senior design sequence: CSE 4095, 4099, 4939W, 4940.

Students electing to complete the concentration must do so in their primary major, and as such select elective coursework from their primary discipline. Students electing to use their Senior Design course sequence must have their project topic approved by both their departmental senior design coordinator and either the director of the Navy STEM Program or the Associate Dean for Undergraduate Education.

Students electing to use Special Topics courses or Independent Study/Research courses must have the course or research topic approved by both their department and either the director of the Navy STEM Program or the Associate Dean for Undergraduate Education. Other courses relevant to naval science and technology may be considered for the concentration by petition to the director of the Navy STEM Program or the Associate Dean of Undergraduate Education. Students may not apply courses used in this concentration to fulfill requirements for other concentrations or minors. The concentration in Naval Science and Technology is restricted to U.S. citizens.

The Computer Engineering program combines coursework in computer science and electrical engineering providing a program that focuses on the design of computer hardware and digital systems.

The Computer Engineering undergraduate program educational objectives are that our alumni/ae: make technical contributions to design, development, and manufacturing in their practice of computer engineering, advance in their professional career and engage in professional development or post-graduate education to pursue flexible career paths amid future technological changes.

The Computer Engineering program is accredited by the Engineering Accreditation Commission of ABET, [www.abet.org](http://www.abet.org).

## Computer Science

### Bachelor of Science

Computer Science majors are required to complete the following Computer Science and Engineering (CSE) courses: CSE 1010, 2050, 2500, 3000, 3100, 3140, 3150 or 3160, 3500, 3666, 4939W and 4940;

Computer Science majors must complete one of the following concentrations:

**Algorithms and Theory:** CSE 3502 or 5503 and three of the following: CSE 3802, 4100, 4412, 4502 or 5717, 4702, 4820 or 5819, 5500, 5506, 5512, 5820, 5854, 6512.

**Systems and Networks:** CSE 3300 or 5299 and three of the following: CSE 3400 or 5850, 4300 or 5305, 4302 or 5302, 4412, 4709 or 5309, 5300, 5306, 5312.

**Cybersecurity:** CSE 3400 or 5850 and three of the following: CSE 3300 or 5299 or 3502 or 5503 or 4300 or 5305, 4400 or 5400, 4402 or 5402, 4412, 4702 or 5852, 5854, 5910.

**Bioinformatics:** CSE 3800 or 5800 and three of the following: CSE 3810 or 6800, 4502 or 5717, 4820 or 5819, 5810, 5820, 5815, 5825, 5830, 5840, 5860.

**Software Design and Development:** CSE 2102 and three of the following: CSE 3150 or CSE 3160 that was not used to meet core requirements, 3200, 4102 or 5102, 4300 or 4701 or 5305, 5095 (as Social Media Mining and Analysis), 5103, 5810.

**Computational Data Analytics:** CSE 4502 or 5717 and three of the following: CSE 4095 (as Dynamic Data Visualization) or BADM 3302, CSE 4701, CSE 4705, CSE 4820 or 5819, CSE 5095 (as Social Media Mining and Analysis), CSE 5820, CSE 5825 or 5830 or 5835, CSE 5707 or BADM 3301, CSE 5713 or BADM 3203, CSE 5910.

**Naval Science and Technology:** The concentration in Naval Science and Technology is designed to expose students to engineering concepts and topics of importance to the Navy and industries that support naval science and technology. It is focused on facilitating interactions between students and naval professionals as well as hands-on and experiential activities related to senior design projects or independent study projects that have naval science and technology connections.

All Computer Science majors must also complete nine credits of Naval Science and Technology Coursework topics, distributed as follows:

- At least three credits of ENGR 3109.
- Six credits from the following courses with at least one course outside the senior design sequence: CSE 4095, 4099, 4939W, 4940.

Students electing to complete the concentration must do so in their primary major, and as such select elective coursework from their primary discipline. Students electing to use their Senior Design course sequence must have their project topic approved by both their departmental senior design coordinator and either the director of the Navy STEM Program or the Associate Dean for Undergraduate Education.

Students electing to use Special Topics courses or Independent Study/Research courses must have the course or research topic approved by both their department and either the director of the Navy STEM Program or the Associate Dean for Undergraduate Education. Other courses relevant to naval science and technology may be considered for the concentration by petition to the director of the Navy STEM Program or the Associate Dean of Undergraduate Education. Students may not apply courses used in this concentration to fulfill requirements for other concentrations or minors. The concentration in Naval Science and Technology is restricted to U.S. citizens.

**Unspecialized:** Three of the following: CSE 2102, 3300, or 5299, 3400 or 5850, 3502 or 5503, 3800 or 5800, 4502 or 5717; and any other 2000-level or higher CSE course not used to fulfill another major requirement.

**Individually Designed:** Students may propose an individually designed concentration to fit their academic or career interests. This will be a minimum of 12 credits at the 2000 level or above, proposed by the student and approved by the student's advisor and the CSE Department Undergraduate Committee. The expectation is that such a concentration will have a strong unifying theme. This may include non-CSE courses, but the student will still be subject to the required 43 CSE credits.

All Computer Science majors must also complete the following:

- MATH 2110Q and 2210Q;
- One of MATH 3160; STAT 3025Q, 3345Q, or 3375Q;
- One two-semester laboratory course sequence from either chemistry (CHEM 1127Q-1128Q, 1137Q-1138Q or 1147Q-1148Q) or physics (PHYS 1401Q-1402Q, 1501Q-1502Q or 1601Q-1602Q);
- One additional science course from the following list (but not in the same department as the two semester sequence): BIOL 1107, 1108, or 1110; CHEM 1127Q, or 1128Q; PHYS 1401Q, 1402Q, 1502Q, 1601Q, or 1602Q; EARTH 1050, or EARTH 1051 and 1052;
- Additional CSE courses as required to reach 43 credits in CSE courses;
- Elective courses to reach a minimum of 120 credits.

Further details and course sequences are given in the Computer Science Guide to Course Selection.

The Computer Science program combines a rigorous education in computer science with added coursework in an area outside of computing, in the sciences, business or humanities. With a background that combines computer science and a non-computing discipline, our graduates have the breadth of understanding to apply computer science to other disciplines, which is particularly valuable as computing has become a key aspect of nearly all endeavors.

The Computer Science undergraduate program educational objectives are that our alumni/ae: practice and grow as computing professionals, conducting research and/or leading, designing, developing or maintaining projects in various technical areas of computer science; utilize knowledge and skills in Computer Science effectively for improving the society; and use new technical advancements of Computer Science to produce tangible contributions in the profession.

The Computer Science program is accredited by the Computing Accreditation Commission of ABET, [www.abet.org](http://www.abet.org).

## Computer Science and Engineering

### Bachelor of Science in Engineering

Computer Science and Engineering majors are required to complete the following: CSE 1010, 2050, 2300W or 2301, 2500, 3000, 3100, 3140, 3150 or 3160, 3500, 3504, 3666, 4939W and 4940; ECE 2001.

Computer Science and Engineering majors must complete one of the following concentrations:

**Algorithms and Theory:** CSE 3502 or 5503 and three of the following: CSE 3802, 4100, 4412, 4502 or 5717, 4702, 4820 or 5819, 5500, 5506, 5512, 5820, 5854, 6512.

**Systems and Networks:** CSE 3300 or 5299 and three of the following: CSE 3400 or 5850, 4300 or 5305, 4302 or 5302, 4412, 4709 or 5309, 5300, 5306, 5312.

**Cybersecurity:** CSE 3400 or 5850 and three of the following: CSE 3300 or 5299 or 3502 or 5503 or 4300 or 5305, 4400 or 5400, 4402 or 5402, 4412, 4702 or 5852, 5854, 5910.

**Bioinformatics:** CSE 3800 or 5800 and three of the following: CSE 3810 or 6800, 4502 or 5717, 4820 or 5819, 5810, 5815, 5820, 5825, 5830, 5840, 5860.

**Software Design and Development:** CSE 2102 and three of the following: CSE 3150 or CSE 3160 that was not used to meet core requirements, 3200, 4102 or 5102, 4300 or 4701 or 5305, 5095 (as Social Media Mining and Analysis), 5103, 5810.

**Computational Data Analytics:** CSE 4502 or 5717 and three of the following: CSE 4095 (as Dynamic Data Visualization) or BADM 3302, CSE 4701, CSE 4705, CSE 4820 or 5819, CSE 5095 (as Social Media Mining and Analysis), CSE 5820, CSE 5825 or 5830 or 5835, CSE 5707 or BADM 3301, CSE 5713 or BADM 3203, CSE 5910.

**Naval Science and Technology:** The concentration in Naval Science and Technology is designed to expose students to engineering concepts and topics of importance to the Navy and industries that support naval science and technology. It is focused on facilitating interactions between students and naval professionals as well as hands-on and experiential activities related to senior design projects or independent study projects that have naval science and technology connections.

All Computer Science and Engineering majors must also complete nine credits of Naval Science and Technology Coursework topics, distributed as follows:

- At least three credits of ENGR 3109.
- Six credits from the following courses with at least one course outside the senior design sequence: CSE 4095, 4099, 4939W, 4940.

Students electing to complete the concentration must do so in their primary major, and as such select elective coursework from their primary discipline. Students electing to use their Senior Design course sequence must have their project topic approved by both their departmental senior design coordinator and either the director of the Navy STEM Program or the Associate Dean for Undergraduate Education.

Students electing to use Special Topics courses or Independent Study/Research courses must have the course or research topic approved by both their department and either the director of the Navy STEM Program or the Associate Dean for Undergraduate Education. Other courses relevant to naval science and technology may be considered for the concentration by petition to the director of the Navy STEM Program or the Associate Dean of Undergraduate Education. Students may not apply courses used in this concentration to fulfill requirements for other concentrations or minors. The concentration in Naval Science and Technology is restricted to U.S. citizens.

**Unspecialized:** Three of the following: CSE 2102, 3300 or 5299, 3400 or 5850, 3502 or 5503, 3800 or 5800, 4502 or 5717; and any other 2000 level or higher CSE course not used to fulfill another major requirement.

**Individually Designed:** Students may propose an individually designed concentration to fit their academic or career interests. This will be a minimum of 12 credits at the 2000+ level, proposed by the student and approved by the student's advisor and the CSE Department Undergraduate

Committee. The expectation is that such a concentration will have a strong unifying theme. This may include non-CSE courses, but the student will still be subject to the required 50 CSE credits.

All Computer Science and Engineering majors must also complete the following:

- MATH 2110Q, 2210Q, and 2410Q;
- One of MATH 3160, STAT 3025Q, 3345Q, or 3375Q;
- Additional CSE courses as required to reach 50 credits in CSE courses;
- Elective courses to reach a minimum of 126 credits.

Further details and course sequences are given in the Computer Science and Engineering Guide to Course Selection.

The Computer Science and Engineering program combines a rigorous education in computer science with added emphasis on the physical and architectural underpinnings of modern computer system design. With a background that spans computer science and computer engineering, the graduates are able to address computing systems across the hardware-software spectrum.

The Computer Science and Engineering undergraduate program educational objectives are that our alumni/ae: practice and grow as computing professionals, conducting research and/or leading, designing, developing or maintaining projects in various technical areas of computer science; utilize knowledge and skills in Computer Science and Engineering effectively for improving the society; and use new technical advancements of Computer Science and Engineering to produce tangible contributions in the profession.

The Computer Science and Engineering program is accredited by the Engineering Accreditation Commission and the Computing Accreditation Commission of ABET, [www.abet.org](http://www.abet.org).

## Electrical Engineering

### Bachelor of Science in Engineering

Electrical Engineering majors are required to complete the following:

- CSE 1102 or 2050 or ENGR 1166;
- CSE 2301;
- ECE 1401, 2001, 3001, 3101, 3111, 3201, 3211 or 3212 or 3231, 3221 or 4201, 4900W, 4111 or 4112, 4211 or 5211 or 4225 or 5225, 4901 and 4902;
- MATH 2110Q, 2210Q and 2410Q;
- STAT 3345Q or MATH 3160;
- Professional Requirements courses (12 credits);
- Design Laboratory courses (six credits);
- Elective courses (seven credits).

Further details and course sequences are given in the Electrical Engineering Guide to Course Selection.

### Concentration in Naval Science and Technology

The concentration in Naval Science and Technology is designed to expose students to engineering concepts and topics of importance to the Navy and industries that support naval science and technology. It is focused on facilitating interactions between students and naval professionals as well as hands-on and experiential activities related to senior design projects or independent study projects that have naval science and technology connections.

To complete this concentration, students must complete nine credits of Naval Science and Technology Coursework topics, distributed as follows:

1. At least three credits of ENGR 3109.
2. Six credits from the following courses (or five if using Senior Design): ECE 4095, 4900W, 4901, 4902.

Students electing to complete the concentration must do so in their primary major, and as such select elective coursework from their primary discipline. Students electing to use their Senior Design course sequence must have their project topic approved by both their departmental senior design coordinator and either the director of the Navy STEM Program or the Associate Dean for Undergraduate Education.

Students electing to use Special Topics courses or Independent Study/Research courses must have the course or research topic approved by both

their department and either the director of the Navy STEM Program or the Associate Dean for Undergraduate Education. Other courses relevant to naval science and technology may be considered for the concentration by petition to the director of the Navy STEM Program or the Associate Dean of Undergraduate Education. Students may not apply courses used in this concentration to fulfill requirements for other concentrations or minors.

The concentration in Naval Science and Technology is restricted to U.S. citizens.

The Electrical Engineering program educational objectives are that our alumni/ae: make technical contributions to design, development, and manufacturing in their practice of electrical engineering; advance in their professional career; and engage in professional development or post-graduate education to pursue flexible career paths amid future technological changes.

The Electrical Engineering program is accredited by the Engineering Accreditation Commission of ABET, [www.abet.org](http://www.abet.org).

## Engineering Physics

*Offered jointly by the Physics Department of the College of Liberal Arts and Sciences and the School of Engineering*

### Bachelor of Science in Engineering

Students choose the college/school that they wish to graduate from and must satisfy the course requirements of either the College of Liberal Arts and Sciences or the School of Engineering to complete their degree.

#### Physics Requirements

PHYS 2300, 3101, 3201, 3202, 2501W, 3401, 3300, and six credits of PHYS 2000-level or above electives.

#### Engineering Requirements

- CSE 1010;
- ENGR 1000, 1166, 4001, 4002W;
- MSE 2001 or 2101, and MSE 2002 or 2102;
- CE 2110, 3110, 3120;
- CHEG 2103;
- ECE 2001;
- Thermal Science Elective: one from MSE 3001, ME 2233, or CHEG 2111
- Nine credits ENGR electives (three credits may be 2000-level, at least six credit must be 3000-level)

#### Additional Requirements

- MATH 2110 and 2410
- STAT 3025

The Engineering Physics undergraduate program educational objectives are that our alumni/ae: contribute to current and future scientific and technological developments in the areas of physics and electrical, mechanical and materials science engineering; excel in engineering and physics careers and responsible citizenship in industry, government, academia and other professional practices; and engage in professional development or graduate education to pursue flexible career paths.

## Environmental Engineering

### Bachelor of Science in Engineering

Environmental Engineering majors are required to complete the following:

- CE 2110, 2211, 2251;
- CHEM 1128Q (or 1148Q); CHEG 2111;
- ENGR 1166; MATH 2110Q and 2410Q;
- ENVE 1000E, 2310E; CE 2411/ENVE 2411; ENVE 3120 (or CHEG 3123), ENVE 3201, 3202, 3220, 3230, 3270, 4210, 4310, 4320, 4530 or 4540, 4810, 4910W, 4920W;
- Biological Science requirement;
- Earth Science requirement;
- Professional Requirements courses (12 credits);
- Elective course (as needed to reach 128 credits).

The Earth Science requirement may be fulfilled by EARTH 1051 or 3710/ENVE 3530; MARN 1002; NRE 3145, 3146 or 4135; SPSS 2120, 3420 or 4420; or other appropriate courses by petition.

The Biological Science requirement may be fulfilled by BIOL 1108; EEB 2100E; ENVE 3270; NRE 3105, 3205, 3265, or 4340; or other appropriate courses by petition.

Professional Requirements include: at least three credits in the area of Management and Policy from the following list of courses: AH 3275; ARE 3434E, 4462E; EEB 3205E; ENVE 3100, 4850; GEOG 3320W, 3340; LAND 3230WE; MEM 2221; NRE 3245E; OPIM 3603. At least three credits from any 3000-level or higher CE or ENVE courses. At least six credits from any 3000-level or higher courses in engineering or science (BIOL, CHEM, EEB, GEOG, EARTH, ERTH, LAND, MARN, MATH, MCB, NRE, PHYS, SOIL, TURF), or CE 2500 or CHEM 2241, 2243.

No course that was used to meet another requirement for the Environmental Engineering Program may double count as a Professional Requirement. This includes university general education requirements and requirements for the School of Engineering. Environmental Engineering Honors students are required to take three credits of ENVE 4886 and/or 4897 in place of three credits of Professional Requirements.

The Environmental Engineering undergraduate program educational objectives are to impart our alumni/ae with the knowledge and skills needed to: actively contribute to the practice and profession of engineering, including management and administration, in the public, private or academic sectors in the technical area of environmental engineering; follow a path towards leadership in the profession that can include becoming licensed professional engineers, assessing the impact of human activities on the environment, designing and constructing solutions to minimize and mitigate such impacts, and tending to the natural environment as our life support system; and practice lifelong learning through post-graduate and professional education.

The Environmental Engineering program is accredited by the Engineering Accreditation Commission of ABET, [www.abet.org](http://www.abet.org).

## Management and Engineering for Manufacturing

*Jointly offered by the Schools of Business and Engineering granting a single joint Bachelor of Science degree from the Schools of Engineering and Business.*

### Bachelor of Science

Requirements for all Management and Engineering for Manufacturing students, both through the School of Business and through the School of Engineering, are the same. Students must work very carefully with a Management and Engineering for Manufacturing advisor. Completion of all major requirements also fulfills all School of Business, School of Engineering, and ABET requirements.

Management and Engineering for Manufacturing majors are required to complete the following:

**Expository Writing:** ENGL 1007, 1010 or 1011 (or for Honors Scholars, ENGL 2011).

**Quantitative Analysis:** MATH 1131Q and MATH 1132Q; MATH 2110Q and 2410Q; and STAT 1000Q or 1100Q.

### Other Required Courses:

- History Requirement: HIST 1201, 1400, 1501/W, 1502/W, 1600 (LLAS 1190/W), 1800, 3705, or ECON 2102/W
- Ethics Requirement: PHIL 1104
- Economics Requirement: ECON 1200, or ECON 1201 and 1202
- International Requirement: ANTH 1000/W; GEOG 1700, 2000; HRTS 1007; POLS 1202, 1207; WGSS 2124
- Engineering Science Requirement: CHEM 1127Q; PHYS 1501Q and 1502Q
- Additional Content Area Four course

ACCT 2001, 2101; BLAW 3175; CE 2110 and 3110; CSE 1010 or 1100; ECE 2000; ENGR 1000; FNCE 3101; ME 2233, 3221, 3227, and 3263; MEM 1151, 2211, 2212 or 2213, 3221, 3231, 4225, 4971W, and 4972W; MENT 3101 and 4900; MKTG 3101; MSE 2101; OPIM 3652 or ENGR

3215; OPIM 3603, 3701 or 5270; a Business Technical Elective course (three credits); an Engineering Technical Elective course (three credits).

Neither OPIM 3103 nor OPIM 3104 may be used to fulfill business-elective credit by MEM majors. ME 3222 may not be used to fulfill engineering-elective credit by MEM majors.

The Business Technical Elective must be from a 3000-level or higher course from one of the following five departments in the School of Business: Accounting, Finance, Management, Marketing, or Operations and Information Management.

The Engineering Technical Elective must be from a 3000-level or higher course from the School of Engineering or from the following list of Allied Health courses: AH 3270, 3570, or 3574.

MEM students who have completed CSE 1010 or 1100 will not be required to take OPIM 3103 and will satisfy the requirements for courses that will have OPIM 3103 as a requisite.

The Management and Engineering for Manufacturing undergraduate program educational objectives are that our alumni/ae: practice their profession with solid engineering and business knowledge and skills and have a total enterprise vision of world class manufacturing and service organizations; compete successfully using lean manufacturing and quality management principles in the design, manufacture of products, and development of services; and apply high professional standards, with up to date knowledge and personal skills, integrating global factors in their approach to engineering and business decisions.

### Information Literacy

In addition to the basic competency achieved in ENGL 1007, 1010, or 1011 or equivalent, all students will receive instructions on how to conduct an effective search for information in the library and how to conduct an effective search on the web for applicable engineering topics in ENGR 1000 or equivalent. As the student progresses in their program, various courses will require assignments to increase their information literacy competency. The advanced level of information technology competency will be achieved at the completion of MEM 4971W and 4972W.

### Writing in the Major

MEM 4971W and 4972W are the senior design project courses for the program. All students must write reports on their projects. These courses provide opportunities to write professional reports with appropriate feedback and criticism from two faculty members. The report writing provides instruction in proper report structure for professional work in practice.

Students are encouraged to seek faculty-supervised manufacturing summer internships prior to their junior and senior years. Such internships may be shown on the student records by registering for MEM 3281, with instructor and advisor approval.

MEM students have available a one-semester exchange program with the Industrial Engineering and Management program from Lund University, Sweden.

### Concentration in Naval Science and Technology

The concentration in Naval Science and Technology is designed to expose students to engineering concepts and topics of importance to the Navy and industries that support naval science and technology. It is focused on facilitating interactions between students and naval professionals as well as hands-on and experiential activities related to senior design projects or independent study projects that have naval science and technology connections.

To complete this concentration, students must complete nine credits of Naval Science and Technology Coursework topics, distributed as follows:

1. At least three credits of ENGR 3109.
2. Six credits from the following courses (or four if using Senior Design): MEM 3295, 3299, 4971W, 4972W, 4296.

Students electing to complete the concentration must do so in their primary major, and as such select elective coursework from their primary discipline. Students electing to use their Senior Design course sequence must have their project topic approved by both their departmental senior design coordinator and either the director of the Navy STEM Program or the Associate Dean for Undergraduate Education.

Students electing to use Special Topics courses or Independent Study/Research courses must have the course or research topic approved by both their department and either the director of the Navy STEM Program or the Associate Dean for Undergraduate Education. Other courses relevant to naval science and technology may be considered for the concentration by petition to the director of the Navy STEM Program or the Associate Dean of Undergraduate Education. Students may not apply courses used in this concentration to fulfill requirements for other concentrations or minors.

The concentration in Naval Science and Technology is restricted to U.S. citizens.

### Admission to the Management and Engineering for Manufacturing Major

Students who apply to the Management and Engineering for Manufacturing major with admission requirement coursework in transfer must apply through the School of Engineering at [ppc.engr.uconn.edu](http://ppc.engr.uconn.edu). Admission to the Management and Engineering for Manufacturing (MEM) major is competitive. The following requirements must be met for consideration of admission into the MEM major. The following admission requirements must be complete at time of application to be considered for admission:

1. Be in good academic standing (not on probation or eligible for dismissal).
2. Have earned 24 credit hours.
3. Have completed each of the following areas with no grades less than a "C" (no substitutions).
4. MATH 1131Q; both MATH 1120Q and 1121Q; or both MATH 1125Q and 1126Q.
5. One of the following: CHEM 1127Q or 1147Q, PHYS 1501Q, or other lab science.
6. One of the following: ACCT 2001; ECON 1200, 1201, 1202; STAT 1000Q, 1100Q.
7. To be admitted to the MEM Program, students must have demonstrated academic success and the potential to maintain a strong enough cumulative GPA to remain in the program.

Incoming first-year students may be admitted into the major by the Office of Undergraduate Admissions at the time of enrollment at UConn, based on their credentials at the time of enrollment. Similarly, a first-semester student enrolled in the School of Business or the School of Engineering may freely transfer into the MEM program via [ppc.engr.uconn.edu](http://ppc.engr.uconn.edu), but only prior to the completion of the first semester. After the end of the first semester, all admissions to MEM are subject to the above restrictions.

### Supplemental Academic Standards

After admission into the Management and Engineering for Manufacturing program, students must maintain a high standard of scholastic achievement to continue in the major program. Any student having completed 24 or more credit hours must maintain a minimum 2.79 cumulative grade point average. A student failing to meet this standard is subject to dismissal from the program.

The Management and Engineering for Manufacturing program is accredited by the Engineering Accreditation Commission of ABET, [www.abet.org](http://www.abet.org).

## Materials Science and Engineering

### Bachelor of Science in Engineering

Materials Science and Engineering majors are required to complete the following:

- CHEM 1128Q or 1148Q;
- ENGR 1166;
- MATH 2110Q and 2410Q;
- CE 2110;
- MSE core: 2001, 2002, 3001, 3002, 3003, 3004, 4001, 4003, 4004;
- MSE labs: MSE 2053, 3055, 3056, 4901W, and 4902W;
- Professional requirement courses (15 credits);
- Technical Elective courses (nine credits).

### Professional Electives

Recommended professional elective courses: 15 credits from: any 3000 or 4000 level MSE elective course, BME 3700 or 4701; CHEG 3156 or ME

3217 or 3228. Up to three credits of MSE 4097 or 4996 and up to three credits of MSE 4099 can satisfy the Professional Elective requirement. Students may take multiple instances of MSE 4095 or 4098, which all may count as Professional Electives in MSE, provided each instance covers a different topic. Students with GPA of 3.2 or greater may elect letter-grade graduate courses. Any substitutions must be approved by the Director of Undergraduate Studies and the School of Engineering Undergraduate Dean.

### Technical Elective Requirement

Nine credits, selected from all 2000, 3000, and 4000 courses in the basic sciences, mathematics, and in any engineering discipline other than Materials Science and Engineering are accepted as technical electives. At least three credits must be selected from the basic sciences or mathematics: Mathematics (MATH), Biological Sciences (BIOL), Chemistry (CHEM), Molecular and Cell Biology (MCB), Physics (PHYS), and Statistics (STAT).

Selection of courses is detailed in the *Materials Science and Engineering Guide to Course Selection* at [mse.engr.uconn.edu/curriculum-and-course-guide](http://mse.engr.uconn.edu/curriculum-and-course-guide).

### Free elective

Three credits, selected from courses at any level in any discipline at student's discretion.

### Concentration in Naval Science and Technology

The concentration in Naval Science and Technology is designed to expose students to engineering concepts and topics of importance to the Navy and industries that support naval science and technology. It is focused on facilitating interactions between students and naval professionals as well as hands-on and experiential activities related to senior design projects or independent study projects that have naval science and technology connections.

To complete this concentration, students must complete nine credits of Naval Science and Technology Coursework topics, distributed as follows:

1. At least three credits of ENGR 3109.
2. Six credits from the following courses: MSE 4095, 4901W, 4902W, 4989.

Students electing to complete the concentration must do so in their primary major, and as such select elective coursework from their primary discipline. Students electing to use their Senior Design course sequence must have their project topic approved by both their departmental senior design coordinator and either the director of the Navy STEM Program or the Associate Dean for Undergraduate Education.

Students electing to use Special Topics courses or Independent Study/Research courses must have the course or research topic approved by both their department and either the director of the Navy STEM Program or the Associate Dean for Undergraduate Education. Other courses relevant to naval science and technology may be considered for the concentration by petition to the director of the Navy STEM Program or the Associate Dean of Undergraduate Education. Students may not apply courses used in this concentration to fulfill requirements for other concentrations or minors.

The concentration in Naval Science and Technology is restricted to U.S. citizens.

### Program Educational Objectives (PEOs):

**Program Educational Objective 1:** Within three to five years after graduation, in their professional careers and/or graduate programs, our alumni/ae will have progressed in responsible professional positions, pursued continual learning, and/or will have attained or will be successfully moving toward attaining post-graduate degrees.

**Program Educational Objective 2:** Within three to five years after graduation, in their professional careers and/or graduate programs, our alumni/ae will have earned recognition for applying and continually expanding special, in-depth competencies in materials design, selection, processing, characterization, modeling and simulations.

**Program Educational Objective 3:** Within three to five years after graduation, in their professional careers and/or graduate programs, our alumni/ae will have earned recognition for applying and continually expanding professional skills of critical and cooperative thinking, communication, leadership, teamwork, including in multidisciplinary settings, innovation, and project management.

**Program Educational Objective 4:** Within three to five years after graduation, in their professional careers and/or graduate programs, our alumni/ae will have become engaged with and will be contributing to professional societies. Our alums will also begin to identify and promote opportunities for collaboration with the MSE department, faculty, students, and other alumni/ae.

The Materials Science and Engineering program is accredited by the Engineering Accreditation Commission of ABET, [www.abet.org](http://www.abet.org).

## Mechanical Engineering

### Bachelor of Science in Engineering

Mechanical Engineering majors are required to complete the following:

- CE 2110, 2120, and 3110;
- ECE 2000 or 2001;
- ENGR 1166;
- MATH 2110Q and 2410Q;
- ME 2233, 2234, 3220, 3227, 3242, 3250, 3253, 3255, 3263, 3264, 4972, and 4973W;
- MSE 2001 or 2101;
- ME Requirement (nine credits);
- Professional Requirements (six credits);
- Electives (five credits).

All mechanical engineering students are required to have at least six credits of work in the mathematical sciences and sciences beyond those courses specifically required in the program. The course credits can be met at any course level. Those at the 2000 level and above can be used to meet the professional requirements of the program. Restrictions on courses are noted in the following:

All MATH 2000-level and above courses except MATH 2720W, and 2794W; all STAT courses except STAT 1000Q; all BIOL, EEB, MCB, and PNB courses; all CHEM courses except CHEM 1101; all GSCI courses, all MARN courses may be used.

**Concentration requirements:** nine credits (three courses, 2000 level and above); no course grades of less than “C”; plan of study for concentration; must take courses from a subset of identified courses.

**Aerospace Concentration:** Three courses from: ME 3239, 3251, 3275, 3276, 3280, 5311, 6160, or 3295 Special Topics taught as any of these: Acoustics, Aerodynamics, Aerodynamics and Flight Mechanics, Aerospace Control Systems Aircraft Performance; Stability and Control; Analysis of Composite Materials and Structures; Introduction to the Finite Element Method; Mechanics of Composite Materials, Orbital Mechanics, or Structural Dynamics.

**Energy and Power Concentration:** Three courses from: ME 3239, 3251, 3270, 3275, 3276, 3280, 3285, 5311, 6160, or 3295 (Special Topics) taught as any of the following: Aerodynamics, Aerodynamics and Flight Mechanics, Radiation Heat Transfer.

**Dynamic Systems and Control Concentration:** Three courses from: ME 3214, Special Topics 3295 when taught as any of these: Aerospace Control Systems; Acoustics; Advanced Vibrations; Aircraft Performance; Stability and Control; Intelligent Material Systems and Structures; Manufacturing Robotics, Mechatronics; Modeling and Simulation for Materials and Biology; Optimal and Adaptive Controls; Orbital Mechanics, or Structural Dynamics, ME 5160, 5180, 5210, 5420, 6330, or 5895 Special Topics when taught as Mechatronics.

**Design and Manufacturing Concentration:** Three courses from: ME 3217, 3221, 3222, 3224, 3225, 3228, 5511, 5155, 5150, 5210, 5220, 5895 when taught as Probabilistic Engineering Design or Special Topics 3295 when taught as any of the following: Advanced Biomechanics of Soft Tissues; Analysis of Composite Materials and Structures; Computational Foundations of Digital Manufacturing; Computers in Manufacturing; Flexible and Stretchable Electronics; Geometric Modeling; Intelligent Material Systems and Structures; Introduction to Products and Processes; Introduction to the Finite Element Method; Manufacturing of Biointegrated Materials and Devices at Micro and Nanoscales; Mechanics of Architected Materials; Mechanics of Composite Materials; Principles of Optimum Design, or Six Sigma Green Belt Using Minitab.

### Concentration in Naval Science and Technology

The concentration in Naval Science and Technology is designed to expose students to engineering concepts and topics of importance to the Navy and industries that support naval science and technology. It is focused on facilitating interactions between students and naval professionals as well as hands-on and experiential activities related to senior design projects or independent study projects that have naval science and technology connections.

To complete this concentration, students must complete nine credits of Naval Science and Technology Coursework topics, distributed as follows:

1. At least three credits of ENGR 3109.
2. Six credits from the following courses: ME 3396, 3299, 4975, 4976.

Students electing to complete the concentration must do so in their primary major, and as such select elective coursework from their primary discipline. Students electing to use their Senior Design course sequence must have their project topic approved by both their departmental senior design coordinator and either the director of the Navy STEM Program or the Associate Dean for Undergraduate Education.

Students electing to use Special Topics courses or Independent Study/Research courses must have the course or research topic approved by both their department and either the director of the Navy STEM Program or the Associate Dean for Undergraduate Education. Other courses relevant to naval science and technology may be considered for the concentration by petition to the director of the Navy STEM Program or the Associate Dean of Undergraduate Education. Students may not apply courses used in this concentration to fulfill requirements for other concentrations or minors.

The concentration in Naval Science and Technology is restricted to U.S. citizens.

The faculty of the Mechanical Engineering program at the University of Connecticut strives to continuously improve our undergraduate program in Mechanical Engineering. The program's educational objectives are that our graduates: will be gainfully employed in Mechanical Engineering or related career paths including industrial, academic, governmental and non-governmental organizations and will continue their professional development by engaging in professional activities and/or training to enhance their careers and/or pursue post-graduate studies.

The Mechanical Engineering program is accredited by the Engineering Accreditation Commission of ABET, [www.abet.org](http://www.abet.org).

## Multidisciplinary Engineering

### Bachelor of Science in Engineering

Multidisciplinary Engineering majors are required to complete the following:

- CHEG 2103;
- CHEM 1128Q or 1148Q;
- CE 2110, 3110, and 3120;
- ECE 2001;
- ENGR 1166, 4001, 4002W;
- MATH 2110Q and 2410Q;
- MSE 2001 or 2101, and MSE 2002 or 2102;
- STAT 3025 or an equivalent approved statistics course (advisor approval required);
- Thermal Science Elective: One from MSE 3001, ME 2233, or CHEG 2111;
- Engineering Electives (nine credits);
- Area Elective Credits (twenty-four credits).

All multidisciplinary engineering students are required to have at least nine credits of work in engineering beyond those courses specifically required in the program. Three credits may be met by courses offered in the School of Engineering at the 2000 level or higher, and six credits must be met by courses in the School of Engineering at the 3000 level or higher.

Area Elective Credits can be used to pair the Multidisciplinary Engineering degree with other partner programs at the university. For students not seeking a paired program, consult with your academic advisor and the Guide for Multidisciplinary Engineering Majors for guidance on selecting courses based on your interests.



The Multidisciplinary Engineering Degree is overseen by faculty from the School of Engineering as well as the Engineering Undergraduate Programs Office, who strive to continuously improve our undergraduate program in Multidisciplinary Engineering. The program's educational objectives (PEOs) are that our graduates: will be gainfully employed in Engineering or related career paths including industrial, academic, governmental and non-governmental organizations, and will continue their professional development by engaging in professional activities and/or training to enhance their careers and/or pursue post-graduate studies.

### **Multidisciplinary Engineering with a Specialization in Entertainment Engineering**

Students choosing the Entertainment Engineering specialization will take coursework in the School of Fine Arts focused on stagecraft and technical theater, with a focus on hands-on and experiential learning in SFA dramatic productions. Students with this specialization will be well positioned to work in the theater and entertainment industries with a strong engineering background that intersects with the performing arts.

#### **Required Courses (24 credits):**

- DRAM 1219
- DRAM 3201
- DRAM 3202
- DRAM 3203
- DRAM 3204
- DRAM 3199 Independent Study and Production Assignment (three credits each, six credits total)
- Any three credit DRAM 3000-level course not used in fulfillment of another requirement

#### **Suggested Content Area/General Education Courses**

The specialization in Entertainment Engineering will require the 24 credits of required courses as described above. In addition, students pursuing this specialization are encouraged to choose at least one of their content area or General Education courses from the curated list below to provide additional depth in the Dramatic Arts according to their interests.

- AFRA/DRAM 3131 (CA 4)
- AAAS 2136W (CA 1/CA 4-INT)
- DRAM 1101 (CA 1)
- DRAM 1501 (CA 1/CA 4-INT)
- DMD 2620 (CA 2)
- DRAM 3133 (CA 4)

### **Multidisciplinary Engineering with a Specialization in Human Rights and Sustainability**

The specialization in Human Rights and Sustainability is a joint program between the School of Engineering, the Human Rights Institute, and the College of Liberal Arts and Sciences. The Multidisciplinary Engineering (MDE) major with Specialization in Human Rights and Sustainability requires a student to be enrolled in the School of Engineering. In addition to providing students with a broad background in numerous engineering fields, this specialization aims to emphasize a human rights-based approach to engineering. Students will complete a minimum of 24 Human Rights credits, chosen from the courses outlined below, and will design a capstone project that follows a human-rights based approach to engineering.

Students will select 24 credits of specialization coursework according to the distribution below.

- ENGR/HRTS 2300: ideally taken during the second semester of first year in the program.
- Three Core Courses: one from each area.
  - A. Institutions and Laws
  - B. History, Philosophy, and Theory
  - C. Applications and Methods
- Two Core Sustainability Courses (Area D)
- Two additional courses that may be taken from any of the Core or Elective courses (A-E) on the list below.

**Note:** Courses solely or cross listed between ENGR and other disciplines listed below may be used to fulfill either ENGR elective credits or be counted as part of the 24 HRTS credits, but not both.

Students are encouraged, but not required, to take a W course in Human Rights as part of the 24 credits.

A capstone engineering design project (ENGR 4001 and ENGR 4002W) with strong Human Rights (HR) content as approved by the MDE faculty advisory board and Human Rights Institute Director, or Internship in HR (HRTS 4291) for students whose capstone design project does not have a significant HR theme. HRTS 4291 would count as one for the two "additional courses" above.

- Note: Students can elect to do both an HR-themed capstone and an HR internship if desired but must have at least one HR-themed experiential learning experience.

The MDE advising team will be responsible for ensuring that students successfully navigate the program requirements. The Human Rights undergraduate advising team will work with the students to identify experiential learning opportunities for students in the major.

#### **Core Courses**

##### **A. Institutions and Laws**

ANTH/HRTS 3230/W; HIST/HRTS 3202; HRTS 3050, 3055, 3200/W; POLS/HRTS 3212, 3420, 3428; SOCI/HRTS 2800, 2845/W.

##### **B. History, Philosophy, and Theory**

ANTH/HRTS 3326; ANTH/HRTS/LLAS 3327; ENGL/HRTS 3631; HIST/HRTS 3201, 3207, 3232; HRTS 2100W, 3460, 3710; HRTS/LLAS 2450; HRTS/PHIL 3220/W; HRTS/POLS 3042.

##### **C. Applications and Methods**

BADM or BLAW or HRTS 3252, 3254; DRAM/HRTS 3139; HRTS 3149/W, 3250/W, 3475, 3540; POLS/HRTS 3256/W, 3430; SOCI/HRTS 3835/W.

##### **D. Sustainability (\*Courses that can also count as ENGR credits)**

\*ENGR/HRTS 3257; \*ENVE/ENVS/EVST 3100; \*ENVE 3110E; \*ENVE 4850; GEOG 2400E; NRE 2600E; \*POLS/ENGR/HRTS 3209; POLS 3203.

##### **E. Elective Courses**

Any HRTS course numbered 2000 or above not already taken; ANTH/HRTS 3028/W; ANTH 3150W; ARTH/HRTS 3575; ECON 3473/W; ECON 2445/HRTS/WGSS 3445; EDCI 2100; GEOG 4240; HIST 2570, 3418; HIST/AAAS 3531; (with advisor approval) HRTS 3293, 3295, 3298, 3299; PHIL/HRTS 2170W; PHIL 2215/W; POLS/HRTS 3418/W, 3807; POLS 3240E; AAAS/HRTS/SOCI 2220; SOCI/HRTS 2830/W, 2898; SOCI/HRTS/AFRA 2520, 2530; WGSS/HRTS 2263; WGSS 2255, 3105, 3257, 3269.

##### **Capstone Course: HRTS 4291**

This course is only required for students whose Senior Design sequence does not have a strong human rights component. Any student can complete an HRI internship and have it count for elective credit.

### **Multidisciplinary Engineering with a Specialization in Industrial Design**

This specialization covers all the necessary classes to obtain a well-rounded education in engineering, such as chemistry, calculus, physics, and materials science, but leaves a significant number of courses for a solid framework in industrial design. This approach gives students a strong foundation of industrial design studio practices, and a unique understanding of fabrication methods, presentation skills, human factors, and concept development methods that will make them uniquely qualified to address new challenges in the field of engineering and design.

#### **Required Courses (24 credits):**

- ART 3701
- ART 3705
- ART 3710
- ART 3720
- ART 3725
- ART/ENGR 3735
- Two Industrial Design electives taken during Fall and Spring totaling six credits, selected from the following list (not all courses are available all semesters):
  - ART 3730

- ART/ENGR 3740
- ART/ENGR 3750
- ART/ENGR 3760

## **Robotics Engineering**

### **Bachelor of Science in Engineering**

Robotics Engineering majors are required to complete the following:

- ENGR 1166;
- CSE 2050, CSE 2500 or MATH 2710, CSE 3500, CSE 4820;
- ECE 1401, 2001, 3101, 3411, ECE 3111 or ME 3253 or ME 3254, ECE/ME 3161, ECE/ME 3162, ECE/ME 3163, ECE/ME 4161;
- MATH 2110Q, 2210Q, and 2410Q;
- STAT 3345Q or MATH 3160;
- Senior design and in-major writing: Complete one of the senior design sequences below:
  - ECE 4900W, 4901 and 4902;
  - ME 4972/4973W or ME 4974W/4975/4976;
  - CSE 4939W, 4940.
- Track Electives (Three courses; taken from designated list of courses for each track);
- Robotics Electives (Two additional courses; taken from designated list of courses from any of the track lists);
- Elective courses (Two credits if taking ECE 3111 or three credits if taking ME 3253 or 3254).

### **Tracks**

#### **Electronics Track**

CSE 2301; ECE 3201, 3211, 3212

#### **Systems Track**

CSE 3100, 4705, 4709; ECE 4131, 4132

#### **Mechanical Track**

CE 2110, 3110; ME 2120, 3220, 3221, 3227, 3256, 3262

#### **Biomedical Track**

BME 3500, 3600, 4120, 4130, 4300, 4500

Robotics is a multidisciplinary field that draws on aspects from electrical engineering, mechanical engineering, and computer engineering. The proposed curriculum is built around fundamental core courses in each of these areas that are then brought together with specific robotics engineering courses. The Robotics Engineering program educational objectives are that our alumni/ae:

- make technical contributions to design, development, and manufacturing in their practice of robotics engineering.
- advance in their professional career.
- engage in professional development or post-graduate education to pursue flexible career paths amid future technological changes.

# School of Fine Arts

Alain Frogley, D. Phil., *Interim Dean*

Colleen Bridgeman, B.S., *Assistant Dean*

The School of Fine Arts encompasses the Departments of Art and Art History, Digital Media and Design, Dramatic Arts and Music. The curricula in each department afford not only an intensive professional education, but a liberal university education as well.

**Admission Requirements.** See Admission to the University and Department Guidelines.

**General Education Requirements.** The University Senate has adopted General Education Requirements in a variety of curricular areas that must be satisfied as part of every bachelor's degree program. These requirements appear in the "Academic Regulations" section of this *Catalog*.

Courses may be used to meet both School of Fine Arts and University requirements.

**Supplementary Scholastic Standards.** Fine Arts students (with the exception of Art History and Theatre Studies majors and Digital Media and Design students enrolled in the Bachelor of Arts program) must enroll in a minimum of six credits in major department courses (Art and Art History, Dramatic Arts, or Music or Digital Media and Design courses for students enrolled in the Bachelor of Fine Arts program) each semester of full-time study unless an exception is granted by the Director of Advising. Students who fail to comply with the minimum credit requirement are subject to dismissal from the school.

## Bachelor's Degree Requirements

Upon the recommendation of the faculty, the various bachelor's degrees are awarded by vote of the Board of Trustees to students who have met the following requirements:

1. Earned at least 120 credits applicable toward the degree;
2. earned at least a 2.0 grade point average for all calculable course work;
3. met all the requirements listed above for the specific degree taken.

## Exemptions and Substitutions

Students who desire to be excused from any of the requirements or courses should consult the pertinent department head and Eva Gorbants, Assistant Dean.

**Minors.** The School of Fine Arts offers interdisciplinary minors in Digital Arts and Global Arts and Culture. They are described in the "Minors" section of this *Catalog*.

## Art and Art History

### Degrees offered

Bachelor of Fine Arts in Art

Bachelor of Arts in Art

Bachelor of Arts in Art History

**Information Literacy and Writing in the Major Competency Requirements.** Students must successfully complete at least one Art History W course.

**Note:** Each Bachelor of Fine Arts Studio Art Major must own a personal portable computer that meets or exceeds posted departmental performance standards. Students are also responsible for purchasing the latest version of Adobe Creative Cloud for Education prior to the start of the second semester of their first year.

**Minors.** The Art and Art History Department offers minors in Art History and Studio Arts. They are described in the "Minors" section of this *Catalog*.

### Bachelor of Arts in Art

The B.A. degree in Art serves those whose educational goals include a broader range of academic coursework in addition to a focus on studio art. The program enables students to gain basic competencies through foundational coursework, followed by intermediate and upper level classes in a range of studio art areas. Along with studio art study, B.A. students take courses that address historical and theoretical aspects of art. By combining

experience in the Department of Art and Art History with coursework offered by other departments, students learn analytical, practical and critical thinking skills, preparing them for entry into careers that may include positions in museums, galleries, community arts centers, and non-profit arts organizations. Some students who complete the B.A. may plan to pursue post-baccalaureate or graduate degrees. The B.A. in Art may combine with other program degrees for students who wish to complete a double major.

### Admission

Essay

### Common Curriculum

All B.A. students share a common curriculum of 27 credits:

- **Drawing:** ART 1030
- **Foundation:** Studio Concepts: ART 1010
- **Basic Studios\*:** Painting (ART 2310); Photography (ART 2410); Printmaking (ART 2510); Sculpture (ART 2610)
- **Art History:** Nine credits in Art History, one a 1000-level offering to be taken in the first two years of study. Not more than one 1000-level Art History course may be used toward the Art History requirement for the B.A. degree.

**Note:** Studio Art minimum requirement is 42 credits, a minimum of 15 of which must be at the 3000-level or higher. ART 1000 does not count toward major requirements.

### Independent Study

Open to Juniors and higher with a minimum departmental grade point average of 3.0 and no outstanding incompletes for any other ART 3999, for a maximum of six credits total.

### Internships and Co-ops

Open to Juniors and higher with a minimum major GPA of 3.0, have an opportunity for a placement in art for credit, either a Studio Internship (ART 3991) or Co-operative Education in Art (ART 3990).

The Department of Art and Art History reserves the right to retain student work for exhibition purposes and classroom demonstrations.

### Bachelor of Fine Arts in Art

The Bachelor of Fine Arts degree is the professional degree in art and design. The program provides a rich educational environment for students to develop capabilities necessary for careers in the visual arts, or for further study at the graduate level. A solid program in general education supports intensive work in studio art, design and art history. Students gain requisite technical skills, experience in critical and creative problem solving, visual literacy, and a knowledge of historical modes of expression in the visual arts. After completing foundational studies, students choose from eight concentrations to focus their work through required and elective upper level courses. Internships, education abroad, and student exhibitions provide further educational opportunities. Studies culminate in the Senior Project course and an exhibition of work in the Senior Show.

### Areas of Concentration

- Graphic Design
- Illustration/Animation
- Industrial Design
- Painting/Drawing
- Photography/Video
- Printmaking
- Sculpture/Ceramics
- Individualized

### Admission

Portfolio Review

### Common Curriculum

All B.F.A. students share a common curriculum of 39 credits:

**Drawing:** ART 1030, 1040

**Foundation Courses:** Studio Concepts: ART 1010

**Criticism and Interpretation:** ART 1020

**Basic Studios\*:** Painting (ART 2310), Photography (ART 2410), Printmaking (ART 2510), Sculpture (ART 2610).

**Art History:** Twelve credits in Art History, one a 1000-level offering to be taken in the first two years of study. Not more than two 1000-level Art History courses may be used toward the Art History requirement for the B.F.A. degree.

**Senior Project:** ART 4901

\*Note: All basic studios should be completed no later than the end of the fifth term. Studio Art minimum requirement is 66 credits, a minimum of 30 of which must be at the 3000 level or higher.

### Areas of Concentration

All concentrations consist of a minimum of 18 credits of 2000-level or higher courses, with area requirements specified below.

**Graphic Design:** ART 2011, 2110, 2120, 3110, 3120, 4110.

**Illustration/Animation:** ART 2010, 2011, 2110, 2210, 2220, 3010, 3210 (repeated once), or 3270.

**Industrial Design:** ART 2011, 3701, 3705, 3710, 3720, 3730.

**Painting/Drawing:** ART 2010, 3310, 3330, 3901; and nine additional credits in the 3000-level courses in the painting/drawing area to be determined by student interest and faculty advisement.

**Photography/Video:** ART 2420, 3420, and 4410 (may be repeated once); ARTH 3460, 3560 plus 12 additional credits of 3000-level studio courses in the photography/video area to be selected from the following list: ART 3410, 3430, 3440, 3450, 3455, 3460, 3465, and 3470. ART 1040 optional for photography/video concentration, substitution determined by student interest and faculty advisement.

**Printmaking:** ART 2010, 3510, 3520, 3530 (repeated for a total of 9 credits), and 3901.

**Sculpture/Ceramics:** ART 2010 and 3901, plus 15 additional credits in any of the 3000-level courses in the three-dimensional area to be determined by student interest and faculty advisement, selected from the following list: ART 3605, 3610, 3615, 3620, 3625, 3630, 3640, 3650, 3655, 3660, 3665, and 3670.

**Individualized Studies:** A program of at least 30 credits (including ART 4901) on the 3000-level or higher, drawn from two or more areas, in consultation with area faculty. Students must file an approved Individualized Studies proposal.

**Remaining Credits.** Any remaining credits of the required 78 in art and art history may be filled by repeating some courses where permitted, taking relevant concentration courses, or taking electives in studio art.

**Independent Study.** Open to Juniors and higher with a minimum departmental grade point average of 3.0 and no outstanding incompletes for any other 3999. A maximum of six credits total.

**Internships and Co-ops.** Open to Juniors and higher with a minimum major GPA of 3.0 have an opportunity for a placement in art for credit, either a Studio Internship (ART 3991) or Co-operative Education in Art (ART 3990).

### Additional Graduation Requirements.

- Senior Project ("C" or better)
- Exhibited work in annual BFA Exhibition

The Department of Art and Art History reserves the right to retain student work for exhibition purposes and classroom demonstrations.

### Bachelor of Arts in Art History

The Art History program's special strengths include an interdisciplinary range of courses that address chronological breadth as well as issues of gender, identity formation, and theory and criticism in the visual arts. Members of the Art History faculty collaborate closely with colleagues in programs in Women's Studies, Latin American Studies, Medieval Studies, American Studies, African American Studies, European Studies, Asian American Studies, and Human Rights. Graduates go on to graduate study as well as careers in museums, galleries, and a range of arts-related settings both in the U.S. and abroad. Majors are encouraged to participate in Education Abroad Programs and many have used internship opportunities at museums and galleries to build professional expertise and broaden their career options.

The undergraduate art history major requires the following Art History courses:

Six credits at the introductory, 1000 level: ARTH 1128, 1137, 1138, 1140, 1141, or 1162 and 24 credits of art history at the 2000 level and above to include:

- three to six credits of art history at the 2000 level
- one three-credit course from each of Groups A, B, and C listed below
- a three-credit capstone seminar; and
- six to nine additional credits of art history at the 3000 level

### A: Ancient, Medieval or Renaissance art:

ARTH 3140, 3150, 3210, 3220, 3230, 3240, 3260, 3330, 3340, 3360, 3610\*, 3620\*

### B: Art from the 19th-century to the present:

ARTH 3020, 3035, 3050\*, 3430, 3440, 3445, 3450, 3460, 3510, 3530, 3560, 3630\*, 3640\*, 3645 \*

### C: Art from global perspectives:

ARTH 3015, 3050\*, 3500, 3610\*, 3620\*, 3630\*, 3640\*, 3645\*, 3715, 3720, 3730, 3740, 3745, 3760

\*Courses marked with an asterisk (\*) may be used to fulfill just one requirement.

**Additional Requirements.** Art History students also take six credits of studio art at any level for which they meet the prerequisites and 12 credits at the 2000 level or above of related courses outside the major as approved by the major advisor.

Art history majors must complete at least 45 credits numbered 2000 level or higher as part of their total 120 credits required for graduation.

## Digital Media and Design

### Degrees offered

Bachelor of Fine Arts in Digital Media and Design

Bachelor of Arts in Digital Media and Design

### Admission

Slideroom portfolio review.

**Information Literacy and Writing in the Major Competency Requirements.** Basic information literacy skills will be addressed in DMD 1001, 1002, 1101, 1102 and 2010. Students must successfully complete DMD 3010W.

**Note:** Each DMD student must own a personal portable computer that meets or exceeds posted departmental performance standards. Refer to [dmd.uconn.edu](http://dmd.uconn.edu) for current standards. Students are also responsible for purchasing and installing the latest version of Adobe Creative Cloud for Education on their personal computer.

### Bachelor of Fine Arts Areas of Concentration

- Motion Design and Animation
- 3D Animation
- Digital Film/Video Production
- Game Design
- Web/Interactive Media Design

### Bachelor of Arts Areas of Concentration

- Digital Culture
- Digital Media Business Strategies
- Digital Media Design

### Bachelor of Fine Arts in Digital Media and Design

The Bachelor of Fine Arts is the professional degree in art and design. The B.F.A. emphasizes creative production and facilitates students' abilities to produce and implement visual communication strategies necessary for careers in visual arts and design. Students gain advanced technical, creative problem solving, and critique skills through intensive studio courses, as well as a thorough understanding of relevant history and theory. Additional requirements that distinguish the B.F.A. from the B.A. include two Studio Art courses. In collaboration with the Art and Art History department, B.F.A. students enroll in ART 1030 Drawing 1 and choose one additional

introductory studio art course from illustration, painting, photography, printmaking, life drawing, or sculpture. Twelve course credits in Art/Design/Film/Digital Media History/Theory are also a requirement of the B.F.A. degree.

By the third semester, all B.F.A. majors must declare one of five areas of concentration and register for the appropriate courses for their chosen specialization. As a senior capstone, all B.F.A. students must take six credits of Senior Project (fall/spring) and a Portfolio and Professional Development course. The students' Senior Projects are publicly displayed in the DMD Senior Exhibition, the culmination of the B.F.A. degree.

*Note: Game Design and 3D Animation concentrations are only available on the Storrs campus.*

## Bachelor of Fine Arts Requirements

**Bachelor of Fine Arts Common Curriculum Requirements:** All B.F.A. students share a common curriculum of 45 credits:

**First Year / Foundation Courses:** DMD 1001, 1002, 1101, 1102.

**DMD Core:** DMD 3010W, 4040.

**Senior Capstone:** DMD 4025 and six credits of 4075.

**Art Requirements:** ART 1030; one Basic Studio\* for three credits from ART 2010, 2210, 2310, 2410, 2510, 2610.

\* Note: The basic studio requirement should be completed no later than the fourth term. **Art/Design/Digital Media/Film History or Theory:** DMD 2010 and nine additional credits from the approved list.

## Areas of Concentration (33 credits)

All concentrations consist of 33 credits of 1000/2000/3000/4000-level courses including all necessary prerequisites within area of DMD concentration as specified below.

- **Motion Design and Animation Requirements:** DMD 2200, 2210, 2230, 3200, and 21 credits of 2000-level or higher Motion Design and Animation electives, as approved by advisor. Twelve of these credits must be at 3000-level or higher.
- **3D Animation Requirements:** DMD 2200, 2300, 2310, 2320, 3310, and 18 credits of 2000-level or higher 3D Animation electives, as approved by advisor. Nine of these credits must be at 3000-level or higher.
- **Digital Film/Video Production Requirements:** DMD 2200, 2210, 2810, 3230, 3850 and 18 credits of 2000-level or higher Film/Video electives, as approved by advisor. Nine of these credits must be at 3000-level or higher.
- **Game Design Requirements:** DMD 1060, 2500, 2542, 2580, 3500, 4500, and 15 credits of 2000-level or higher Game Design electives, as approved by advisor. Nine of these credits must be at 3000-level or higher.
- **Web/Interactive Media Design Requirements:** DMD 1060, 1070, 2470, 3470, 3475, and 18 credits of 2000-level or higher Web/Interactive electives, as approved by advisor. Nine of these credits must be at 3000-level or higher.

## Independent Study

(DMD 3099) Open to fifth semester students or higher with a minimum departmental grade point average of 3.0 and no outstanding incompletes for any other independent study courses. Limited to a maximum of 15 credits total.

## Internships

(DMD 4081) Fourth semester or higher students meeting departmental academic standards may earn credit for an external or internal internship.

## Additional Graduation Requirements

- Senior Project ("C" or better required for graduation)
- Exhibited work in annual B.F.A. Exhibition.

## Bachelor of Arts in Digital Media and Design

The Bachelor of Arts in Digital Media and Design is designed to develop students' proficiencies in design and digital media technologies while exploring the context and relevance of digital media practices inside and outside the major that strengthens the content of students' DMD studies. The B.A. curriculum offers flexibility for a student to combine a degree in

Digital Media and Design with courses offered in other departments across campus and is ideal for students who wish to complete a double major, dual degree, or various minors. Due to UConn's NASAD (National Association of Schools of Art and Design) accreditation requirements, the B.A. in Digital Media and Design, as a liberal arts degree, limits the maximum total number of credits in art and design to 45% (or 54 credits) of the total curriculum.

## Bachelor of Arts Requirements

**Bachelor of Arts Common Curriculum Requirements:** All B.A. students share a common curriculum of 24 credits: DMD 1001, 1002, 1101, 1102.

**First Year / Foundation Courses:** DMD 1001, 1002, 1101, 1102.

**DMD Core:** DMD 3010W, 4040.

**Art/Design/Digital Media/Film History or Theory:** DMD 2010 and three additional credits from the approved list.

## Areas of Concentration (18-21 credits)

All concentrations consist of 18 to 21 credits of 1000/2000/3000/4000-level courses including all necessary prerequisites within an area of DMD concentration. Students must choose one of the concentrations listed below.

### Digital Culture Requirements

- **Digital Culture Core (15 credits):** DMD 2610 or 2620, DMD 3620, a course in Collaborating with Cultural Organizations, Methods, and DMD 4086 (to be taken twice in two consecutive semesters for a total of six credits). Six credits of 2000-level or higher Digital Culture electives, as approved by advisor. Three of these credits must be at 3000-level or higher.
- **Technical Specialization:** choose two 2000-level or higher courses for a total of six credits in one of the following DMD concentrations: Motion Design and Animation, 3D Animation, Digital Film/Video Production, Game Design, or Web/Interactive Media Design.

Additionally, students will develop a core competency in a humanities or social science discipline consistent with their interests and career goals and chosen in consultation with their advisor. This chosen area of competency also provides the foundation for the Senior Thesis. Competency areas might include Anthropology, Latino Studies, Human Rights, Comparative Literature and Cultural Studies, Urban and Community Studies, History, English, Sociology, Social Justice Organizing, etc.

### Digital Media Business Strategies Requirements

- **Digital Media Business Strategies Core (12 credits):** DMD 2700, 2710, 3720, 3730. Nine credits of 2000-level or higher Digital Media Business Strategies electives, as approved by advisor. Three of these credits must be at 3000-level or higher.
- **DMD Studio course:** choose one course from DMD 1070, 2200, 2210, 2300, or 2500.

### Digital Media Design Requirements

- **Intro to Areas of Concentration:** choose two courses from DMD 1070, 2200, 2210, 2300, 2500, or 2700.
- **DMD Electives:** 15 credits of DMD courses as approved by advisor. Six of these credits must be at 3000-level or higher.

## Independent Study

(DMD 3099) Open to fifth semester or higher students with a minimum departmental grade point average of 3.0 and no outstanding incompletes for any other independent study courses. Limited to a maximum of 15 credits total.

## Internships

(DMD 4081) Fourth semester or higher students meeting departmental academic standards may earn credit for an external or internal internship.

Note: The Digital Media & Design Department reserves the right to retain student work for exhibition purposes, online program promotion, and classroom demonstration.

## Supplemental Academic Standards

- Digital Media and Design majors must maintain a minimum cumulative grade point average of 2.7 for all graded coursework at the University of Connecticut.
- Digital Media and Design majors must maintain a minimum

cumulative grade point average of 3.0 based on all courses required within the Digital Media and Design majors.

At the end of each semester, students with a grade point deficiency will be placed on departmental scholastic probation. During the subsequent semester, the student will have the opportunity to improve their standing. In the event that the student's standing does not rise to the minimum level, they will be subject to dismissal from the Digital Media and Design major.

## Dramatic Arts

### Degrees Offered

Bachelor of Fine Arts in Acting, Design and Technical Theatre, and Puppet Arts: Preparation for successful careers in performing arts, entertainment and cultural industries.

Bachelor of Arts in Theatre Studies: study of theatre within a liberal arts curriculum.

Both programs are also considered as preparatory for graduate level studies. The department also offers the Master of Arts and the Master of Fine Arts degrees. Consult the *Graduate Catalog* for details.

### Admission

Please consult Dramatic Arts website for current admission details.

**Prospective Acting majors:** Audition.

**Prospective Design and Technical majors:** Portfolio review in person or via SlideRoom and interview.

**Prospective Puppet Arts majors:** Audition, portfolio review and interview.

**Prospective Theatre Studies majors:** SlideRoom and interview.

### Bachelor of Fine Arts Requirements

All students in the department are required to take at least one course within the major that contributes to the advancing of diverse perspectives. Courses that count toward this requirement include: DRAM 1501, 2136W, 3130, 3131, 3132, 3133, and 3139. When applicable, courses taken to fulfill this requirement may also be counted toward the department history and literature-based course requirement.

To fulfill their departmental writing in the major requirement, students in all three B.F.A. programs must complete one of the following courses: DRAM 2136W, 4135W, or 4711W.

All upper-level courses in Design and Technology, Puppet Arts, and Theatre Studies build upon the basic information literacy competencies introduced in ENGL 1007/1010/1011/2011. Students are expected to develop an understanding of how information is created, disseminated, and organized in the performing arts, and develop abilities in accessing, evaluating, synthesizing and incorporating information into written, oral, or media presentations.

All B.F.A. students in Dramatic Arts (Acting, Design and Technical, and Puppet Arts majors) must complete the following courses: DRAM 2130, 2131, and six credits selected from the following literature and history-based courses: DRAM 2136/W, 3130, 3131, 3132, 3133, 3138, 3139, 3611, 4135/W, and 4711W.

Additional course requirements for the B.F.A. major programs include:

### Acting majors

**Acting majors must also complete:**

- DRAM 1215
- Two credits of DRAM 1282
- Three credits of DRAM 3182
- All 60 credits: DRAM 1701, 1702, 1801, 1802, 1901, 1902, 2701, 2702, 2810, 2812, 2901, 4701, 4702, 4703, 4704, 4705, 4811, 4911, 4912, 4931

### Design and Technical majors

**Design and Technical majors must also complete:**

- All 24 credits: DRAM 1201, 1202, 1207, 1209, 1216, 1217, 1218, 2141
- 12 credits of DRAM 3199
- All 15 credits: DRAM 3201, 3220, 3301, 3401, 3501

- Nine credits from DRAM 3103, 3202, 3302, 3320, 3402, 3420, 3502, 3602, 3603, 3604

**Note:** Each Bachelor of Fine Arts Student in the Design and Technical area, and any other student taking any of the digital design courses, must own a personal portable computer that meets or exceeds posted departmental performance standards. Students should expect to purchase an up-to-date version of Adobe's Creative Cloud for Education and install it on their personal computer for most of their time in residence, either for design classes that require it or for production assignments as assistants and designers.

### Puppet Arts majors

**Puppet Arts majors must also complete:**

- Six credits from the following courses: DRAM 1216, 1217, 1218
- One credit of DRAM 1282
- Six credits from: DRAM 3201, 3220, 3301, 3401, 3402, 3501
- 24 credits from: DRAM 3601, 3602, 3603, 3604, 3605, 3607, 3608, 3609
- All 27 credits from: DRAM 1201, 1202, 1207, 1209, 2130, 2131, 2141, 3610 (taken twice)
- Four credits of DRAM 3182 (to be selected from the following areas: fabrication, costuming, lighting, painting, properties, performance, and running crew)

**Note:** Puppet Arts students must own a personal portable computer that meets or exceeds posted departmental performance standards. It is recommended that students purchase the latest version of Adobe's Creative Cloud for Education and install it on their personal computer.

### B.F.A. in Design and Technical Theatre Supplementary Scholastic Standards Policy

To be considered in good standing, B.F.A. in Design and Technical Theatre students must maintain a minimum cumulative grade point average of 2.7 for all graded coursework as it appears on their university transcript. Design and Technical Theatre majors must maintain a minimum cumulative grade point average of 3.0 based on all courses required within the major.

At the end of each semester all students are required to fully participate in the "Semester Review Exhibition Gallery" which affords faculty the opportunity to meaningfully assess each student's progression and offer a recurring time to evaluate status. Through this, each student will be evaluated twice a year. Students with a grade point deficiency or who are found by their major advisor and/or faculty to have failed to maintain adequate progress and/or development will be placed on departmental scholastic probation.

Students on departmental scholastic probation are not eligible to be considered for leadership opportunities in departmental productions, nor are they eligible for funded field studies or conferences, or other special opportunities without an extenuating exception approved by the faculty.

During the subsequent semester, the student will have the opportunity to improve their standing. In the event that the student's standing does not rise to the minimum level, they will be subject to dismissal from the B.F.A. in Design and Technical Theatre.

### Semester Review Exhibition Policy

All Design and Technical Theatre students are required to participate in the "Semester Review Exhibition Gallery" when held each term. Participation is defined as meaningfully supporting the load in, presentation, and strike of the exhibition as assessed by the faculty.

The Semester Review Exhibition is a pedagogical cornerstone of our program with the following goals:

- Create an opportunity for students to practice the essential skills of public speaking/interviewing/presenting, which is prevalent especially in our "freelance" focused industry.
- Create real world connections and job prospects, network within the industry and with collaborators beyond any individual's discipline, and scaffold career support beyond four years.
- Create an opportunity for students to practice the essential skill of self-assessment and self-evaluation in order to become participants in their own education.

- Assess individual progress and preparedness as students move through our program and in doing so equitably evaluate what the next steps are for each student's path in the program.

### Bachelor of Arts in Theatre Studies Requirements

All students in the department are required to take at least one course within the major that contributes to the advancing of diverse perspectives. Courses that count toward this requirement include: DRAM 1501, 2136W, 3130, 3131, 3132, 3133, and 3139. When applicable, courses taken to fulfill this requirement may also be counted toward the department history and literature-based course requirement.

To fulfill their departmental Writing in the Major requirement, Theatre Studies majors complete one of the following courses: DRAM 2136W, 4135W, or 4711W.

All upper-level courses in Design and Technology, Puppet Arts, and Theatre Studies build upon the basic information literacy competencies introduced in ENGL 1007/1010/1011/2011. Students are expected to develop an understanding of how information is created, disseminated and organized in the performing arts, and develop abilities in accessing, evaluating, synthesizing and incorporating information into written, oral, or media presentations.

### Common Curriculum (33+ credits)

- At least seven credits from the following: DRAM 1216, 1217, 1218, 1282
- 15 credits from DRAM 1710, 2130, 2131, 2141, 4711W
- Nine credits of literature and history-based courses
- One credit of DRAM 4194
- DRAM 4901: Senior project (2.0 or better required for graduation) or an internship (satisfactory report)

### Related Group (12 credits)

2000/3000/4000-level courses. These courses should be related (if applicable) to the student's Theatre Studies concentration, yet these courses do not need to be from a single department or program. Competency areas might include History, Creative Writing, Journalism, Communications, Business, etc.

Only three of the 12 credits may be at the 2000 level.

These same courses may be used to satisfy other University requirements if appropriate.

### Areas of Concentration (18 credits)

2000/3000/4000-level courses including all necessary prerequisites within the area of Theatre Studies concentration. Concentrations are not mandatory for the B.A. degree in Theatre Studies, but majors may opt to choose one of the concentrations listed below. If a concentration is not chosen, then students will take 18 Dramatic Arts credits at the 2000-4000 level with advisor consultation.

- **Stage Management Requirements:** A minimum of 18 credits of DRAM 2000-level or higher courses including DRAM 2711, 3103, 3199, 3301, 3302, 3402, 4122, or others as approved by the advisor.
- **Dramaturgy Requirements:** A minimum of 18 credits of DRAM 2000-level or higher courses including DRAM 3130, 3131, 3132, 3133, 3139, 3141, 3142, 3199, or others as approved by the advisor.
- **Playwriting Requirements:** A minimum of 18 credits of DRAM 2000-level or higher courses including DRAM 3141, 3142, 3145, 3199, 3301, 3302, 4151, 4152, or others as approved by the advisor.
- **Theatre Administration Requirements:** A minimum of 18 credits of DRAM 2000-level or higher courses including DRAM 2711, 3103, 3121, 3199, 4122, or others as approved by the advisor.
- **Theatre Directing Requirements:** A minimum of 18 credits of DRAM 2000-level or higher courses including DRAM 2711, 2712, 3141, 3199, 3301-3302, or others as approved by the advisor.

### Independent Study (DRAM 3199)

Open to students with a minimum departmental grade point average of 2.25 GPA and no outstanding incompletes for any other independent study courses.

**Minors.** A minor in Dramatic Arts and a minor in Puppet Arts are described in the "Minors" section of this *Catalog*.

## Music

### Degrees Offered

#### Bachelor of Music

Bachelor of Music with an emphasis in composition, performance or theory.

#### Bachelor of Arts in Music

Bachelor of Arts in Music, which can be taken without emphasis, with a Music History Emphasis or with a Jazz Emphasis.

#### Bachelor of Science in Music Education

Bachelor of Science in Music Education as a component of the five-year Integrated Bachelor's/Master's degree, conferred by the Neag School of Education. Students seeking a degree in music education enter the University of Connecticut as "pre-teaching in music education" students in the Department of Music. Admission requires the same procedures as for other music degree programs, including an audition and aural skills assessment. During their second year music education students apply for admission to the teacher-education program in the Neag School of Education and, if accepted, subsequently enter that school. Upon completion of the teacher-education program, students graduate with three degrees: the Bachelor of Arts in Music, the Bachelor of Science in Music Education, and the Master of Arts in Curriculum and Instruction. See the Neag School of Education section of this catalog for details and degree requirements.

The department offers the M.A., M.Mus., D.M.A., and Ph.D. degrees. Consult the *Graduate Catalog* for details.

### Admission

On-site audition and aural skills assessment. Consult the Department's website for details: music.uconn.edu. All students are admitted to the Bachelor of Arts in Music and are subsequently considered for admission into the Music Education or Bachelor of Music programs upon enrollment at the University.

### Common Curriculum

1. Completion of the following courses: MUSI 1101, 1222, 1311, 1312, 1313, 1314, 3311, 3313, 3404, and 3405.
2. Convocation (MUSI 1101), Private Lesson (MUSI 1222 or 3222), and Ensemble (MUSI 1110, 1111, or 1112) are required each semester of a student's residency in music as a declared music major, subject to the following exceptions:
  - a. Students pursuing the Bachelor of Arts with no emphasis may reduce these residency requirements to six semesters, which need not be consecutive;
  - b. Students pursuing the Bachelor of Music or Bachelor of Arts with voice as their primary instrument may substitute MUSI 1119 for MUSI 1111 in the last two semesters of their residency;
  - c. B.M. Theory and Composition students need seven semesters of private lessons;
  - d. B.A. and B.M. keyboard students need four semesters of ensemble.
3. Four performances representing the student's primary instrument. (See specific guidelines under additional requirements).
4. Students pursuing the Bachelor of Arts with no emphasis must complete piano proficiency equivalent to MUSI 1231 Class Piano Level 2. Students seeking any other music degree or concentration must complete piano proficiency equivalent to MUSI 1231 Class Piano Level 4.
5. Students with a keyboard emphasis must complete four semesters of MUSI 1241 (B.M. and B.S. keyboard students must complete four semesters of MUSI 1241 before promotion to 3000 level or above applied study).

The University's information literacy requirement will be met through MUSI 3322W, 3407W, 3410W, or 3421W.

The University's writing in the major requirement will be met through participation in MUSI 3322W, 3407W, 3410W, or 3421W.

### Additional Requirements

(All B.A. degree programs)

1. Nine credits outside Music Department in addition to general

education requirements.

2. Minimum of 42 credits of music courses, of which 14 must be at the 2000 level or above.
3. Students in all degree programs will participate in four performances in an elective recital or convocation that shall include two solo and two chamber performances.

### **Jazz Emphasis**

1. MUSI 1601, 3631, 3407W.
2. For the last four semesters of this degree program, Jazz Ensembles (MUSI 1115) fulfills the remaining four credits (one credit per semester) of the large ensemble requirement.
3. Four semesters of applied study in jazz are counted against the eight required semesters of applied study (MUSI 1222/3222). Jazz lessons are taught in the third and fourth year of the degree program by members of our current jazz faculty.

### **Music History Emphasis**

1. MUSI 3312 and 3314.
2. MUSI 3409.
3. Music History courses: MUSI 4489 and three courses chosen from MUSI 3410W, 4471 and 4473: one of these three courses must be 4471 or 4473, and one must be on a pre-1700 topic.
4. Music Theory courses: Two courses from MUSI 3321, 3322W, 3361, 3371.

### **Additional Requirements**

*(Bachelor of Music Degrees)*

1. MUSI 3312 and 3314.
2. MUSI 3409 and one additional 3000-level music history course.
3. Completion of MUSI 3321 and 3322W.
4. Students in all degree programs will participate in four performances in an elective recital or convocation that shall include two solo and two chamber performances.
5. In addition, completion of the following courses:

#### **Composition Emphasis**

- a. MUSI 1601, 3361, 3371, 4731 and 4979.
- b. Completion of the following composition courses: MUSI 3331, 4333 (two semesters), 3351, 3631.

#### **Performance emphasis: Instrumental**

- a. MUSI 3222 (four semesters), MUSI 3233, 3234, 4731, 4732 or 4733, 4979.
- b. Two of the four following courses: MUSI 3331, 3351, 3361 or 3371.
- c. Four semesters of 1113, Small Ensemble.
- d. A half recital during the junior year as a prerequisite for MUSI 4979. Promotion to MUSI 3222 is a prerequisite for the half recital.

#### **Performance emphasis: Vocal**

- a. MUSI 1119 (four credits), 1251, 1252, 2253, 2254, 3222 (four semesters), 3231, 4731, 4732, 4979, two courses from MUSI 3721, 3722, 3723, or 3724; and piano courses necessary to acquire proficiency in playing piano accompaniments as determined by jury.
- b. A half recital during the junior year as a prerequisite for MUSI 4979. Promotion to MUSI 3222 is a prerequisite for the half recital.

#### **Theory emphasis**

- a. MUSI 3331, 3351, 3361, 3371, 4731, and one or two courses (minimum of two credits) from 1601, 3601, 3631 or 3421W.
- b. MUSI 4999 Independent Study (Senior project/paper).
- c. A minimum grade point average of 3.33 in theory courses.



# College of Liberal Arts and Sciences

Ofer Harel, Ph.D., *Interim Dean*

Evelyn Tribble, Ph.D., *Associate Dean for Humanities and Undergraduate Affairs*

Mansour Ndiaye, Ph.D., *Assistant Dean and Executive Director of CLAS Academic Services*

## Admission Requirements

The college requires 16 high school units including:

- Four years of English
- Three years of mathematics, with four preferred
- Two years of a single foreign language, with three preferred
- Two years of a laboratory science
- Two years of social science

The Transfer Admissions Office reviews credits from other institutions. Unless exempted by the Dean or the Assistant Vice Provost, students shall take all of their course work at the University during the last two semesters.

## Bachelor's Degree Requirements

To graduate a student must:

- earn a minimum of 120 credits.
- earn at least 45 credits numbered 2000 or above.
- meet the College of Liberal Arts and Sciences (from the list that follows) General Education and concentration requirements.
- have an overall grade point average of at least 2.0 and a grade point average of at least 2.0 in the courses presented in satisfaction of major requirements.

**Field of Concentration.** Only courses taken at the University of Connecticut meet the requirement. Students may not use Pass/Fail courses to meet these requirements. Exceptions are made by the dean of the college.

- 1. Major and related groups.** The field of concentration includes both the major and related groups; it must total at least 36 credits, all numbered 2000 or above. At least 24 credits in one department, or with the permission of the head of the student's major department, in two related departments, make up the major group. At least 12 credits in courses closely related to the student's major, but outside the major department, make up the related group. Students must earn an overall grade point average of at least 2.0 and a grade point average of at least 2.0 in the courses presented in satisfaction of major requirements.
- 2. Double Major Program.** Students may earn a double major by selecting two majors within the College. A minimum of 48 credits without overlap is required to earn both majors. Therefore, students may not be able to double major if the two majors they choose require the same courses and prevent them from earning 48 credits without overlap. Acceptance into the Double Major program requires the Dean's approval. Students shall choose one of the two majors as their primary major and shall receive one degree appropriate to that major. (Note: students cannot choose one major from the College of Liberal Arts and Sciences and a second from another school or college. This combination is only possible through the Additional Degree program, explained in the "Academic Regulations" section of this Catalog).

**Plan of Study.** Students shall file with the department of their major, after approval by their major academic advisor, a tentative plan of study on a form provided by the advisor. Students must file the tentative plan of study by the beginning of advance registration in their fifth semester.

Students shall file a final plan of study with the Registrar by the end of the fourth week of the semester in which they expect to graduate. The advisor and the department head shall approve the final plan of study.

Students completing a double major must file a plan of study for each major.

## Bachelor of Arts (B.A.) and Bachelor of Science (B.S.)

As well as satisfying all University General Education requirements, students must also satisfy the following requirements for a Bachelor of Arts (B.A.) or Bachelor of Science (B.S.) degree. To determine whether a given major can lead to the B.A., the B.S., or both, consult the descriptions of majors.

**Foreign Languages:** All students must have either (1) passed a third-year high school-level course in a single foreign language, (2) high school work and an added year of intermediate level college courses, or (3) two years of a single foreign language through the intermediate level in college.<sup>1</sup>

**Expository Writing:** All students must take English 1010 or 1011, and two W courses with at least one such course approved for use in the major field of study at the 2000 level or above. No student who has not passed the writing component of W courses may pass the course.

**Quantitative Reasoning:** Three Q courses, at least one of which must be in Mathematics or Statistics. Students should contact the Q-advising contours, accessible on-line, and their advisers to determine the adequacy of their preparedness for specific Q-courses. Q courses may be used to satisfy other degree requirements.

The courses in the University General Education content areas one, two, and three and the areas indicated below must be taken in at least eight different academic units.

### Bachelor of Arts (B.A.):

Five courses, including one from each of the areas A-D and a fifth course from any area A-E. Courses must be from at least four different academic units.

### Bachelor of Science (B.S.):

Four courses, including one course from each of the areas A-D. Courses must be from at least four different academic units.

**A. Arts:** AAAS 2136/W, 2222, 3375; AFRA 1100, 2222, 3132; AMST 1002, 2204, 2400; ARAB 3771; ARIS 3710; ART 1000, 3375; ARTH 1128, 1137, 1138, 1140, 1141, 1162, 2222, 3575, 3710; CHIN 3250W, 3270; CLCS 1002, 1110, 2204, 3211; DRAM 1101, 1110, 1501, 1811, 2134, 2136/W, 2150, 2203, 3132; FINA 1001, 1100; FREN 1171; GERM 1171, 3261W, 3264W; HEJS 2203, 2204; HIST 3710; HRTS 2150, 2203, 3575; ILCS 1149, 3258W, 3260W; INDS 3375; MUSI 1001, 1002, 1003, 1004, 1005, 1006, 1022, 1112, 3407W; SPAN 1010, 1020, 1030, 3250; URBN 2400; WGSS 2204, 2217/W

**B. Literature:** AAAS 2305; AMST 2200, 2274W, 2276/W, 3267W; ARAB 3550W; ARIS 1170/W; CAMS 1101, 1102, 1103; CLCS 1101, 1102; ENGL 1101/W, 1103/W, 1401, 1503, 1616/W, 2100, 2101, 2107, 2200, 2201/W, 2203/W, 2274W, 2276/W, 2305, 2401, 2405, 2407, 2408/W, 2409, 2411/W, 2413/W, 2605/W, 2607, 2635E, 2640/W, 2730W, 3267W 3629, 3633W, 3640/W; FREN 1176, 3234, 3261, 3262, 3270W; GERM 1140W, 1920, 3252W, 3254W, 3255/W; HEJS 1103, 3201, 3629; ILCS 1101, 1158, 1168, 3248/W, 3255W; JAPN 2305; LLAS 1009/W; MAST 1200; SPAN 1007, 1009/W, 3232, 3267W; WGSS 1170/W

**C. History:** AAAS 2101, 2688/W, 2841, 3531, 3554, 3822; AFRA 2621, 2752, 3206, 3619/W; AMST 1700, 2810, 3531; ARAB 3751; CAMS 2020, 3326; CLCS 2609; DMD 2010; ECON 2101/W, 2102/W, 2103; ENGL 2609; GEOG 1200; HEJS 3362, 3419; HIST 1100/W, 1200, 1201, 1203, 1206, 1250, 1300, 1400, 1450, 1501/W, 1502/W, 1570, 1600/W, 1800, 1801, 1805, 2020, 2101, 2205/W, 2206, 2210E, 2222E, 2401/W, 2402/W, 2412/W, 2413W, 2507, 2621, 2650, 2688/W, 2752, 2810, 2841, 2845/W, 3105, 3206, 3326, 3362, 3419, 3531, 3540E/WE, 3554, 3609, 3619/W, 3635, 3660W, 3674, 3705, 3712, 3822; JOUR 1002, 2010; LLAS 1190/W, 1570, 2507, 2621,

<sup>1</sup> A "B+" or better in CAMS 1172: Intensive Intermediate Ancient Greek will fulfill the intermediate second language requirement of the student's degree program.

3220, 3609, 3619/W, 3635, 3660W, 3675; MAST 2210E, 2507; SCI 2206; URBN 1200, 2650; WGSS 1121, 3675

**D. Philosophical/Ethical Analysis:** ECON 2120; GERM 1175; HEJS 2104; HRTS 2170W, 3200/W, 3220/W, 3250/W; LAND 2210E; LING 1010; NRE 1235E; PHIL 1101, 1102, 1103, 1104, 1105, 1106, 1107, 1108E, 1109, 1175, 2170W, 2410, 3220/W; POLS 1002, 2023/W

**E. World Cultures:** AAAS 1000, 1001, 2201, 3820; AMST 2201; ANTH 1001W, 3401, 3450W; ARAB 1751, 1771, 2751; ARIS 1211; CHIN 1121, 1122, 3230/W; CLCS 1103W, 2010, 2201, 2301; FREN 1169, 1176, 1177, 3210, 3218, 3224, 3235, 3267, 3268/W; GERM 1169, 2400E, 3251, 3258; HEJS 2200, 2301; HIST 3540E/WE, 3820; ILCS 1160, 1170; INTD 3260; NURS 2175; SPAN 1008, 1010, 1030

### **Bachelor of Science (B.S.), All of the following:**

One of the Chemistry Sequences: CHEM 1124Q, 1125Q, 1126Q; CHEM 1127Q, 1128Q; CHEM 1137Q, 1138Q; CHEM 1147Q, 1148Q

One of the Mathematics Sequences: MATH 1125Q, 1126Q, 1132Q; MATH 1131Q (or 1151Q), 1132Q (or 1152Q); MATH 2141Q, 2142Q

One of the following: BIOL 1107, 1108, 1110

One of the Physics Sequences: PHYS 1201Q, 1202Q; PHYS 1401Q, 1402Q; PHYS 1501Q, 1502Q; PHYS 1601Q, 1602Q

\* indicates foreign-language prerequisite

## **Internships**

Many departments and programs in the College offer experiential learning in the form of internships, also called “field study” or “practicum.” The College recognizes the important role that internships play in our curriculum but also requires that standards for internships be met so that student interns receive the intended educational benefits. Thus the following restrictions apply: No credit may be given retroactively for internship work undertaken without being properly enrolled in the internship course in advance. A student may count no more than fifteen internship credits towards a bachelor’s degree in CLAS and each credit for internship work must entail at least forty-two hours of work per semester or term. The required number of hours of work must be stated clearly in the learning contract or work plan for the internship signed by both the instructor of record and the internship supervisor. Additional departmental restrictions may also apply.

## **Africana Studies**

Taking as its central mission the study of peoples of African descent on the continent and in the diaspora, the Africana Studies major seeks a nuanced and interdisciplinary understanding of the human experience. The Africana Studies major does so through the humanities, arts, and social sciences, with particular emphasis on continuities and discontinuities across geography and time. Its broad educational objectives are to engender among all students an intellectual appreciation of black lives and their saliency for all human experience; to deepen students’ critical analytic skills; and to value social equality, democracy, and humanitarianism. The Africana Studies major strives to provide students with substantive knowledge of the black world and its linkages to national as well as pre-, sub-, supra-, and transnational processes. Students play an active role in the Africana Studies Institute’s mission to facilitate respect and positive intersocial relationships within the university community. Completion of the B.A. in Africana Studies prepares the student for work in government, community agencies, international organizations, business, journalism and communications, or for graduate studies that lead to careers in research and teaching.

To satisfy the Africana Studies major, students must complete 27 total credits in AFRA courses. Students must complete nine credits from the Core Curriculum, 15 credits distributed in each of the Five Curricular Areas (Black History, Black Diasporic and Global Perspectives, Race, Society and Health, Black Arts, Literature, and Culture, Black Politics and Social Justice) and three elective credits in any AFRA curricular area including variable and special topics or independent study. Variable and Special topics courses may also be applied to the distribution areas based on course content and with advisor consent. Students must also complete 12 credits of related courses not cross-listed with AFRA.

## **Core Curriculum**

AFRA 2211, AFRA 4994W (required); AFRA/ARTH/AAAS 2222; AFRA/HIST 2622. (Choose one additional course from the courses above).

### **Black History**

AFRA/HIST 3025, AFRA/HIST 3206; AFRA/ANTH 3512, AFRA/HIST 3563, AFRA/HIST 3564, AFRA/HIST 3569, AFRA/HIST 3618, AFRA/HIST 3619W, AFRA/HIST 3753.

### **Black Diasporic and Global Perspectives**

AFRA/HIST/LLAS 2621; AFRA/HIST 2752; AFRA/ANTH 3155; AFRA/HIST/LLAS 3208; AFRA 3224/HIST 3770, AFRA/HIST 3620.

### **Black Arts, Literature, and Culture**

AFRA/ENGL2214/W; AFRA/ARTH3050/W; AFRA/DRAM 3132; AFRA/ENGL 3213/W, AFRA/ENGL 3215/W, AFRA/ENGL 3217/W; AFRA/HIST/AMST 3568.

### **Race, Society and Health**

AFRA/SOCI 2250; AFRA/COGS 2345; AFRA/SOCI 2461, AFRA/SOCI 2510, AFRA/SOCI 2520; AFRA/HDFS/WGSS 3042; AFRA/PSYC 3106; AFRA/ANTH 3152, AFRA/ANTH 3320.

### **Black Politics and Social Justice**

AFRA/SOCI/HRTS 2530; AFRA/POLS/PP 3033; AFRA/POLS 3252, AFRA/POLS 3642, AFRA/POLS 3647, AFRA/POLS 3652.

**Any three elective credits from Special Topics, Variable Topics or Independent Study:** AFRA 3295, AFRA 3299, AFRA 3898.

AFRA 2214W and AFRA 4994W satisfy the Information Literacy Competency and Writing in the Major requirements.

**Related Courses:** Students can take 12 credits to fulfill the major.

The major in Africana Studies is administered by the Africana Studies Institute. A minor in Africana Studies is described in the “Minors” section.

## **American Sign Language**

The B.A. in American Sign Language allows students to pursue one of two tracks: American Sign Language Literature and Deaf Cultural Studies or Interpreting American Sign Language and English. ASL 1101-104 are prerequisites and the credits do not count towards the major.

### **Required Courses (15 credits):**

ASLN 3305, 3306W; ASLN/LING 3800; LING 2850, 3850.

### **American Sign Language Literature and Deaf Cultural Studies Track**

Students must complete a minimum of nine credits, of which, a minimum of six credits must be from group A. All nine credits may be satisfied from Group A.

Group A: ASLN 3266, 3360, 3650; ASLN/WGSS 3254.

Group B: ASLN 3290, 3292, 3295, 3298, 3299.

### **Interpreting American Sign Language and English Track**

Students must complete all of the courses in Group A (12 credits) with an additional three credits from Group B.

Group A: ASLN 2500, 2600E, 2700, 2800.

Group B: ASLN 3290, 3292, 3295, 3298, 3299.

Note: ASLN 3293 or EDCI 4088 may count toward group B in either track with advisor approval.

A minor in American Sign Language and Deaf Culture Studies is described in the “Minors” section.

## **American Studies**

The American Studies Program at the University of Connecticut provides students with the opportunity to gain a critical understanding of the American experience while allowing individual students to define what aspects of that experience they would like to explore. Although our required courses focus largely on the United States, the field also studies the United States in a global context by examining how other cultures have shaped this country and how this country has influenced the world.

## General Requirements

- A. Total Credits for the Major: 27** (nine courses, not including “Related Coursework”). In fulfilling the Course Requirements below, a single course can be “double-dipped” to fulfill two areas at once (but not triple-dipped). **Note:** Students who double dip must reach their 27 credits for the major by taking any of the classes listed in the course requirements below.
- B. General Distribution Requirement I.** In fulfilling the requirements for the American Studies degree, students must take four AMST-designated courses (AMST 1201 and 3265 count toward this total).
- C. General Distribution requirement II.** In fulfilling the requirements for the American Studies degree, students must take courses listed in three different departments, not including AMST. Courses cross listed with AMST may count for this requirement, however (for example, AMST/ARTH 3440 counts as an Art History course).

## Course Requirements

With the permission of the Director of American Studies, a student may also satisfy these requirements with a course not listed here.

- 1. Intro Course:** AMST 1201
- 2. American Studies Methods Requirement:** AMST 3265W
- 3. Space, Place, Land, and Landscape** (one of the following): AMST/ENGL 2200; AMST/ARTH 3440; AMST/ENGL/HIST 2207; AMST/ENGL 2276W; AMST/HIST 3502; AMST/HIST 3542; AMST/LLAS 3271/POLS 3834; AMST/URBN 2400; ANTH 3904; ENGL 3235W, 3240E; HIST 2541/W, 3520, 3522, 3540E, 3542; HIST/AAAS 3874/LLAS 3875.
- 4. The United States and the World** (one of the following): AMST/ENGL/HIST 2207; AMST/POLS 3834/LLAS 3271; HIST 3504; 3516; HIST/AFRA 3206; HIST/LLAS/AFRA 3618; HIST/MAST 2210E; HIST/AFRA/LLAS 3208; HIST/AAAS/LLAS 3875; HRTS/SOCI 3831.
- 5. Popular Culture and the Cultural Imagination** (one of the following): AMST/CLCS/HEJS 2204; AFRA/AMST/HDFS/WGSS 3042; AMST/ARTH 3440; AMST/ARTH 3570; AMST/ENGL 2200; AMST/ENGL 2276/W; AMST/HIST 3568; AMST/MUSI 1002; AMST/POLS 3822; AMST/URBN 2400; ARTH 3715; DRAM 3131, 4151; ENGL 2201/W, 2203/W, 3207/W, 3210, 3212, ENGL 2214/W; ENGL/AFRA 3213; ENGL 3215; ENGL/AFRA 3217/W; ENGL 3218, ENGL 3220/W, 3240E; ENGL/WGSS 3613; HIST 3569.
- 6. Intersectionalities** (one of the following): AMST/AAAS 2201; AMST/CLCS/HEJS 2204; AMST/AAAS 2276/W; AMST/ENGL 2274W; AMST/HIST 3502; AMST/HIST 3568; AMST/POLS 3082; AMST/POLS 3834/LLAS 3271; AAAS/HIST 3531; AFRA/ANTH 3152; ANTH 3026, 3027; AFRA/HRTS/SOCI 2520; ARTH 3715; DRAM 3131; ENGL 2214/W, 3210, 3212; ENGL/AFRA 3213; ENGL 3215; ENGL/AFRA 3217/W; ENGL 3218, 3605; ENGL/WGSS 3613; HDFS 3240/SOCI 3459; HIST 2570, 3554, 3555, 3560, 3561, 3562, 3563; HIST/AFRA 3569; HIST 3564; HIST/LLAS/AFRA 3618; HIST 3674; POLS 3218, 3642; SOCI 2510.
- 7. Politics, Social Movements, and Everyday Life** (one of the following): AAAS/HIST 3531; AMST/AAAS 2201; AMST/HIST 2810; AMST/HIST 3568; AMST/LLAS 3271/POLS 3834; AMST/POLS 3082; HIST 3504, 3510, 3519, 3550, 3555; POLS 2607, 3218, 3602; POLS/AFRA/WGSS 3652; POLS 3802, 3807, 3817, 3822; SOCI/AFRA/HRTS 2530; SOCI 3821.
- 8. The Americas** (one of the following): AMST/LLAS 3271/POLS 3834; ANTH/LLAS 3021; ANTH 3026, 3027; ANTH/LLAS 3029; ANTH 3042; ANTH 3531/HIST 3209/MAST 3531; ANTH 3902; ENGL 3605; HIST/AFRA 3206; HIST/LLAS 3607, 3609; HIST 2650, 3608W, 3610; HIST/LLAS/AFRA 3618; HIST 2621; HIST/LLAS 2622; HIST/LLAS 3660W; HIST 3875/AAAS 3875/LLAS 3875; POLS 3235; SPAN 3234, 3265.
- 9. Electives:** One elective, selected from any of the courses above. Additions to these lists may be approved by the Director of American Studies.

## Related Coursework

Four courses related to American Studies, approved by the advisor on the final plan of study. Courses from the American Studies course requirements list can also be used to satisfy Related Coursework, so long as they have not been used to satisfy other requirements, and so long as they do not have an AMST designation.

A minor in American Studies is described in the “Minors” section.

## Anthropology

Anthropology studies human beings of all times and places. It examines human biological, cultural and social similarities and differences, and tries to explain them. Because of its broad perspective – which stresses writing, critical thinking, and social analysis – anthropology provides an excellent preparation for a variety of professional and business careers. Anthropology can also be an integral part of the training for life that is the goal of the University’s liberal arts program.

Students must take the following major courses:

- ANTH 1000 or 1006 or 1500.
- ANTH 2000, 2501 and 2502.
- At least one course in an ethnographic area (ANTH 3021, 3025, 3026, 3027, 3028, 3029, 3030, 3038, 3041, 3042, 3050, 3155, or 3904).
- At least one information literacy course (ANTH 2600, 3003, 3004, 3200, 3202W, 3250, 3300, 3340E, 3450W, 3506W, 3555, 3701, 3703, 3704W, or 3706).
- At least nine additional anthropology credits at the 2000 level or above. No more than one ethnographic area (Requirement C) course can be applied here. No more than six credits from the following courses can be counted towards this requirement: ANTH 3081, 3090, 3093, 3096, 3099.
- A minimum of 12 credits of related courses (2000 level or above) must be approved by the major advisor.

To satisfy the writing in the major competency, one of the courses above must be a 2000 level or above ANTH W course. At least 24 2000-level or above Anthropology credits need to be completed with an average GPA of 2.0 or higher.

Minors in Anthropology, Anthropology of Global Health, Native American and Indigenous Studies, and Religion are described in the “Minors” section.

## Applied Data Analysis

The Applied Data Analysis major gives students broad training in the following core areas of data science: computer programming and data management, data analysis, data visualization, and data ethics. Students with this major obtain a Bachelor of Arts (B.A.) degree. The major can be tailored for a student’s interest in a domain area of concentration. In order to apply to the Applied Data Analysis major, students must have:

- A GPA of 3.2 or higher in the following classes: MATH 1132Q; STAT 1000Q/1100Q, and an introductory programming course (CSE 1010, 1729; STAT 2255; COGS 2500Q).
- Completed at least 24 credits, 15 of which must be at the University of Connecticut, with a cumulative GPA of 3.2 or higher.

After entry into the majors, students must maintain a 3.2 cumulative GPA.

Students receiving a B.A. in Applied Data Analysis are required to take 36 credits, with one or more courses in four core areas, a nine-credit domain concentration sequence, STAT 3255 (Introduction to Data Science), and a Capstone course of at least three credits. Students meet the “writing in the major” requirement in a domain concentration-specific W course, or in a Capstone W course.

**The four core area requirements are:**

- 1. Programming and Data Management:** One course (three credits): STAT 2255 or COGS 2500.
- 2. Basic Data Analysis:** One course (three credits): STAT 3215Q.
- 3. Data Ethics:** One course (three credits): PHIL 3202.
- 4. Data Visualization:** One course (at least three credits): STAT 3675Q or GEOG 3510.

**Students must select one of the following domain concentration areas:**

**American Political Institutions Domain Concentration:**

- Three of the following: POLS 3600, 3601, 3604, 3606.
- Capstone: DSDA 4815.
- W course: POLS 3603WQ.

**American Political Representation Domain Concentration:**

- Three of the following: POLS 2607, 3612, 3617, 3618, 3625.
- Capstone: DSDA 4815.
- W course: POLS 3608W.

**Earth Data Science Domain Concentration:**

- Three of the following: EARTH 2800, 3020, 3710, 4230, 4810.
- Capstone: EARTH 4150.
- W course: EARTH 2050W.

**Public Management and Policy Domain Concentration:**

- Three of the following: PP 3032, 3033, 3098, 4031, 4034.
- Capstone: DSDA 4815.
- W course: PP 3020W.

**Survey Research Methods Domain Concentration:**

- PP 2100, 3030, 3098.
- Capstone: DSDA 4815.
- W course: PP 3020W.

**Population Dynamics Domain Concentration:**

- Three of the following: SOCI 2110/W, 2651/W, 2660/W, 2820/W, SOCI 2901/W, SOCI 3971/W.
- Capstone: DSDA 4815.
- W course: One of the W versions in the domain concentration list.

To reach 36 credits, additional credits may be taken from approved domain concentrations above or the list of courses below:

- GEOG 2500, 3500Q; STAT 2215Q, 3025Q, 3515Q, 3375Q.

## Arabic and Islamic Civilizations

The Arabic and Islamic Studies major requires a minimum of 24 credits of Arabic (ARAB) and Arabic and Islamic Studies (ARIS) courses, plus a minimum of 12 credits of related courses from programs other than Arabic and Islamic Studies. A minimum of 12 major credits must consist of Arabic and Islamic Studies courses taken in residence. Only six may be transfer credits. AP credits may not be used toward the major.

Prerequisite: Four semesters of formal Arabic at the 1000 level, or equivalent proficiency. Proficiency must be approved by major advisor. Arabic and Islamic Studies majors must complete a minimum of 12 courses, for a total of 36 credits, distributed as follows:

Students must take 24 credits (eight courses) of ARAB or ARIS courses according to the following guidelines:

1. ARIS 3000 or comparable proficiency in Classical Arabic with approval of the major advisor.
2. Two courses from Group 1:  
Group 1: Language: ARAB 2170, 3102, 3212; ARIS 3000
3. Two courses from each of Groups 2 and two courses from group 3:  
Group 2: Literature: ARAB 3550W, 3551, 3559, 3570  
Group 3: Culture: ARAB 2571, 3102, 3751, 3771, 3772
4. All majors must take ARAB 3550W.

Note: Special Topics, Foreign Study and Independent Study courses may fit, depending on topic, any of the above groups, with advisor approval. Four courses or 12 additional related credits are required at the 2000-level or above from programs other than Arabic and Islamic Studies. Related courses may belong to many subject areas and must always be approved by the advisor. These may include:

- Courses in any modern or classical language.
- Any English, Linguistics, or Philosophy course.
- Any Communication Sciences course that is directly related to second language acquisition or the Arab World.
- Any History, Political Science, Art History, Anthropology, Sociology, Economics, or Geography course that deals with Islamic culture or the Arab world.

Enrollment in a study abroad program in an Arabic-speaking country is recommended but not mandatory for Arabic and Islamic Studies majors.

With advisor's advanced consent, any of the above courses may be replaced by an ARAB or ARIS 3293 course from study abroad programs. Up to 12 credits taken in study abroad programs may count toward the major. Students can enroll in either University of Connecticut sponsored or non-University of Connecticut sponsored programs. In either case, students must consult with the advisor to determine which courses will receive credit.

To satisfy the Information Literacy Competency and Writing in the Major requirements, all students must take ARAB 3550W.

A minor in Arabic and Islamic Studies is described in the "Minors" section.

## Biology

The biological sciences are organized into three departments: the Department of Ecology and Evolutionary Biology (EEB), the Department of Molecular and Cell Biology (MCB), and the Department of Physiology and Neurobiology (PNB). Introductory level courses are listed under General Biology (BIOL).

The Bachelor of Science degree is generally recommended for students planning a scientific career in biology, but the Bachelor of Arts degree in Biological Sciences allows a richer liberal arts program and provides good preparation for many careers, including subsequent graduate study.

**Credit restriction:** In no case may students receive more than 12 credits for courses in biology at the 1000 level.

### Biological Sciences Major

The Biological Sciences major gives students a broad training in all aspects of biological sciences and prepares students interested in graduate programs in science, biotechnology, or health (M.D., D.D.S., P.A.), science education, and other related fields. The major can be tailored for a student's interest in any area of biology. Students can obtain a Bachelor of Science (B.S.) or Bachelor of Arts (B.A.) degree. The Biological Sciences B.A. degree does not require students to also take chemistry, physics and calculus and focuses solely on classes related to biology. All Biology majors are required to take the following introductory classes and are encouraged to do so by the end of their sophomore year: BIOL 1107; BIOL 1108 or 1110. Students are required to take a class from each of the five core areas of ecology; evolution; genetics; physiology; cells and molecules.

**Ecology:** EEB 2244 or 2244W.

**Evolution:** EEB 2245 or 2245W.

**Genetics:** MCB 2410 or 2400.

**Physiology:** PNB 2250, or 2274 and 2275.

**Cells and Molecules:** MCB 2000, 2210, 2215, or 2610.

Students must complete a total of 36 credits from any EEB, MCB, or PNB course at the 2000 level or higher. Six credits must be at the 3000 level or higher. Students are also required to take a 'W' course from any W course offered by EEB, MCB or PNB. A maximum of three independent study credits from among EEB 3899; MCB 3899, 4896, 4989; and PNB 3299 may count toward the 36-credit requirement. A maximum of eight 2000-level or above transfer credits in EEB, MCB, or PNB may count toward the major with approval of the respective department. A minor in Biological Sciences is described in the "Minors" section.

Majors are also offered in Ecology and Evolutionary Biology, Molecular and Cell Biology, Physiology and Neurobiology, and Structural Biology and Biophysics. These majors are described in separate sections in the Catalog.

## Chemistry

Programs in the Department of Chemistry may lead to either the Bachelor of Arts or the Bachelor of Science degree. In addition, the American Chemical Society (ACS) certifies two more rigorous Bachelor of Science options.

The B.A. degree is appropriate for students who are interested in chemistry but do not wish to pursue a career as a laboratory scientist. The B.S. degrees prepare students to pursue graduate study in Chemistry or to find employment in technologically oriented industries.

Prospective majors with a good high school chemistry background should take CHEM 1137Q and 1138Q in their first year. Other prospective majors should take 1127Q-1128Q or 1124Q-1125Q-1126Q or 1147Q-1148Q (Honors).

Chemistry majors must complete the following mathematics and physics sequences: MATH 1131Q and 1132Q (or 1125Q, 1126Q and 1132Q), MATH 2110Q (or 2130Q), and MATH 2410Q (or 2420Q); PHYS 1201Q-1202Q, and 1230 (or 1401Q-1402Q or 1501Q-1502Q or 1601Q-1602Q).

Failure to complete these sequences by the end of the fourth semester may delay completion of the degree.

Requirements for the B.A. and B.S. degrees are as follows:

### Bachelor of Science

At least 35 credits of Chemistry courses numbered 2000 and above must be successfully completed for the Bachelor of Science in Chemistry in addition to the College B.S. requirements.

#### Chemistry option

The requirements include CHEM 2443, 2444, 2445, (Organic), 3210, 3214, 3215 (Inorganic), 3332, 3334 (Analytical), and 3563, 3564, 3565W (Physical).

#### Chemistry option (ACS certified)

American Chemical Society certification requires an additional course in biochemistry (MCB 3010, or MCB 2000), and one advanced chemistry course chosen from CHEM 3189, 3442W, 3661, 4196W, 4370, 4371, 4551, or a CHEM 5000 level course.

#### Environmental Chemistry option (ACS certified)

The requirements include those listed above for the ACS certified B.S. degree in Chemistry with the exception of CHEM 3215. In addition, the sequence CHEM 4370 - 4371 is required.

### Bachelor of Arts

At least 28 credits of Chemistry courses numbered 2000 or above must be successfully completed for the Bachelor of Arts in Chemistry in addition to the College Bachelor of Arts requirements. The requirements include those listed above for the B.S. degree Chemistry option with the exception of CHEM 3215 and 3334.

### Other requirements

The grade point average in all of the required chemistry courses must be at least 2.3 for the ACS certified degree.

All B.S. students are strongly encouraged to participate in undergraduate research through one or more semesters of CHEM 3189, preferably with a capstone thesis (CHEM 4196W) in the final semester.

To satisfy the information literacy competency, all students must take CHEM 3565W. Other courses that further enhance competency in information literacy include 3170W, 3189, 3215, 3334, 3442W, and 4196W.

To satisfy the writing in the major requirement, all students must take CHEM 3565W. Other courses that will further help students develop writing skills in chemistry include 3170W, 3442W, and 4196W.

A minor in Chemistry is described in the "Minors" section.

## Cognitive Science

Cognitive Science is the study of how intelligent beings (including people, animals, and machines) perceive, act, know, and think. It explores the process and content of thought as observed in individuals, distributed through communities, manifested in the structure and meaning of language, modeled by algorithms, and contemplated by philosophies of mind. Its models are formulated using concepts drawn from many disciplines, including psychology, linguistics, logic, communication sciences/disorders, computer science, anthropology, and philosophy, and they are tested using evidence from psychological experiments, clinical studies, field studies, computer simulations, and neurophysiological observation.

This program is intended to prepare students for graduate training in cognitive science and related disciplines or to work in the information sciences. The distribution requirements ensure that students will acquire a truly interdisciplinary education. The research and formal systems requirements provide basic knowledge concerning the experimental and theoretical foundations of cognitive science. Finally, majors are encouraged to learn about theory building and testing in a variety of natural and physical sciences. One way to achieve this is to fulfill the requirements of the Bachelor of Science degree.

## General Requirements

The requirements for the cognitive science major include 40 2000-level or above credits, no more than 21 of which may be taken in any one department. There are several 1000-level courses that are required preparation for the 2000-level and above requirements. These courses should be taken during the first four semesters and may fulfill general education requirements.

A maximum of six 2000-level or above transfer credits may count toward the major with approval of advisor. Students must earn a grade of "C-" (1.7) or higher in each course that is counted toward the major.

### Core Courses (16 credits)

COGS 2201, 3584 and four of the following courses: ANTH 3250; CSE 4705; LING 2010Q; PHIL 3250/W; PSYC 2501; SLHS 4245/W.

### Research Courses (six credits)

**Statistics** (one of the following for at least three credits): PSYC 2100Q or 2100WQ; STAT 2215Q, 3025Q (Calculus level).

**Research Methods** (one of the following for at least three credits): ANTH 3003, 3004 (if elected for three credits); ANTH 3090 (if elected for at least three credits); LING 3110; PSYC 3250W, 3251/W, 3253, 3450W, 3550W, 3551W, 3552.

**Formal Systems Courses (three credits):** COGS 2500Q; CSE 2300W, 2500, 3500<sup>a</sup>, 3502<sup>a</sup>, 3802; LING 3000Q<sup>a</sup>, 3310Q<sup>a</sup>, 3410Q<sup>a</sup>, 3511Q<sup>a</sup>; MATH 2210Q, 2410Q, 3160, 3210, 3230; PHIL 2211Q, 3214.

### Advanced Courses (12 credits)

Must include courses from at least three departments. Can include core courses not needed to satisfy the core course requirement.

ANTH 3200, 3405; CSE 3500<sup>a</sup>, 3502<sup>a</sup>; COGS 2345; LING 3000Q<sup>a</sup>, 3310Q<sup>a</sup>, 3410Q<sup>a</sup>, 3511Q<sup>a</sup>; 3610W; PHIL 2208/W, 2210/W, 2212/W, 3241, 3247/W, 3249W, 3256/W; PNB 3251; PSYC 2200, 2208, 2209, 2400, 2500, 3100/W, 3270, 3440, 3500, 3501, 3502; SLHS 2203, 2204, 4123, 4254/W, 4376.

PSYC 3470 is a variable topics course and may be counted as an advanced course toward the major with advisors' approval.

### Electives (3-6 credits)

One or two additional courses (from above lists or other related courses from any department), chosen with the approval of the advisors.

<sup>a</sup>The following courses may be used to fulfill both the Formal Systems and Advanced Courses requirements: CSE 3500, 3502; LING 3000Q, 3310Q, 3410Q, 3511Q. In this event, two electives are required.

### Competency and Writing Requirements

The exit requirement for information literacy will be met by satisfaction of the Research Methods Requirement. The exit requirements for writing in the major are met by taking any W course on the Plan of Study.

A minor in Cognitive Science is described in the "Minors" section.

## Communication

The Communication major leads to a bachelor of arts degree. The major examines communication at multiple levels of society and in different settings, including interpersonal, nonverbal, organizational, intercultural, and international communication, while also considering the roles of media and technology in communication processes. Training in the basic theories, principles, best practices, and current research methods of communication can qualify students for a variety of communications and media industry positions in business, advertising, public relations, marketing, digital media production, government/politics, and promotion.

The department of Communication offers courses that span the discipline, enabling students to acquire breadth and depth in their education and training. A variety of focal areas are identified in the COMM curriculum, and students may focus their coursework in one or more of these areas to further their academic and professional goals. Across the curriculum, courses are numbered to reflect these focal areas:

- X100: Professional Communication (e.g. COMM 2100, 3110, 3120W)
- X200: Interpersonal Communication (e.g. COMM 2200, 3222, 4200)
- X300: Media Effects and Audiences (e.g. COMM 2300, 3310W,

4300)

- X400: Communication in Context (e.g. COMM 3410, 3420, 3430)
- X500: Persuasion and Promotion (e.g. COMM 2500, 3510, 4530W)
- X600: Communication Technology (e.g. COMM 2600, 3600, 4640)
- X700: Multimedia Production (e.g. COMM 2700, 3700, 4710)

## Requirements

Students majoring in Communication must complete the following:

1. Introductory courses: COMM 1000 and 1100. These courses should be completed by the end of sophomore year, if possible.
2. A minimum of 30 credits in Communication at the 2000 level or above (typically 10 COMM courses). Note that many students take more than the minimum of 30 credits in communication, choosing to expand their learning in one or more areas in the discipline. These 30 credits must include the following:
  - a. Core courses: At least four of the following Core courses: COMM 2100, 2200, 2300, 2500, 2600. Core courses introduce students to the range of work within the discipline.
  - b. Research methods in Communication: COMM 2000Q or 2010Q. Most students complete this requirement by taking COMM 2000Q. Students double majoring in Psychological Sciences and Communication may substitute PSYC 2100WQ for this requirement but will need to complete an additional elective course in Communication to meet the minimum of 30 credits of upper-level Communication courses required for the major.
  - c. Writing-intensive course: At least one “W” course in Communication.
  - d. Three credits in Immersion courses: All Communication majors complete at least three credits across one or more immersion courses: COMM 4799, 4979, 4981, 4982, 4996, 4997W, 4999. Immersion courses provide students an opportunity to pursue research, experiential, and professional development within the field.
  - e. Electives: Three more communication courses at a minimum, in order to complete the minimum of 30 credits in communication.
3. Related Group Requirement: Students must complete an additional 12 credits of coursework outside of Communication at the 2000 level or above. The department maintains a list of courses pre-approved as satisfying the related requirement (see the department website). Courses that do not appear on the list must be approved by a Communication advisor.

## Internship

All students are encouraged to do at least one internship (COMM 4981). Internships can be taken during the academic year or summer, and suffice the Immersion course requirement for the major. Students must have completed 12 credits in Communication courses at the 2000-level or above to be eligible to register for the course and receive internship credit.

## Undergraduate Research

The Department encourages students to participate in its research activities:

- The research practicum (COMM 4982) is designed to allow students to participate in ongoing departmental research and learn about conducting research in the discipline.
- Students who wish to design and conduct their own projects can enroll in Undergraduate Research (COMM 4996) with the supervision of a faculty member.
- Honors students may complete a Senior Thesis (COMM 4997W) on a topic of their choosing with the support of their honors thesis advisor.

Each research course is particularly helpful preparation for graduate work in the field of Communication.

## Writing Courses

To satisfy the writing in the major requirement, students must pass at least one 3000-level or above “W” course approved for this major. A number of “W” courses are available to meet this requirement, including (but not limited to) COMM 3120W, 3222W, 3310W, 3410W, 3610W, 4200W, 4300W, and 4530W. For students interested in media and public relations

careers, journalism courses are recommended for additional writing competency.

## Information Literacy

To satisfy the information literacy competency, all students must pass COMM 1000, 1100, and 2000Q. An education in communication is inextricably linked to information literacy, so students exploring further coursework within the major will continue to develop their information literacy competency. Minor in Communication

A minor in Communication is described in the “Minors” section.

## Double majors and dual/multiple degrees

Students are encouraged to meet with a Communication advisor to discuss ways to integrate a major in Communication with other majors and degrees.

## Ecology and Evolutionary Biology

Students majoring in Ecology and Evolutionary Biology may opt for either a Bachelor of Arts degree or Bachelor of Science degree. Both B.A. and B.S. degree candidates must complete the following courses in addition to the general CLAS requirements for these degrees:

BIOL 1107, and BIOL 1108 or 1110; and CHEM 1127Q and 1128Q; or CHEM 1124Q, 1125Q, and 1126Q.

Requirements for the EEB Major (B.S. or B.A.)

1. Both of the following **core courses**: EEB 2244/W and EEB 2245/W.
2. At least one of the following **animal diversity courses**: EEB 2214, 3254, 3265, 3266, 3269, 3273, 4200, 4250, 4252, 4274, 4275; or 4260 if taken in combination with either 4261 or 4262.
3. At least one of the following **plant diversity courses**: EEB 3203, 3204, 3220/W, 3240, 3250, 3271, 4272, 4276.
4. A course in **physiology**: EEB 2250, 3360, 4215, PNB 2250, or SPSS 4210.
5. At least two of the following courses with extensive laboratory or fieldwork, which may include courses used to satisfy the animal or plant diversity requirement: EEB 3203, 3204, 3220, 3230, 3240, 3247, 3250, 3254, 3265, 3266, 3267, 3271, 3273, 4120, 4200, 4230W, 4250, 4252, 4261, 4262, 4272, 4274, 4275, 4276.
6. Students are encouraged to complete a course in statistics.
7. At least 24 credits of EEB courses at the 2000-level or above, which may include courses in I-V above. A maximum of three independent study credits from EEB 3899 may count toward the 24-credit requirement.
8. Related Course Requirements: At least 12 credits of 2000-level or above science courses outside EEB, which must include MCB 2410. One semester of organic chemistry is recommended.
9. To satisfy the Writing in the Major and Information Literacy competency requirements, all students must pass at least one W course in EEB.

A minor in Ecology and Evolutionary Biology is offered. A minor in Bioinformatics is offered jointly by the School of Engineering and the College of Liberal Arts and Sciences. Both programs are described in the “Minors” section of this *Catalog*.

## Economics

A student majoring in economics should acquire a thorough grounding in basic principles and methods of analysis, plus a working competence in several of the specialized and applied fields. Examples of such fields are industrial organization, law and economics, money and banking, international trade and finance, public finance, labor economics, health economics, urban and regional economics, and economic development. The major in economics can lead to either a Bachelor of Arts or a Bachelor of Science degree.

Course work in economics serves a wide variety of vocational objectives. An economics major (supplemented by a rigorous calculus and statistics course sequence) is excellent preparation for graduate work in economics, which qualifies a person for academic, business, or government employment. Majors and others with strong economics training are attractive prospects for business firms and government agencies, and for professional graduate study in business or public policy. An economics background is especially desirable for the study and practice of law. The economics B.S. is

recommended for students interested in professions that call for quantitative skills. The B.S. is especially recommended for Honors students and students considering graduate school in economics or other quantitative areas.

For an economics major that leads to a Bachelor of Arts degree, students must earn twenty-four credits in courses at the 2000 level or above, including two intermediate theory courses (ECON 2201 or 2211Q and 2202 or 2212Q), plus at least nine credits in either quantitative skills courses (ECON 2301Q-2328) and/or ECON courses at the 3000 level or above. No more than six credits in ECON 2499 and/or 3499 may be counted toward the required 24 credits in economics courses at the 2000 level or above. ECON 2481 does not count toward fulfilling the major requirements.

Economics B.A. majors are also required to pass twelve credits in 2000-level or above courses in fields related to economics or to fulfill a minor related to economics. In addition, all Economics majors must take STAT 1000Q or 1100Q and one of the following: MATH 1071Q, 1131Q, 1151Q or 2141Q. STAT 1100Q is recommended over STAT 1000Q. ECON 2311Q is a recommended course for the B.A. Students may substitute more advanced MATH and STAT courses with consent of the faculty advisor.

For an economics major that leads to a Bachelor of Science degree, students must take STAT 1000Q or 1100Q (STAT 1100Q is recommended over STAT 1000Q) and one of the following MATH sequences: MATH 1131Q (or 1151Q) and 1132Q (or 1152Q); or MATH 2141Q and 2142Q. In addition, B.S. majors must also take one of the following: MATH 2110Q or 2130Q or 2210Q or 2410Q or 2420Q. Students may substitute more advanced MATH and STAT courses with consent of the advisor.

B.S. students must take one of the following science sequences in Biology, Chemistry, or Physics:

- Biology: BIOL 1107 and either BIOL 1108 or 1110.
- Chemistry: CHEM 1124Q, 1125Q, 1126Q; or CHEM 1127Q, 1128Q; or CHEM 1137Q, 1138Q; or CHEM 1147Q, 1148Q.
- Physics: PHYS 1201Q, 1202Q; or PHYS 1401Q, 1402Q; or PHYS 1501Q, 1502Q; or PHYS 1601Q, 1602Q.

One of these courses may be used to fulfill the CA 3 lab requirement of the University's general education requirements. In addition, students must take one other CA 3 course from a different subject area, but it need not be a lab course.

B.S. majors must also earn 29 credits in courses at the 2000-level or above, including two quantitative intermediate theory courses (ECON 2211Q and 2212Q); a sequence in econometrics (ECON 2311Q and 2312Q); and at least six credits from the following modeling and methods courses: ECON 2301Q, 2326, 2327, 3321, 3322, 3208, 3209, 3313, 3315, 3317, 3318, 4206, 4323, or 4326. Students may substitute equivalent graduate-level courses with consent of the advisor. B.S. majors may fulfill the requirement for ECON 2211Q and 2212Q by taking ECON 2201, 2202, and 2301Q, in which case ECON 2301Q cannot be used to fulfill the requirement for six credits in modeling and methods courses. B.S. majors may not count ECON 2481 toward the major, nor may they count more than six credits in ECON 2499 and/or 3499.

B.S. majors are also required to pass 12 credits in 2000-level or above courses in a field or fields related to economics. These related area courses may count toward a minor in a field related to economics. For both the B.A. and B.S., the intermediate theory courses (ECON 2201 or 2211Q and ECON 2202 or 2212Q) should be taken early in the student's major program. The department has special requirements for economic majors in the University Honors Program.

Economics majors satisfy the information literacy competency by passing at least one W course in Economics. Students may gain enhanced competence in information literacy by taking ECON 2311Q, 2312Q, 2326, or 2327. Economics majors satisfy the writing in the major requirement by passing at least one W course in Economics. A minor in Economics is described in the "Minors" section.

## English

To satisfy the English major, the student must present for the degree 30 credits of English courses numbered 2000 or above. These credits shall be distributed as follows:

Core Curriculum: 18 credits

Electives of Optional Concentration: 12 credits

### Core Curriculum (18 Credits)

Each of these core requirements must be satisfied by a unique course. A single course may not be applied to two different requirements within the core curriculum.

**A. Methods for the Major:** ENGL 2600 (three credits)

**B. Early Literary, Cultural, and Linguistic History** (six credits from the list below)

ENGL 2100, 2107, 2200, 2201/W, 2603, 3111/W, 3113/W, 3115/W, 3117/W, 3213/W, 3301, 3303, 3501, 3503/W, 3505, 3507, 3603, 3652

**C. Antiracism, Globality and Embodiment** (six credits) Students take one course from group 1, and a second course from either group 1 or 2.

1). **Black, Indigenous, Latinx, and Asian/American Literary and Cultural Traditions** (three credits) ENGL 2214/W, 2301/W, 2305, 3210, 3212, 3213/W, 3215/W, 3217/W, 3218/W, 3267, 3318, 3319, 3320, 3605, 3607

2). **Difference and Diaspora** (three credits) ENGL 2274/W, 3015/W, 3120, 3122/W, 3220, 3609, 3611, 3613, 3629

**D. Advanced Study: Writing in the Major** (three credits)

### Electives or Optional Tracks (12 credits)

Courses used to satisfy credits in the core curriculum may also be applied toward one or more of the tracks below, as long as the student completes the 30 unique credits for the major. Students may forego tracks and opt to take 12 credits of electives instead.

ENGL 2627, 2640/W, 3319, 3509/W, 3619, 3621, 3623, 3627, 3693, 3695, 3698, and 3699 may be counted toward a specific track if approved by the Associate Head of English. ENGL 4897 may be applied to a specific track if approved by the Honors English Advisor.

#### Track: Creative Writing

Twelve credits distributed as follows:

- Introduction to Creative Writing: ENGL 2701 (three credits)
- Two 3000-level Creative Writing Workshops (six credits) chosen from among these courses: ENGL 3701, 3703, 3705, 3707, 3711, 3715E
- One elective (three credits) focused on literary genres or methods, chosen from the following: ENGL 2401, 2405, 2407, 2408/W, 2409, 2411/W, 2413/W, 2610, 2612, 2614, 2635E, 2640/W, 2730/W, 3003/W, 3012, 3013/W, 3240E, 3403, 3420, 3422, 3640/W, 3713

#### Track: Cultural Studies/Media Studies

Twelve credits from the following list:

ENGL 2276/W, 2411/W, 2413/W, 2610, 2612, 2614, 2640/W, 3235/W, 3265/W, 3420, 3422, 3623, 3625, 3633/W, 3640/W

#### Track: English Teaching

Twelve credits distributed as follows:

- Cultural, Genre, and Media Studies (three credits): 2276/W, 2401, 2405, 2407, 2408, 2409, 2411/W, 2413/W, 2605/W, 2609, 2610, 2612, 2635E, 2640/W, 3235/W, 3240E, 3265W, 3619, 3623, 3625, 3631, 3633W, 3640, 3652, 3653, 3715E
- Advanced Composition (three credits): ENGL 2013W, 2049W, 3003W, 3010W, 3701\*
- Grammar (three credits): ENGL 3601 or 3603
- Children's or Young Adult Literature (three credits): ENGL 3420 or 3422

\*Sections of this course may be applied to the track only if approved by the Coordinator of the Teaching Concentration.

#### Track: Irish Literature

Twelve credits from the following list:

ENGL 3120, 3122, 3301, 3509\*, 3623\*, 3627\*

\*Sections of these courses may be applied to the track only if approved by the Coordinator of the Irish Literature program.

**Track: Literature, Antiracism, and Social Justice**

Twelve credits from the following list:

ENGL 2107, 2207, 2214/W, 2274/W, 2301/W, 2605/W, 2609, 2635E, 3120, 3122/W, 3210, 3212, 3213/W, 3215/W, 3217/W, 3218/W, 3220, 3318, 3319, 3605, 3607, 3609, 3611, 3613, 3619, 3629, 3631, 3633/W

**Track: Literary Histories and Legacies**

Twelve credits from the following list:

ENGL 2100, 2101, 2200, 2201/W, 2203/W, 2214/W, 2301/W, 2603, 3111/W, 3113/W, 3115/W, 3117/W, 3118/W, 3120, 3122/W, 3123/W, 3124/W, 3207/W, 3213/W, 3215/W, 3301, 3303, 3501, 3503/W, 3505, 3507, 3509, 3603, 3652

**Track: Literature of Place and Environment**

Twelve credits from the following list:

ENGL 2055WE, 2276/W, 2635E, 2730W, 3240E, 3235/W, 3652, 3653, 3715E

**Track: Writing and Composition Studies**

Twelve credits from the following list:

ENGL 2001, 2013W, 2049W, 2055WE, 2730W, 3003W, 3010W, 3012, 3013W, 3015W, 3082, 3091, 3692, 3713, 3715E

A maximum of six credits of ENGL 3091 and 3692 may be counted towards the Writing and Composition Studies concentration.

A minor in English is described in the “Minors” section.

## Environmental Sciences

The major in Environmental Sciences is based in the physical and biological sciences, but also includes course work in selected areas of the social sciences. The major leads to a Bachelor of Science degree, and may be adopted by students in either the College of Agriculture, Health and Natural Resources or the College of Liberal Arts and Sciences. This curriculum offers a comprehensive approach to the study of environmental problems, including not only a rigorous scientific background, but also detailed analyses of the social and economic implications of environmental issues. The complexity and interdisciplinary nature of environmental science is reflected in the core requirements of the major. These courses, assembled from several different academic departments representing two colleges, provide both breadth and depth, preparing students for careers that deal with environmental issues and for graduate study in environmental sciences and related fields.

**Required courses in Basic (Natural) Sciences**

- BIOL 1107 and 1108 or 1110;
- CHEM 1124Q, 1125Q, 1126Q or 1127Q, 1128Q;
- MATH 1131Q, 1132Q;
- PHYS 1201Q, 1202Q or 1401Q, 1402Q;
- STAT 1000Q or 1100Q or 3025Q;
- NRE 1000.

ARE 1150; ECON 1200 or 1201; EARTH 1050; GEOG 2300E; and MARN 1002 are prerequisites for several upper division course concentration options. It is the student’s responsibility to ensure that all prerequisites in the catalog for concentration courses have been satisfied.

**Required Sophomore Seminar Course**

ENVS 2000

**Required Capstone Course**

NRE 4000W (three credits). Completion of NRE 4000W satisfies the writing in the major and information literacy exit requirements.

**Required Internship or Research Experience**

1-6 credits of internship and/or research experience. Internship and/or research experience must be approved by the student’s advisor.

Students are required to complete a minimum of 36 credits of approved courses, at the 2000-level or higher. Approved courses include: ENVS 2000, NRE 4000W, 1-6 credits of internship or research experience, and a minimum of 24-credits within a declared concentration.

## Area of Concentration

All students majoring in Environmental Sciences must declare and fulfill the requirements of a concentration in a discipline associated with the program before graduation. Approved concentrations are listed below.

**Sustainable Systems Concentration**

Students must complete at least two courses from each of the following Knowledge Competencies. The same course cannot be used to fulfill more than one knowledge competency.

**Resource Management:** EEB 2208; GEOG 3340; MARN 3030; NRE 2010, 2215E, 2345, 2600E, 3105, 3125, 3305, 3335, 3345/W, 3500, 3535, 4255, 4335, 4575; SPSS 2100E. **Ecological Systems:** EEB 2100E, 2222, 2244/W, 3247, 4230W; EEB 3230/MARN 3014; NRE 2455, 4205, 4340.

Students must complete at least one course from each of the following Knowledge Competencies.

**Built Systems:** AH 3175; ENVS/EVST/ENVE 3110; GEOG 2400; LAND 3230WE; NRE 3265, 4425; SPSS 3550. **Governance and Policy:** AH 3174; ARE 2235, 3434E, 3437E, 4438E, 4462E; ECON/MAST 2467; ENVS/EVST/ENVE 3100; GEOG 3320W; MAST/POLS 3832; NRE 3000, 3201, 3245E; POLS 3412; SOCI 3407/W. **Ethics, Values, and Culture:** ANTH 3339; ENGL 2635E, 3240E, 3715E; GEOG 3410; GERM 2400; HIST 3540E, 3542; HIST/MAST 2210E; JOUR 3046E; LAND 2210E; PHIL 3216; SOCI 2701, 2705, 2709W, 3407/W. **Economics and Business:** ARE 2235, 4305, 4438E, 4444, 4462E; ECON/MAST 2467; ECON 3466E, 3473.

**Global Change Concentration**

Students must complete at least two courses from each of the following Knowledge Competencies. The same course cannot be used to fulfill more than one knowledge competency.

**Climate Change and its Impacts:** EARTH 3010, 4850; GEOG 3400, 4300; MARN 3000E; NRE 2600E, 3115, 3146, 4170; SPSS 2100E, 2500E. **Land and Ocean Use and its Impacts:** EEB 2100E, 2208, 2222; EARTH 3020; EARTH/MARN 3230; GEOG 3310, 3410; MARN 3001, 3030, 4066; NRE 2215E, 2345, 2600E, 3105, 3115, 3155, 4340; NRE 4135/EARTH 4735. **Natural Science:** CHEM 4370, 4371; EEB 2244/W, 2245/W, 3247; EEB 3230/MARN 3014; EEB/EARTH 4120; EARTH 4110, 4210, 4720; GEOG 2300E; MARN 2002, 2060, 4030W, 4060, 4202Q; NRE 2455, 3125, 3145, 4205; SPSS 2120, 3420.

Students must complete at least one course from each of the following Knowledge Competencies.

**Methods:** CE 2251; CE/ENVE 3530/EARTH 3710; EEB 3266, 4100, 4230W, 4262; EARTH 4430, 4510, 4710, 4810; EARTH/NRE 4735; GEOG 3500Q; GEOG/EARTH 4230; GEOG/MARN 3505; MARN 4202Q; NRE 2000, 2010, 3305, 3345/W, 3535, 4335, 4475, 4535, 4544, 4545, 4575, 4665; PHYS 2400; STAT 2215Q, 3025Q. **Governance and Policy:** AH 3174; ARE 2235, 3434E, 3437E, 4438E, 4462E; ECON/MAST 2467; ENVS/EVST/ENVE 3100; EVST/POLS 3412; GEOG 3320W; MAST/POLS 3832; NRE 3000, 3201, 3245E; SOCI 3407/W.

**Environmental Health Concentration**

Students must pass all of the following: AH 3021, 3175; ANSC 4341; NRE 4340.

Students must pass two of the following: AH 3275; ENVS/EVST/ENVE 3110; EARTH 4710;

MARN 3030; MCB 2400; NRE 3115, 3155; PATH 3700, 4300; SPSS 2120.

Students must pass one of the following: AH 3570, 3571, 3573, 3574; PSYC 3105.

Students must pass at least one of the following: EEB 3245; ECON 2451/W; GEOG 3240.

Note: A B.S. in Environmental Sciences can also be earned through the College of Agriculture, Health and Natural Resources. For the complete requirements, refer to the Environmental Sciences description in the “College of Agriculture, Health and Natural Resources” section of this Catalog.



## Environmental Studies

The Environmental Studies major is an interdisciplinary program designed to provide students with the knowledge, skills, and perspectives needed to understand the interactions between human society and the environment. Understanding the ethical and cultural dimensions of our relationship with the environment, as well as the challenges of protecting it, requires insights from multiple perspectives, including the humanities, the social sciences, and the natural sciences. Core courses in the major ensure familiarity with basic principles from these three areas. With this shared core of knowledge, majors will focus their studies on an area of special interest, taking electives and related courses that allow greater specialization. Among the many possibilities are environmental sustainability, issues concerning public policy and environmental justice, and the literary and philosophical legacy of human encounters with the non-human world. A capstone course will allow each student to research a distinct perspective on a contemporary environmental issue. A major in Environmental Studies might lead to a career in a variety of fields, including public policy, environmental education, eco-tourism, marketing or consulting, journalism, or advocacy.

The major leads to a Bachelor of Arts degree in the College of Liberal Arts and Sciences (CLAS) or the College of Agriculture, Health and Natural Resources (CAHNR). The student's choice of colleges should be made in consultation with faculty and advisors based upon the student's interests and career goals.

### Requirements

#### Introductory Courses

All majors must take four introductory courses:

- BIOL 1102 or, for those seeking a more advanced background, BIOL 1108;
- EVST 1000E;
- EARTH 1050 or 1051, GEOG 2300E, or NRE 1000;
- STAT 1000Q or 1100Q or equivalent.

#### Core Courses (18 credits)

All majors must take two of the following courses from each core. Students cannot apply more than one course per department to count within a particular core. Additional core courses taken in the same department can be applied to the additional major requirements beyond the core requirements.

#### Humanities Core

PHIL 3216/W; GERM 2400; HIST 2210E or 3540E or 3542; ENGL 3240E or 3635 or 3715E or JOUR 3046.

#### Social Sciences Core

ARE 3434E or 4462E or ECON 3466E; GEOG 2400 or 3350; NRE 3000 or 3245E; POLS/EVST 3412; SOCI 2701 or 2709W.

#### Natural Science Core

AH 3175; EEB 2208; EARTH 3010; GEOG 3400; NRE 4170.

#### Capstone Research Project

EVST 4000W (three credits). All majors must complete a capstone research project, which fulfills the Writing in the Major and the Information Literacy requirements for the major.

#### Additional requirements for the major

In addition, environmental studies majors in CLAS must take nine credits of electives at the 2000 level or above, plus an additional 12 credits of related courses, approved by the student's advisor. These courses must be designed to form a coherent set of additional courses that will provide the student with a focus or additional depth in an area of interest related to the major. They must be chosen in consultation with the student's faculty advisor and be approved by the advisor. Courses listed above that are not used to meet the core requirements may be used to meet this requirement. Total credits (2000 level or above): 30, plus 12 credits of related courses.

#### \*Other areas of recommended preparation (not required):

- **Physical Science:** CHEM 1122, 1127Q; PHYS 1030Q/1035Q.
- **Earth Science:** EARTH/GEOG 1070; MARN 1002/1003.
- **Economics:** ARE 1110, 1150; ECON 1179, 1200, 1201.

Note: A B.A. in Environmental Studies can also be earned through the College of Agriculture, Health and Natural Resources. For a complete

description of the major in that college, refer to the Environmental Studies description in the "College of Agriculture, Health and Natural Resources" section of this *Catalog*.

## Geographic Information Science

Geographic Information Science (GIScience) is the scientific discipline that conducts spatial analysis to examine economic, environmental, physical, and social phenomena. The study of spatial data structures and computational techniques to capture, represent, process, and analyze geographic information are essential to GIScience. GIScience overlaps with and draws from many research fields such as computer science, statistics, mathematics, and psychology, and contributes to progress in those fields. GIScience also supports research in many academic disciplines such as natural resource management, environmental science and engineering, geosciences, agriculture, marine sciences, sociology, history, public health, business, and anthropology.

Courses in GIScience enable students to develop capability in spatial thinking and gather in-depth knowledge in geospatial technology. Geospatial technology is a term used to describe the range of modern tools contributing to the geographic mapping and analysis of the Earth and human societies, e.g. geographic information systems (GISystems), remote sensing, the global positioning system (GPS), spatial statistics, web mapping and navigation technologies.

According to the U.S. Department of Labor, graduates with skills in geospatial technology are in extremely high demand and are one of the highest growth areas in the federal government. Students have employment opportunities in many corporate and government entities. Students with an undergraduate degree in GIScience are also prepared to move on to graduate school to pursue M.A., M.S., and Ph.D. degrees in many fields that enable them to pursue academic jobs or to secure higher ranking positions in the public and private sectors.

### Bachelor of Science or Bachelor of Arts

Students can obtain a B.S. or B.A. degree. The GIScience B.A. degree does not require students to take biology, chemistry, physics, or calculus, and focuses on classes related to spatial analysis of social issues. The GIScience B.S. degree requires students to take biology, chemistry, physics and calculus and is intended as preparation for students pursuing a career in natural science or engineering with geospatial technology.

#### Major Requirements

The major in GIScience requires at least 26 credits of 2000-level or higher courses in the Department of Geography. GIScience majors complete basic core courses before beginning advanced courses. Recommended preparation for the major: GEOG 1010 and 1302.

#### Required Core Courses (at least 14 credits)

GEOG 2500, 2505, 3510 or 3500Q, 3530, and any GEOG W course at the 2000 level or above (one or three credits).

#### Electives (12 credits)

In addition to the required courses above, the plan of study must include 12 credits of electives from courses below. At least six credits of electives must be selected from the list of GIScience courses. At least six credits of electives must be selected from the list of Human Geography or Physical Geography courses. At least three credits must be 4000-level. No more than six credits of internship and/or independent study (GEOG 4090, 4091, and 4099) may be counted toward the additional credit requirements of the Geographic Information Sciences major.

#### GIScience Courses:

GEOG 3110, 3500Q\*, 3505, 3510\*, 3512, 4130, 4230, 4515, 4516, 4518, 4519.

\* if it's not chosen as a core course

#### Human and Physical Geography Courses:

GEOG 2000, 2100, 2200, 2300E, 2310, 2320, 2400, 3000, 3200, 3310, 3400, 3410, 3420, 4210, 4220, 4240, 4300.

#### Related Courses (12 credits)

12 credits of related coursework taken in other departments. The following is a list of pre-approved related courses that may be relevant to the GIScience

major. Other courses can be used with approval of a student's Geography advisor.

#### Remote Sensing Courses:

NRE 2000, 3535, 4535, 4545, 4575.

#### Computer Science and Engineering Courses:

CSE 2050, 2100, 2102, 2300, 2304, 2500, 3000, 3100, 3150; 3300, 3400, 3500; CE 2251, 2310E, 2410, 2710.

#### Math and Statistics Courses:

MATH 2110Q, 2130Q, 2143, 2144, 2210Q, 2410Q, 2420Q, 3160, 3410, 3435, 3710; STAT 2215Q, 3025Q, 3115Q, 3375Q, 3445, 3515Q.

#### Social Science Courses:

ANTH 2510, 3003, 3090, 3503, 3512, 3513, 3514, 3515; INTD 3584, 3594; POLS 2062, 2072Q; SOCI 3201, 3211Q; URBN 2000, 2100, 2301Q, 2302, 2400, 3210, 3993, 3981/3991, 3998; COMM 2000Q, 2110, 2300, 2700, ; WGSS 2124, 2255, 2255W, 3255, 3255W, 3269.

#### Natural Science Courses:

EEB 4100, 4230W; EARTH 2500, 3230, 4050W, 4210, 4735; MARN 2060, 3000E, 3014, 3030, 3812.

#### Economics Courses:

ECON 2201, 2202, 2211Q, 2212Q, 2301Q, 2311Q, 2312Q, 2326, 2327, 3103, 3313, 3421, 3439.

The Information Literacy Competency and Writing in the Major requirements can be satisfied by passing any 2000 or higher level W course in Geography.

## Geography

Geography is a multidimensional discipline that analyzes the interactions between people and their environments. Our geographers teach courses and engage in research on a wide range of relevant and timely topics such as urban sprawl, the nature and impact of migration, globalization of the economy and international trade, the spatial prevalence of disease, regional development, global climatic change, environmental degradation and restoration, watershed and landscape change, and the analysis and display of spatial data using geographic information systems (GIS) technology.

Coursework in geography enables graduates to find employment in the private and public sectors while providing both the regional and global perspective required of informed citizens. B.A. students have gone on to work as urban and regional planners, marketing specialists, environmental program managers, location analysts, and transportation planners. The B.S. degree prepares students to pursue a technologically oriented career as geographic information systems specialists. Students with an undergraduate degree in geography are also prepared to move on to graduate school to pursue M.A. and Ph.D. degrees that enable them to teach at the college level or to secure higher ranking positions in the public and private sectors.

### Bachelor of Arts

The B.A. degree requires 24 credits in 2000-level or above geography courses and 12 credits of related course work in other departments. B.A. majors must complete a basic core of three courses: GEOG 2100 or 2200, 2300E, and one methods course (choice of GEOG 2500, 2510, 3110, 3500Q, or 3510), and 15 additional credits, including at least one "W" course in geography chosen in consultation with their departmental advisor. No more than six credits of internship and/or independent study (GEOG 4090, 4091, and 4099) may be counted toward the additional credit requirements of the Geography major.

### Bachelor of Sciences

The B.S. degree requires 31 credits in 2000-level or above geography courses and 12 credits of closely related course work in other departments. B.S. majors must complete a basic core of three courses: GEOG 2100 or 2200, 2300E, and 2500. B.S. majors must take 21 additional credits in Geography, including at least four courses from either "methods" courses (choice of GEOG 2505, 2510, 3420, 3500Q, 3505, 3510, 4230, 4515, or 4520), or "physical" courses (choice of GEOG 2310, 3310, 3400, 3410, 3420, 3505, 4230, or 4300), in addition to one "W" course, in consultation with their departmental advisor. Based on content, GEOG 4093, 4095, 4098 may be used towards the methods or physical requirements in the

major with advisor consent. No more than six credits of internship and/or independent study (GEOG 4090, 4091, and 4099) may be counted toward the additional credit requirements of the Geography major. The writing in the major requirement for Geography can be met by passing any of the following geography courses: GEOG 3320W, 3330W, 4000W, 4001W, 4110W, or 4200W.

Information Literacy requirement in the Geography major can be met by passing any of the following geography courses GEOG 3320W, 3330W, 4000W, 4001W, 4110W, or 4200W.

A minor in Geographic Information Science is described in the "Minors" section.

## Geoscience

*Effective for the 2022-23 catalog, the GSCI subject code was changed to EARTH.*

Majors in Geoscience focus on the materials, processes, and histories of Earth as a planetary system, with a special emphasis on environmental change at geologic time scales. Interest areas include global change, climate adaptation, water resources, planetary science, tectonics, paleontology and evolution, natural hazards, mineral and energy resources, surface processes, geophysics, and paleoclimatology.

Students may obtain a Bachelor of Science degree or a Bachelor of Arts degree. The Bachelor of Science degree has three tracks.

### Bachelor of Science

At least 30 credits of Geoscience courses at the 2000 level and above and at least 12 credits of related courses at the 2000 level and above must be successfully completed for the Bachelor of Science in Geoscience in addition to the college B.S. requirements. Courses cross-listed with Geoscience courses cannot be used to fulfill the related courses requirement.

All Students must complete a 2000 level or above EARTH W course, and a concentration listed below. No more than three credits in the major can be from EARTH 4989, 4990, 4991, 4999.

#### Earth Track

1. All of the following: EARTH 3010, 3030, 3040.
2. At least 18 additional credits of Geoscience courses at the 3000 level and above.

#### Environment Track

1. All of the following: EARTH 3020, 3030, 3040.
2. Three courses chosen from EARTH 3710, 4130, 4150, 4210, 4230, 4240, 4430, 4440, 4710, 4720, 4735.
3. At least nine additional credits of Geoscience courses at the 3000 level and above.

#### Atmosphere Track

1. EARTH 3010.
2. One course chosen from the following: EARTH 3020, 3030, 3040.
3. Three courses chosen from EARTH 2800, 4150, 4230, 4430, 4810, 4850.
4. At least twelve additional credits of Geoscience courses at the 3000 level and above.

### Bachelor of Arts

At least 24 credits of Geoscience courses at the 2000 level and above and at least 12 credits of related courses at the 2000 level and above must be successfully completed for the Bachelor of Arts in Geoscience in addition to the college B.A. requirements. Courses cross-listed with Geoscience courses cannot be used to fulfill the related courses requirement.

The requirements include the following:

1. A 2000 level or above EARTH W course.
2. Two courses chosen from: EARTH 3010, 3020, 3030, 3040.
3. At least 15 additional credits of Geoscience courses at the 2000 level and above.

No more than three credits can be from EARTH 4989, 4990, 4991, 4999. No more than six credits at the 2000 level can count toward the 24 credit total.

Geoscience majors satisfy the writing in the major and information literacy competency requirements by passing a 2000 level or above EARTH W course.

A minor in Geoscience is described in the "Minors" section.

## History

The study of history aims at the understanding and disciplined reconstruction of past human activities, institutions, ideas, and aspirations in the light of present knowledge and in the hope of usefulness for the future. History belongs both to the humanities and to the social sciences. It is studied both for its own sake and for the light it throws on the present problems and future prospects of particular societies and of humankind in general.

A major in history in combination with work in foreign languages, philosophy, literature, and the social sciences provides a broad foundation for informed citizenship. History majors find employment in many fields of human endeavor from arts and business to public service and education. Specialization in history is especially valuable as pre-professional training for law, government, diplomacy, and journalism and for library, archival, and museum administration.

**Requirements for the Major in History:** Undergraduate majors are required to take at least 27 credits at the 2000 level or above, which must include one three-credit course from each of Groups A, B, and C, and two three-credit courses from Group D. All majors should enroll in HIST 2100 as early as possible, and all majors except Honors students must take HIST 4994W in their senior year. Honors students should take in sequence 4996 and 4997W. Under certain circumstances and with advisor approval, honors majors may substitute 4994W for 4996. With the consent of the undergraduate major's advisor, graduate level courses may be used to fulfill the distribution requirement. HIST 2100 and 4994W satisfy the information literacy competency. HIST 4994W or 4997W satisfy the writing in the major requirements.

**Group A - Ancient, Medieval, and Early Modern:** HIST 2020, 2350, 2470, 3300 (ANTH 3513), 3301 (CAMS 3301), 3320 (CAMS 3320), 3321 (CAMS 3321), 3325 (CAMS 3325), 3326 (CAMS 3326), 3330 (CAMS/HEJS 3330), 3335 (CAMS 3335), 3340 (CAMS 3340), 3360, 3361, 3362 (HEJS 3362), 3370, 3371, 3400, 3420, 3460, 3704.

**Group B - Modern Europe:** HIST 2205, 2206 (SCI 2206), 2222E, 2240, 2401, 2402, 2412, 2413, 2421, 2451, 2471, 3201 (HRTS 3201), 3203 (HDFS 3423), 3204W, 3207 (HRTS 3207), 3208 (AFRA/LLAS 3208), 3232 (HRTS 3232), 3416 (WGSS 3416), 3418 (HEJS 3203), 3419 (HEJS 3204), 3426, 3430, 3440, 3456, 3463.

**Group C - United States:** HIST 2206 (SCI 2206), 2207 (AMST 2207, ENGL 2207), 2222E, 2530 (AAAS 2530), 2541 (URBN 2541), 2570, 2810, 3201 (HRTS 3201), 3204W, 3206, 3208 (AFRA 3208, LLAS 3208), 3209 (ANTH 3531, MAST 3531), 3232 (HRTS 3232), 3502, 3504, 3510, 3516, 3519, 3520, 3522, 3530 (AAAS 3578), 3531 (AAAS 3531), 3540E, 3542, 3544 (MAST 3544), 3550, 3551, 3554, 3555, 3556W, 3559, 3560 (WGSS 3560), 3561 (WGSS 3561), 3562 (WGSS 3562), 3563 (AFRA 3563, HRTS 3563), 3564 (AFRA 3564), 3568 (AFRA 3568), 3569 (AFRA 3569), 3575 (LLAS 3221, HRTS 3221), 3618 (AFRA 3618, LLAS 3618), 3660W (LLAS 3660W), 3674 (LLAS 3220). Either HIST 3520 or 3522, but not both, may be counted for credit toward the major.

**Group D - Africa, Asia, Latin America, and Middle East:** HIST 2101 (AAAS 2101), HIST 2210E (MAST 2210E), 2222E, 2621, 2622 (AFRA 2622, LLAS 2622, WGSS 2622), 2650 (URBN 2650), 2752 (AFRA 2752), 2841 (AAAS 2841), 2842 (AAAS 2842), 3201 (HRTS 3201), 3202 (HRTS 3202), 3206 (AFRA 3206), 3208 (AFRA/LLAS 3208), 3210 (MAST 3532), 3232 (HRTS 3232), 3569 (AFRA 3569), 3575 (LLAS 3221, HRTS 3221), 3607, 3608W, 3609, 3610, 3618 (AFRA 3618, LLAS 3618), 3619 (AFRA 3619, LLAS 3619), 3620 (AFRA 3620), 3635, 3640, 3643, 3660W (LLAS 3660W), 3674 (LLAS 3220), 3704, 3705, 3712, 3753 (AFRA 3753), 3760, 3770, 3808 (AAAS 3808), 3809 (AAAS 3809), 3810, 3812 (AAAS 3812), 3820, 3822, 3832, 3845, 3863, 3875 (AAAS 3875, LLAS 3875).

**Courses with Variable Content** (HIST 2993, 3095, 3098, 3100W, 3101W, 3102, 3991, 3993, 4989, 4994W, 4996, 4997W, 4999, or a graduate level History course) may be applied to any of the four distribution groups as determined by course content and with Advisor consent. No more than six credits of HIST 3991 will count toward the major requirements.

A minor in History is described in the "Minors" section.

## Human Development and Family Sciences

Students in the Human Development and Family Sciences major must complete the following requirements: HDFS 1070; PSYC 1100, 1103 (or

1101); HDFS 1060; and STAT 1000Q or 1100Q (Note: These courses may also fulfill University General Education requirements). Students must meet the information literacy and writing competency requirements through satisfactory completion of HDFS 2004W and one of the following: HDFS 4007W, 4087W, or 4181W.

The major in Human Development and Family Sciences requires 43 credits at the 2000 level or above including 31 credits in Human Development and Family Sciences and 12 credits in courses related to but outside the major department. A student completing requirements for a major must have a grade point average of 2.0 or better in the credits that count toward the major in Human Development and Family Sciences. Students are allowed much flexibility in tailoring their major to meet their particular interests and educational goals. Working with their advisors and other faculty, students can develop their HDFS plan of study to reflect inter-related areas of expertise in areas such as Early Childhood Education, Child and Adolescent Development; Adulthood, Aging, and Gerontology; Couples, Parents, and Families; Health, Wellbeing, and Prevention; and Diversity and Culture.

This major must include all of the following required courses: HDFS 2001, 2004W, 2100, 2200 and 2300.

This major must include the completion of one of the following courses: HDFS 3520, 3530, 3540, or 3550.

This major must include completion of one of the following courses as a second W: HDFS 4007W, 4087W, or 4181W.

This major also must include at least nine credits from the following courses: HDFS 2095, 2142E, 2620, 3042, 3083\*, 3092\*\*, 3095, 3098, 3101, 3102, 3103, 3110, 3120, 3122, 3123, 3125, 3127, 3141, 3240, 3249, 3250, 3251, 3252, 3261, 3268, 3277, 3310, 3311, 3319, 3340, 3341, 3342, 3343, 3420, 3421, 3423, 3425, 3430, 3431, 3432, 3433, 3442, 3473, 3510, 3520, 3530, 3540, 3550, 4004, 4007W, 4255.

These nine credits may include elections from HDFS 3520, 3530, 3540, 3550 or 4007W if not applied to satisfaction of the foregoing requirements.

\* No more than six credits can be counted toward the nine selected credits.

\*\* No more than three credits can be counted toward the nine selected credits.

## Minors

Minors in Culture, Health, and Human Development, Gerontology, and Human Development and Family Sciences are offered. Please refer to their descriptions in the "Minors" section of this *Catalog*.

## Honors Program

The Human Development and Family Sciences Honors Program offers motivated students a way of enhancing their studies while providing distinction to their academic records through more in-depth study and the opportunity for independent projects or research. Human Development and Family Sciences majors with an overall GPA that meets the University Honors minimum and a GPA in the major of 3.5 or higher are eligible to apply to the Honors Program in Human Development and Family Sciences. Students should apply as early as possible, and applications will not be accepted after the first semester of a student's junior year. Honors Scholars who complete the required honors course work and an approved honors thesis project, as well as maintain the required GPA, will graduate with a degree with Honors. For more information on this program, contact the Human Development and Family Sciences Honors Advisor.

## Human Rights

The field of concentration in Human Rights gives students an understanding of the legal instruments, norms, and institutions that constitute contemporary human rights law, as well as the social movements, cultural practices, and literary and artistic representations that have and continue to imagine the human rights ethic in various ways. In recent years, the human rights dimensions of many of the most vexing and pertinent issues at the global, national, and local level have gained prominence - including the problems of environmental deterioration, economic inequality, and ethnic and religious conflict. Students who major in Human Rights will be better equipped not only to understand the complex nature of these and other issues, but also to develop and pursue novel approaches toward a better world. In addition to studying the manifold histories, theories, and practices of human rights in a systematic and comprehensive manner, students majoring in Human Rights

will also develop more specialized methodological and topical expertise in a second discipline.

To complete the Major in Human Rights, students are required to complete an additional, primary major offered in the College of Liberal Arts and Sciences or an additional degree program offered in another University School or College. For students completing a double major within the College of Liberal Arts and Sciences, a minimum of 48 credits without overlap is required to earn both majors and students will receive one degree appropriate to their primary major.

For students completing a dual degree, all requirements for each degree must be met and at least 18 unique additional credits more than the degree with the higher minimum-credit requirement must be completed (e.g. School of Nursing and CLAS, CLAS requires 120 credits to graduate, 120 + 18 = 138 credits to graduate with both degrees) and students will receive a Bachelor of Arts in Human Rights along with another degree appropriate to their second program. All 18 credits for the additional degree must be at the 2000 level or higher.

It is recommended that Human Rights majors declare their primary major by the end of their third semester.

**Recommended course:** HRTS 1007.

**Requirements for the Major in Human Rights:** Undergraduate majors must complete a total of 36 credits: nine credits of core courses with at least one course in each of groups A, B and C; 12 credits of elective courses from the lists of core courses (A, B and C) or elective courses; 12 credits of related courses as approved by the Director of the Human Rights Major; and HRTS 4291 or 4996W.

## Core Courses

### A. Institutions and Laws

ANTH/HRTS 3230/W; HIST/HRTS 3202; HRTS 3050, 3055, 3200/W, HRTS/POLS 3212, HRTS 3420, 3428; HRTS/SOCI 2800, 2845/W.

### B. History, Philosophy, and Theory

ANTH/HRTS 3326; ANTH/HRTS/LLAS 3327; DMD/HRTS 3828; ENGR/HRTS 2300, ENGL/HRTS 3631; HIST/HRTS 3201, 3207, 3232; HRTS/LLAS 2450; HRTS/POLS 3042; HRTS/PHIL 3220/W; HRTS 2100/W, 2200, 3460, 3710.

### C. Applications and Methods

BADM or BLAW or HRTS 3252, 3254; DMD/HRTS 3640, 3641; DRAM/HRTS 2150, 3139; ENGR or HRTS 3257; HRTS 2400, 3149/W, 3250/W, 3401, 3475, 3540; POLS/HRTS 3256/W, 3430; SOCI/HRTS 3835/W.

### D. Elective Courses

Any HRTS course numbered 2000 or above; AAAS/HRTS/SOCI 2220; AFRA/HRTS/SOCI 2520; AFRA/HRTS/SOCI 2530; ANTH/HRTS 3028/W, 3153W; ANTH 3150/W; ANTH/WGSS 3350; ARTH /HRTS 2210, 3575; DRAM/HEJS/HRTS 2203; ECON 2120, 3473/W; ECON 2445/HRTS/WGSS 3445; EDCI 2100, 3100; ENGL/HRTS 3619; ENGL 3629; GEOG 2400, 3240; HDFS 3251; HIST/AAAS 3531; HIST/WGSS 3562; HIST/HRTS/AFRA 3563; HIST 2456, 3100W, 3418, 3570; LLAS/HRTS 3221/HIST 3575; LLAS 3271/POLS 3834; NRE 2600E; NURS 3225; PHIL/HRTS 2170W, 3219/W; PHIL 2215/W, 3218; POLS/HRTS 3418/W, 3807; POLS/WGSS 3249; POLS 3672/WGSS 3052; POLS 3211, 3214, 3240; POLS/ENGR/HRTS 3209; SOCI/HRTS 2830/W; SOCI 2503/W, 2898; WGSS/HRTS 2263; WGSS 2255, 3105, 3257, 3269.

### E. Related Courses

A minimum of 12 credits of related courses (2000 level or above) must be approved by the director of the Human Rights major.

### F. Capstone Course (Three credits)

HRTS 4291 or HRTS 4996/W.

## Information Literacy and Writing Requirements

The following courses satisfy the Information Literacy Competency and Writing in the Major requirements: ANTH/HRTS 3028W, 3153W, 3230W; ANTH 3150W; ARTH 3575W; ECON 3473W; EDCI 3100W; HIST 3100W; HRTS 2100W, 3149W, 3200W, 3250W, 4996W; HRTS/PHIL 2170W, 2215W, 3219W, 3220W; PHIL 2215W; POLS 3211W; POLS/

HRTS 3256W, 3418W; SOCI 2503W, 2830W; SOCI/HRTS 2845W, 3835W; and WGSS 2255W, 3105W, 3257W.

## Human Rights and Sustainability Specialization in Multidisciplinary Engineering

A Multidisciplinary Engineering major with a specialization in Human Rights and Sustainability is open to those enrolled in the School of Engineering. The program draws substantively on the courses offered through the Human Rights Institute, but the requirements are tailored to Engineering.

A minor in Human Rights is described in the “Minors” section.

## Individualized Major

The Individualized Major Program allows students to create a major that is not otherwise offered at the University of Connecticut. In order to submit a proposal for admission to the program, students must: be in good academic standing, have a minimum grade point average of 2.0, and have third semester standing or higher. It is recommended that students not have begun their final 30 credits of study. Students are not permitted to apply in their final semester of study.

The proposed individualized major must be coherent in theme, have academic merit, and include at least 36 credits, numbered 2000 or higher, from two or more departments in the University. At least 18 credits shall come from departments of this College. The major may include up to six credits of independent study and six credits of field work. The student may include the individualized major in a double major plan of study, but at least 24 credits of the individualized major plan must not overlap with the student’s other major and its related field courses. To graduate, the student must earn a grade point average of 2.5 or better in the 36 credits of the individualized major.

Individualized majors may contribute to Bachelor of Arts (B.A.) or Bachelor of Science (B.S.) degrees.

**Capstone:** All students with approved individualized major plans of study must complete a capstone during their last academic year. Students must either register for UNIV 4600W Capstone Course or UNIV 4697W Senior Thesis (for honors and other students writing a thesis) or propose an alternative capstone course. An alternative capstone must provide the student the opportunity to engage in a research or creative project that integrates the themes of the major. Alternative capstones must be approved by the student’s primary faculty advisor and the director of the program.

**Writing in the major requirement:** In addition to the capstone, all students must nominate one other course numbered 2000 or higher in which they will write in a relevant academic discipline (where feasible, this course should be a W course). (Double majors and additional degree students may choose to satisfy the exit level writing in the major competency outside the Individualized Major.)

**Information literacy competency:** All majors must include the capstone and one research methods or research course in their plans of study. (Double majors and additional degree students may choose to satisfy the information literacy competency outside the Individualized Major.)

The individualized major is administered by the Individualized and Interdisciplinary Studies Program. Please see our website ([iisp.uconn.edu](http://iisp.uconn.edu)) for more information.

## Journalism

This department offers professional preparation for students who are planning careers in journalism. It also offers other students the chance to improve their writing, interviewing and research skills and to learn about the news media. Students in writing courses are expected to produce work of professional quality and to publish that work when possible.

Students who major in journalism should also take related courses in history, economics, political science and other liberal arts disciplines as a sound preparation for news reporting. The department strongly urges students to complete a second major. Students also should gain professional experience before graduation, either through part-time jobs, the Co-operative Education Program or the department’s internship program. Internships are available at newspapers, radio and television stations, magazines, online publications and political press offices.

In addition to satisfying the requirements of the College, majors must complete 27 credits in journalism at the 2000 level or above, including JOUR 2000W, 2001W, 3002, 3020 and 3030; the three credit portfolio sequence (JOUR 2111, 3111, and 4111); and one of the following courses: JOUR 3000, 3012, 3013, 3041, 3045, 3046, 4035, or other advanced courses if accepted with the consent of the department. JOUR 1002 is a prerequisite for JOUR 3002.

National accrediting rules require a broad education outside of journalism. Students usually meet this standard when they complete college and university requirements. However, when planning their programs, students should review this standard with their advisors.

A journalism education is, by definition, an education in writing and information literacy. A journalism major will fulfill the writing in the major requirement and the information literacy competency by completing the department's core courses (JOUR 2000W, 2001W, 3002, 3020 and 3030).

Journalism majors are advised to consult with their advisors about computer skills that may be helpful to them, based on individual career plans. Students who major in journalism will be expected to own basic digital audio and imaging equipment for use in classes and professionally. The department's website, journalism.uconn.edu, lists current requirements.

Students must apply to the Journalism Department to become majors. They must do so by the end of the third full week of classes in the fall or spring semester. A student who is not accepted initially may reapply in subsequent semesters. Forms can be obtained online or in the Journalism Department Office, 468 Oak Hall.

Admission is limited to students who:

1. Have successfully completed at least 39 credits. (Students who are members in good standing of the University Honors Program may apply after completing 23 credits at UConn).
2. Have a cumulative GPA of at least 2.6 or have a GPA below 2.6 and provide a personal essay that shows mastery of the fundamental tools of writing, including spelling, grammar, and syntax. The applicant's academic record and goals also will be considered.

## Latino and Latin American Studies

The interdisciplinary major in Latino and Latin American Studies offers an understanding of hemispheric relationships between the peoples and cultures of Latin America and the Caribbean, and those of the United States. It explores interconnected histories and contemporary economic, social, and political challenges including migration, transnational communities, and economic development. Completion of the B.A. in Latino and Latin American Studies prepares the student for work in government, community agencies, international organizations, business, journalism and communications, or for graduate studies that lead to careers in research and teaching.

The major in Latino and Latin American Studies consists of a minimum of 37 credit hours of course work, including a required 2-course sequence in writing, research, and methodology (seven credits); an experiential learning component (six credits); a capstone project (three credits); three electives in LLAS (nine credits); and four related courses (12 credits).

Related courses may include LLAS courses provided that they are cross-listed with another discipline. In addition, intermediate proficiency in a language spoken in Latin America, though not a prerequisite for major study, must be demonstrated for completion of the major for students focusing on Latin America, and proficiency in Spanish is strongly suggested for those focusing on Latinos in the United States.

Prerequisite for the major: A 1000-level introductory course on Latino or Latin American Studies.

### Required Courses (16 credits)

1. Critical Methodology sequence of LLAS 2011W and 2012
2. Experiential Learning Requirement. Choose six credits from:
  - a. Community immersion project (combination of Independent Study LLAS 3999, Field Work LLAS 3990 or 4212, or service-learning courses that involve Latino American community)
  - b. Urban Semester with Latino Studies focus (INTD 3584 and INTD 3594 or 3590, the internship itself); additional credits can count as related courses, or towards the capstone)

c. Study abroad courses or internship in Latin American or Caribbean Studies

3. Capstone project: LLAS 4994W or comprehensive project through Urban Semester (three credits)

### Elective Courses (nine credits)

Elective courses must have a LLAS designation, and must fall within content area of chosen concentration, either Latino or Latin American Studies.

### Related Courses (12 credits)

Language Requirement. Intermediate proficiency in a language spoken in Latin America is required for students focusing in Latin America, and proficiency in Spanish is strongly suggested for students focusing on Latinos in the United States. Proficiency can be demonstrated in one of the ways below:

- Take at least one 3000-level or above course in literature, culture, film or the arts in the target language
- Pass equivalent language exam
- Requirement waived for native speakers

Education Abroad. While study abroad is not mandatory, we strongly encourage all Latino and Latin American Studies majors to spend at least a semester in Latin America or the Caribbean. For further information on academic programs in the region, contact El Instituto or the Education Abroad Office.

Information literacy and writing in the major competencies will be satisfied by completion of the core courses LLAS 2011W and LLAS 4994W.

Minors in Latin American Studies and Latino Studies are described in the "Minors" section.

## Linguistics

The Department of Linguistics offers two joint majors, one together with the Department of Philosophy in Linguistics and Philosophy, and the other with the Department of Psychology in Linguistics and Psychology. For either major, a minimum of four courses (twelve credits) at the 2000 level or above from each department is required.

### Linguistics and Philosophy

For the Linguistics and Philosophy joint major, required linguistics courses are LING 3410Q, either LING 3000Q or 3110, and at least two additional LING courses at the 2000 level or above; and required philosophy courses are PHIL 3241 and at least three additional PHIL courses at the 2000 level or above. For this joint major, exit requirements for information literacy will be satisfied by passing LING 3000Q or 3110. The exit requirement for writing in the major will be satisfied by passing any W course in LING or PHIL at the 2000 level or above that has been approved by the student's advisor for inclusion in the plan of study.

### Linguistics and Psychology

For the Linguistics and Psychology joint major, specifically required linguistics courses are: LING 2010Q and 3000 or 3110, and at least two out of the other 2000-level or above linguistics courses; and specifically required psychology courses are: PSYC 2100Q or 2100WQ and 3500, and at least two out of PSYC 2400, 2500, 2501, 3501, 3550W, and 3552. All students in the Linguistics/Psychology Major are strongly encouraged to take LING 5010/PSYC 5500 in their senior year. A minimum of four courses (12 credits) at the 2000 level or above from each department is required. For this joint major, exit requirements for information literacy will be satisfied by passing LING 3000 or 3110. The exit requirement for writing in the major will be satisfied by passing any W course in LING or PSYC at the 2000 level or above that has been approved by the student's advisor for inclusion in the plan of study.

A minor in Linguistics is described in the "Minors" section.

Other students interested in Linguistics should consider forming their major group from the courses in another field, and using courses in linguistics for their related group, as described under "Field of Concentration," item 1.

## Literatures, Cultures and Languages

The Department of Literatures, Cultures and Languages offers courses in Arabic, Chinese, French, German, Hebrew, Italian, Spanish, Classical

Languages (Ancient Greek, Latin, and Biblical Hebrew) and selected critical languages. Students may major in Chinese Studies, Classics and Ancient Mediterranean Studies, French and Francophone Studies, German Studies, Italian Literary and Cultural Studies, Judaic Studies, and Spanish Studies. A student may double major in two of the above majors. Students will gain knowledge of the Literature, Culture, and applied Language skills that are required for teaching, business, diplomatic or governmental work, and research in graduate or undergraduate study of the culture and literature that is associated with these languages.

Education Abroad is required (or strongly encouraged, please see descriptions) for the majors in modern languages for at least one semester or approved equivalents. The department sponsors University of Connecticut programs in France; Italy; Spain; Germany; and Tianjin, China. Many other programs are available in Africa, Asia, Latin America, and Europe through Education Abroad. Such coursework is normally most valuable during the junior year, but qualified sophomores and seniors are also eligible. Students interested in Education Abroad should consult with their advisors.

Courses numbered at the 2000 level or above are open to first-year students and sophomores if they meet the course prerequisites. In the modern languages, coursework is conducted in the foreign language unless otherwise indicated.

**Minors:** The Department of Literatures, Cultures and Languages offers minors in Classics and Ancient Mediterranean Studies, Chinese, French, German, Italian Literary and Cultural Studies, and Spanish Studies. Related minors in European Studies, Judaic Studies, Latin American Studies, Latino Studies, and Middle Eastern Studies may be of interest to students. Please see the “Minors” section of this *Catalog*.

### Chinese

The Chinese major requires a minimum of 36 credits in courses at the 2000 level or above, including 24 credits in Chinese and 12 credits of related courses from programs other than Chinese. A minimum of 12 major credits must consist of Chinese courses taken in residence. Only six may be transfer credits. AP credits may not be used toward the major.

Chinese majors must complete a minimum of twelve courses:

- A. Four **language** courses from the following: CHIN 3171, 3210, 3211, 3220, 3240, 3260, or another CHIN course approved by the advisor
- B. Four **content** courses from the following: CHIN 3171, 3230, 3260, 3270, 3271, 3275, 3282, or another CHIN course approved by the advisor
- C. Four **related** courses from the following: AAAS 2210, 3201, 3220, AAAS/ENGL 3212; DRAM 2131; HIST 3822, 3832, 3863, HIST/AAAS 3808, 3809; HIST 3530/AAAS 3578; PHIL 3264; POLS 3245; SOCI 2827; or any other related courses from programs other than Chinese, with the advisor's consent.

Enrollment in an Education Abroad program in a Chinese-speaking country is required for all Chinese majors. With the advisor's consent, any of the above courses may be replaced by an appropriate CHIN 3293 course from study abroad programs.

Up to 12 credits taken in study abroad programs may count toward the major. Students can enroll in either UConn-sponsored or non-UConn-sponsored programs. In either case, students must consult with the advisor to determine which courses will receive credits.

To satisfy the Information Literacy Competency and Writing in the major requirements, all students must take a W course as specified by the advisor.

A minor in Chinese is described in the “Minors” section.

### Classics and Ancient Mediterranean Studies

The major in Classics and Ancient Mediterranean Studies allows students to pursue an interest in the Greek, Latin, and Ancient Hebrew/the Biblical world. Students may choose to pursue a traditional, language-oriented (Greek or Latin) concentration in Classics or a concentration in Ancient Mediterranean Studies. Students who concentrate in Classics may take courses in Ancient Mediterranean Studies in addition to their language and literature requirements. Those who concentrate in Ancient Mediterranean Studies may also pursue some relevant language study (Greek, Latin, or Biblical Hebrew). Either concentration will lead to a major in Classics and Ancient Mediterranean Studies.

### Concentration in Classics

Students must complete a minimum of eight courses from the following:

- A. At least two courses involving reading in Greek and/or Latin: CAMS 3101, 3102, 3232, 3293\*, 3295\*, 3298\*, 3299\*. (CAMS 3101 and 3102 are topics courses, which may be retaken for credit with a change in subject matter).
- B. At least one writing course on Classical literature in English translation: CAMS 3241W, 3242W.
- C. At least two other courses dealing with the ancient world: CAMS 2020, 3207, 3208, 3211, 3212, 3213, 3221, 3224, 3225, 3226, 3227, 3244, 3245, 3251, 3257/W, 3293\*, 3295\*, 3298\*, 3299\*, 3301, 3320, 3321, 3325, 3326, 3330, 3335, 3340, 4096W. (These may be cross-listed under Art History, History, Hebrew and Judaic Studies, and Philosophy). HEJS 3201 and INTD 3260 may also be included.

\*May count toward major only with consent of advisor.

To satisfy the writing in the major and information literacy competencies, all students must take CAMS 3241W or 3242W.

### Concentration in Ancient Mediterranean Studies

Students must complete a minimum of eight courses from the following:

- A. At least one writing course on Classical literature in English translation: CAMS 3241W, 3242W.
- B. At least six other courses dealing with the ancient world: CAMS 2020, 3101, 3102, 3207, 3208, 3211, 3212, 3213, 3221, 3224, 3225, 3226, 3227, 3232, 3244, 3245, 3251, 3257/W, 3293\*, 3295\*, 3298\*, 3299\*, 3301, 3320, 3321, 3325, 3326, 3330, 3335, 3340, 4096W. (These may be cross-listed under Art History, History, Judaic Studies, and Philosophy). HEJS 3201 and INTD 3260 may also be included. (CAMS 3101 and 3102 are topics courses, which may be retaken for credit with a change in subject matter).

\*May count toward major only with consent of advisor.

To satisfy the writing in the major and information literacy competencies, all students must take CAMS 3241W or 3242W.

A minor in Classics and Ancient Mediterranean Studies is described in the “Minors” section.

### French

The French major requires a minimum of 30 credits in 2000-level or above French courses and 12 credits in 2000-level or above “related courses” from departments other than French.

All majors must complete four core courses: FREN 3257\*; 3261; 3262; and 3268/W or 3269.

French majors must complete any 18 credits among the following groupings: FREN 3210, 3211W, 3215 or 3216; FREN 3217 or 3267; FREN 3218 or 3250 or 3251 or 3270W or 3280; FREN 3224 or 3274; FREN 3223 or 3226; FREN 3218, 3231, 3234, or 3235; FREN 3220, 3221, 3222, or 3250 or 3251 or 3272.\*\*

\*Native French or heritage speakers may request a waiver from the FREN 3257 requirement if an evaluation of their speaking skills is approved. Students will still have to meet the 30-credit requirement for the major.

\*\*As part of their major, Technopole students must take the three-semester sequence FREN 3101, 3102 and 3103 (one credit each) in the two years prior to their departure to France.

To satisfy the writing in the major and information literacy requirements, all majors must take one French W course, either FREN 3211W or 3268W. FREN 3270W may be taken towards the major, but because it is taught in English, it cannot count as the W for the major.

### Education Abroad

Study abroad in our Paris program is required of all non-dual degree French majors for at least one semester. Any of the above courses may be replaced, with advisor approval, by an appropriate FREN 3293 course from study abroad in Paris. Students participating in the Paris for a year may earn a full academic year's credit at the University of Connecticut and a maximum of 15 credits toward the major in French. The department encourages

interdisciplinary work and encourages students to take courses in other disciplines wherever possible.

Technopole France dual-degree students must study abroad for a year in Toulouse. They will spend one semester at Université Fédéral de Toulouse Midi-Pyrénées pursuing their French major and one semester pursuing an engineering internship overseen by UFTMP (this option is not available for non-Technopole students). In the fall, any of the above courses may be replaced, with advisor approval, by an appropriate FREN 3293 course at UFTMP. Technopole students may earn a maximum of 12 credits toward the major in French, plus six related. A minor in French is described in the “Minors” section.

## German

Students majoring in German are required to take the following courses:

1. GERM 3233, 3234, 4246.
2. Either GERM 3251 or 3258.
3. Three from GERM 2400, 3200, 3231, 3232, 3245, 3261W, 3264W, 3265, 3292, 3293 (on a non-literary topic), and 3294 (on a non-literary topic), 3295 (on a non-literary topic), or two courses of the above and the combination of all three one-credit courses GERM 3220, 3221, and 3222.
4. One of the following literature courses: 3254W, 3255W, 3293 (on a literary topic), 3294 (on a literary topic), and 3295 (on a literary topic).
5. Only two courses taught in English are allowable toward the German major.

## Information Literacy

To satisfy the Information Literacy Competency requirement, the following courses are required:

1. One of GERM 3233, 3234; and
2. One of GERM 3254W, 3255W, 3261W, 3264W; and
3. GERM 4246.

## Writing in the Major

To satisfy the writing in the major requirement, all majors must take one of the following courses: GERM 3254W, 3255W, 3261W, 3264W.

## Eurotech

In collaboration with the School of Engineering, the German Section offers Eurotech, a carefully structured five-year, double-degree program enabling students who have been admitted to the School of Engineering to earn both a B.A. in German and a B.S. in Engineering. The program includes German language courses specially designed to include engineering content, engineering courses partly taught in German, and a six-month internship in a German-speaking company. There is a special emphasis on environmental engineering and pollution prevention. Eurotech students may substitute a combination of all three one-credit courses GERM 3220, 3221, and 3222 for one of the three-credit courses in category three.

## Eurobiz

The College of Liberal Arts and Sciences and the School of Business offer a four to five-year, dual-degree EUROBIZ program leading to degrees in Business Administration in any business major and a B.A. in German. The program includes language courses specially designed to include business content, business courses taught partly in German, a study abroad semester in Germany, and a four- to six-month internship in a company in Germany.

## Education Abroad Germany

The University of Connecticut sponsors a variety of programs at a number of universities in the State of Baden-Württemberg, Connecticut’s sister state in Germany. Study abroad in Germany allows students to follow their own concentration and interests. Students also have the possibility of work-study programs and internships.

A minor in German is described in the “Minors” section.

## Italian Literary and Cultural Studies

Beyond satisfying the foreign language requirements in Italian at UConn, students must complete a minimum of eight courses (the equivalent of 24 credits), which must include ILCS 3239 and 3240 (or their ECE equivalent). The remaining 18 credits may be fulfilled by taking any ILCS courses offered at the 3000 and 4000 levels (PLUS four related courses at the

2000 or 3000 level, outside the major, AND the standard university-wide requirements for W and Q courses, including one W in the major).

**Education Abroad in Italy:** Students are strongly encouraged to participate in a variety of UConn-sponsored Education Abroad programs (and also have the option of enrolling in non-sponsored programs). In either case, students should consult with the ILCS faculty to determine which courses will receive credits. Students who enroll in study abroad programs not sponsored by UConn do not necessarily receive UConn credits for their coursework.

## In addition, the following rules apply:

- A minimum of 12 of the major credits must consist of Italian courses taken in residence.
- Up to 12 credits may be met by ILCS 3293, with the consent of the advisor. Only six may be transfer credits.
- UConn’s Early College Experience courses may be counted towards the major.

A minor in Italian Literary and Cultural Studies is described in the “Minors” section.

## Judaic Studies

Based in the Department of Literatures, Cultures, and Languages and sponsored by the department’s Hebrew and Judaic Studies section, UConn’s major in Judaic Studies offers a unique interdisciplinary approach to the study of the languages, literatures, culture, history and religion of the Jews. Students are especially encouraged to pursue their interests in Jewish civilization by learning about the experience of the Jewish people within other cultures from ancient to modern times. This truly interdisciplinary approach, which allows students to include relevant courses offered by other sections of the department, is further enhanced by the many courses that are cross-listed with other departments and programs at the university.

All students are required to study Hebrew language. Fulfillment of this requirement depends upon the student’s area of interest. There are two Tracks, each with a distinct orientation: Track A, General Judaic Studies and Track B, Classical Judaic Studies. While both tracks provide grounding in all periods of Jewish civilization, Track B emphasizes the pre-modern experience and “classical” texts of the Jews.

Students in Track A are required to have two years of Modern Hebrew (or the equivalent, which would include credits from Israeli or other “ulpan” programs).

Students in Track B are required to complete the single year sequence of courses in Biblical Hebrew, which prepares the student to read Hebrew scripture in the original.

Students in Track A and B are required to take 24 credits beyond the required language preparation in their track as specified below.

Students who are majoring in other disciplines and may not be able to pursue Hebrew language proficiency but wish to obtain a solid grounding in Judaic civilization are encouraged to pursue a minor in Judaic Studies.

## Track A: General Judaic Studies

General Judaic Studies majors are required to complete the following courses: HEJS 1003, 1004, 1103, 1151, and 1152. These courses do not count toward the 24 credits required for the major.

## Information Literacy and Writing in the Major requirements

General Judaic Studies majors must complete HEJS 3401W (included in 24 required credits) to fulfill their information literacy and writing (“W”) requirements. SOCI 2509W may be substituted for HEJS 3401W with the approval of the student’s HEJS advisor.

Four courses (12 credits) from Group 1 including one each from the Biblical, Ancient/Rabbinic, Medieval, and Modern periods, and three additional courses (nine credits) drawn from either Group 1 or Group 2.

## GROUP 1

1. Biblical Israel: CAMS/HIST 3301, HEJS 3201, INTD 3260.
2. Ancient/Rabbinic: HEJS/CAMS/HIST 3330.
3. Medieval: HEJS 3301.
4. Modern: HEJS 2104, 2200, 3251, 3252, 3279; SOCI 2509W.

**GROUP 2**

CAMS 3244; CAMS/HIST 3340; HEJS 2104, 2203, 2204, 2301, 3202; HEJS 3203/HIST 3418; HEJS 3419; HIST 3705, 3712.

The following courses may also be included in the required 24 credits with the approval of the student's HEJS advisor: HEJS 3293, 3298, 3299.

Some HEJS Graduate courses that are open to undergraduates may also be substituted with the permission of the student's HEJS advisor. In addition, students may also take upper-level undergraduate and graduate courses in other sections of LCL that have significant Judaic content provided they have been approved by their HEJS advisor.

**Track B: Classical Judaic Studies**

Classical Judaic Studies majors are required to complete the following courses: HEJS 1103, 1149, and 1150. These courses do not count toward the 24 credits required for the major.

**Information Literacy and Writing in the Major requirements**

Classical Judaic Studies majors are required to complete HEJS/CAMS/HIST 3330W (included in 24 required credits) to fulfill their information literacy and writing ("W") requirements.

Seven courses amounting to 21 credits chosen from Groups 1 (Core Courses) and 2 (Specialized Courses). The selection of Group 2 courses depends upon the student's specific interests in the pre-Modern experience of the Jews and should be chosen with the approval of the student's HEJS advisor.

**GROUP 1 (Core Courses)**

CAMS 3244; CAMS/HIST 3301; CAMS/HIST 3340; HEJS 3201, 3241, 3301; INTD 3260

**GROUP 2 (Specialized Courses)**

HEJS 5316, 5326

One of the following courses may also be included in the 24 credits, depending upon the student's pre-modern period of interest. Approval of the student's HEJS advisor is required: ARTH 3150; CAMS/HIST 3320; CAMS/HIST 3321; CAMS/HIST 3325; CAMS/HIST 3335; CAMS 3251/ARTH 3140.

The following courses may also be included in the required 24 credits with the approval of the student's HEJS advisor: HEJS 3293, 3299, 3298 and CAMS 3298.

**Spanish**

Spanish courses comprise three main groups:

Group 1 (Literature): SPAN 3207, 3208, 3230, 3231, 3232, 3233, 3234, 3260, 3261, 3262, 3263, 3264, 3265, 3266, 3267W, 3293, 4200W.

Group 2 (Culture): SPAN 3179, 3200, 3201, 3204, 3205, 3206, 3207, 3208, 3214, 3250, 3251, 3252, 3254, 3293, 4200W.

Group 3 (Language and Communication): SPAN 3101\*, 3102\*, 3103\*, 3170, 3172\*\*, 3177, 3178, 3179, 3204, 3240W, 3241, 3242, 3261, 3267W, 3281, 3293, 4200W.

To major in Spanish, students must take 24 credits of Spanish courses numbered 2000, 3000 or 4000 and according to the following guidelines:

- A. One composition course (SPAN 3178, 3240W or 3293).
- B. One introductory or literary survey course (SPAN 3230, 3231, 3232, 3233, 3234, 3242).
- C. Two courses from Group 1 (not used to satisfy requirement B).
- D. Two courses from Group 2.
- E. Two courses from Group 3 (not used to satisfy requirements A or B).
- F. All majors must take at least one W course as part of the previous 24 required Spanish credits.
- G. 12 additional credits are required in 2000, 3000 and 4000-level related courses from programs other than Spanish. These may include internships and appropriate Education Abroad courses (ARTH 2993; POLS 3993; INTD 3993; ECON 2493; HIST 3993). Other related courses require advisor's prior consent.
- H. Enrollment in an Education Abroad program in a Spanish speaking country is also required. In consultation with the advisor, this

requirement can be substituted with additional Spanish credits in residence, research credits related to the U.S. Hispanic community, Urban Semester, and other options.

In addition, the following rules apply: A minimum of 12 of the major credits must consist of Spanish courses taken in residence. Up to 12 credits may be met by SPAN 3293. Only six may be transfer credits. AP credits may not be used toward the major. A single course cannot satisfy more than one requirement. Only three Internship credits of SPAN 3281 can count towards the major.

To satisfy the information literacy and writing in the major requirements, all students must pass one of SPAN 3240W, 3267W, or 4200W.

\*SPAN 3101-3102-3103 is a sequence of three one-credit classes that are open only to Engineering Spanish Program students. The three credits equal one course that counts towards the major.

\*\*SPAN 3172 is open only to students preparing to leave for the Spanish Allied Health Program in Granada.

A minor in Spanish is described in the "Minors" section.

**Marine Sciences**

Students in the Marine Sciences major receive multidisciplinary training in the biological, chemical, physical, and geological processes of the ocean with emphasis on how humans impact the coastal environment. In addition to receiving a strong foundation in mathematics and natural sciences, students engage in experiential learning, fieldwork, internships, study abroad and senior-year capstone courses that foster interdisciplinary training. The Marine Sciences major at UConn prepares graduates for employment in environmental consulting, regulatory agencies and research institutions, and for graduate studies.

**Bachelor of Science in Marine Sciences**

The B.S. in Marine Sciences requires a foundation of courses including at least 30 credits of Marine Sciences courses (27 at 2000-level and above), and 12 credits of Related Area courses. Marine Sciences majors in the B.S. must pass the following courses:

**I. Required courses in Basic Sciences and Math**

BIOL 1107 and 1108; CHEM 1124Q, 1125Q and 1126Q, or CHEM 1127Q and 1128Q; MATH 1131Q and 1132Q; PHYS 1201Q and 1202Q, or PHYS 1401Q and 1402Q.

Introductory statistics or data analysis: STAT 1000Q or 1100Q or 3025Q or CSE 1010 or 1100 or PHYS 2200 or 2400 or PHYS 2501W or CHEM 3332 or GEOG 2500 or 2510 or EARTH 4150.

**II. Marine Sciences B.S. Major Requirements**

The following courses constitute the major requirements: MARN 1002 or 1003, 2801WE, 3001, 3002, 4001, 4002 or 4896W with prior consent of the Department Head. Four MARN electives must be completed with at least one course from each group:

Group 1: MARN 3000E, 3060, 3230, 3505, 4030W, 4050, 4052, 4060, 4066.

Group 2: MARN 3012, 3014, 3015, 3017, 3030, 3811, 3812, 4010, 4018, 4130.

Group 3: MARN 4202Q, 4210Q.

A maximum of four MARN 5000+ graduate level courses may be used to fulfill some of these requirements. Students may be able to use MARN 3893, 4893, 4895, 4898 or other MARN courses towards one or more of these electives with prior approval of the Department Head.

**III. Marine Sciences B.S. Related Area**

In consultation with an advisor, four Related Area courses are taken in different fields or a single field of interest leading to a minor.

**Bachelor of Arts in Marine Sciences**

Students who choose the B.A. in Marine Sciences are typically more interested in marine and environmental policy, management, and/or education. The B.A. in Marine Sciences requires a foundation of courses including at least 30 credits of Marine Sciences courses (27 at 2000-level and above), and 12 credits constituting the Related Area.

Marine Sciences majors in the B.A. must pass the following courses:



### I. Required courses in Basic Sciences and Math

BIOL 1107 and 1108; CHEM 1124Q, 1125Q and 1126Q, or CHEM 1127Q and 1128Q; MATH 1060Q and 1071Q, or MATH 1131Q; PHYS 1201Q or PHYS 1401Q.

Introductory statistics or data analysis: STAT 1000Q or 1100Q or 3025Q or CSE 1010 or 1100 or PHYS 2200 or 2400 or 2501W or CHEM 3332 or GEOG 2500 or 2510 or EARTH 4150.

### II. Marine Sciences B.A. Major Requirements

The following courses constitute the major requirements: MARN 1002 or 1003, 2801WE, 3001, 3002, 4001, 4002 or 4896W with prior consent of the Department Head. Four MARN electives must be completed from any group listed under the Marine Sciences B.S. electives.

A maximum of four MARN 5000+ graduate level courses may be used to fulfill elective requirements. Students may be able to use MARN 3893, 4893, 4895, 4898 or other MARN courses towards one or more of these electives with prior approval of the Department Head.

### III. Marine Sciences B.A. Related Area

In consultation with an advisor, four Related Area courses are taken in different fields or a single field of interest leading to a minor.

### Competency Requirements (B.S. and B.A. programs)

The University's General Education competency requirements for information literacy will be satisfied by completing the requirements above, in particular MARN 3001, 2801WE and 4002. The writing in the major requirement will be satisfied by MARN 2801WE.

Note: Some Marine Sciences courses may be offered only at the Avery Point campus. Others may be partially available through Distance Learning.

Minors in Marine Biology and Marine Sciences are described in the *Minors* section.

## Maritime Studies

Water covers more than two-thirds of the Earth's surface and the majority of the human population lives within 50 miles of navigable waterways. The world's oceans and great riparian systems have provided the dominant medium for human economic and cultural exchange and the context for many of humanity's most dramatic stories, powerful technologies, and aesthetic and literary achievements.

Maritime Studies is an interdisciplinary major that embraces the liberal arts as the foundation for exploring humankind's critical and continually evolving connections with the world's waterways and watersheds. The Maritime Studies Program combines rigorous liberal arts training in recognized humanities and social science disciplines such as history, English, economics, political science, anthropology and geography with specialized courses, interdisciplinary seminars, and research and internship opportunities that focus on issues, traditions, and problems that influence life in maritime regions. A complement to the Marine Sciences Major, Maritime Studies highlights the social and cultural side of the human/water relationship, but recognizes and explores the links between human activities and the composition and the condition of the coastal and marine environments.

Maritime Studies is a flexible but focused major that students may shape to meet a wide range of occupational and educational goals. Depending upon the track of studies selected, Maritime Studies students may prepare for a range of careers including those in the maritime service and heritage tourism sectors as well as for graduate study in maritime and public history, English, journalism, marine policy and cultural resource management, planning and regulation, education, law, or business. The Maritime Studies Program takes advantage of the UConn-Avery Point campus' unique Long Island Sound location and its many coastal and maritime educational resources and research programs including the UConn Sea Grant Institute, the National Undersea Research Center, the Long Island Sound Resource Center, and Marine Sciences Department. Significant internship and research opportunities for students are also available through agreements with regional institutions that include Mystic Seaport, one of the world's premier maritime museums and research centers.

## Major Requirements

MARN 1001E is a prerequisite for the major. It is recommended that majors take MAST 1200 to satisfy General Education Content Area One and MAST 1300E to satisfy Content Area Two and Content Area Four-International.

### Core Courses

All students are required to take MAST 2101. In addition, students must take five of the Core Courses listed below. Students must select these five courses from five different disciplines.

- Anthropology: ANTH/MAST 3531 or 3532;
- Economics: ECON 2467;
- English: ENGL/MAST 3652 or ENGL/MAST 3653;
- Geography: CE/GEOG 2500; or MAST/GEOG 3600;
- History: MAST/HIST 2210E or MAST/HIST 3544; or HIST 2101;
- Political Science: MAST/POLS 3832; or MAST 2300E.

### Thematic Concentration

Students must declare a concentration in one of the following areas: Blue Humanities, Marine Policy, Maritime Archaeology, or Fisheries Policy. One of the five Core Courses elected by the student can also contribute to the Thematic Concentration. Furthermore, the student must complete an approved sequence of three additional courses in the concentration at the 2000 level or above. Choice of concentration and course sequence must be approved by the MAST director or the student's advisor.

The writing in the major requirement can be met with MAST 4994W. Students will satisfy the information literacy requirement as they complete core courses.

### Related Areas

Students must complete 12 credits in related areas. Courses are selected in conjunction with the MAST director or the student's advisor.

## Mathematics

The Mathematics Department offers programs of study in Mathematics, Applied Mathematical Sciences, Actuarial Science (in cooperation with the School of Business), Mathematical Statistics (in cooperation with the Department of Statistics), and Mathematics - Physics (in cooperation with the Department of Physics).

MATH 2010Q, 2011Q, 2705W, 2720W, 2794W, and 3670W and STAT 3494W may not be counted in any of the major groups listed below.

The Department offers both Bachelor of Science and Bachelor of Arts degrees in Mathematics, Applied Mathematical Sciences, Mathematics-Statistics, Mathematics-Actuarial Science, and Mathematics-Actuarial Science-Finance, and a Bachelor of Science in Mathematics-Physics. The Bachelor of Science program provides in-depth training in Mathematics as preparation for graduate study or for participation in scientific and engineering teams in government, industry, or research laboratories. The Bachelor of Arts degree is designed to provide training in contemporary mathematics without the depth and concentrated specialization required for the Bachelor of Science program. To satisfy the writing in the major and information literacy competencies in the Bachelor of Arts in Mathematics, the Bachelor of Science in Mathematics, the Bachelor of Arts in Applied Mathematical Sciences, and the Bachelor of Science in Applied Mathematical Sciences, all students must pass one of the following courses: MATH 2705W, 2710W, 2720W, 2794W, 3670W, 3710W, or 3796W.

### Bachelor of Science in Mathematics

The requirements for the B.S. in Mathematics are:

1. Either (i) MATH 2110Q (or 2130Q), 2210Q, 2410Q (or 2420Q), 2710 (or 2141Q-2142Q) or (ii) MATH 2141Q, 2142Q, 2143Q, 2144Q;
2. MATH 3150 (or 4110), 3151, 3230 (or 4210);
3. At least six additional credits from any of the following courses: MATH 2360Q, 3146, 3160 (or 3165), 3170, 3210, 3231, 3240, 3250, 3260, 3330 (or 4310), 3370, 3410, 3435, 3510, 3511, 3710, and approved sections of 3094 and 3795;
4. At least three additional credits from any of the following courses: MATH 3210, 3231, 3240, 3250, 3260, 3330 (or 4310), and 3370. In addition, at least 12 credits at the 2000 level or above in approved related areas are required.

### Bachelor of Arts in Mathematics

The requirements for the B.A. in Mathematics are 27 credits of 2000-level or above course work in Mathematics and 12 credits of course work in approved related areas. The required courses are:

1. Either (i) MATH 2110Q (or 2130Q), 2210Q, 2410Q (or 2420Q), 2710 (or 2141Q-2142Q), or (ii) MATH 2141Q, 2142Q, 2143Q, 2144Q;
2. MATH 3150 (or 4110), 3230 (or 4210);
3. At least three additional credits from any of the following courses: MATH 3151, 3210, 3231, 3240, 3250, 3260, 3330 (or 4310), 3370 or approved sections of 3094 and 3795. The remaining courses may come from any 2000-level or above Mathematics courses.

### Bachelor of Science in Applied Mathematical Sciences

The requirements for the B.S. in Applied Mathematical Sciences are

1. Either (i) MATH 2110Q (or 2130Q), 2210Q, 2410Q (or 2420Q), 2710 (or 2141Q-2142Q) or (ii) MATH 2141Q, 2142Q, 2143Q, 2144Q;
2. MATH 3150 (or 4110), 3410 (or 3435), 3510, and 3511;
3. Two additional courses selected from MATH 3146, 3151, 3160 (or 3165), 3170, 3410, 3435, 3710, and approved sections of 3094 and 3795;
4. At least three additional credits from MATH 2360Q, 3160 (or 3165), 3210 (or 4210), 3230, 3231, 3240, 3250, 3260, 3330 (or 4310), and approved sections of 3094 and 3795. In addition, at least 12 credits at the 2000 level or above in approved related areas are required.

### Bachelor of Arts in Applied Mathematical Sciences

The requirements for the B.A. in Applied Mathematical Sciences are 27 credits of 2000-level or above course work in Mathematics and 12 credits of course work in approved related areas.

The required courses for the degree are MATH 2110Q (or 2130Q or 2143Q), 2210Q (or 2143Q-2144Q), 2410Q (or 2420Q or 2144Q), 3410 (or 3435), 3510, and 3511.

The remainder of the 27 credits of Mathematics must be chosen from MATH 2710, 3146, 3150 (or 4110), 3160 (or 3165), 3170, 3210 (or 4210), 3250, 3410, 3435, 3710 or approved sections of 3094 and 3795.

### Bachelor of Science or Arts in Mathematics-Statistics

The requirements for the B.S. or B.A. in Mathematics-Statistics degree are 40 credits at the 2000 level or above in Mathematics and Statistics, with at least 12 credits in each department.

The required courses for the Mathematics-Statistics major are MATH 2110Q (or 2130Q or 2143Q); MATH 2210Q or 3210 or (2143Q and 2144Q); 2410Q (or 2420Q or 2144Q); and STAT 3375Q and 3445.

To satisfy the Writing in the Major and Information Literacy competencies, all students must pass one of the following courses: MATH 2705W, 2710W, 2720W, 2794W, 3710W, 3670W, 3796W, or STAT 3494W.

### Bachelor of Science or Arts in Mathematics-Actuarial Science

The requirements for the B.S. or B.A. degree in Mathematics-Actuarial Science are 40 credits at the 2000 level or above in Mathematics, Statistics, Business, and related areas.

The required courses are MATH 2110Q or 2130Q or 2143Q, MATH 2210Q (or 2144Q), 2620, 3160 (or 3165), 3620, 3630, 3636, 3637, 3639, 3640; STAT 3375Q, 3445.

To satisfy the writing in the Major and Information Literacy competencies, all students must pass one of the following courses: MATH 2705W, 2710W, 2720W, 2794W, 3670W, 3710W, or 3796W.

Admission to the Actuarial Science program will be available only to students who meet the following two requirements. First, the student must have a total grade point average of 3.2 or higher or a grade point average of 3.2 or higher in mathematics. The student must also satisfy one of the following:

1. completed MATH 1126Q or 1131Q with a grade of at least "B";
2. successfully completed an honors calculus course with a grade of at least "C";
3. received AP credit for MATH 1131Q; or

4. received a passing score on one or more of the actuarial examinations.

Students not satisfying one or more of the requirements may be admitted into the program by the Mathematics Department Actuarial Committee.

To remain as an Actuarial Science Major, the student is required to maintain a total grade point average of 3.2 or higher. Students who do not satisfy this requirement may remain in the major with the permission of the director of the Actuarial Science program or his/her designee. If the student is not continued in the program, but meets minimum University of Connecticut scholastic standards as outlined in the University Senate by-laws, the director or designee will work with the student to identify an appropriate alternative major.

### Bachelor of Science or Arts in Mathematics-Actuarial Science-Finance

The requirements for the B.S. or B.A. degree in Mathematics-Actuarial Science-Finance are 40 credits at the 2000 level or above in Mathematics, Statistics, Business, and related areas and 15 credits in Finance.

The required courses are MATH 2110Q or 2130 or 2143; MATH 2210Q (or 2144Q), 2620, 3160 (or 3165), 3620, 3630, 3639, 3640, 3650, 3660; STAT 3375Q, 3445; ACCT 2001; FNCE 4209, 4306, 4430.

The remainder of the 15 credits of Finance must be chosen from FNCE 4302, 4304, 4305, 4307, 4308 and 4309.

To satisfy the writing in the Major and Information Literacy competencies, all students must pass one of the following courses: MATH 2705W, 2710W, 2720W, 2794W, 3670W, 3710W, or 3796W.

This degree is offered through the College of Liberal Arts and Sciences. Admission to the Actuarial Science program will be available only to students who meet the following two requirements. First, the student must have a total grade point average of 3.2 or higher or a grade point average of 3.2 or higher in mathematics. The student must also satisfy one of the following:

1. completed MATH 1126Q or 1131Q with a grade of at least "B";
2. successfully completed an honors calculus course with a grade of at least "C";
3. received AP credit for MATH 1131Q; or
4. received a passing score on one or more of the actuarial examinations.

Students not satisfying one or more of the requirements may be admitted into the program by the Mathematics Department Actuarial Committee.

To remain as an Actuarial Science Major, the student is expected to maintain a total grade point average of 3.2 or higher.

### Bachelor of Science in Mathematics-Physics

The B.S. degree in Mathematics-Physics may be completed by following either track A, which has a physics emphasis, or track B, which has a mathematics emphasis. Students in track A should choose an advisor from the Physics Department, and those in Track B should choose an advisor from the Mathematics Department. In either track, the writing in the major and information literacy competencies are met using PHYS 2501W.

The required courses for the Mathematics-Physics Major Track A (Physics Emphasis) are:

1. Either: (i) MATH 2110Q (or 2130Q or 2143Q) and 2210Q and 2410Q (or 2420Q) or: (ii) MATH 2141Q and 2142Q and 2143Q and 2144Q.
2. All of: MATH 3146, 3410, 3510 and PHYS 2300, 2501W, 3101, 3201, 3202, 3300, 3401.
3. Any nine credits from: PHYS 2200, 2400, 2502, 3102, 3150, 3402, 3989, 4093, 4095, 4096W, 4098, 4099, 4100, 4130, 4140, 4150, 4210, 4300, 4350, 4900.

The required courses for the Mathematics-Physics Major Track B (Mathematics Emphasis) are:

1. Either: (i) MATH 2110Q (or 2130Q or 2143Q) and 2210Q and 2410Q (or 2420Q) and 2710 (or 2141Q and 2142Q) and 3146, or: (ii) MATH 2141Q and 2142Q and 2143Q and 2144Q and 3146.
2. All of: PHYS 2300, 2501W, 3101, 3201, 3202, 3401.
3. Any three credits from: PHYS 2200, 2400, 2502, 3102, 3150, 3300, 3402, 3989, 4093, 4095, 4096W, 4098, 4099, 4100, 4130, 4140, 4150, 4210, 4300, 4350, 4900.
4. Any four courses from MATH 3150 (or 4110), 3151, 3160 (or 3165),

3210, 3230 (or 4210), 3330 (or 4310), 3370, 3410.

A minor in Mathematics is described in the “Minors” section.

## Molecular and Cell Biology

This B.S. program is suitable for students with interests that integrate the organismal, cellular and subcellular levels of biology, including the areas of biochemistry, cell biology, developmental biology, genetics and genomics, and microbiology, as well as their applications in biotechnology and medical science.

Many opportunities for independent research projects in these areas are open for undergraduates. BIOL 1107 is required in addition to the general CLAS requirements for the B.S. degree.

### Requirements for the major

A minimum of 24 credits of MCB courses are required, at least nine credits of which must be at the 3000 level or above. A maximum of three credits from among MCB 3189, 3899, 4896 and 4989 may count toward the 24-credit requirement.

#### Required courses

**Group 1:** All of the following core courses: MCB 2400 or 2410, 2210 or 2215, 2610, and 2000 or 3010.

**Group 2:** CHEM 2443 and 2444.

**Group 3:** Laboratory requirement: One laboratory course chosen from the following list: MCB 2225, 2612, 3189, 3220, 3413, 3633, 4026W, 4624, or three credits of 4896 or 4989.

For breadth of study in biology, it is recommended that students take PNB 2250 and EEB 2244 or 2245. BIOL 2289 may be used to count toward the 24 credits of required MCB courses.

To satisfy the MCB writing in the major and information literacy competency requirements, students must take an MCB W course. A minor in Molecular and Cell Biology is offered. A minor in Bioinformatics is offered jointly by the School of Engineering and the College of Liberal Arts and Sciences. Both programs are described in the “Minors” section of this *Catalog*.

## Philosophy

The program in Philosophy introduces students to basic philosophical issues and acquaints them with techniques of philosophical inquiry. The program addresses problems in ethics, social and political philosophy, metaphysics, theory of knowledge, philosophy of science, logic, philosophy of religion, and aesthetics from both historical and contemporary perspectives.

Students majoring in Philosophy must pass 24 credits in Philosophy courses numbered 2000 or above, and 12 or more credits in related fields.

Required PHIL courses include:

1. At least two courses in the history of philosophy: PHIL 2221, 2222, 3261, 3263, 3264; including at least one of PHIL 2221 or 2222;
2. At least one course in logic: PHIL 1102, 2211Q, 3214 (note that PHIL 1102 does not count toward the 24 credits in Philosophy courses numbered 2000 or above);
3. At least one course in metaphysics or epistemology: PHIL 2208, 2210, 2212, 3241, 3250;
4. At least one course in moral, social, or political philosophy: PHIL 2215, 2217, 3216, 3218, 3220.

Students meeting the requirements for the major will automatically meet the exit requirements for information literacy. The exit requirement for writing in the major can be satisfied by passing any W course in Philosophy numbered 2000 or above.

A minor in Philosophy is described in the “Minors” section.

Philosophy also offers a joint-major with the Department of Linguistics. The description of the Linguistics-Philosophy major appears under the Linguistics major.

## Physics

Physics, a fundamental and quantitative science, involves the study of matter and energy, and interactions between them. The subject is generally divided into mechanics, electricity and magnetism, statistical and thermal physics, and quantum physics. These form the foundation for present-day research areas, which include astrophysics, atomic, molecular and optical

physics, condensed matter physics, nuclear physics, and the physics of particles and fields. In addition to a knowledge of physics, students gain a rigorous training in logical thinking and quantitative problem solving. An education in physics can also provide an entry into many other fields such as biophysics, geophysics, medical physics, and engineering, as well as into less technical fields such as secondary education, technical sales, and science writing. Many students have also found that physics is an excellent preparation for the study of medicine, dentistry, or law.

The preferred introductory sequence for a major in physics, common to all physics degree programs, consists of PHYS 1600Q, 1601Q, and 1602Q. There are two options for the Bachelor of Science degree in physics: (1) the general option for students seeking to further their physics studies in graduate school and/or a career in research, and (2) the applied option, for students seeking graduate study in another field, medicine or dentistry, or a technical career in industry. The Bachelor of Arts degree in physics is ideal for pre-medical, pre-dental, or pre-veterinary students, students seeking double majors, or students seeking a middle or high school teaching career. There is also a Bachelor of Science in Engineering Physics offered jointly with the School of Engineering with possible emphases on Electrical Engineering, Mechanical Engineering, or Materials Science and Engineering. There is also a Bachelor of Science in Mathematics-Physics that is offered jointly with the Department of Mathematics.

Students satisfy the information literacy competency exit requirements in both the Physics B.S. and B.A. degrees by passing PHYS 2300 and 2501W. The University’s writing in the major requirement is achieved by passing PHYS 2501W. PHYS 4096W may be taken as well.

### Bachelor of Science, General Option:

Required physics courses must include PHYS 2300, 2501W, 3101, 3201, 3202, 3300, and 3401, and at least three credits of an advanced laboratory (PHYS 3150, 3501, or 4150), plus 12 credits of 2000-level or above PHYS electives. It is strongly recommended that students going on to graduate school in physics take PHYS 3402. All students are strongly encouraged to participate in an undergraduate research project. An experimental research project (PHYS 3989 or 4096W) may count towards the advanced laboratory requirement. No more than six credits from PHYS 4099 may be counted towards this degree option. The general option for the Bachelor of Science degree requires a minimum of 12 credits from 2000-level or above related courses in mathematics, other sciences, or engineering.

### Bachelor of Science, Applied Option:

Required physics courses must include PHYS 2300, 2501W, 3101, 3201, and 3300, plus a minimum of nine credits from the following courses: PHYS 3150, 3501, 4140, 4150, 4210, 4350, and either 4710 or 4720, or 4730, or 4740, with at least three of the nine credits being from an advanced laboratory (PHYS 3501, 3150, or 4150). These courses involve the application of the basic physics subjects; i.e. mechanics, electricity and magnetism, thermodynamics, and quantum mechanics, in the introduction to the major subfields of physics. All students are strongly encouraged to participate in an undergraduate research project. An experimental research project (PHYS 3989 or 4096W) may count towards the advanced laboratory requirement.

The applied option for the Bachelor of Science degree requires six credits of 2000-level or above PHYS electives, plus a minimum of 12 credits from 2000-level or above related courses in mathematics, other sciences, or engineering, and an additional six credits of either 2000-level or above PHYS electives or 2000-level or above related courses in mathematics, other sciences, or engineering.

### Bachelor of Arts:

Required physics courses must include PHYS 2300, 2501W, 3101, 3201, and 3300, plus nine credits of 2000-level or above PHYS electives. No more than six credits from PHYS 4099 may be counted towards this degree. The Bachelor of Arts degree requires a minimum of 12 credits from 2000-level or above related courses in mathematics, other sciences, or engineering.

### Bachelor of Science in Engineering Physics:

*Offered jointly by the Physics Department of the College of Liberal Arts and Sciences and the School of Engineering*

Students choose the college/school that they wish to graduate from and must satisfy the course requirements of either the College of Liberal Arts and Sciences or the School of Engineering to complete their degree.

### Physics Requirements

PHYS 2300, 3101, 3201, 3202, 2501W, 3401, 3300, and six credits of PHYS 2000-level or above electives.

### Engineering Requirements

- CSE 1010;
- ENGR 1000, 1166, 4001, 4002W;
- MSE 2001 or 2101, and MSE 2002 or 2102;
- CE 2110, 3110, 3120;
- CHEG 2103;
- ECE 2001;
- Thermal Science Elective: one from MSE 3001, ME 2233, or CHEG 2111
- Nine credits ENGR electives (three credits may be 2000-level, at least six credit must be 3000-level)

### Additional Requirements

- MATH 2110 and 2410
- STAT 3025

## Bachelor of Science in Mathematics-Physics

The B.S. degree in Mathematics-Physics may be completed by following either Track A, which has a physics emphasis, or Track B, which has a mathematics emphasis. Students in Track A should choose an advisor from the Physics Department, and those in Track B should choose an advisor from the Mathematics Department. The number of credits for 2000-level courses or above in the Track A is 30 in Physics and 19 in Mathematics, and for Track B these numbers are 21 credits in Physics and 28 in Mathematics. In either track, the writing in the major and information literacy competencies are met using PHYS 2501W.

In addition to the general education's requirements of the University and College, the required courses for the Mathematics-Physics Major Track A (Physics Emphasis) are:

1. Either: (i) MATH 2110Q (or 2130Q or 2143Q) and 2210Q and 2410Q (or 2420Q) or: (ii) MATH 2141Q and 2142Q and 2143Q and 2144Q.
2. All of: MATH 3146, 3410, 3510 and PHYS 2300, 2501W, 3101, 3201, 3202, 3300, 3401.
3. Any nine credits from: PHYS 2200, 2400, 2701, 2702, 3102, 3150, 3501, 3989, 4093, 4095, 4096W, 4098, 4099, 3402, 4100, 4130, 4140, 4150, 4210, 4300, 4350, or one of 4710, 4720, 4730 or 4740.

The required courses for the Mathematics-Physics Major Track B (Mathematics Emphasis) are:

1. Either: (i) MATH 2110Q (or 2130Q or 2143Q) and 2210Q and 2410Q (or 2420Q) and 2710 (or 2141Q and 2142Q) and 3146, or: (ii) MATH 2141Q and 2142Q and 2143Q and 2144Q and 3146.
2. All of: PHYS 2300, 2501W, 3101, 3201, 3202, 3401.
3. Any three credits from: PHYS 2200, 2400, 3102, 3150, 3300, 3501, 3989, 4093, 4095, 4096W, 4098, 4099, 3402, 4100, 4130, 4140, 4150, 4210, 4300, 4350, 4710, 4720, 4730, 4740, 4900.
4. Any four courses from MATH 3150 (or 4110), 3151, 3160, 3210, 3230 (or 4210), 3330 (or 4310), 3370, 3410.

A minor in Physics is described in the "Minors" section.

## Physiology and Neurobiology

This B.S. program in Physiology and Neurobiology is intended to provide students with a foundational understanding of body and brain functions at the molecular, cellular, and systemic levels by synthesizing current and emerging ideas from research and medical science. Course offerings span comparative and model system physiology, nervous system function and development, endocrinology, cardiorespiratory physiology, and associated diseases. Additionally, we also offer coursework and independent study based undergraduate research opportunities. The following courses are required to earn a B.S. degree in the College of Liberal Arts and Sciences:

- BIOL 1107;
- CHEM 1124Q-1126Q or 1127Q-1128Q;

- MATH 1131Q-1132Q;
- PHYS 1201Q-1202Q-1230 or 1401Q-1402Q or 1601Q-1602Q.

### PNB Major Requirements

Undergraduate majors must complete at least 26 credits in PNB at the 2000 or higher level, including:

- All courses in the core group.
- At least three courses from the physiology and neurobiology groups, with at least one course from the physiology group and at least one course from neurobiology group.
- At least one course from the experiential group.
- At least one "W" course in PNB (which may be fulfilled from the experiential group), which will satisfy the writing in the major and information literacy competency requirements.

### Core Group

- PNB 2774, 2775, and 2776
- PNB 3251

### Physiology Group

- PNB 2250, 3252, 3265, 3270, 3350, and 3500

### Neurobiology Group

- PNB 3255, 3260, 3275, 3700, and 4400

### Experiential Group

- PNB 3178, 3179, 3120W, 3180, 3263WQ, 3264W, and 4297W

Students who have not completed 26 credits in the PNB major after satisfying the above requirements may take additional course(s) from the above categories, or any other PNB course at the 2000 or higher level. However, no more than three credits of PNB 3180, 3296, or 4296 may be applied toward the 26 credits-in-major requirement.

### Related Courses:

- MCB 2000 or 3010
- MCB 2400 or 2410
- CHEM 2443 and 2444 or CHEM 2241 and MCB 2210 or 2215

There is a minor in Physiology and Neurobiology. A minor in Neuroscience is offered jointly by the Physiology and Neurobiology Department and the Psychological Sciences Department. Both programs are described in the "Minors" section of this *Catalog*.

## Political Science

Political Science serves students whose primary interest is in some phase of public affairs (law, politics, government service) or international relations (foreign service), in gaining a better understanding of the entire field of governmental organization and functions.

### Major Courses

- A. A minimum of nine credits in Political Science 1000-level courses from the following subdivisions: Theory and Methodology (POLS 1002), Comparative Politics (POLS 1202 or 1207), International Relations (POLS 1402/W), and American Politics (POLS 1602/W). It is recommended that these courses be taken during the first two years of study.
- B. A minimum of 24 credits in Political Science numbered 2000 or higher (none on a pass-fail basis):

1. At least one course in four of the following six subdivisions (total of 12 credits):

- **Theory and Methodology:** POLS 2023/W, 2062/W, 2072Q, 2073Q, 3002, 3012/W, 3017, 3019/W, 3022W, 3023/W, 3030, 3032, 3042, 3062/W, 3072, 3082, 3672
- **Comparative Politics:** POLS 2222/W, 3202/W, 3203, 3205, 3206, 3208/W, 3209, 3211/W, 3212, 3214/W, 3216, 3228, 3235, 3237/W, 3239/W, 3240E, 3245, 3249, 3250/W, 3252, 3255, 3256/W
- **International Relations:** POLS 2450, 2460E, 3040, 3247, 3402, 3406/W, 3410, 3412, 3413/W, 3414, 3418/W, 3422, 3426, 3428, 3429/W, 3430, 3432, 3434/W, 3437, 3438W, 3442, 3447, 3450, 3457, 3462, 3464/W, 3472/W, 3476, 3710
- **American Politics:** POLS 2602/W, 2607/W, 2622, 3027/W,

3600, 3601, 3602, 3603WQ, 3604/W, 3606, 3608, 3610/W, 3612, 3613/W, 3615/W, 3617, 3618, 3622, 3625, 3627, 3632/W, 3642, 3647, 3652, 3662, 3667, 3720, 3850

• **Public Administration, Policy and Law:** POLS 2062, 2803W, 2807/W, 2827W, 3802, 3807, 3812, 3815, 3817, 3822/W, 3827, 3832, 3834, 3837/W, 3842, 3847, 3857

• **Intersectional Indigeneity, Race, Ethnicity, and Politics:** POLS 2602/W, 3019, 3030/W, 3082, 3210/W, 3216, 3218/W, 3247, 3249, 3252, 3418, 3464, 3632, 3633, 3642, 3647, 3652, 3662, 3667, 3672, 3807, 3834, 3837

2. Other 2000 level (or higher) Political Science courses totaling a minimum of 12 credits.
3. Students must take at least one three credit W course within the major. Advanced information literary exit requirements are incorporated into all W courses in the major, and students who successfully complete political science W courses will have met this requirement.

## Notes

A W or Q may be substituted for the same numbered course. Cross-listed courses may only be counted once. All POLS 2998/W and 2995 courses apply to the major and may count towards the subdivision requirement. The subdivisions assigned to these courses can be found at polisci.uconn.edu. POLS 3995 courses may be counted towards part one only with the consent of the advisor. POLS 2993, 3023, 3426, 3991, 3993, 3999, 4994, and 4997W may not be counted towards part one. Interdepartmental (INTD and UNIV) courses may not be included in the 24 credits. No more than six credits of independent study, colloquium (POLS 4894), and/or field work (of which no more than three credits may be for POLS 3991) can be counted toward the 24 credits.

## Related Courses

At least 12 credits in courses related to Political Science taken from one or more other departments. These courses must be numbered 2000 or higher and cannot be taken on a pass-fail basis. All 2000-level (or higher) courses in Anthropology, Economics, Geography, History, Human Rights, Philosophy, Public Policy and Sociology will meet this requirement. Any course within these departments that is cross-listed with POLS will count towards the major and not as a related. Certain other courses have been approved and are listed on polisci.uconn.edu. Courses not in the departments listed above or included on the pre-approved list may be approved as related courses at the discretion of the advisor.

A minor in Political Science is described in the “Minors” section.

## Psychological Sciences

The Department of Psychological Sciences recommends that its majors take a broad selection of Psychological Science courses and electives to obtain a well-rounded introduction to the science. The Department encourages students to participate in its research activities, including laboratory courses, research seminars, and independent study experiences.

A maximum of seven 2000-level or above transfer credits in psychology may count toward the major upon approval of the transfer coordinator in the Department of Psychological Sciences. Up to three credits of PSYC 3889 or 3899 can be used, and PSYC 3880 cannot be used.

All Psychological Sciences majors are required to take two introductory-level courses – General Psychology I (PSYC 1100) and either General Psychology II (PSYC 1101) or General Psychology II (Enhanced) (PSYC 1103) – followed by at least 25 2000-level or above credits, which are grouped as follows:

### Foundation

PSYC 2100Q or 2100WQ.

**Area I. Social, Developmental, Clinical, and Industrial/Organizational**  
PSYC 2300 or 2300W, 2301, 2400, 2600, 2700.

**Area II. Experimental and Behavioral Neuroscience**  
PSYC 2200, 2208, 2209, 2500, 2501, 3201, 3500, 3501.

**Area III. Cross Area (I and II)**

PSYC 2110, 2201, 3100/W, 3102, 3105, 3400, 3601.

## Area IV. Advanced and Specialty Lecture Courses

Includes Area III courses except for PSYC 3100/W: PSYC 2101, 2110, 2201, 2701, 3101, 3102, 3104, 3105, 3106, 3200/W, 3241, 3270, 3300, 3301, 3302W, 3400, 3405, 3470, 3502, 3600, 3601, 3644, 3670/W, 3770, 3883, 3884, 3885.

Note one PSYC 5000+ level graduate level course may be used to fulfill one of the requirements in each Area for a maximum of four graduate courses toward the undergraduate major with the approval of a Psychological Sciences faculty advisor.

## Laboratory Courses

PSYC 3150, 3250W, 3251, 3252, 3253, 3350W, 3450W, 3550W, 3551W, 3552.

## Research

PSYC 3889, 3899, 4197W.

## Tracks

Students must select one of our tracks for their major: Standard (B.A. or B.S.); Research Concentration (B.A. or B.S.); or Honors (B.A. or B.S.). The requirements for each of these tracks are as follows:

### Bachelor of Arts: Standard

25 PSYC credits, including: 2100Q or 2100WQ, two Area I courses, two Area II courses, one Area III course, two other 2000-level or above PSYC courses from any areas, 12 related 2000-level or above non-PSYC credits.

### Bachelor of Science: Standard

25 PSYC credits, including: 2100Q or 2100WQ, two Area I courses, two Area II courses, one Area III course, two Area IV laboratory courses, or one Area IV laboratory course and a sequence of PSYC 3889 and 4197W, 12 related 2000-level or above non-PSYC credits.

### Bachelor of Arts: Research Concentration

31 PSYC credits, including: 2100Q or 2100WQ, two Area I courses, two Area II courses, one Area III course, two Area IV courses (lecture and/or laboratory), three credits of Area IV research, one other 2000-level or above PSYC course from any area, 12 related 2000-level or above non-PSYC credits.

### Bachelor of Science: Research Concentration

31 PSYC credits, including: 2100Q or 2100WQ, two Area I courses, two Area II courses, one Area III course, two Area IV laboratory courses or one Area IV laboratory course and a sequence of PSYC 3889 and 4197W, three credits of Area IV research, one other 2000-level or above PSYC course from any area, 12 related 2000-level or above non-PSYC credits.

### Bachelor of Arts: Honors

(Available only to students accepted into the University Honors Program)

31 PSYC credits, including: 2100Q or 2100WQ, two Area I courses, two Area II courses, one Area III course, two Area IV courses (lecture and/or laboratory), 3899 and 4197W from Area IV research, 12 related 2000-level or above non-PSYC credits.

### Bachelor of Science: Honors

(Available only to students accepted into the University Honors Program)

31 PSYC credits, including: 2100Q or 2100WQ, two Area I courses, two Area II courses, one Area III course, two Area IV laboratory courses or one Area IV laboratory course and a sequence of PSYC 3899 and 4197W, 3899 and 4197W from Area IV research. If PSYC 3899 and 4197W are used instead of one Area IV lab, student must take one other 2000-level or above PSYC course from any area, 12 related 2000-level or above non-PSYC credits.

**Related 2000-level courses.** At least 12 credits. Must be approved by advisor prior to registration. Because of content overlap, COMM 2500, EPSY 3010, and HDFS 2100 may not be used.

## Information Literacy

To satisfy the information literacy competency, all students must pass PSYC 2100Q/2100WQ. Other courses that will further enhance competency in information literacy include PSYC 1100, 1103, 3250W, 3350W, 3450W, 3550W, 3889, 3899, and 4197W.

## Writing in the Major

To satisfy the writing in the major requirement, all students must pass a PSYC W course. There is a minor in Psychological Sciences. A minor in Neuroscience is offered jointly by the Department of Psychological Sciences and the Department of Physiology and Neurobiology. Both programs are described in the Minors section.

The Department of Psychological Sciences also offers a joint major with the Department of Linguistics. The description of the Linguistics-Psychology major appears under *Linguistics*.

## Sociology

Sociology is an analytic discipline concerned with understanding people as creators of, and participants in, society. The field is broadly concerned with the study of modern society and its social organizations, institutions, groups, and social roles. Sociologists study social influences on human behavior, such as sexuality, ethnic identity, and religious belief, and how individuals become members of families and communities. The field is also concerned with social problems, especially all forms of prejudice, discrimination, and inequality, and with poverty, crime, violence, and the threatened environment. Sociologists emphasize sources of social problems in the organization of society, public policies for their alleviation, and today's questions of social justice. Finally, they study how individuals, both alone and working in groups, can change the society in which they live. A major in sociology opens many doors for careers and is excellent background for advanced training in a variety of other fields.

At least 24 credits of SOCI courses at the 2000 level or above are required: Three specific courses are required of all majors: SOCI 3201, 3211Q, 3251. (Note: Students must take SOCI 1001, 1251, 1501 or 1701 prior to taking SOCI 3201, 3211Q, and 3251).

Passing SOCI 3201 satisfies the information literacy competency. The writing in the major requirement can be satisfied by passing any 2000 or 3000-level W course in Sociology.

Fifteen additional credits (usually five courses) must be taken from any 2000-level or above courses offered by the department. (Note: No more than three credits of SOCI 3990 can apply to the major).

A maximum of eleven 2000-level or above transfer credits in sociology may count toward the major with department approval.

A minor in Sociology is described in the "Minors" section.

## Speech, Language and Hearing Sciences

The Speech, Language, and Hearing Sciences major is a pre-professional program within the liberal arts and sciences curriculum. It provides a broad overview of normal speech, language and hearing development. In addition a variety of speech, language, and hearing disorders are introduced. This major permits the student to apply for graduate studies in one of two specialty areas: audiology or speech-language pathology.

Students who want to learn more about the fields of audiology and speech-language pathology but are unsure about declaring the major are encouraged to take SLHS 1150. Students may declare the major by going to ppc.uconn.edu.

Successful completion of the B.A. degree in Speech, Language, and Hearing Sciences requires the following:

1. A total of 25 credits at the 2000 level or higher in Speech, Language, and Hearing Sciences.
2. Courses on normal development of speech, language, and hearing including: SLHS 2203, 2204, 2156Q, and 3247.
3. Courses on measurement and disorders of speech, language and hearing including: SLHS 3248, 4249 or 4249W, and two of the following: SLHS 4245 or 4245W, 4251, or 4254 or 4254W.
4. Students can also take an elective three-credit seminar in Bilingualism in Typical and Atypical populations: Language and Cognition. These three graduate-level credits can be applied toward your undergraduate degree (complete SLHS 4123) or to both, your UConn undergraduate and UConn graduate degree (complete SLHS 5123).
5. Twelve credits of related coursework. Related courses can be tailored to the interests and needs of the student but must be approved by a Speech, Language, and Hearing Sciences advisor.
6. Nine credits of elective coursework. Elective courses can be any 2000- level or higher course of interest to the student.

7. Students must take one course in each of the following areas: (a) Statistics: STAT 2215Q; (b) Biological science: BIOL 1102, 1107 or 1108; (c) Physical science: PHYS 1010Q or PHYS 1075Q. More advanced level courses may be substituted for the courses listed above.
8. It is recommended that students accumulate a total of 25 hours of approved observations of assessment and treatment of speech, language and hearing disorders.

The information literacy competency is met by the successful completion of required courses.

To satisfy the writing requirement in the major, students must pass at least one course from SLHS 4245W, 4249W, or 4254W. Students may use SLHS 4296W to satisfy the writing requirement in the major.

## Statistical Data Science

The Statistical Data Science major gives students a broad training in the following core areas of data science: computer programming and data management, basic and advanced data analysis, data visualization, and data ethics. Students with this major obtain a Bachelor of Science (B.S.) degree. The major can be tailored for a student's interest in a domain concentration.

For a Statistical Data Science major that leads to a Bachelor of Science degree, students must take STAT 1000Q or 1100Q (STAT 1100Q is recommended over STAT 1000Q) and one of the following MATH sequences: MATH 1131Q (or 1151Q) and 1132Q (or 1152Q); or MATH 2141Q and 2142Q. In addition, B.S. majors must also take one of the following: MATH 2110Q or 2130Q or 2210Q or 2410Q or 2420Q.

B.S. students must take one of the following science sequences in Biology, Chemistry, or Physics that include laboratory measurements:

- Biology: BIOL 1107 and either BIOL 1108 or 1110.
- Chemistry: CHEM 1124Q, 1125Q, 1126Q; or CHEM 1127Q, 1128Q; or CHEM 1137Q, 1138Q; or CHEM 1147Q, 1148Q.
- Physics: PHYS 1201Q, 1202Q; or PHYS 1401Q, 1402Q; or PHYS 1501Q, 1502Q; or PHYS 1601Q, 1602Q.

One of these courses may be used to fulfill the CA 3 lab requirement of the University's general education requirements. In addition, students must take one other CA 3 course from a different subject area, but it need not be a lab course.

In order to apply to the Statistical Data Science major, students must have:

- A GPA of 3.2 or higher in the following classes: MATH 1132Q, STAT 1000Q/1100Q, and an introductory programming course (CSE 1010, 1729, or STAT 2255).
- completed at least 24 credits, 15 of which must be at the University of Connecticut, with a cumulative GPA of 3.2 or higher.

After entry into the majors, students must maintain a 3.2 cumulative GPA.

Students receiving a B.S. in Statistical Data Science are required to take 36 major credits, with one or more courses in each of the core areas, a nine-credit domain concentration sequence, STAT 3255 and 4915 (capstone)<sup>†</sup>. To satisfy the information literacy competency and writing in the major requirement, Statistical Data Science majors must also take STAT 4916W<sup>†</sup>.

### Core Area Requirements:

1. **Programming and data management:** One course (three credits): STAT 2255.
2. **Basic Data Analysis:** Two courses (six credits): STAT 3025Q or 3375Q\* or MATH 3160; STAT 3215Q.
3. **Data Ethics:** One course (three credits): PHIL 3202.
4. **Data Visualization:** One course (at least three credits): STAT 3675Q\* or GEOG 3510 or EEB 4100\*\*.
5. **Advanced analysis:** Two courses (six credits): MATH 2210Q; STAT 4255.

To complete the domain concentration sequence, students must take at least nine credits from one of the following groups:

<sup>†</sup>Students completing a Biological Data Science domain concentration may take any of the following to meet the capstone and W requirement: (i) STAT 4915, 4916W, (ii) EEB 4896W, or (iii) MCB 4897W. Credits in EEB 4896W cannot simultaneously count towards both an Honors thesis in EEB and a Data Science capstone.

\*Students completing a Statistics domain concentration must take STAT 3375Q and 3675Q to meet these requirements.

\*\*Recommended for students completing the Biological Data Science domain concentration.

**Advanced Statistics:** STAT 3445 and two of the following: STAT 3515Q, 4625, 4825, 4845, 4190\*\*\*.

\*\*\* At least and no more than three credits of STAT 4190 may count towards the major and must be pre-approved by the Department of Statistics for adequate data science content.

**American Political Institutions:** three of the following: POLS 3600, 3601, 3603WQ, 3604, 3606.

**American Political Representation:** three of the following: POLS 2607, 3608W, 3612, 3617, 3618, 3625.

**Biological Data Science:** three of the following: EEB 3899‡, 5050, 5300, 5348, 5349; MCB 3421, 3637, 4008, 4009, 4014, 5430, 5472, 5631, 4896‡.

Students can choose any three courses‡ from the list above based on availability, however, interested students might consider choosing subsets of courses from the list above that align with established sub-areas:

- Genome sequencing and analysis: EEB 5300; MCB 3637, 5430.
- Phylogenetics and evolution: EEB 5348, 5349; MCB 3421, 5472.
- Ecological analyses: EEB 5050, 5348; MCB 5631.
- Molecular structure and function: MCB 4008, 4009, 4014.

‡ Only three credits of either EEB 3899 or MCB 4896 can count towards the major, and these credits cannot simultaneously count towards another major or degree.

**Financial Analysis:** three of the following: ECON 3313, 3315, 3413, 4323.

**Marine Science:** three of the following: MARN 3001, 3002, 3014, 4001, 4210Q.

**Population Dynamics:** three of the following: SOCI 2110/W, 2651/W, 2660/W, 2820/W, 2901/W, 3971/W.

## Statistics

The Department of Statistics offers work leading to degrees in theoretical and applied statistics.

The Department offers both Bachelor of Science and Bachelor of Arts degrees in Statistics and Mathematics-Statistics. The latter is offered jointly with the Mathematics Department.

The Statistics major requires 24 credits at the 2000 level or above in statistics, including STAT 3115Q, 3375Q, 3445, and 3675Q. Students who have taken STAT 3215Q instead of the required STAT 3115Q must additionally take STAT 3515Q. A maximum of three credits from each of STAT 4190, 4299 and 4389 may count toward the 24-credit requirement. Since STAT 3375Q has MATH 2110Q or 2130Q as a prerequisite, students should begin the calculus sequence as soon as possible. In addition, at least 12 credits at the 2000-level or above in approved related areas are required. MATH 2210Q or 3210 is strongly recommended and can count towards the related credits.

Students without mathematical background who wish to acquire some skill in statistical methodology should take STAT 1100Q followed by 2215Q. Students interested in the statistical analysis of business and economic data should take STAT 1000Q followed by 2215Q. Students with the appropriate calculus prerequisite should take STAT 3025Q rather than STAT 1000Q or 1100Q and 2215Q. STAT 3115Q and 3515Q are appropriate continuations for each of these three introductory sequences. STAT 3025Q is recommended before STAT 3375Q–3445.

To satisfy the information literacy competency and writing in the major requirement, statistics majors must take STAT 3494W. STAT 3494W does not count towards the 24 required major credits in Statistics, nor the 40 required major credits in Mathematics-Statistics.

## Bachelor of Science or Arts in Mathematics-Statistics

The requirements for the B.S. or B.A. in Mathematics-Statistics degree are 40 credits at the 2000 level or above in Mathematics and Statistics, with at least 12 credits in each department.

The required courses for the Mathematics-Statistics major are MATH 2110Q (or 2130Q or 2143Q); MATH 2210Q or 3210 or (2143Q and 2144Q); 2410Q or (2420Q or 2144Q); and STAT 3375Q and 3445.

To satisfy the Writing in the Major and Information Literacy competencies, all students must pass one of the following courses: MATH 2710W, 2720W, 2794W, 3670W, 3710W, 3796W, or STAT 3494W.

A minor in Statistics is described in the “Minors” section.

## Structural Biology and Biophysics

This B.S. program emphasizes the physical and chemical foundations of molecular biology. A total of 36 credits at the 2000-level or above from the following courses are required for the major.

### Prerequisites

The following courses at the 1000 level are prerequisites for the major: BIOL 1107; CHEM 1127Q and 1128Q, or CHEM 1147Q and 1148Q, or CHEM 1124Q, 1125Q and 1126Q; MATH 1131Q and 1132Q; PHYS 1401Q and 1402Q, or PHYS 1501Q and 1502Q, or PHYS 1601Q and 1602Q.

### Required courses

MATH 2110Q or 2130Q; MATH 2210Q or 2410Q or 2420Q; CHEM 2445; MCB 3003, 3004; MCB 3010 or both 2000 and 4026W; MCB 4008 and 4009.

### Recommended courses

MCB 2210, 2410, 2610, 3201, 3412, 3413, 3421, 3617, 3899, 4026W, 4997W, 5035; CHEM 3332, 4551; CSE 1100; MATH 3210.

To satisfy the writing in the major and information literacy competency requirements, all students must take one of the following courses: MCB 3841W, 4026W, 4997W; CHEM 3170W, 4196W; or any W course approved for this major.

## Urban and Community Studies

The undergraduate major in Urban and Community Studies is an interdisciplinary program in the College of Liberal Arts and Sciences with a focus on educating citizens on the multiple dimensions of urban and community life and preparing students for careers in public and community service as well as graduate study in social work, public administration, law, planning, public health, or other related areas.

The major has three parts. First, students receive a broad education in the study of cities, suburbs, neighborhoods and communities through core courses in three fields drawn from Economics, Geography, History, Political Science, Public Policy, Sociology, and Urban and Community Studies. Second, students acquire a solid foundation in analytical techniques such as statistical analysis, survey research, geographic information systems, qualitative methods, or archival research. Finally, students take additional electives in order to broaden their academic training or to develop a deeper specialization in selected areas.

### Requirements of the major

1. URBN 2000/W, and either URBN 4000 or URBN 4497W or INTD 3594.
2. Three of the following with no more than one per department (cross-listed courses count towards the non-URBN department): ECON 2439, 2456; GEOG/URBN 3200/W; GEOG 2000, 2400E, 4210; HIST/URBN 2541/W; HIST 3554; HIST/AFRA 3564; HIST 3674/LLAS 3220; POLS 3842 or PP 3031; POLS/URBN 3632/W; PP 4034; SOCI/URBN 2901/W; SOCI 2820/W, 3425.
3. One of the following: CE/GEOG 2500; ECON 2327; GEOG 2510, 3500Q; POLS 2072Q; PP/URBN 2100; SOCI 3201; STAT 2215Q; URBN 2301Q, 2302.
4. Two additional courses selected from Group 2, Group 3, or the following list: AFRA/SOCI 2510; ANTH 3150/W; ECON 2328/W, 2431, 3431/W; ECON 3439/W/URBN 3439; EDLR 3547/W; ENGL 3235W; GEOG 3000, 4200W; HIST/URBN 2650; HIST 2810, 3102, 3520; HIST 2530/AAAS 2530; HIST/AFRA/HRTS 3563; HIST/AFRA 3568; HDFS 2001, 3110, 3510, 3530, 3540/W; INTD 3584; NRE 3265; POLS 3240E; POLS 3662/LLAS 3270; POLS/AFRA 3642; POLS/HRTS 3212; POLS 2622, 3406/W, 3617, 3847; PP 3020/W; PP/AFRA 3033/ POLS 3633; SOCI 3459/W/HDFS 3240/W; SOCI 2301/W, 2651/W, 2655, 2670/W, 2705, 2709WE, 2907/W, 3601/W; ; SOCI/AFRA/HRTS 2530; SOCI 3903W/URBN 3276/W; SOCI/WGSS 2680/W; URBN 3981/3991 (three credits combined) or INTD 3594; AMST/URBN 2400; URBN 3400E, 3993, 3995, 3998, 4497W, 4999. INTD 3594 and URBN 4497W can be counted if not used to fulfill requirement number one above.

In order to assure a breadth of experience, students are encouraged to take courses that include content in each of the following areas: change over

time, structural and spatial dimensions, diversity, power and decision-making, and political and social processes. One unique option for students is to enroll in the 15 credit Urban Semester Program, which provides major credit for two courses INTD 3584 and 3594.

Students interested in pursuing a program in Urban and Community Studies are advised to complete 1000-level courses in the social sciences, which may be prerequisites for courses in Urban and Community Studies. These include, but are not limited to, GEOG/URBN 1200; ECON 1201; POLS 1602; PP 1001; SOCI 1001, 1251; STAT 1000Q/1100Q; and URBN 1300/W. They should also plan on enrolling in URBN 2000 as soon as possible.

The writing in the major requirement can be met by taking any 2000-level or above W course approved for this major. Students should be aware, however, that availability of specific W courses varies by campus. The information literacy requirements are met by successfully completing URBN 2000.

A minor in Urban and Community Studies is described in the “Minors” section.

## Women’s, Gender, and Sexuality Studies

The Women’s, Gender, and Sexuality Studies Program is a flexible interdisciplinary academic program devoted to pursuit of knowledge concerning women and the critical analysis of the production of gender and sexuality within transnational and cross-cultural contexts. Combining the methods and insights of traditional academic disciplines with the special insights of feminist studies, gender studies, and sexuality studies, our courses focus on understanding the origins of and changes in diverse cultural and social arrangements. The Women’s, Gender, and Sexuality Studies major is broad as well as flexible.

The Program is committed to a vision of people of diverse sexualities and genders that is truly transnational and cross-cultural and that recognizes the diversity of sexual and gender desires, practices, and identifications, as well as racial, ethnic, class and religious differences.

The Program prepares students to employ critical learning in their private lives, in their public roles as citizens and as members of the work force, and enhances their ability to advocate for gender and sexual justice. Women’s, Gender, and Sexuality Studies fosters interdisciplinary breadth and critical thinking and thus opens the way to a wide variety of career choices and graduate programs. Our students are flourishing in social service agencies, business, law, education, and journalism, and employers appreciate the broad interdisciplinary perspective of a Women’s, Gender, and Sexuality Studies education.

### Core Courses

Students are required to pass the following core courses (15 credits): WGSS 2250, 3256, 3265W, 3269, 4994W.

### Supporting Courses

Students are required to pass five additional WGSS courses at the 2000 level or above (15 credits). At least three (nine credits) of these must be chosen from the following: WGSS 2105, 2105W, 2124, 2217, 2217W, 2255, 2255W; WGSS 2263/HRTS 2263; WGSS 2267; WGSS/AFRA/HIST/LLAS 2622; WGSS 3042/AFRA 3042/AMST 3042/HDFS 3042; WGSS 3105, 3105W, 3252, 3253, 3253W; WGSS 3254/ASLN 3254; WGSS 3255, 3255W, 3257, 3257W; WGSS 3258/LLAS 3230; WGSS 3259/LLAS 3231; WGSS 3260/COMM 3321/LLAS 3264; WGSS 3264, 3270, 3270W; WGSS 3652/AFRA 3652/POLS 3652; WGSS 3672, 3718, 3718W, 3891, 3894, 3993, 3995, 3998, 3999; WGSS 4100/AAAS 4100/AFRA 4100/LLAS 4100. NOTE: Up to six credits of WGSS 3891 (Internship Program) may be counted toward the major.

### Related Courses

Students must pass an additional 12 credits at the 2000 level or above in fields closely related to the major.

### General Education Requirements

WGSS 4994W fulfills the information literacy competency and writing in the major requirements.

A minor in Women’s, Gender, and Sexuality Studies is described in the “Minors” section.

## Alternative Areas of Study

**Asian and Asian American Studies Institute.** The Asian and Asian American Studies Institute is a multidisciplinary research and teaching program. Comprised of the humanities, social sciences, and the arts, the Institute’s research output and course offerings engage Asia, the Pacific, and the Americas as sets of shifting historical, geographic, and geopolitical zone of interaction, struggle, and cooperation.

The institute fosters intellectual endeavors that concern the broad historical and contemporary experiences of people of Asian descent in Asia and in different parts of the world, inclusive of North and South Americas, the Caribbean, Europe, Africa, and Australia.

The Institute offers courses and the description of a minor in Asian American Studies is listed in the “Minors” section of this Catalog.

For further information, contact the Asian and Asian American Studies Institute, Beach Hall, Room 416, (860) 486-4751 or visit their website at [asianamerican.uconn.edu](http://asianamerican.uconn.edu).

**Comparative Literary and Cultural Studies.** Comparative Literary and Cultural Studies (CLCS) is for students who like literature but do not wish to major in English or in a single language offered by the Department of Literatures, Cultures and Languages. It is an individualized major in Literature itself. The program draws on all departments in the College of Liberal Arts and Sciences and works in conjunction with European Studies, Women, Gender, and Sexuality Studies, Medieval Studies, the Center for Latin American Studies, the Center for Contemporary African Studies, the Center for Asian Studies and the School of Fine Arts, Film Studies, Mideast Studies and Judaic Studies.

For further information, contact the Comparative Literary and Cultural Studies Program, Oak Hall, Room 252 or AUST, Room 135; [clcs.uconn@gmail.com](mailto:clcs.uconn@gmail.com) or visit their website at [languages.uconn.edu/programs/clcs](http://languages.uconn.edu/programs/clcs).

**El Instituto: Institute of Latina/o Caribbean and Latin American Studies.** El Instituto is an interdisciplinary and multidisciplinary program that advances the research and undergraduate and graduate teaching of Latina/o, Caribbean, Puerto Rican, and Latin American Studies. El Instituto faculty are engaged in regional, national, and international academic exchanges and scholarship that enhance the understanding of global diasporic issues, social justice, critical thinking, and historical inequalities affecting the Latina/o, Caribbean, and Latin American experience.

Offering degrees grounded in both traditional disciplinary and interdisciplinary methodologies, El Instituto is at the forefront of new ways of thinking about hemispheric Latina/o diasporas, U.S. Latina/os, Latin American and Caribbean societies and U.S./Latin American relations related to coloniality, race, migration, education, media, economics, health, cultural studies and human rights. The institute, located on the second floor of the Ryan Building provides a central place for research, scholarship, and academic programs uniting over 60 scholars at the University of Connecticut. It also offers linkages to local, regional, national and hemispheric academic communities and areas of investigation with a historical research focus on the life of Latino and Puerto Rican communities in New England.

Courses are offered under Latino and Latin American Studies (LLAS) and the descriptions of minors in Latin American Studies and Latino Studies are listed in the “Minors” section of this *Catalog*.

For further information contact, 860-486-5508, [elinstituto@uconn.edu](mailto:elinstituto@uconn.edu) or visit their website at [elin.uconn.edu](http://elin.uconn.edu).

**Judaic Studies.** The Center for Judaic Studies and Contemporary Jewish Life at the University of Connecticut in Storrs is housed in the Thomas J. Dodd Research Center. The threefold purpose of the Center is to foster academic study and research in Judaic Studies, offer undergraduate and graduate courses for academic concentration and enrichment as well as training for service in the community by providing a Judaic Studies component, and provide resources for continuing education in Judaic Studies and related areas of scholarly inquiry.

Courses in Hebrew and Judaic Studies are listed under Hebrew and Judaic Studies (HEJS) as well as History (HIST) and Sociology (SOCI). Students may major in Judaic Studies through the College of Liberal Arts. The description of a minor in Judaic Studies is listed in the “Minors” section of this Catalog.



For further information, contact the Center for Judaic Studies and Contemporary Jewish Life, Unit 1205, Dodd Center, (860) 486-2271 or visit their website at [judaicstudies.uconn.edu](http://judaicstudies.uconn.edu).

**Law.** Please refer to the “Student Resources” section of this *Catalog* for information about pre-law advising.

**Medicine and Dentistry.** Students planning for a career in medicine or dentistry need a rigorous and broad education in the liberal arts and sciences, as well as a strong record of academic achievement. Guidance in the structuring of academic programs, including selection of a major, should be done in consultation with advisors from the Pre-medical/Pre-dental Advising office.

For further information about admission to schools of medicine, dentistry, and other health-related disciplines, contact the advisors. Please visit their websites at [premed.uconn.edu/advisor-profiles](http://premed.uconn.edu/advisor-profiles) and [premed.uconn.edu/advising-appointments](http://premed.uconn.edu/advising-appointments).

**Medieval Studies Program.** Faculty in the Departments of Art and Art History; English; History; Literatures, Cultures and Languages; and Music offer courses with an interdisciplinary approach to provide education to students of the Middle Ages.

In addition to graduate degrees, the program offers a minor for undergraduate students. The description of a minor in Medieval Studies is listed in the “Minors” section of this *Catalog*.

For additional information, contact the Medieval Studies Program, 215 Glenbrook Road, Unit 4025; [uconn.medieval.studies@gmail.com](mailto:uconn.medieval.studies@gmail.com) or visit their website at [medievalstudies.uconn.edu](http://medievalstudies.uconn.edu).

# Neag School of Education

Jason Irizarry, Ed.D., *Dean*

Dorothea Anagnostopoulos, Ph.D., *Associate Dean*

Morgaen Donaldson, Ed.D., *Associate Dean*

Ann Traynor, Ed.D., *Assistant Dean and Certification Officer*

The University's general education requirements are listed in the General Education Requirements section of this Catalog. In addition to fulfilling the University's general education requirements, all students in the Neag School of Education must satisfy the following competency requirements.

**Writing Competency:** All students in the IB/M program will be required to successfully complete two writing intensive (W) courses within the Neag School of Education. The W courses in each major program field will help students develop writing skills specific to the content area domain, as well as be consistent with the practices of professional PK-12 educators. Courses that will satisfy the W requirement include EDCI 3100W, 4110W, 4205W, 4210W; and EPSY 4120W. All students in the Sport Management program will be required to successfully complete two writing intensive (W) courses within the Neag School of Education. The W courses will develop writing skills specific to the content area domain, as well as be consistent with the practices of sport management professionals. Courses that will satisfy the W requirement include EDLR 3300W and 3547W.

**Information Literacy Competency:** The information literacy competency requirement for IB/M Teacher Education students and Sport Management students will be satisfied by the successful completion of the W courses within each concentration area within the Neag School of Education.

## Teacher Education Programs

The Neag School of Education offers two routes to certification: the Integrated Bachelor's/Master's (IB/M) Teacher Education Program and the Teacher Certification Program for College Graduates (TCPCG). For information regarding the TCPCG, please refer to the *Graduate Catalog*. The Neag School of Education has developed a model of teacher professional preparation that provides students with a balance of carefully sequenced inquiry experiences, multiple clinical practices, liberal arts preparation, and pedagogical knowledge in a collegial environment which stresses collaboration between and among public schools, professional development schools, the different departments in the Neag School of Education, and the University's liberal arts and sciences faculty.

To qualify for the University of Connecticut's institutional recommendation for certification, any applicant must successfully complete the Integrated Bachelor's/Master's Teacher Education Program, involving five years of full-time study. Prospective teachers complete at least two years of course work in general education and in a subject area major prior to admission to the Neag School of Education. This is followed by two years of full-time course work in a subject area major and professional education while enrolled in the undergraduate teacher education program and one additional year of full-time course work in professional education while enrolled in the Graduate School to earn the Master of Arts in Curriculum and Instruction or Master of Arts in Educational Psychology. Connecticut's Praxis Core assessment and subject knowledge testing requirements must also be successfully completed.

The Integrated Bachelor's/Master's Teacher Education Program includes the following certification areas:

- American Sign Language Education (Grades 7-12)
- Biology Education (Grades 7-12)
- Chemistry Education (Grades 7-12)
- Earth Science Education (Grades 7-12)
- Elementary Education (Grades 1-6)
- English Education (Grades 7-12)
- French Language Education (Grades 7-12)
- General Science Education (Grades 7-12)
- German Language Education (Grades 7-12)
- History and Social Studies Education (Grades 7-12)
- Italian Language Education (Grades 7-12)
- Latin/Classics Language Education (Grades 7-12)
- Mandarin Chinese Language Education (Grades 7-12)

- Mathematics Education (Grades 7-12)
- Music Education (Grades PK-12)
- Physics Education (Grades 7-12)
- Spanish Language Education (Grades 7-12)
- Comprehensive Special Education (Grades K-12)

Our state-approved teacher education program meets certification requirements and statutory regulations for Connecticut. Education requirements are subject to change in accordance with the changes mandated by the state of Connecticut ([portal.ct.gov/sdecertification](http://portal.ct.gov/sdecertification)). Students must fulfill the course, field and assessment requirements that are in effect at the time of their admission to the Neag School of Education. The most recent program guidelines and sample semester sequence for each program are available on the Neag School of Education website at [advising.education.uconn.edu](http://advising.education.uconn.edu). Please note that the requirements listed below are currently in effect.

## American Sign Language Education

American Sign Language Education students must complete a subject area major in American Sign Language consisting of a minimum of 36 credits in courses at the 2000-level or above in the field of concentration. A minimum of 24 credits in American Sign Language and up to 12 related credits. Up to six credits in 1000-level courses may be included with prior consent of the faculty advisor. Requirements include the following proficiency development courses or equivalents: ASLN 1101, 1102, 1103, and 1104. At least nine credits of the following literature courses or equivalents: ASLN 3254, 3360, and 3650. At least twelve credits of the following culture and civilization courses or equivalents: ASLN 3298; ASLN/LING 3800; ASLN/WS 3254; LING 2850, 3850. It is strongly recommended that students complete a maximum number of courses in their major language, proactively seek out multiple opportunities to develop control of ASL and pursue meaningful placement in an ASL rich environment at the earliest possible time. American Sign Language Education majors must also complete the following Professional Education Requirements: EDCI 3100/W, 3215, 4010, 4205W, 4250 (nine credits); EGEN 3100, 4100, 4110; EPSY 3010, 3110, 3125, 4010; HIST 1501 or 1502; PSYC 1100; and the Master of Arts in Curriculum and Instruction program.

## Biology Education

Biology Education majors are required to complete a subject area major in Biological Sciences consisting of a minimum of 36 credits in natural sciences courses at the 2000 level or above. This includes a minimum of 24 credits of 2000-level or above courses completed in the biological sciences and closely related subject areas. Up to 12 credits may be completed in related areas. Six credits taken at the 1000 level may be included with permission of the science education advisor. Majors must also complete the following Professional Education Requirements: EDCI 3100/W, 3213, 4010, 4210W (three credits), 4250 (nine credits); EGEN 3100, 4100, 4110; EPSY 3010, 3110, 3125, 4010; HIST 1501 or 1502; PSYC 1100; and the Master of Arts in Curriculum and Instruction program.

## Chemistry Education

Chemistry Education majors are required to complete a subject area major in Chemistry consisting of a minimum of 36 credits in natural sciences courses at the 2000 level or above. This includes a minimum of 24 credits of 2000-level or above courses completed in chemistry and closely related subject areas. Up to 12 credits may be completed in related areas. Six credits taken at the 1000 level may be included with permission of the science education advisor. Majors must also complete the following Professional Education Requirements: EDCI 3100/W, 3213, 4010, 4210W (three credits), 4250 (nine credits); EGEN 3100, 4100, 4110; EPSY 3010, 3110, 3125, 4010; HIST 1501 or 1502; PSYC 1100; and the Master of Arts in Curriculum and Instruction program.

## Earth Science Education

Earth Science majors are required to complete a subject area major in Earth Science consisting of a minimum of 36 credits in natural sciences courses at the 2000 level or above. This includes a minimum of 24 credits of 2000-level or above courses completed in the earth sciences and closely related subject areas. Up to 12 credits may be completed in related areas. Six credits taken at the 1000 level may be included with permission of the science education

advisor. Students wishing to specialize in the earth sciences are advised initially to major in geology or physical geography and in addition, to select appropriate courses in meteorology, astronomy, and oceanography. Majors must also complete the following Professional Education Requirements: EDCI 3100/W, 3213, 4010, 4210W (three credits), 4250 (nine credits); EGEN 3100, 4100, 4110; EPSY 3010, 3110, 3125, 4010; HIST 1501 or 1502; PSYC 1100; and the Master of Arts in Curriculum and Instruction program.

## Elementary Education

Students in Elementary Education are prepared to teach in grades 1-6. Elementary Education majors are required to complete a subject area major that includes a single subject plus a second concentration as listed below. A minimum of 39 credits of advanced level courses 2000 level or above in teaching areas encountered in elementary schools are required. Up to nine credits may be at the 1000 level. Mathematics or science courses at the 1000 level may be included as the equivalent of 2000-level courses. Required courses: One course in math (MATH 2010Q) and one course in science in addition to general education requirements.

### Single Subject

At least 24 credits in one of the following four subject areas: (1) English; or (2) Geography and/or History; or (3) Mathematics; or (4) Science (Biology, Chemistry, Physics, Earth Science, and/or General Science). Up to six credits may be at the 1000 level.

### Second Concentration

At least 15 credits distributed among the three related subjects listed below, which do not include the subject area selected above. Two of these related subject areas must include at least two courses.

1. HUMANITIES: English; Fine Arts (Art, Drama, and/or Music); Modern and Classical Languages; Linguistics; Philosophy; and/or Communication Sciences.
2. SOCIAL SCIENCES: Anthropology; Economics; Geography; History; Political Science; Psychology; and/or Sociology.
3. MATHEMATICS: Computer Science; Mathematics; and/or Statistics.
4. SCIENCE: Biology; Chemistry; Earth Science; General Science; and/or Physics.

## Professional Education Requirements

Majors must also complete the following Professional Education Requirements: EDCI 3010, 3100/W, 4110W, 4115, 4120, 4125, 4130, 4150 (nine credits); EGEN 3100, 3120, 4110, 4200; EPSY 3010, 3110, 3125, 4010; HDFS 1070 or PSYC 2400; HIST 1501 or 1502; PSYC 1100; and the Master of Arts in Curriculum and Instruction program.

## English Education

The secondary English program prepares students to teach English in grades 7-12, and to use and respond to language in all its forms: writing, literature and oral communication. Students ordinarily acquire a broad background in British and American literature, as well as drama, speech, poetry, journalism and world literature. English Education majors must complete a subject area major in English consisting of a minimum of 36 credits in courses numbered 2000 or above in English or related areas. Up to 12 credits may be completed in related areas including no more than six credits of 1000 level courses. Requirements include at least one course in each of the following groups:

**Composition:** ENGL 3010W or equivalent.

**Young Adult Literature:** ENGL 3422 or equivalent.

**The English Language and Grammar:** ENGL 3601 or equivalent.

**American Literature (two courses):** ENGL 2201 and one of the following: ENGL 2203, 2214, 2274, 2276/W, 3210, 3212, 3213/W, 3215/W, 3217/W, 3218, 3220, 3235/W, 4201W.

**British Literature (two courses):** ENGL 2100 and 3503, or equivalents.

**Multicultural Literature (one course):** ENGL 1601W, 2214, 2274, 3210, 3212, 3213/W, 3215/W, 3217/W, 3218, 3220, 3605, 3607, 3609, 3611, 3613, 4203W, 4613W, or equivalent.

**International Literature (one course):** ENGL 1301, 2301/W, 2305, 3120, 3122, 3301, 3318, 3319, 3320, 3619, 3629, 4301W, 4302W.

**Genre Courses (two courses):** ENGL 2276/W, 2401, 2405, 2407, 2408, 2409, 2411/W, 2413/W, 2605/W, 2610, 2612, 2635E, 2640/W, 3235/W, 3240E, 3403, 3619, 3631, 3633W or equivalent.

Majors must also complete the following Professional Education Requirements: EDCI 3100/W, 3211, 4010, 4210W (three credits), 4215 (three credits), 4250 (nine credits); EGEN 3100, 4100, 4110; EPSY 3010, 3110, 3125, 4010; HIST 1501 or 1502; PSYC 1100; and the Master of Arts in Curriculum and Instruction program.

## French Language Education

French Language Education majors must complete a subject area major in French consisting of a minimum of 36 credits in courses at the 2000 level or above in the field of concentration. A minimum of 30 credits in French with up to six related credits. Up to six credits in 1000-level courses may be included with prior consent of the faculty advisor. Requirements include the following core language courses or equivalents: FREN 3257, 3268, and 3269; at least nine credits of the following literature courses or equivalents: FREN 3220, 3221, 3222, 3226, 3231, 3232, 3234, 3235, 3261W, 3262W, and/or 3272; and at least 12 credits of the following culture and civilization courses or equivalents: FREN 3210, 3211, 3218, 3223, 3224, 3250, 3251, 3267, 3270W, 3274, and/or 3280. It is strongly recommended that students complete a maximum number of courses in their major language, proactively seek out multiple opportunities to develop control of the spoken language, and pursue meaningful study abroad at the earliest feasible time. Majors must also complete the following Professional Education Requirements: EDCI 3100/W, 3215, 4010, 4205W, 4250 (nine credits); EGEN 3100, 4100, 4110; EPSY 3010, 3110, 3125, 4010; HIST 1501 or 1502; PSYC 1100; and the Master of Arts in Curriculum and Instruction program.

## General Science Education

General Science Education majors must complete a subject area major in general science consisting of a minimum of 39 credits at the 2000 level or above, which must include study in biology, chemistry, physics, and earth sciences (astronomy, geology, meteorology, and oceanography). Six credits taken at the 1000 level may be included with permission of the science education advisor. General Science Education majors must also complete the following Professional Education Requirements: EDCI 3100/W, 3213, 4010, 4210W (three credits), 4250 (nine credits); EGEN 3100, 4100, 4110; EPSY 3010, 3110, 3125, 4010; HIST 1501 or 1502; PSYC 1100; and the Master of Arts in Curriculum and Instruction program.

## German Language Education

German Language Education majors must complete the following proficiency development courses or equivalents: GERM 1133, 1134, 3220, 3233, 3234, 3245, and 4246; at least 12 credits of the following literature courses or equivalents: GERM 3252W, 3253W, 3254W, 3255, 3293, or 3294; and at least nine credits of the following culture and civilization courses or equivalents: GERM 3251, 3258, 3261W, or 3265. It is strongly recommended that students complete a maximum number of courses in their major language, proactively seek out multiple opportunities to develop control of the spoken language, and pursue meaningful study abroad at the earliest feasible time. German Language Education majors must also complete the following Professional Education Requirements: EDCI 3100/W, 3215, 4010, 4205W, 4250 (nine credits); EGEN 3100, 4100, 4110; EPSY 3010, 3110, 3125, 4010; HIST 1501 or 1502; PSYC 1100; and the Master of Arts in Curriculum and Instruction program.

## History and Social Studies Education

The history and social studies program offers preparation leading to certification in grades 7-12. Graduates are prepared to teach history, civics, sociology, economics, geography, and anthropology, along with a wide range of area studies and courses ordinarily associated with social studies. History and Social Studies Education majors must complete a subject area major in history and social science consisting of a minimum of 42 credits of courses numbered 2000 and above, including at least 24 credits in history, and at least 18 credits in social studies (anthropology, economics, geography, political science, psychology, or sociology). Up to 12 credits may be taken at the 1000 level (only six credits of 1000-level history courses allowed). History 2000 and above courses must include two Non-Western, one Ancient/Early Modern, one Modern Europe, one American, HIST 2100 and HIST 4994W. Social science courses must include two courses in political science, one economics course, and one geography course. Majors must

also complete the following Professional Education Requirements: EDCI 3100/W, 3214, 4010, 4210W (three credits), 4250 (nine credits); EGEN 3100, 4100, 4110; EPSY 3010, 3110, 3125, 4010; HIST 1501 and 1502; PSYC 1100; and the Master of Arts in Curriculum and Instruction program.

### Italian Language Education

Italian Language Education students must complete a subject area major in Italian Literary and Cultural Studies consisting of a minimum of 36 credits in courses at the 2000-level or above in the field of concentration. A minimum of thirty credits in Italian with up to six related credits. Up to six credits in 1000-level courses may be included with prior consent of faculty advisor. Requirements include the following core language courses or equivalents: ILCS 3239, 3240. And, at least 21 credits of the following literature, culture, and civilization courses or equivalents: ILCS 3237, 3245, 3246, 3247, 3248/W, 3250, 3251, 3253, 3254, 3255W, 3256, 3258W, 3259, 3260W, 3261, 3262, 3270, 3293, 3295, 3298, and 4279. It is strongly recommended that students complete a maximum number of courses in their major language, proactively seek out multiple opportunities to develop control of the spoken language, and pursue meaningful study abroad at the earliest feasible time. Education majors must also complete the following Professional Education Requirements: EDCI 3100/W, 3215, 4010, 4205W, 4250 (nine credits); EGEN 3100, 4100, 4110; EPSY 3010, 3110, 3125, 4010; HIST 1501 or 1502; PSYC 1100; and the Master of Arts in Curriculum and Instruction program.

### Latin/Classic Language Education

Latin/Classics Language Education students must complete a subject area major in Classics and Ancient Mediterranean Studies consisting of a minimum of 36 credits in courses at the 2000-level or above in the field of concentration. A minimum of 30 credits in CAMS with up to six related credits. Up to six credits in 1000-level courses may be included with prior consent of the faculty advisor. Requirements include the following core language courses or equivalents: CAMS 1123, 1124, 3102. And, at least nine credits of the following literature courses or equivalents: CAMS 1103, 3102, 3221, 3224, 3225, 3226, 3227, 3232, 3241W, 3242W, 3244, 3245. And, at least 12 credits of the following culture and civilization courses or equivalents: CAMS 1102, 3102, 3325, 3326, 3330/W, 3335, 3340. (3102 can be repeated an unlimited number of times as long as the topic varies.) It is strongly recommended that students complete a maximum number of courses in their major language, proactively seek out multiple opportunities to develop control of the written language, and pursue meaningful study abroad at the earliest feasible time. Education majors must also complete the following Professional Education Requirements: EDCI 3100/W, 3215, 4010, 4205W, 4250 (nine credits); EGEN 3100, 4100, 4110; EPSY 3010, 3110, 3125, 4010; HIST 1501 or 1502; PSYC 1100; and the Master of Arts in Curriculum and Instruction program.

### Mandarin Chinese Language Education

Mandarin Chinese Language Education students must complete a subject area major in Mandarin Chinese consisting of a minimum of 36 credits in courses at the 2000 level or above in the field of concentration. A minimum of 24 credits must be taken in one or two closely related departments. A minimum of 12 credits must be taken in related areas. Up to six credits in 1000-level courses may be included with prior consent of the faculty advisor. Requirements include the following proficiency development courses or equivalents: CHIN 1111, 1112, 1113, 1114, 3210, 3211, 3250W, and 3275. And, at least 12 credits of the following literature courses or equivalents: CHIN 3270, 3271, and 3282. And, at least nine credits of the following culture and civilization courses or equivalents: ARTH 3720; CHIN 3230, 3260; HIST 1805, 3808, 3810, 3820, 3822; and POLS 3245. It is strongly recommended that students complete a maximum number of courses in their major language, proactively seek out multiple opportunities to develop control of the spoken language, and pursue meaningful study abroad at the earliest feasible time. Mandarin Chinese Language Education majors must also complete the following Professional Education Requirements: EDCI 3100/W, 3215, 4010, 4205W, 4250 (nine credits); EGEN 3100, 4100, 4110; EPSY 3010, 3110, 3125, 4010; HIST 1501 or 1502; PSYC 1100; and the Master of Arts in Curriculum and Instruction program.

### Mathematics Education

The secondary mathematics program prepares graduates for certification in mathematics for grades 7-12. Majors are prepared to teach mathematics

at the middle school, as well as subject areas such as algebra, geometry, trigonometry, and calculus. Mathematics Education majors must complete a subject area major in Mathematics consisting of a minimum of 36 credits in mathematics and related areas. Students are required to complete 30 credits at the 2000-level or higher. Required courses include MATH 1131Q, 1132Q, 2110Q, 2210Q, 2360Q, 2410Q, 2710, 2720W, 3160, 3240, 3710; STAT 1000Q or 1100Q, and STAT 2215Q. Related Requirement (three credits): To best prepare for interdisciplinary teaching, particularly within STEM areas, students are required to take three credits, and encouraged to take six credits, in a suitable related area such as the following: Computer Science, Environmental Science, Physics, Engineering, Philosophy (Logic), Statistics, or Combinatorics. Note that these credits can overlap with General Education courses. Majors must also complete the following Professional Education Requirements: EDCI 3100/W, 3212, 4010, 4210W (three credits), 4250 (nine credits); EGEN 3100, 4100, 4110; EPSY 3010, 3110, 3125, 4010; HIST 1501 or 1502; PSYC 1100; and the Master of Arts in Curriculum and Instruction program.

### Music Education

The Music Education Program prepares students to teach music from PK-12 and direct bands, orchestras, and choruses. Music Education majors must complete the following Music courses: MUSI 1101, 1222, 1311, 1312, 1313, 1314, 1501, 1701, 3222, 3311, 3312, 3313, 3314, 3342, 3404, 3405, 3409, 3421W, 4731, 4732 or 4733. Majors are required to complete MUSI 1231 or to demonstrate equivalent piano proficiency. Convocation, Applied Music, and Ensemble participation is required each semester (with the exception of the Student Teaching Semester). Four performances representing the student's declared applied emphasis (instrumental or voice) are required. The performances may take place in recital or convocation, where a student may appear as either soloist, chamber musician, or accompanist. Such performances are to be of solo literature, although with permission of the applied teacher, small ensemble literature may be acceptable. Majors must also complete a subject area major consisting of a minimum of 36 credits in courses at the 2000 level or above in music. Up to eight credits of 1000 level courses may be included with prior consent of the faculty advisor. In addition, Music Education majors must complete the following Professional Education Requirements: EDCI 3020, 3100/W, 3305, 4010, 4210W (three credits), 4250 (nine credits); EGEN 3100, 3110, 4100, 4110; EPSY 3010, 3110, 3125, 4010; HIST 1501 or 1502; PSYC 1100; and the Master of Arts in Curriculum and Instruction program.

### Physics Education

Physics Education majors must complete a subject area major in Physics consisting of a minimum of 36 credits in natural sciences courses at the 2000 level or above. This includes a minimum of 24 credits of 2000-level or above courses completed in physics and closely related subject areas. Up to 12 credits may be completed in related areas. Six credits taken at the 1000 level may be included with permission of the science education advisor. An adequate background in mathematics is also required. Majors must also complete the following Professional Education Requirements: EDCI 3100/W, 3213, 4010, 4210W (three credits), 4250 (nine credits); EGEN 3100, 4100, 4110; EPSY 3010, 3110, 3125, 4010; HIST 1501 or 1502; PSYC 1100; and the Master of Arts in Curriculum and Instruction program.

### Spanish Language Education

Spanish Language Education majors must complete a subject area major in Spanish consisting of a minimum of 36 credits in courses at the 2000 level or above in the field of concentration. A minimum of 30 credits in Spanish and up to six related credits. Up to six credits in 1000-level courses may be included with prior consent of the faculty advisor. Requirements include at least 12 credits of the following language and communication courses or equivalents: SPAN 3170, 3171, 3172, 3177, 3178/W, 3179, 3204, 3240W, 3241, 3242, 3267W, 3291, 3293 and/or 4200W; And at least nine credits of the following literature courses or equivalents: SPAN 3207, 3208, 3230, 3231, 3232, 3233, 3234, 3260, 3261, 3262, 3263, 3264, 3265, 3266, 3267W, 3293, and/or 4200W; and at least nine credits of the following culture and civilization courses or equivalents: SPAN 3179, 3200, 3201, 3204, 3205, 3206, 3207, 3208, 3214, 3250, 3251, 3252, 3254, 3293, and/or 4200W. It is strongly recommended that students complete a maximum number of courses in their major language, proactively seek out multiple opportunities to develop control of the spoken language, pursue meaningful study abroad at the earliest feasible time. Majors must also complete the

following Professional Education Requirements: EDCI 3100/W, 3215, 4010, 4205W, 4250 (nine credits); EGEN 3100, 4100, 4110; EPSY 3010, 3110, 3125, 4010; HIST 1501 or 1502; PSYC 1100; and the Master of Arts in Curriculum and Instruction program.

### Comprehensive Special Education

The Comprehensive Special Education Program prepares prospective teachers of students with disabilities in grades K-12. Comprehensive Special Education majors must complete a subject area major that includes a single subject plus a second concentration as listed below. A minimum of 39 credits of advanced-level courses (2000 or above) in teaching areas encountered in schools are required. Up to nine credits may be taken at the 1000 level; 1000-level courses in mathematics or science may be included as the equivalent of 2000-level courses.

#### Required courses

One course in mathematics and one course in science in addition to the general education requirements.

#### Single Subject

At least 24 credits in one of the following three subject areas. (1) English; or (2) Mathematics; or (3) Science (Biology, Chemistry, Physics, Earth Science, and/or General Science). Up to six credits may be at the 1000 level.

#### Second Concentration

At least 15 credits distributed among the three related subjects listed below which do not include the subject area selected above.

1. **Humanities:** English, Fine Arts (Art, Drama, and/or Music); Modern and Classical Languages; Linguistics, Philosophy; and/or Communication Sciences;
2. **Social Sciences:** Anthropology; Economics; Geography; History; Political Science; Psychology; and/or Sociology;
3. **Mathematics:** Computer Science; Mathematics; and/or Statistics;
4. **Science:** Biology; Chemistry; Earth Science; General Science; and/or Physics.

Two of these related subject areas must include at least two courses.

#### Professional Education Requirements

Majors must also complete the following Professional Education Requirements: EDCI 3100/W, 4110W, 4115; EGEN 3100, 4100, 4110; EPSY 3010, 3115, 3125, 3130, 4110, 4115 (nine credits), 4120W; 5142; HDFS 1070 or PSYC 2400; HIST 1501 or 1502; PSYC 1100; and the Master of Arts in Educational Psychology program (Special Education majors only).

### Sport Management Program

The Department of Educational Leadership, Sport Management major, prepares students to enter careers in the sport industry, including intercollegiate athletics, professional sports, the sporting goods industry, private/public sport clubs and resorts, youth sport management, and sport venue and event management.

The University's general education requirements are listed in the "Academic Regulations" section of this *Catalog*.

The most recent program guidelines and sample semester sequence are available on the Neag School of Education website at [advising.education.uconn.edu](http://advising.education.uconn.edu). The Department of Educational Leadership offers the following undergraduate program:

#### Sport Management

Students complete course work in general education, cognate areas, and Educational Leadership. Requirements include: COMM 1100; ECON 1201, 1202; MATH 1070Q; PSYC 1100, 1101 or 1103, 2600; SOCI 1001 or 1251; STAT 1000Q or 1100Q; EDLR 3090, 3091, 3300W, 3310, 3325, 3335, 3340, 3345, 3350, 3547W, 3550. Recommended course: SOCI 1501. Cognate electives: 15 credits.

### Advisement Information

Because the Neag School of Education is a junior and senior professional school, prospective applicants complete two or more years of study in a school or college other than the Neag School of Education. Most students participate in the services offered by the Academic Center for Exploratory

Students (ACES) during their first and sophomore years declaring a pre-education major. Students who intend to teach declare a pre-teaching major. Students who intend to pursue the Sport Management program declare a pre-Sport Management major.

Pre-Education students should seek the most recent information at the earliest opportunity. Admission information, including a list of advisors, program guidelines, sample semester sequences, and information on the Connecticut competency examination requirements for reading, writing, and mathematics (currently met by taking Praxis Core or submitting qualifying ACT, GRE or SAT scores) are available on the Neag School of Education's website at [advising.education.uconn.edu](http://advising.education.uconn.edu). Students are invited to meetings each semester to discuss Neag School of Education programs.

Prospective applicants who wish to complete requirements in the minimum amount of time should strictly follow the most recent program guidelines. Students can declare themselves as pre-education majors by contacting the Academic Center for Exploratory Students (ACES) at [aces.uconn.edu](http://aces.uconn.edu).

### Admission to Neag School of Education Programs

The Neag School of Education is a professional school. Students begin their junior-senior programs after completing at least 54 credits in a school or college other than the Neag School of Education (at either Storrs or one of the regional campuses) or a two or four-year accredited college or university other than the University of Connecticut. The maximum enrollment in each program is determined by the Dean in consultation with program administrators.

Applications for admission to the Neag School of Education are available on the Neag School of Education website at: [teachered.education.uconn.edu](http://teachered.education.uconn.edu) and [sport.education.uconn.edu](http://sport.education.uconn.edu).

Students not currently attending the University of Connecticut must submit an additional University admission application with Transfer Admissions ([admissions.uconn.edu](http://admissions.uconn.edu)). Students transferring to the University with less than 54 credits should fulfill requirements in a school or college other than the Neag School of Education and later make application to the Neag School of Education. These students initially complete only the University application.

The faculty of the Neag School of Education seek to actively recruit students from underrepresented groups. Admission to the Neag School of Education is competitive.

### Teacher Education

All teacher education programs annually admit for the fall semester. Students are advised to submit a completed *Application for Admission to Upper Division Programs* and all supporting materials after completion of their third semester, and before January 20, to be considered for admission for the following fall semester.

Successful applicants generally have completed sufficient credits to be eligible for consideration, have applied by the annual deadline of January 20, have participated in successful interviews with faculty, have accumulated sufficient experience working with children, have submitted a resume, have written acceptable essays, and have earned the most competitive cumulative grade point averages.

### Critical Shortage Area Admissions

The Connecticut State Department of Education has designated several certification areas as critical shortage areas. Currently, these are: secondary mathematics, secondary science, special education, and world languages (e.g., Spanish, French, etc.). Applications for critical shortage area majors are due by January 20 and will be reviewed during the regular admissions period. After that review, if there are spaces available in the critical shortage area majors, additional applications will be considered if submitted by April 1. Please note, students can apply only once per academic year to a given shortage area major.

Connecticut statute requires that each person admitted to a teacher education program in Connecticut shall take the Praxis Core Academic Skills for Educators tests in mathematics, reading, and writing or meet the requirements for a waiver. Students must submit test scores or meet the waiver requirement by August 1 (prior to entering the teaching program in the junior year).

Waiver eligibility includes a combined score of at least 1100 on the SAT mathematics and critical reading subtests, with neither subtest score below 450; or at least 22 on the ACT English subtest and at least 19 on the ACT Mathematics subtest; or a score of 297 on the GRE quantitative reasoning and verbal reasoning tests with no less than a score of 144 in quantitative reasoning and 150 in verbal reasoning, plus a minimum analytical writing score of 4.0. The most up-to-date information on these tests can be reviewed at [www.ets.org](http://www.ets.org). Additional information on the Praxis Core requirement is available on [teacher.education.uconn.edu/ibm-current-students-praxis](http://teacher.education.uconn.edu/ibm-current-students-praxis).

Applicants for the Master of Arts in Curriculum and Instruction or Master of Arts in Educational Psychology must apply for admission to the Graduate School by February 1 of the final undergraduate semester. Admission requirements include a cumulative grade point average of at least 3.0 for the entire undergraduate record, or 3.0 for the last two years, or excellent work in the entire final year.

## Sport Management

Students must submit the application and all supporting materials by February 1 for fall admission. Successful applicants to Sport Management generally have completed sufficient credits to be eligible for consideration, have applied by the annual deadline, have completed a well-written personal statement discussing why applicant is interested in pursuing a degree in Sport Management (be sure to include information regarding current experiences in the field of Sport Management and applicant's future aspirations for a career in this field), a resume of not more than two pages, three professional references (name, title, contact information), one letter of recommendation (from the three professional references listed above), and have earned the most competitive grade point average.

## Bachelor's Degree Requirements

Upon recommendation of the faculty, the degree of Bachelor of Arts or Bachelor of Science is awarded by vote of the Board of Trustees to students who have met the following requirements: (1) earned a total of 120 credits; (2) earned at least a 2.2 grade point average for all calculable course work; (3) met all the requirements of the Neag School of Education; and (4) earned at least 12 credits in courses offered in the Neag School of Education.

In addition, students with major fields of study in a subject area of the College of Liberal Arts and Sciences are eligible to receive the Bachelor of Arts degree from the Neag School of Education provided that they have met the general education requirements of the College of Liberal Arts and Sciences.

## Accreditation

The Neag School of Education is accredited by both the Connecticut State Board of Education and the Council for the Accreditation of Educator Preparation (CAEP). A statement will appear on all transcripts of students who finish teacher education programs in the Neag School of Education indicating completion of a Connecticut State Board of Education and CAEP approved program.

## National and State Requirements

The Connecticut State Board of Education maintains minimum requirements for certification for positions in the public schools of Connecticut. The faculty of the Neag School of Education prepares students to meet certification requirements. The certification officer is responsible for supplying the Connecticut State Department of Education with an institutional recommendation for all students from this institution seeking certification and will recommend only those candidates completing the most recent requirements.

In accordance with Connecticut Public Act 09-1, fingerprinting and a criminal background check are required prior to placement in a clinical assignment. In certain circumstances, evidence of a criminal record may prevent a student from fulfilling clinical requirements for program completion and professional licensure.

Connecticut statute mandates a series of assessments for prospective teachers.

1. Students admitted to teacher education programs must take the Praxis Core tests or meet the waiver criteria. Additional information regarding approved tests and eligibility criteria for a Praxis Core waiver is included elsewhere in this chapter related to admission to

Neag School of Education program.

2. Students planning to apply for teacher certification in Connecticut or elsewhere should contact their academic advisor regarding subject knowledge testing. No graduate may be recommended for a teaching certificate until successfully completing Connecticut's subject knowledge testing requirements (e.g., Praxis II, ACTFL, Foundations of Reading, edTPA). Title II of the Higher Education Act requires that teacher education programs annually report on several items including how well program completers perform on state licensing and certification assessments. The most recent Neag School of Education program completion data is available at [data.education.uconn.edu/title-ii-data-reports/](http://data.education.uconn.edu/title-ii-data-reports/).

Because of the nature of Connecticut's certification and educator preparation program approval regulations, including the standards of the Council for the Accreditation of Educator Preparation and its professional associations, students must satisfy all program requirements in order to be recommended for certification.

# School of Nursing

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The School of Nursing offers two pre-licensure programs: a traditional 4-year baccalaureate program and a 2nd degree post baccalaureate program, Certificate Entry into Nursing/B.S. (CEIN/B.S.). The traditional undergraduate program provides an opportunity to combine a general education with professional preparation in nursing. This curriculum requires four academic years. The post baccalaureate program, CEIN/B.S., is a one-year program designed for individuals with baccalaureate degrees in other areas. The programs are accredited by the Commission on Collegiate Nursing Education and approved by the Connecticut State Board of Nurse Examiners.

## Preclinical Requirements for Pre-Licensure Programs

In addition to pre-entrance University requirements, students admitted to the School of Nursing must present evidence of the following prior to clinical experiences: physical exam with color vision testing and clearance to participate in clinical activities, TDAP (Tetanus, diphtheria and pertussis) booster with tetanus immunization in the past 10 years; one poliomyelitis booster following initial immunization; annual tuberculin test (with chest x-ray for positive reactors); rubella, rubeola, hepatitis B titers (with vaccine if titer is negative); and varicella titer, an annual flu vaccine, clear background and drug screenings and any other requirements of affiliating agencies.

It is mandatory that all students carry comprehensive health insurance when they are involved in practice in clinical areas.

A current American Heart Association Basic Life Support certificate in cardiopulmonary resuscitation (professional level: covering infant, child, adult, and two-person) is a prerequisite for entry into the clinical courses and must be current through graduation.

Students who fail to provide written documentation that they have met the above stated health requirements will *not* be allowed in the clinical areas.

Clinical practice experiences in healthcare and other agencies are a required component of program completion and graduation with a baccalaureate degree in nursing. Students must meet all standards and requirements necessary to complete required clinical placements including, but not limited to health requirements, drug testing, fingerprinting and/or criminal background checks. Failure to do so will result in an inability to complete the program.

## Requirements for Clinical Practice

In addition to academic qualifications, UConn nursing students must possess the ability to consistently demonstrate a proficiency in five core areas for nursing students: motor, sensory, communication, behavior and critical thinking skills. These areas reflect the reasonable expectations of a nursing student performing the common functions of a registered nurse or an advanced practice nurse.

The ability to consistently demonstrate these personal and professional competencies are essential from admittance to graduation. Students must be capable of performing the skills of a nursing student.

Therefore, each nursing student must have the ability to learn and perform the following competencies and skills:

1. Motor: The student must possess sufficient motor capabilities to execute the movements and skills required to provide safe and effective nursing interventions. These include, but are not limited to:
  - a. Coordination, speed and agility to assist and safely guard (protect), with safe and proper body mechanics, patients who are ambulating, transferring, or performing other activities.
  - b. Ability to adjust and position equipment and patients, which involves bending or stooping freely to floor level and reaching

above the head.

- c. Ability to move throughout the classroom or clinical site, and sit and stand for long periods of time to carry out patient care activities.
  - d. Ability to perform patient care duties for up to 12 hours at a time, day or night.
  - e. Ability to move or position patients and equipment, which involves lifting, carrying, pulling up to 30 pounds.
  - f. Ability to guide, resist, and assist patients, or to provide emergency care, which involves standing, kneeling, sitting, or walking.
  - g. Ability and dexterity to manipulate the devices used in giving nursing care.
  - h. Ability to administer CPR without assistance.
2. Sensory: The student must be able to obtain information in classroom, laboratory, or clinical settings through observation, auscultation, palpation and other measures, including but not limited to:
    - a. Visual ability (corrected as necessary) to recognize and interpret facial expressions and body language, identify normal and abnormal patterns of movement, to read or set parameters on various equipment, to discriminate color changes, and to interpret and assess the environment.
    - b. Auditory ability (corrected as necessary) to recognize and respond to soft voices, auditory timers, equipment alarms, call bells, and to effectively use devices for measurement of blood pressure, breath sounds, etc.
    - c. Tactile ability to palpate a pulse and to detect changes or abnormalities of surface texture, skin temperature, body contour, muscle tone, and joint movement.
    - d. Sufficient position, movement and balance sensations to assist and protect patients who are ambulating, transferring, or performing other activities.
  3. Communication: The student must be able to communicate effectively with peers, faculty, patients and their families, and other health care providers. This includes, but is not limited to:
    - a. Ability to read at a competency level that allows one to safely carry out the essential functions of an assignment (examples; handwritten chart data, printed policy, and procedure manuals).
    - b. Ability to effectively interpret and process information.
    - c. Ability to effectively communicate (verbally and in writing) with patients and their families, health care professionals, and others within the community.
    - d. Ability to access information and to communicate and document effectively via computer.
    - e. Ability to recognize, interpret, and respond to nonverbal behavior of self and others.
  4. Behavior: The student must be capable of exercising good judgment, developing empathic and therapeutic relationships with patients and others, and tolerating close and direct physical contact with a diverse population. This will include people of all ages, races, socioeconomic and ethnic backgrounds, as well as individuals with weight disorders, physical disfigurement and medical or mental health problems. This also includes, but is not limited to:
    - a. Ability to work with multiple patients, families, and colleagues at the same time.
    - b. Ability to work with classmates, instructors, health care providers, patients, families, and others under stressful conditions, including but not limited to providing care to medically or emotionally unstable individuals, situations requiring rapid adaptations, the provision of CPR, or other emergency interventions.
    - c. Ability to foster and maintain cooperative and collegial relationships with classmates, instructors, other health care providers, patients, and their families.
  5. Critical Thinking: The student must possess sufficient abilities in the areas of calculation, critical problem solving, reasoning, and judgment to be able to comprehend and process information within a reasonable time frame as determined by the faculty and the profession. The student must be able to prioritize, organize and attend to tasks and responsibilities efficiently. This includes, but is not limited to:
    - a. Ability to collect, interpret and analyze written, verbal, and

observed data about patients.

- b. Ability to prioritize multiple tasks, integrate information, and make decisions.
- c. Ability to apply knowledge of the principles, indications, and contraindications for nursing interventions.
- d. Ability to act safely and ethically in the college clinical lab and in clinical placements within the community.

If a nursing applicant or student is unable to meet one or more of these areas due to a long-term or short-term disability, they may request consideration for an accommodation through the Center for Students with Disabilities. Prompt notice is essential for full consideration. The requirements for clinical practice apply for all programs which include a clinical component.

### Criminal Background Check

The School of Nursing requires all students to have a criminal background check prior to the start of *each* academic year in which clinical placement is a required component of the program. The School of Nursing contracts with an outside entity to obtain relevant background check information. The 'satisfactory' or 'needs further follow-up' outcome of the background check will be released to the School and to the agencies where clinical experiences are planned. Students must apply directly to the outside entity and pay all associated costs. The outside entities' contact information, as well as the costs associated with the criminal background check, can be found in the student handbook.

It is important to note that the results of a student's criminal background check may prevent a student from completing a clinical placement. The agency of clinical placement will make the determination whether a student can receive experiences within that site. The School cannot guarantee that a student will be accepted into any required clinical placement sites. Failure to complete all required clinical activities *will* prevent a student from graduating from the School of Nursing.

The following is a partial list of crimes and offenses that may negatively impact a student's ability to complete required clinical placements: any sexual crime, any crime of violence, any drug crime, any weapon crime, property crimes, theft, robbery, burglary, embezzlement or fraud, public intoxication or substance abuse, other felonies or serious offenses which would not be appropriate in a healthcare/patient care environment.

**Drug Testing.** Use of drugs, prescribed or otherwise, may create a risk of being denied a clinical placement. This includes, but is not limited to, prescribed medical marijuana or opiates. If the findings of a required drug screening prevent you from being placed in a clinical agency for your experience, you will not be able to complete the nursing program. If you have any concerns about your current prescriptions in relation to securing a clinical placement, please contact your health care provider.

Faculty reserve the right to recommend a student's withdrawal from the program for reasons of health.

**Transportation.** The location and shift times (day/evening/weekend) required by clinical experience providers vary greatly, and the SON cannot guarantee the availability of a particular location or shift. Some students may be required to travel distances of more than 75 miles, and in some instances, ride-sharing services may be prohibited by the clinical experience provider. Students are responsible for arranging transportation to and from all clinical experiences and any travel costs, e.g., fuel and parking fees. Students with questions or concerns about transportation should contact the program director before the beginning of each semester.

**Computers.** All students are required to have their own laptop computer with wireless capability at the start of their first year for baccalaureate students and prior to the start of the CEIN/B.S. program for CEIN/B.S. students. See current student handbook for laptop technical specifications.

**Licensure.** Under the provisions of Section 19a-14(a) of the Connecticut General Statutes, as amended by Public Act 86-365, the Department of Public Health and Addiction Services of the State of Connecticut may deny licensure to applicants who have been convicted of a felony or are addicted to drugs or alcohol. Copies of this law are available in the School of Nursing Admission and Enrollment Services Office. Students are responsible for being aware of what the licensure requirements are in the State in which they intend to apply for a license.

**Books, Uniforms and Professional Equipment.** All pre-licensure students are expected to purchase books, uniforms, and the professional equipment required before beginning the clinical experiences.

Students in the Pre-Licensure program who return from a Leave of Absence during the clinical component of the program are required to complete a one-day mandatory reorientation/skill refresher in the clinical resource lab (simulation lab).

## Admission Requirements

See Admission to the University. Student applications for admission to the School of Nursing are accepted only for the Fall semester. Qualified students are admitted directly to the School of Nursing as first-year students. See First-Year Student Admission. Admission is competitive and applicants should have credentials placing them in the upper range of their high school graduation class. First-year, transfer, and change of major students must have completed a high school (or college) course in chemistry and algebra for admission consideration.

Transfer students should see Transfer Admission. Such students should have made substantial progress toward completing the 1000-level requirements, particularly those courses that are an indication of their academic ability in math and science. Number of credits earned, grade point average in all courses taken, and space availability are key considerations in the school's admission decision.

Students not admitted into the School of Nursing at the time of entry to the University may apply for admission through the School of Nursing School Change procedures. Such students should submit a completed School of Nursing Change of Major form online including a statement as to why they desire the School change. Change of Major forms are due by February 1 for fall acceptance consideration. Decisions will be based on several criteria including the applicant's academic record, courses taken and space availability. Change of Major applicants are expected to have a minimum cumulative GPA of 3.5 as well as a math/science GPA that is equal or higher than a 3.0 in two or more math/science prerequisite courses to be competitive in the petition or transfer process.

Students taking non-degree course work in a non-matriculated fashion may petition for a change of classification to degree-seeking matriculated status.

### Admission requirements for CEIN/B.S.

Applicants must have a baccalaureate degree with cumulative undergraduate GPA of 3.0 or better. The following required science courses must be completed prior to admission with "B-" or better grades in each: Human Anatomy and Physiology (PNB 2264 and 2265 or equivalent), Chemistry (CHEM 1122 or equivalent), Biology (BIO 1107 or equivalent), Genetics (MCB 2400 or equivalent and must be taken within five years of enrollment in the program), Microbiology (MCB 2610) or equivalent). An undergraduate statistics course must be completed with grades of "C" or better.

Applicants to the UConn Certificate of Entry in Nursing Bachelor of Science program (CEIN/B.S.) are individually and holistically reviewed. A holistic review allows the admissions committee the opportunity to consider multiple factors rather than focusing on any one factor. We consider your experiences and unique qualities in addition to your academic performance. We believe both tangible and intangible factors are essential to success in the nursing profession and in our program. The UConn School of Nursing is committed to diversity and the excellence it facilitates. Our application process seeks to identify globally minded nurses who are well prepared to care for our diverse communities.

## Curricula in Nursing for the Traditional Undergraduate

### I. University General Education Requirements

The University has adopted General Education requirements, which must be satisfied as part of every bachelor's degree program. These requirements are listed in the "General Education Requirements" section of this *Catalog*.

### II. School Requirements

Nursing students must complete the following courses (38 credits). Students should note that some of these courses may also fulfill University General Education requirements: BIOL 1107; CHEM 1122; MATH 1020Q, 1030Q,



1040Q or 1060Q; MCB 2400 or 2410; PNB 2264 and 2265; PSYC 1100; STAT 1000Q or 1100Q; HDFS 1070 plus any other Content Area 1 or 2 course (for a total of six credits) in fulfillment of the general education requirements of the university.

**Writing in the Major.** All students in the School of Nursing are required to pass NURS4230W.

**Information Literacy.** All students in the School of Nursing fulfill this area of competency by the successful completion of NURS 3205, 4250E and 4282.

**Quantitative Competency.** Students in the School of Nursing fulfill this area of competency with the following courses: MATH 1020Q or higher and STAT 1000Q or 1100Q. Quantitative competency is also met by successful completion of math competency exams in each clinical course.

### III. Baccalaureate Student

Nursing students must complete the following nursing courses (75 credits): NURS 1130, 1131, 3100, 3110, 3120, 3205, 3220, 3225, 3234, 3334, 3444, 3554, 3664, 4230W, 4250E, 4282.

### IV. Additional Requirements

To be eligible to enroll in NURS 3234 (first clinical course) in the fall semester, students must have completed the coursework described in the "School Requirements" section above and the following courses by the end of the preceding spring semester: ENGL 1007 or 1010 or 1011; NURS, 1130, 1131, 3100, 3110, 3120.

If a grade of "C-" or less is earned in PNB 2265, MCB 2400 or 2410, NURS 3110 or 3120, the student may still be considered for NURS 3234 enrollment in the fall if the course is retaken and a grade of "C" or better earned by July 1.

### V. Program Requirements

#### Supplementary Scholastic Standards

A student in the School of Nursing must have a grade of "C" or better in the courses listed in the "School Requirements" and "Additional Requirements" sections above. Students admitted to the School of Nursing must have a minimum GPA of 2.5 at the end of the semester in which they have completed 26 calculable credits of graded coursework at the University of Connecticut. In order to progress in the 3000-level nursing courses, students must complete all prerequisite courses with a grade of "C" or better. In order to progress, a cumulative GPA of 2.7 is required prior to enrollment in NURS 3220, 3234. Students lacking a 2.7 total grade point average at this point in the program will be dismissed from the School of Nursing.

Students must earn a "C" (2.0) or better in all nursing courses (those with NURS designation) in order to earn credit toward graduation. No student may take a course in the nursing curriculum without having completed prerequisite courses with a grade of "C" or higher. No courses required for graduation as a nursing major may be taken more than twice before achieving a passing grade. Students may be dismissed if there is more than one semester in which they earn a semester grade point average below 2.5 in required nursing courses. A cumulative grade point average of 2.5 or above in all required nursing courses is required for graduation.

Students are permitted to repeat only one required nursing course *once* throughout their nursing education and remain in the School of Nursing when all other standards are met.

#### Bachelor's Degree Requirements

Upon the recommendation of the faculty the degree of Bachelor of Science is awarded by vote of the Board of Trustees to students who have met the following requirements: (1) earned a total of 120 degree credits, (2) earned at least a 2.5 grade point average for all calculable course work, and (3) met all the requirements of the School of Nursing and University General Education Requirements. (See Scholastic Standing Requirement).

### VI. CEIN/BS: B.S. Certificate Entry into Nursing

A one-year program designed for individuals with baccalaureate degrees in other areas. Students complete 45 credits of didactic and clinical experience. In order to progress in the program, students must complete the following coursework with a "C" or better: NURS 4300, 4301, 4304, 4305, 4414, 4424, 4434, 4544 and 4554.

A second baccalaureate degree in nursing is awarded at the successful completion of the CEIN/BS program.

# School of Pharmacy

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The School of Pharmacy professional program requires completion of two years of pre-professional requirements, two years in the professional program leading to a Bachelor of Science with a major in Pharmacy Studies (B.S. Pharmacy Studies), followed by two additional years leading to a Doctor of Pharmacy (Pharm.D.). This professional B.S./Pharm.D. program is a **full-time** professional program (146 minimum credits professional program plus 64 credits pre-professional for a minimum total of 210 credits), making the Pharm.D. graduate eligible to stand for licensure upon completion. For the final two years of the professional program (Pharm.D. years), there will be additional tuition and required fees for in-state students and proportional increases for New England Regional and out-of-state students.

## Degree Programs

### Bachelor of Science in Pharmacy Studies

The Bachelor of Science in Pharmacy Studies is awarded after the completion of four semesters of pre-professional requirements, including University general education and Pharm.D. prerequisites and the successful completion of the first two professional years in the Pharm.D. program. The B.S./Pharm.D. are consecutive degrees and as such, the B.S. in Pharmacy Studies must be earned before entry into the last two years of the professional program. Upon recommendation of the faculty, the degree of Bachelor of Science in Pharmacy Studies is awarded by vote of the Board of Trustees to students who have met the following requirements: (1) earned 137 credits; (2) completed all requirements for the first two years of the professional program; (3) satisfied the University's General Education Requirements; and (4) earned at least a 2.0 grade point average for all calculable required pharmacy courses. The B.S. in Pharmacy Studies does not entitle an individual to sit for a pharmacy licensing examination.

### Doctor of Pharmacy (Pharm.D.)

The Doctor of Pharmacy is a professional doctoral degree, not a graduate degree. It is awarded as a post-baccalaureate/professional degree after the conferral of the B.S. in Pharmacy Studies and successful completion of the Pharm.D. requirements. Upon recommendation of the faculty, the degree of Doctor of Pharmacy is awarded by vote of the Board of Trustees to students who have met the following requirements: (1) earned minimum 210 credits; (2) completed all requirements for the B.S. in Pharmacy Studies and the Pharm.D. degrees; (3) satisfied the University's General Education Requirements; and (4) earned at least a 2.0 grade point average for all calculable required pharmacy courses. The Doctor of Pharmacy degree entitles an individual to sit for a pharmacy licensing examination.

### Pharm.D./Ph.D. Program

This program targets a small number of highly motivated students who seek to combine pharmacy education suitable for professional licensure with advanced research-based training in the pharmaceutical sciences. Students completing this program will earn consecutive dual degrees, the Pharm.D. and the Ph.D. Students in the dual track are afforded early acceptance into the Ph.D. program and, if they successfully complete the Pharm.D. curriculum, a modified graduate curriculum will be tailored to shorten the total time required to complete the Ph.D. degree. Students must meet the admission requirements of both programs and apply to the Ph.D. program in the spring semester of the P2 (second professional) year as they complete the B.S. in Pharmacy Studies.

### Pharm.D./MBA Dual Degree Program

A dual degree Pharm.D./MBA program is offered to highly motivated students who seek to combine pharmacy education with business managerial knowledge and skills. After completing the second professional year and graduating with the B.S. in Pharmacy Studies, students enroll in the MBA program for the third year. Students then return to the School of Pharmacy for the last two years of the Pharm.D. program, which would consist of both pharmacy and business courses. Students must meet the admission

requirements of both programs and apply to the MBA program in the spring semester of the P2 (second professional) year as they complete the B.S. in Pharmacy Studies. Both the Pharm.D. and the MBA will be conferred simultaneously after the program requirements have been successfully met.

### Pharm.D./MPH Dual Degree Program

A dual degree Pharm.D./MPH program is offered to highly motivated students who seek to combine pharmacy education with special skills in public health as it relates to pharmacotherapy and health promotion, disease prevention and medication safety. After completing the second professional year and graduating with the B.S. in Pharmacy Studies, students enroll in the MPH program for the third year. Students then return to the School of Pharmacy for the remaining two post-baccalaureate/professional years of the Pharm.D. program, which would consist of both pharmacy and public health courses. Students must meet the admission requirements of both programs and apply to the MPH program in the spring semester of the P2 (second professional) year as they complete the B.S. in Pharmacy Studies. Both the Pharm.D. and the MPH will be conferred simultaneously after the program requirements have been successfully met.

**Accreditation.** The University of Connecticut's Doctor of Pharmacy program has been granted full accreditation by The Accreditation Council for Pharmacy Education (ACPE), [www.acpe-accredit.org](http://www.acpe-accredit.org). The School of Pharmacy also offers a number of courses leading to the degrees of Master of Science (M.S.) and Doctor of Philosophy (Ph.D.). Students holding the degree of Bachelor of Science may prepare for the Doctor of Philosophy degree with a major in a number of pharmaceutical science fields. The Master of Science degree in pharmaceutical sciences may be awarded in the above subject areas and pharmacy administration (see the *Graduate School Catalog*).

**Regional Plan.** In conformity with plans approved by the Boards of Trustees of the six New England land grant universities for regionalization of certain fields of specialized education, the University of Connecticut School of Pharmacy has been designated as a regional New England school for all other New England states except Rhode Island. Regional students enrolled in the professional program receive a tuition savings over out-of-state tuition rates.

### Continuation of B.S. Pharmacy Studies Pre-Professional Students into the Professional Program

To be considered for continuation into the P1 professional coursework, all pre-professional students in the B.S. Pharmacy Studies program are subject to the review and approval of the School of Pharmacy Pharm.D. Admissions Committee and therefore must apply, meet the requirements for their application pathway, and be successfully admitted into the professional portion of the program.

## Admission

### Pre-Professional Admission to B.S. in Pharmacy Studies:

See Admission to the University. The School of Pharmacy admits students into the B.S. in Pharmacy Studies pre-professional major directly as first-year students. School of Pharmacy B.S. students are highly encouraged to attend the Storrs campus as first-year pre-professional students and must switch to the Storrs campus for their third and fourth semesters during which they apply to the professional program and complete the following prerequisite courses; CHEM 2443 and 2444; MCB 2000 and 2610; PNB 2264 and 2265. Students not admitted into the School of Pharmacy at the time of entry to the University may apply for admission to the pre-professional major through School of Pharmacy procedures. Admission is competitive. Decisions will be based holistically on several criteria including the applicant's academic record, courses completed, interview, and space availability.

Students at other post-secondary institutions who are not currently attending or who have never attended the University of Connecticut as an undergraduate degree-seeking student must file a separate University application with the Transfer Admissions Office, 2131 Hillside Road, Unit 3088, Storrs, CT 06269-3088 by the University Transfer Admissions Deadline. Transfer students wishing to transfer directly into the School of Pharmacy as pre-professional B.S. students should have made progress towards completing the first-year/sophomore, 1000-2000 level requirements, particularly those courses which are prerequisites for the Common Body of Knowledge/Entry Level courses (CHEM 1127Q-1128Q; BIOL 1107; ECON 1201;

ENGL 1010 or 1011; MATH 1131Q; PHYS 1201Q) and must successfully complete all of these courses by the end of the first-year spring semester.

### Admission to Professional Pharmacy Program

Student applications for admission to the professional P1 year are only accepted for the fall semester. There are two methods of application review for admission into the Professional P1 year; 1) Competitive Review for UConn students and 2) External Transfer Students.

Continuation and/or Admission for ALL applicants to the P1 year is based upon: 1) cumulative grade point average in the math and science prerequisites; 2) overall academic performance; 3) grades in the prerequisite courses; 4) non-academic and extra-curricular experience; 5) recommendations and personal statement; and 6) personal interview.

After successful admission into the professional program, students are enrolled into the fall semester, when they begin their P1 Pharmacy (PHRX) coursework. Only those students who have successfully completed their pre-professional coursework and the School of Pharmacy admissions process according to procedures and are admitted by the School of Pharmacy Pharm.D. Admissions Committee may proceed onward with their fall P1 PHRX coursework. Entering P1s who have not fulfilled the University General Education requirements before they enter the professional program will have to complete those courses by May of the second professional year.

A criminal background check will be conducted on all students admitted to the Professional Program. Students will not be admitted if their background check does not pass.

Any pre-professional Pharmacy Studies B.S. student failing to successfully apply, or gain admittance to the professional P1 year, will be dismissed from the School of Pharmacy B.S. Pharmacy Studies Program and will be advised regarding alternative major options.

### Pharm.D. Admission

Competitive Admission for direct entry into the Professional P1 year is limited, and on a space-available basis. Students should apply for admission early in the application cycle, which ends in the beginning of January. To be eligible, students must have all required math, science, and English courses completed by May for entry into the professional program the following fall semester. Both Content Area 2 courses (Economics and Sociology/ Psychology/Anthropology) must be completed before admission into the fall semester. Students who have not fulfilled the University General Education requirements before they enter the professional program will have to complete those courses by May of the second professional year.

Direct Admission into the Professional P1 Program is competitive and based upon: 1) Successful completion and submission of PharmCAS application by January deadline along with supporting documents 2) Cumulative grade point average in the math and science prerequisites; 3) Overall academic performance; 4) Pharmacy-related and / or other non-academic and extra-curricular experience; 5) Recommendations and personal statement; and 6) Personal interview.

Additionally, external transfer students who have completed their pre-professional curriculum at regionally accredited degree-granting institutions of higher education in the United States will be eligible to apply for direct admission to the Doctor of Pharmacy Professional Program. Applications to the University by transfer students are due April 1. Transfer students who have completed their pre-professional curriculum at an international institution may be eligible depending upon how international coursework transfers into the University and is evaluated. Students will be considered for an interview and admission on a competitive basis. An outstanding academic record may be one of the components used to prioritize student interviews. Students receiving an interview should not assume they will be admitted to the professional program.

**Calculation of the Math/Science Prerequisite GPA:** To calculate the cumulative math/science prerequisite GPA, the total grade points earned for courses are divided by the number of total credits.

### Substitutions

When approved course substitutions are taken, the courses are treated as substitutions and not as replacements for specific prerequisite courses. For example, grades for MATH 1125Q and 1126Q will be averaged and substituted for MATH 1131Q. Grades for CHEM 1124Q, 1125Q, and 1126Q will be averaged and substituted for CHEM 1127Q and 1128Q. The required prerequisite for Biochemistry is MCB 2000. However, MCB 3010 may be a substitute. The same applies for other approved substitutions.

### Physics

The required prerequisite for physics is PHYS 1201Q (four credits). With approval from the School of Pharmacy, PHYS 1401Q, 1501Q, etc. can be substituted for PHYS 1201Q. However, taking another physics course (e.g. PHYS 1401Q, 1501Q, etc.) in addition to PHYS 1201Q may be considered repetition of a prerequisite.

### Advanced Placement

When AP work is applied toward prerequisites, the number of total prerequisite credits is reduced by the number of credits earned by that AP work.

### Rounding for GPA

The School of Pharmacy does not round when calculating grade point averages. For example, a 2.99 will not be rounded to a 3.00.

**Communication Skills.** It is essential that Pharmacy students have excellent written and oral communication skills. Students must be able to communicate effectively with patients, physicians and with other members of the health care team. The academic version of the International English Language Testing System (IELTS) is required of all applicants and U.S. citizens or permanent residents for whom English is not the native language and/or primary language of instruction. A minimum score of 7.5 is required for admission to the program.

### Supplementary Scholastic Standards for the Pre-Professional B.S. Pharmacy Studies Students

Pre-professional B.S. students in the School of Pharmacy must meet and maintain the criteria stated in the School of Pharmacy Student Handbook. In addition, School of Pharmacy B.S. students must successfully apply through School of Pharmacy Pharm.D. admission procedures and gain successful admission by the School of Pharmacy Admissions Committee in order to progress into the Professional PHRX curriculum.

If admission to the Professional P1 Program is denied, students will be dismissed from the B.S. Pharmacy Studies Program. Students will be advised regarding alternative major options.

### Scholastic Standards for Professional Program

Students admitted to the professional pharmacy program must maintain standards of scholastic achievement to continue and/or complete the program as stated in the School of Pharmacy Student Handbook.

All required Pharmacy courses must be taken for a grade (*i.e.*, may not be taken on Pass/Fail or Satisfactory/Unsatisfactory).

Following any leave of absence from the professional program, the school reserves the right to impose certain requirements before returning to the program, up to and including academic assessments.

Failure to meet any of the requirements may result in dismissal of the student from the program.

### Technical Standards for Students in the Professional Program

Students admitted to the School of Pharmacy must have the ability to safely apply their knowledge and skills to effectively interact with patients and others in educational and health care settings. Basic nonacademic qualifications required in addition to academic achievements are considered essential for admission and successful completion of the pharmacy curriculum.

Thus, candidates for the B.S. in Pharmacy Studies and for the Doctor of Pharmacy degrees must be able to perform essential functions in each of the following categories: Observation, Behavioral and Social Attributes, Intellect, Communication, and Psychomotor Skills. Upon request of the

student, the University will make good faith efforts in providing reasonable accommodations as required by law.

More information on these standards can be found in the School of Pharmacy Student Handbook.

**Honors Program.** Students in the School of Pharmacy may be eligible to participate in a variety of enrichment programs. These include independent research projects with a faculty mentor, the Honors Program, and the University Scholars Program. Each of these programs offers the motivated student a way of individualizing their intellectual environment to better meet their needs while providing distinction to their academic record. For more information on these programs, ask to speak with the Pharmacy Honors Advisor.

### School and Experiential Site Requirements

Participation in the experiential program requires direct patient contact and is completed in accordance with affiliation agreements with the experiential sites. As such, a variety of items are required to be submitted prior to attending these activities. These requirements include (but are not limited to) a physical exam, immunization titers and possible revaccination, tuberculosis testing, drug screening and background checks, to name a few. Student progression through the program depends on meeting all of the requirements of the school and site. Students must use a computer database to upload information for approval by an authorized outside vendor.

**Computer Requirements.** Students must provide their own laptop computers. Laptops must meet the minimum specifications provided on the school's website. In addition to those specifications, laptop computers must be able to operate on battery power for a minimum of four hours.

**Transportation.** Students must provide their own transportation to experiential sites during the professional program. They should allow for transportation expenses, which would include cost of gasoline and parking fees where necessary.

**Health Insurance.** All students are required to carry health insurance as stated in the University's health policy.

Any medical expenses incurred by the student will be the student's responsibility.

**Professional Liability Coverage.** All students are required to carry specific professional liability (malpractice) coverage. Although the State of Connecticut has statutory protection for students in "field placement programs" (Chapter 53 of the Connecticut General Statutes), there are sites that will not accept this as adequate protection. Therefore, the School of Pharmacy has required all students to have the blanket University malpractice coverage.

**Additional Degrees.** Students wishing to take a second degree in another school or college should consult their Advisor as early in their program as possible.

**Intern Registration.** It is mandatory that all Pharmacy students register with the Connecticut Board of Pharmacy upon enrollment into the Pharmacy professional program. Failure to receive and maintain a valid Pharmacy intern card will result in students not being allowed to participate in experiential curriculum.

**License to Practice Pharmacy.** Any request for information concerning Connecticut internship training requirements and other qualifications for examination and licensure as a pharmacist should be addressed to The Board Administration, Commission of Pharmacy, State Office Building, Hartford, Connecticut. Students seeking licensure in other states should contact the Boards of Pharmacy in those states.

## Required Courses for the Professional Degree

### I. General Education Requirements for B.S. Program

The University Senate has adopted General Education Requirements in a variety of curricula areas, which must be satisfied as part of every degree program. These requirements are listed in the "General Education Requirements" section of the *Course Catalog*. The course requirements are those of the School of Pharmacy and satisfy the University requirements.<sup>1</sup>

### School of Pharmacy Requirements

**Mathematics and Science Courses:** CHEM 1124Q, 1125Q, and 1126Q or CHEM 1127Q, 1128Q; CHEM 2443, 2444; BIOL 1107; PHYS 1201Q;

MATH 1131Q; MCB 2000 or 3010, MCB 2610; PNB 2264, PNB 2265 or PNB 2274, PNB 2275. **English Courses:** ENGL 1007, 1010, or 1011. **Social Sciences Courses:** ECON 1201; 1000-level sociology or psychology or anthropology course.

**Information Literacy Competency:** Information literacy competencies will be met through successful completion of program major courses. **Writing in the Major:** PHAR 3097W or PHRX 4001W will satisfy the writing in the major competency.

## II. Required Courses and Recommended Sequences for the Pre-Professional Years

### First College Year

**First semester:** CHEM 1127Q; BIOL 1107; ECON 1201<sup>1</sup> or GER E-Lit Course; MATH 1131Q. **Second semester:** CHEM 1128Q; ENGL 1007, 1010, or 1011; PHYS 1201Q; Arts and Humanities course from GER Content Area 1; Diversity course from GER Content Area 4.

### Second College Year

**First semester:** CHEM 2443; PNB 2264; GER W Course; GER E-Lit Course<sup>1</sup>; Any 1000 level Sociology, Psychology, or Anthropology course from Content Area 2<sup>1,2</sup>; MCB 2610. **Second semester:** CHEM 2444; PNB 2265; MCB 2000 or 3010; Arts and Humanities course from GER Content Area 1; Diversity course from GER Content Area 4.

**Minimum Total pre-professional credits: 64**

## III. Curriculum in Pharmacy for Consecutive B.S. and Pharm.D. Degrees

To be eligible to enroll in the first year fall semester PHRX courses, students must have successfully completed the pre-professional requirements, the Pharm.D. application procedures and have been admitted to the professional curriculum by the School of Pharmacy Pharm.D. Admissions committee.

### First Professional Year (37 Credits)

**First Semester:** PHRX 3000, 3002, 3006, 3008, 3009, 3030, 3050, 3060. Total credits: 20. **Second Semester:** PHRX 3001, 3003, 3007, 3031, 3032, 3040, 3065. Total credits: 17.

### Second Professional Year (36 Credits)

**First Semester:** PHRX 4030, 4031, 4040, 4041, 4050, 4063; three credits of Professional Electives. Total credits: 19. **Second Semester:** PHRX 4000, 4001W, 4042, 4043, 4044, 4062, 4065; three credits of Professional Electives. Total credits: 17.

**Total credits for Bachelor of Science in Pharmacy Studies: 137**

### Doctor of Pharmacy (73 Credits)

Students must complete two additional years to earn the Pharm.D. with a total of 210 credits.

### Third Professional Year (37 Credits)

**First Semester:** PHRX 5040, 5041, 5042, 5046, 5060, 5062; three credits of Professional Electives. Total credits: 19. **Second Semester:** PHRX 5043, 5044, 5045, 5048, 5065; three credits of Professional Electives. Total credits: 18.

### Fourth Professional Year (36 credits)

Students must have completed the B.S. in Pharmacy Studies and the first year of the Pharm. D. program.

**Rotating Professional Experiences (required):** One month (four credits) each for a total of 16 credits. Courses (direct patient contact indicated by <sup>D</sup>): PHRX 5100<sup>D</sup>, 5101, 5102<sup>D</sup>, 5103<sup>D</sup>. With the approval of the Director of Experiential Education, substitutions may be made.

**Electives (20 credits):** Minimum of five, one month each. At least two of the electives must be direct patient contact (direct patient contact indicated by <sup>D</sup>). All of the PHRX courses in the list are offered for four credits. PHRX

- 1 These courses need not be taken in the semester indicated, but must be completed during the first two years.
- 2 Any 1000-level sociology, psychology, or anthropology course. This course need not be taken in the semester indicated but must be completed during the first two years.

5104<sup>D</sup>, 5105<sup>D</sup>, 5106<sup>D</sup>, 5107<sup>D</sup>, 5108<sup>D</sup>, 5109<sup>D</sup>, 5110, 5111<sup>D</sup>, 5114<sup>D</sup>, 5115, 5116, 5117, 5118, 5119, 5120, 5122, 5123<sup>D</sup>, 5124<sup>D</sup>, 5125<sup>D</sup>, 5126<sup>D</sup>, 5128<sup>D</sup>, 5129<sup>D</sup>, 5130<sup>D</sup>, 5131<sup>D</sup>, 5132<sup>D</sup>, 5133, 5134, 5135, 5136, 5137<sup>D</sup>, 5138, 5139, 5140, 5141<sup>D</sup>, 5142<sup>D</sup>, 5143<sup>D</sup>, 5144<sup>D</sup>, 5145, 5146, 5147, 5148<sup>D</sup>, 5149<sup>D</sup>, 5150<sup>D</sup>, 5151, 5152, 5153, 5154<sup>D</sup>, 5155, 5156<sup>D</sup>, 5157, 5158<sup>D</sup>, 5159<sup>D</sup>, 5160, 5161, 5162, 5163<sup>D</sup>, 5164<sup>D</sup>, 5165, 5166, 5167<sup>D</sup>, 5195, 5199.

**Professional Development Courses (zero credit):** PHRX 5260 and 5265. Students must achieve a grade of “S” in each course to denote satisfactory completion and eligibility for graduation.

**Minimum Total credits for Doctor of Pharmacy: 210.**

**Exemption and Substitution.** Students who desire to be excused from any of these requirements or to substitute other courses for those prescribed, should consult the Office of Admissions and Student Affairs. Such exemptions or substitutions must be approved by Associate Dean for Admissions and Student Affairs of the School of Pharmacy. Any waivers or substitution for professional courses must be approved by the School of Pharmacy Curriculum Committee.

# School of Social Work

Nina Rovinelli-Heller, *Dean, Ph.D., M.S.W.*

Paula Nieman, *B.S.W. Program Director, Ph.D., MSSW, LCSW*

The Social Work major is designed to provide students with the knowledge, skills, and perspectives needed to engage in generalist social work practice. The bachelor's degree in social work (B.S.W.) is a practice based professional degree that prepares students for both entry-level practice and admission to a graduate master of social work (M.S.W.) degree program. In addition to classroom courses, the major requires 400 hours of supervised field internship experiences which provide valuable professional preparation for work with individuals, groups, families, organizations and communities. Graduates will be prepared for work in schools, healthcare, community organizations, advocacy and activism, addressing issues such as poverty, homelessness, human rights and social justice.

This major can only be completed on the Hartford Campus.

The University's general education requirements are listed in the General Education Requirements section of this Catalog. University general education requirements should be completed by the end of the sophomore year. In addition to fulfilling the University's general education requirements, all students in the School of Social Work must satisfy the following competency requirements.

**Writing Competency:** All students will be required to successfully complete one writing intensive (W) course within the School of Social Work. The W course in the major will develop writing skills specific to the content area domain, as well as be consistent with the practices of professionals in the area of social work practice.

**Information Literacy Competency:** The information literacy competency requirement for the major will be fulfilled by the completion of the W course within the School of Social Work and SOWK 3100, 3200, 3201, and 3350.

**Transportation.** Students must furnish their own transportation and cover cost of travel and parking to the field agencies.

## Admission Requirements

The School of Social Work is a professional school. Students begin their junior-senior programs after completing at least 54 credits in a school or college other than the School of Social Work. Students complete their first two years in another school or college within the University (at either Storrs or one of the regional campuses) or a two or four-year accredited college or university other than the University of Connecticut. The maximum enrollment in each program is determined by the Dean in consultation with program administrators. Applications for admission to the School of Social Work are available on the School of Social Work website at [ssw.uconn.edu/apply-for-bsw](http://ssw.uconn.edu/apply-for-bsw).

Students not currently attending the University of Connecticut must submit an additional University admission application to Transfer Admissions ([admissions.uconn.edu](http://admissions.uconn.edu)). Students transferring to the University with less than 54 credits should fulfill requirements in a school or college other than the School of Social Work and later make an application to the School of Social Work. These students initially complete only the University application. The faculty of the School of Social Work seek to actively recruit students from underrepresented groups. Admission to the School of Social Work is competitive.

The social work bachelor's program annually admits for the fall semester. Students are advised to submit a completed Application for Admission to Upper Division Programs and all supporting materials after completion of their third semester, and before February 1st, to be considered for admission for the following fall semester. Successful applicants to the social work program generally have completed sufficient credits to be eligible for consideration, submitted a resume, have written a strong essay, have earned a competitive cumulative grade point average, and have applied by the annual deadline of February 1st.

## Advisement Information

Because the major in social work takes place at the School of Social Work in the junior and senior years, prospective applicants complete two or more years of study in a school or college other than the School of Social Work. Most students participate in the services offered by the Academic Center

for Exploratory Students (ACES) during their first and sophomore years declaring a pre-social work major. Pre-social work students should seek the most recent information at the earliest opportunity. Non pre-social work students are eligible to apply for the BSW program. Admission information, including a list of faculty advisors, program guidelines and semester sequences are available on the School of Social Work's website at [ssw.uconn.edu/bsw](http://ssw.uconn.edu/bsw). Academic support is available at the following locations: The Academic Center for Exploratory Students (ACES) located in the Rowe Center on the Storrs campus, as well as the Office of Student Services in the Hartford Times Building ([advising.hartford.uconn.edu](http://advising.hartford.uconn.edu)) or the School of Social Work, both located on the Hartford campus. Students are invited to meetings each semester to discuss School of Social Work programs. Students who declare themselves as pre-social work majors should register through the Academic Center for Exploratory Students (ACES).

## Major Course Requirements

Social work majors are required to complete 52 credits in the major. These include SOWK 3000, 3100, 3101, 3200, 3201, 3250, 3350, 3501, 3502, 3503, 3700, 3701, 3800, 3801, 4100W and two electives.

Students are reminded that the University requires a total of 120 credit hours, minimum to be eligible for graduation from the University. The 54 credits required before entering the program, along with the 52 credits of Social Work major requirements, only total 106 credits. Therefore, students must register for an additional 14 credit hours to meet the minimum of 120 credit hours. It is important that students discuss course options with their academic advisor prior to finalizing course registrations.

## Bachelor's Degree Requirements

Upon the recommendation of the faculty, the degree of Bachelor of Social Work is awarded by vote of the Board of Trustees to students who have met the following requirements: (1) earned a total of 120 degree credits, (2) earned at least a 2.5 grade point average for all calculable course work, (3) met all the requirements of the School of Social Work and University General Education Requirements ([catalog.uconn.edu/general-education](http://catalog.uconn.edu/general-education)). Students must have grades of C (2.0) or higher in all field education placements.

# Ratcliffe Hicks School of Agriculture

Kristen Govoni Ph.D., *Associate Dean, College of Agriculture, Health and Natural Resources and Director, Ratcliffe Hicks School of Agriculture*

The Ratcliffe Hicks School of Agriculture confers Associate of Applied Science Degrees in Animal Science, Plant Science, and Urban Forestry and Arboriculture. This two-year program of technical and applied education is only available at the Storrs campus. The School was established in 1941 by the University of Connecticut through a bequest from Mr. Ratcliffe Hicks of Tolland, Connecticut.

Students include recent high school graduates as well as adults who are interested in continuing education or a career change. Course work offers a balance between technical and theoretical aspects of each subject with emphasis on hands-on learning.

Ratcliffe Hicks School of Agriculture graduates have the skills and knowledge to enter challenging and exciting careers. They are highly qualified for competitive positions and often manage or own businesses and production operations. Ratcliffe Hicks School of Agriculture graduates can also continue their education and pursue baccalaureate or higher degrees.

## Admission Requirements

Admission is open to qualified graduates of approved secondary schools. For required courses and units, please refer to the Admission section of this *Catalog*. Foreign language study is not required for admission into the two-year program; college preparatory level courses are recommended, but not required.

Applicants follow the same process as other undergraduate programs at UConn. Applicants submit the Common Application or the UConn Admission Application, high school transcript, SAT or ACT scores, and personal essay, which is included in the application. Applicants are encouraged to emphasize their interest, experience, and career goals when completing the essay and activities sections of the application. Applicants with prior post-secondary course work must submit official college transcripts. Applicants who are not graduates of a secondary school must present a copy of a State Equivalency Diploma and a personal statement.

Students from some New England states may be eligible to enroll in the Ratcliffe Hicks School of Agriculture at a reduced tuition rate through the New England Regional Student Program. Eligibility for Associate degree programs in Animal Science, Plant Science, and in Urban Forestry and Arboriculture are described in the Admissions section of this *Catalog*.

**Non-Degree Study.** Individuals interested in obtaining specific skills and knowledge relating to the many diverse areas of plant, forestry, and animal science may also register for Ratcliffe Hicks courses as non-degree students. Non-degree students do not have to apply for formal admission to the University.

## Scholarships

The Ratcliffe Hicks School of Agriculture offers scholarships for qualified individuals entering the two-year program. Selected applicants receive up to \$1,500 toward educational expenses in their first semester. Based on academic performance, scholarships may be renewed for three additional semesters.

Incoming students are automatically reviewed for scholarships prior to entering the program. Selection is based on academic and career-related accomplishments, and potential for continued success.

Many scholarships in Agriculture, Health and Natural Resources are available to Ratcliffe Hicks students, for more information please see: [grow.uconn.edu](http://grow.uconn.edu).

## Associate Degree Curricula

**Majors.** The Ratcliffe Hicks School of Agriculture students major in Plant Science, Animal Science, or Urban Forestry and Arboriculture.

Plant Science majors may concentrate in ornamental horticulture, turfgrass management, or sustainable crop production. Graduates pursue careers in golf course management, sports turf management, floriculture, landscape and grounds maintenance, greenhouse and garden center operations,

nursery management, interiorscaping, park and land management, public horticulture or various positions within the entire food crop production chain from field to fork.

Animal science majors focus on equine studies or production agriculture, including both dairy and livestock. Graduates seek positions in the horse industry, production enterprises, animal health, breeding and genetics, nutrition, meat science and food handling, or related industries.

Urban Forestry and Arboriculture majors focus on the care and maintenance of individual trees and urban forest tracts near buildings, roads, and other developments. This major provides students with needed vocational skills to pursue a career in arboriculture and urban forest management, including the knowledge required to sit for the CT Arborist license exam.

**Faculty Advisors.** Faculty advisors are assigned to students upon entry into the Ratcliffe Hicks School of Agriculture according to a student's major and area of special interest. Advisors assist students in the selection of appropriate courses and help them develop an individualized program that will meet educational and career goals. The Ratcliffe Hicks Director's Office and Academic Advisory Center provide additional support to faculty advisors and students.

**Registration.** Ratcliffe Hicks students are restricted primarily to Ratcliffe Hicks courses, numbered 100-999. Ratcliffe Hicks students may register for 1000-level courses listed in the "Associate Degree Requirements" section below.

Ratcliffe Hicks students must have approval of the advisor and Director to register for 1000-level courses not listed below. Ratcliffe Hicks students may not register for 2000-level or above courses or skill code courses (W, Q, E) unless approved by the Director. Inappropriate registration may result in administrative changes to a student's schedule or credit restrictions toward graduation requirements.

**Pass/Fail.** Ratcliffe Hicks School of Agriculture students who have earned at least 24 credits and are not on scholastic probation may place a course, for no more than four credits, on Pass/Fail. Credits earned from a Pass/Fail course may be used toward the total credit requirement for the Associate of Applied Science degree, but cannot be used to meet any other graduation requirement.

## Associate Degree Requirements

Upon recommendation of the faculty, the degree of Associate of Applied Science is awarded by vote of the Board of Trustees to students who have met the following requirements:

1. earned a total of 60 degree credits;
2. earned at least a 2.0 grade point average for the total number of calculable credits for which they have registered;
3. passed all courses required by the faculty of the Ratcliffe Hicks School of Agriculture; and
4. earned at least 40 credits at the University of Connecticut in Ratcliffe Hicks courses numbered 100-999. Transfer students may be eligible for an exception with approval of the Director.

All students must pass the following courses to earn the Associate of Applied Science Degree. **No single course can be used to satisfy more than one requirement.**

## General Education Requirements

General Education Requirements for Ratcliffe Hicks students differ from University General Education Requirements for baccalaureate students.

**First-Year Seminar:** SAAG 250.

**Writing:** ENGL 1004, 1007, 1010, or 1011.

**Mathematics:** MATH 1011Q or higher (based on SAT scores).

**Civic and Community Engagement:** One course from the following: ARE 1110; HIST 1501, 1502; NRE 1235; PP 1001; POLS 1602; or URBN 1300.

**Arts and Humanities:** In addition to the Civic and Community Engagement course: one course from the following; SAAG 350; ART 1000; DRAM 1101, 1110; FREN 1161, 1162, 1169, 1171, 1177; GEOG/URBN 1200; GERM 1169, 1171; HIST 1201, 1501, 1502; ILCS 1158; MUSI 1001, 1002, 1003, 1004; NRE 1235E; PHIL 1101, 1102, 1104; POLS 1002; WGSS 1104; SPAN 1001, 1002; FREN 1161, or 1162 (or other 1000-level course approved by the Ratcliffe Hicks director).

**Social Science:** In addition to the Civic and Community Engagement course: one course from the following: ANTH 1000, 1006; ARE 1110; COMM 1000; ECON 1000, 1201, or 1202; EVST 1000; GEOG 1000, 1700; HDFS 1060, 1070; POLS 1202, 1207, 1402, 1602; PP 1001; PUBH 1001; SARE 450; SLHS 1150; SOCI 1001, 1251, or 1501; WGSS 1105; or other 1000-level course approved by the Ratcliffe Hicks director.

**Other Alternatives:** Students may substitute COMM 1100; NUSC 1167; SPSS 1125 for the Social Sciences requirement.

Science and computer technology requirements for the A.A.S. degree are incorporated into courses required for the major.

## Major Requirements

### Animal Science Core

BIOL 1102; SAAS 101, 111, 112, 113, 121; SAPB 301.

### Plant Science Core

All majors must pass SAPL 120, 300, and 840.

Plant Science majors may select options in Ornamental Horticulture, Turfgrass Management, or Sustainable Crop Production.

**Ornamental Horticulture:** SAPL 410, 550, 640, 810.

**Turfgrass Management:** SAPL 110, 115, 315; SARE 460; three credits from SAPL 991.

**Sustainable Crop Production:** SAPL 101, 500, 620, 810, 991.

### Urban Forestry and Arboriculture Core

All majors must pass SAPL 120, 810; SANR 215, 255, 325, 425; SARE 460.

**Internship and Independent Study Courses.** Students may apply no more than six credits of these courses toward the minimum graduation requirement of 60 earned credits.

**Plan of Study.** Students should work closely with their advisors to select appropriate courses. Each student should prepare a tentative plan of study with an academic advisor as early as possible, outlining all courses.

A final plan of study, approved by the major advisor and the Ratcliffe Hicks School of Agriculture Director, must be filed with the Director of the School and the Degree Auditor no later than the end of the semester prior to the semester of expected graduation.

**Supplementary Scholastic Standards.** The Ratcliffe Hicks School of Agriculture follows the same academic regulations and procedures regarding scholastic standards and probation as all other schools and colleges of the University except: first semester Ratcliffe Hicks students are subject to dismissal from the University if their semester grade point average is less than 1.2.

## Supplemental Information

**Transfer to Four-Year Program.** Approximately 60 percent of Ratcliffe Hicks graduates continue their education to earn baccalaureate or higher degrees. Students must complete the A.A.S. program to transfer into the College of Agriculture, Health and Natural Resources or other baccalaureate programs at the University. Students should contact the Ratcliffe Hicks Director's Office to obtain an application and verify procedures. The Ratcliffe Hicks School will review applications for transfer and submit recommendations to the Transfer Admissions Office and the Registrar's Office for final decisions. Admission decisions will be based primarily on courses completed in the School and earned grade point average (minimum 2.7). Students transferring to a baccalaureate program at the University of Connecticut will receive transfer credit for courses based on the following criteria:

1. Ratcliffe Hicks courses (three-digit courses in SAAG, SAAS, SANR, SAPL, SAPB, SARE) are subject to the policies of the Transfer Admissions Office, i.e. earned grade must be "C" or higher; credits transfer but grades do not; course equivalency is determined by departmental review.
2. Baccalaureate courses (four-digit course numbers) and grades will be applied to baccalaureate program if the grade earned was "C" or higher, or if an exception is approved by the RHSA director.
3. Courses graded satisfactory/unsatisfactory or pass/fail do not transfer.

**Field Trips and Transportation Costs.** Many courses require off-campus field trips. Students should budget money for participation.

**University Fees and Expenses.** For fees and expenses, see statement under Undergraduate Fees and Expenses.



# Minors

A minor provides an option for students who want to add further breadth to their academic program. A minor is available only to a matriculated student currently pursuing a baccalaureate degree. Minors will consist of 12-18 credits of 2000+ level course work. Unless a higher standard is noted in the description of a specific minor program, completion of a minor requires that a student earn a "C" or better in each of the required courses for that minor. The same course may be used to meet both major and minor requirements unless prohibited by the department or program offering the minor as stated in the University catalog. Substitutions to minor requirements require the approval of the head or designee of the department or program offering the minor. The minor is recorded on the student's official transcript. Substitutions to minor requirements require the approval of the head or designee of the department or program offering the minor. All substitutions for minors in the College of Agriculture, Health, and Natural Resources must be approved at the dean's level. Substitutions for minors in the School of Engineering must be approved at the Dean's level. Substitutions for minors in the School of Fine Arts must be approved by the Director of Advising. Substitutions to minor requirements offered by departments or programs in the College of Liberal Arts and Sciences require approval by the department or program and the dean or dean's designee. A plan of study for the minor signed by the department or program head, director, or faculty designee must be submitted to the Office of the Registrar during the first four weeks of the semester in which the student expects to graduate. All available minors are listed in the "Academic Degree Programs" section and described in the "Minors" section of this *Catalog*.

## Accounting

The minor is designed to provide an opportunity for students to gain an understanding of accounting fundamentals. This minor is not available to Accounting majors.

### Requirements

Six 3-credit 2000-4000 level ACCT (or BADM) courses are required. Business students should register for the ACCT sections; non-business students should register for the BADM sections (with the exception of ACCT 2001, in which any student may enroll).

The six required courses are: ACCT 2001; ACCT 2101 (or BADM 2101); ACCT (or BADM) 3201; ACCT (or BADM) 3202; ACCT (or BADM) 3260; ACCT (or BADM 4243).

ACCT/BADM 3201, 3202, 3260, and 4243 must be taken in residence at the University of Connecticut. Education Abroad courses may not be used to meet this residency requirement.

### Additional Details

Access to courses for this minor is on a space available basis, and the School of Business cannot guarantee completion of this minor. Students may require departmental permission to register for courses in the minor. Refer to the School of Business section of this catalog for restrictions on Business minors and limits on the number of Business courses available to non-Business students.

## African Studies

Students electing this minor must complete a minimum of 15 credits and meet a language requirement.

### Course Requirements

Two courses are required from among the following courses in the Social Sciences: AFRA 3025; AFRA/HIST 3753; AFRA/POLS 3252.

One course is required from among the following courses in the Humanities: CLCS 3201 Comparative Literature: African Literature; ENGL 3318 Literature and Culture of the Third World: African Literature; FREN 3218.

Six more credits are required in courses on the lists of courses meeting the Social Sciences and Humanities requirements and/or the following courses: AFRA/HIST 2752; ARE 4305; ANTH 3512; ARTH 3760; ECON 3473; POLS 3255.

## Language Requirement

Intermediate proficiency in an approved language other than English is required for the minor. This will be either the official language of an African country, e.g. Arabic, French, Portuguese, Swahili, or a widely used African language. Requires completion of the fourth semester of a college-level language sequence or examination by a faculty instructor in the language.

The minor is administered by the Africana Studies Institute. For more information contact [africana@uconn.edu](mailto:africana@uconn.edu).

## Africana Studies

Taking as its central mission the study of peoples of African descent on the continent and in the diaspora, the Africana Studies minor seeks a nuanced and interdisciplinary understanding of the human experience. The Africana Studies minor does so through the humanities, arts, and social sciences, with particular emphasis on continuities and discontinuities across geography and time. Its broad educational objectives are to engender among all students an intellectual appreciation of black lives and their saliency for all human experience; to deepen students' critical analytic skills; and to value social equality, democracy, and humanitarianism. The Africana Studies minor strives to provide students with substantive knowledge of the black world and its linkages to national as well as pre-, sub-, supra-, and transnational processes. Students play an active role in Africana Studies Institute's mission to facilitate respect and positive intersocial relationships within the university community.

In addition to AFRA 2211, you must choose any courses from any three of the Five Curricular Areas (Black History, Black Diasporic and Global Perspectives, Race, Society and Health, Black Arts, Literature, and Culture, Black Politics and Social Justice) and one additional course from any AFRA curricular area, including variable topics, special topics, or independent study.

**Africana Studies Theories and Methods (required) AFRA 2211.**

#### 1. Black History

AFRA/HIST 3025, AFRA/HIST 3206, AFRA/ANTH 3512, AFRA/HIST 3563, AFRA/HIST 3564, AFRA/HIST 3569, AFRA/HIST 3618, AFRA/HIST 3619W, AFRA/HIST 3753.

#### 2. Black Diasporic and Global Perspectives

AFRA/HIST/LLAS 2621; AFRA/HIST 2752; AFRA/ANTH 3155; AFRA/HIST/LLAS 3208; AFRA 3224/HIST 3770; AFRA/HIST 3620.

#### 3. Race, Society, and Health

AFRA/SOCI 2250; AFRA/COGS 2345; AFRA/SOCI 2461, AFRA/SOCI 2510, AFRA/SOCI 2520; AFRA/HDFS/WGSS 3042; AFRA/PSYC 3106; AFRA/ANTH 3152, AFRA/ANTH 3320.

#### 4. Black Arts, Literature, and Culture

AFRA/ENGL2214/W; AFRA/ARTH 3050/W; AFRA/DRAM 3131/W; AFRA/DRAM 3132; AFRA/ENGL 3213/W, AFRA/ENGL 3215/W, AFRA/ENGL 3217/W; AFRA/HIST/AMST 3568.

#### 5. Black Politics and Social Justice

AFRA/SOCI/HRTS 2530; AFRA/POLS/PP 3033; AFRA/POLS 3252, AFRA/POLS 3642, AFRA/POLS 3647, AFRA/POLS 3652.

#### 6. Special, Variable and Independent Topics

AFRA 3295, 3299, 3898.

The minor is administered by the Africana Studies Institute. For information, contact Dr. Melina Pappademos at [melina.pappademos@uconn.edu](mailto:melina.pappademos@uconn.edu).

## Agricultural and Health Biotechnology

This interdepartmental minor provides students with an in-depth, multidisciplinary education in the field of biotechnology. The minor will prepare students for advanced studies and career development in applied molecular biology, as well as agricultural and health biotechnology.

### Requirements

Students must complete a minimum of 14 credits of the courses listed below. This includes one core course (Group A), a minimum of three laboratory

credits (Group B), and six credits of discipline-based fundamental courses (Group C).

**Group A: Core Courses, at least one course from:** ANSC 3323; SPSS 3230

**Group B: Laboratory Modules, at least three credits from:** PATH 3501, 4000; SPSS 3210, 3255; independent study and internship can be taken using the department's course numbers. The topic of these studies must be laboratory-based, focused on some aspect of agricultural or health biotechnology and be approved by the departmental minor advisor (a syllabus must be submitted). No more than three-credits can be used for Group B. The same course cannot count toward more than one group.

**Group C, at least six credits from:** AH 3005, 3060; ANSC 1001, 1111, 3272, 3318, 3641, 5619; DGS 3226; KINS 4500, 4510, 6094, 6520; NUSC 1165, 1645, 3233, 4236, 4250, 4260; PATH 3700, 4203, 5202, 5401, 5503, 5632; SPSS 3210, 3245, 3255, 4210.

Students must earn a grade of C (grade point 2.0) or higher in each course above or S for an S/U course. Students must earn a combined GPA of 2.5 or higher for all letter-grade courses above.

The minor is offered by the College of Agriculture, Health and Natural Resources.

## Agricultural Learning and Outreach

The minor in Agricultural Learning and Outreach is only open to students in the College of Agriculture, Health and Natural Resources. This minor provides the breadth of foundational knowledge needed in professions that involve educating others about a range of agricultural content and issues. This minor requires at least 15 credits of 2000-level or above course work.

### Education Courses

Three credits of coursework from: EDCI 1100, 2100; EPSY 1100, 2810, 3010.

### Content Courses

Three credits of 2000-level and higher coursework, with approval from the minor advisor, from each of the following departments: Animal Science, Natural Resources and the Environment, and Plant Science and Landscape Architecture.

### Applied Courses

Three or more credits of coursework from: AGNR 4500; EGEN 3200; EPSY 3020. Other leadership or related experiential courses such as internships may be used to fulfill this requirement with permission of the advisor.

Completion of this minor does not constitute state teacher certification nor can the courses transfer to a post-baccalaureate teaching program at the University of Connecticut.

This minor is offered by the College of Agriculture, Health and Natural Resources.

## American Sign Language and Deaf Culture

This interdisciplinary minor provides students with current information about ASL and the people for whom it is a primary language, the Deaf community in the U.S.

Prerequisite: ASLN 1101 and 1102 or equivalent are required but do not count toward the total credits required for the minor.

A total of 15 credits (five 3-credit courses) of 2000-level or above coursework is required.

Students enrolled in this minor are required to complete a minimum of four 3-credit courses from the following list of courses: ASLN 3292, 3299\*, 3298\*, 3305, 3306W, 3360, 3650; ASLN/WGSS 3254; ASLN/LING 3800; LING 2850, 3799\*, 3850.

An additional three-credit course may also be from the same list or a related course that is approved by the American Sign Language Studies minor advisor. No more than three credits of LING 3799, and no more than three credits of ASLN 3299 may count towards the minor. Credit earned for field study does not count towards the minor. Only one overlapping course may be used by students doing minors in both American Sign Language and Deaf Studies and Interpreting American Sign Language and English.

\*As approved by the American Sign Language Studies and Deaf Culture minor advisor.

The minor is offered by the Literatures, Cultures, and Languages Department.

## American Studies

This minor promotes an interdisciplinary understanding of the complex economic, political, and cultural structures of the United States and its place in the world.

Students must complete fifteen credits, including:

- Six credits of courses with an AMST designation, at the 2000 level or above.
- Nine credits taken from any of the courses listed under "course requirements" in the American Studies major or courses approved by the director of American Studies.

Courses used to fulfill the student's major field requirements and their related coursework for the major may also be used to fulfill the American Studies minor.

The minor is offered by the American Studies Program. For more information, contact Chris Vials, Director, at 860-486-9033.

## Analytics

To receive a minor in Analytics, a student must earn a "C+" or better in each of four 3 credit, 3000-4000 level (i) OPIM courses offered by the School of Business or (ii) CSE courses offered by the School of Engineering.

Students must complete the following core courses:

1. OPIM 3204, or CSE 4701;
2. OPIM 3203, or CSE 4502 or 5820;
3. OPIM 3301, or CSE 5095 as "Discrete Optimization."

In addition, students must complete one of the following courses: OPIM 3302, 3403, or 3603; CSE 5095 as "Computational Issues in Social Networks"; or any of the core courses listed above if not already counted toward a core requirement.

Nine credits in the Analytics minor must be unique to the minor and cannot be used to fulfill the requirements of any other major or minor. Analytics and Information Management majors may only count OPIM 3204 toward the AIM major as well as the Analytics minor.

This minor is not open to Business Data Analytics majors. Students not enrolled in the School of Business or the School of Engineering must obtain permission to take courses for the minor. Students not majoring in Computer Science and Engineering must take OPIM 3204 in residence on the Storrs campus. Refer to the School of Business section of this catalog for restrictions on Business minors and limits on the number of Business courses available to non-Business students.

The minor is offered by the School of Business and School of Engineering. For more information, contact the Undergraduate Programs Office, School of Business, room 248, or phone (860) 486-2315, or the Department of Computer Science and Engineering, Information Technology Engineering Building, Room 250, or phone (860) 486-3719.

## Animal Science

This minor provides students with an opportunity to pursue an interest in animal science.

The student must complete all of the following courses, which will total no less than 18 credits: ANSC 1001, 1111, 3122.

Students must complete a minimum of nine credits of coursework by choosing from the following courses:

- At least three credits from: ANSC 3121, 3313, or 4341; and
- At least three credits from: ANSC 2251, 2271, 3261, 3272, 3273, or 3343.
- At least 12 of the credits taken to satisfy the minor must be from courses that are not required for the student's major or other minors within the College of Agriculture, Health and Natural Resources.

Students must earn a combined grade point average of 2.5 or greater for all courses listed above.

The minor is offered by the Department of Animal Science.

## Anthropology

The requirements for this minor are at least 15 credits in Anthropology courses that include:

1. Two courses chosen from ANTH 2000, 2501, and 2502; and
2. Three additional courses at the 2000 level and above, with the exception that not more than three credits of ANTH 3090, 3093, 3095, 3098, 3099, 3522W, or 3990 may be counted toward the minor.

Students are encouraged to consult with advisors in Anthropology and in their major field to design a plan of study appropriate to their long-term goals.

The minor is offered by the Anthropology Department.

### Anthropology of Global Health

The Anthropology of Global Health minor provides students with the theoretical and methodological tools needed to analyze health from an anthropological perspective and integrate anthropological analysis into the study of global health problems and solutions. Not open to Anthropology majors or minors.

In order to complete the minor students must complete 15 credits from the following. At least 12 credits must be from the Department of Anthropology. Prerequisite: ANTH 1000 or 1006 or 1010E or 2000/W.

1. ANTH 3300 and/or ANTH 3325; and
2. At least nine credits from ANTH 2000/W, 3202W, 3302, 3304, 3320, 3326, 3327; GEOG 3240; HRTS/SOCI 3837/W; LLAS 3250; PUBH 3001; SOCI 2660. Students may use ANTH 3095, 3098 and graduate level seminars in ANTH, depending on content, towards the requirement with approval of minor advisor.

The minor is offered by the Anthropology Department.

### Arabic and Islamic Studies

The Arabic and Islamic Studies minor requires 18 credits at the 2000 level or above in Arabic and Islamic Studies (ARAB and ARIS subject areas). AP credits may not be used toward the minor.

Prerequisite: Two semesters of formal Arabic, or equivalent proficiency. Proficiency must be approved by the minor advisor.

Arabic and Islamic Studies minors courses comprise three main groups:

**Group 1 (Literature):** ARAB 3550W, 3551, 3559, 3570

**Group 2 (Culture):** ARAB 2571, 3102, 3751, 3771, 3772

**Group 3 (Language):** ARAB 2170, 3102, 3212; ARIS 3000

Note: Special Topics, Foreign Study and Independent Study courses may fit, depending on topic, any of the above groups, with advisor approval.

In addition, the following rules apply:

- A minimum of 12 of the major credits must consist of Arabic courses taken in residence. Only six may be transfer credits.
- A single course cannot satisfy more than one requirement.

Enrollment in a study abroad program in an Arabic-speaking country is not mandatory for Arabic and Islamic Studies minors. With advisor's prior consent, any of the above courses may be replaced by an appropriate ARAB or ARIS 3293 course from study abroad programs. Up to six credits taken in study abroad programs may count toward the minor. Students can enroll in either University of Connecticut sponsored or non-University of Connecticut sponsored programs.

The minor is offered by the Literatures, Cultures, and Languages Department.

## Art History

This minor provides students with an interdisciplinary understanding of the current and historical roles that the visual arts play in a range of artistic, cultural and social contexts. Students are required to complete fifteen 2000-3000 level credits in Art History drawn from the three following categories:

### Group A: Ancient, Medieval, or Renaissance Art

ARTH 3140/CAMS 3251, 3150, 3210, 3220, 3230, 3240, 3260, 3330, 3340, 3360, 3610\*, 3620\*

### Group B: Art from the 19th century to the present

ARTH 3020/W, 3035, 3050\*, 3430, 3440, 3445, 3450, 3460, 3510, 3530, 3560, 3570, 3575, 3630\*, 3640\*, 3645\*

### Group C: Art from global perspectives

ARTH 3015/W, 3050\*, 3500, 3610\*, 3620\*, 3630\*, 3640\*, 3645\*, 3720, 3730, 3740, 3745, 3760

Students interested in this minor should arrange for a meeting with the Art History Coordinator, Department of Art and Art History, School of Fine Arts.

Courses marked with an asterisk (\*) may be used to fill one, but not both, of the categories they designate. ARTH 2198, 2993, 3993 and 3995 (variable topics) may be used to fill area requirements, but only with the written approval of the coordinator of the minor. If approved, there is no limit on the number of credits from these courses that may be applied to the minor, with a change of topic.

The minor is offered by the Art and Art History Department.

## Asian American Studies

The Asian and Asian American Studies Institute (AAASI) at the University of Connecticut offers an interdisciplinary Minor in Asian American Studies. This minor reflects the comparative contours of Asian American Studies as a distinct race-based interdiscipline.

The minor requires students to complete 15 credits at the 2000-level and above by fulfilling the requirements for Groups A and B, below. AAAS 3998 can be taken repeatedly provided that the course content is varied. AAAS 3295 and 4999 require prior consent of the Minor Advisor for fulfillment of minor. Students must earn a grade of "C" or better in each of the courses applied to the minor. A maximum of three credits towards the minor may be transfer credits of courses equivalent to University of Connecticut courses.

- **Group A: Asian American Studies (Nine Credits).** AAAS 2201; AAAS/HIST 2530; AAAS/ENGL 3212; AAAS 3220/ARTH 3020; AAAS 3295, AAAS/ARTH 3375; AAAS/HIST 3531; AAAS/HIST 3845; AAAS/HDFS 3473, AAAS/HIST/LLAS 3875; AAAS 3998, 4999; HIST/HRTS 3202; SOCI 2271, 2835.
- **Group B: Comparative Ethnic Studies/Women's, Gender, Sexualities Studies (Six Credits).** AAAS/SOCI 2210; AAAS/HRTS/SOCI 2220; AAAS 3295, 3998, 4999; AFRA/ENGL 2214; AFRA/SOCI 2520; AFRA/SOCI 2530; AFRA/DRAM 3131; AFRA/HIST/HRTS 3563; AFRA/HIST 3564; ANTH 3041/LLAS 3241; ANTH 3202W; HDFS 3268; HIST/WGSS 3562; POLS 3017, 3082.

Pending the Minor Advisor's approval, students may count up to six credit hours in independent study, and a maximum of three credits in Group A may be transferred to Group B.

Consult with the Minor Advisor before completing the Plan of Study form. A copy of the approved Plan of Study must be filed with both the Asian/Asian American Studies Institute and Degree Auditing of the

Registrar's Office, located in the Wilbur Cross Building, Room 144, during the first three weeks of the semester the student expects to graduate.

### Minor Advisors for Asian and Asian American Studies Institute:

Professor Jason Oliver Chang, Director, Asian and Asian American Studies Institute, Beach Hall, Room 417 or Professor Na-Rae Kim. For more information, contact Jason Oliver Chang by email at [jason.j.chang@uconn.edu](mailto:jason.j.chang@uconn.edu) or by phone at 860-486-5717.

## Asian Studies

Completion of the minor requires students to complete 15 credits at the 2000 level and above by completion of Groups A and B.

### Group A: History and Culture

Six credits chosen from: AAAS 2136, 3212, 3375, 3531, 3578, 3808, 3809, 3812; ANTH 3202W; ARTH 3720, 3740; CHIN 3230, 3270, 3275, 3282;

DRAM 3601; ENGL 3320; HIST 2210E, 2841, 2842, 3095, 3822, 3832, 3845, 3863, 3875.

#### **Group B: Politics, Movements, and Activism**

Six credits chosen from: AAAS 2210, 2220; HIST 3202; POLS 3212, 3245, 3250, 3472; SOCI 2520, 2530.

An additional three credits can be taken from either Group A or Group B.

#### **Recommended Courses**

ARTH 1140; CHIN 1121, 1122; ENGL 1301; HIST 1801, 1805.

Students may count up to six credit hours in independent study or special topics that focus on Asian Studies with the written pre-approval of the minor coordinator. This minor is offered by the Asian and Asian American Studies Institute. Minor Advisors: Professor Jason Oliver Chang, Director, Asian and Asian American Studies Institute, Beach Hall, Room 417 or Professor Na-Rae Kim. For more information, contact Jason Oliver Chang by email at [jason.j.chang@uconn.edu](mailto:jason.j.chang@uconn.edu) or by phone at 860-486-5717.

### **Astrophysics**

The Astrophysics minor provides instruction on the core concepts underpinning our modern understanding of the Universe.

The minor requires the completion of 15 credits as follows:

- Required: PHYS 2701, 2702.
- Select three of: PHYS 2200, 4096W, 4130, 4150, 4710, 4720, 4730, 4740.

No more than six credits of these courses can be used to count for both the Astrophysics minor and a Physics major. Up to three credits of 3000-level and above courses from other departments or programs may be used to fulfill requirements of the minor, but only in exceptional circumstances and with the pre-approval of the coordinator of the minor.

The minor is offered by the Physics Department.

### **Bioinformatics**

Bioinformatics is a new field of science that results from the application of information sciences to biology. Its goals are to facilitate data storage and retrieval, and the extraction of useful information from biological data.

Students wishing a minor in Bioinformatics must take at least 15 credits of the following courses, including at least one course from each of the following four groups. A single course cannot fulfill more than one group requirement. Courses used to satisfy requirements for the student's major may be used to satisfy group requirements.

- For a major requiring credits in a concentration (in addition to core courses) or requiring 12 related credits, only related or concentration credits can be counted towards the 15 credits required in the bioinformatics minor.
- For a major that only stipulates an overall credit requirement, up to 12 credits could be used for the minor.

#### **Group A: Bio-Computing/Computer Science**

MCB 3421, 3602W, 3637, 5429, 5430; MCB 5472/EEB 5372; EEB 4100, 4230W, 5348, 5350; CSE 2102, 2300W, 3500, 3502, 3800 (BME 4800), 3810 (BME 3810), 4102, 4701

#### **Group B: Data Banks/Statistics**

STAT 2215Q, 3025Q; 3375Q and 3445 (Note: both courses must be taken to satisfy this group requirement); CSE 4701

#### **Group C: Protein Structure/Biochemistry**

MCB 2000, 3010, 3421, 4009, 5011; PNB 6420

#### **Group D: Genetics**

MCB 2400 or 2410, 3201, 3412, 3413, 3602W, 3617, 3637, 5429; EEB 5300, 5348

MCB 3895, 3899, 4896, 4989; EEB 3899, 5895; PNB 3299; CSE 4095 and 4099 can be counted towards the 15-credit requirement, if approved by a member of the bioinformatics oversight committee.

The minor is offered jointly by the School of Engineering and the College of Liberal Arts and Sciences. For the Bioinformatics minor, contact Dr. Ion Mandoiu at [ion@engr.uconn.edu](mailto:ion@engr.uconn.edu) or Dr. J. Peter Gogarten at [gogarten@uconn.edu](mailto:gogarten@uconn.edu).

## **Biological Sciences**

Students wishing to complete this minor must take at least 15 credits of 2000-level and higher courses from Ecology and Evolutionary Biology, Molecular and Cell Biology, and Physiology and Neurobiology. It is strongly recommended that at least one course include laboratory or field work. Courses chosen for the minor must include at least one course or course sequence from each of the following three groups:

- MCB 2000, 2210, 2400, 2410, 2610, or 3010.
- EEB 2244/W or 2245/W.
- PNB 2250, 2264-2265, or 2274-2275.

PNB 2264-2265 or 2274-2275 must be taken in sequence to be counted towards the Biology minor.

The minor is offered jointly by the departments of Ecology and Evolutionary Biology, Molecular and Cell Biology, and Physiology and Neurobiology and cannot be earned by students majoring in any of these departments.

## **Biomedical Engineering**

Biomedical engineering involves learning about biology in new ways and developing new tools to diagnose and treat disease and to repair or replace diseased organs. Many students select biomedical engineering to be of service to people and for the excitement of working in a health field.

Requirements: The minor requires a minimum of 15 credit hours of course work. The following courses are necessary to fulfill the requirements of the minor:

- BME 2101
- 12 credits selected from BME 3000-level courses, BME 4000-level courses (BME 4999, Independent Study, may not be used to meet the minor requirement) CSE 3800, 3810; MSE 3700 or 4701.

The minor is offered by the Biomedical Engineering Department.

## **Business Fundamentals**

Students majoring in the School of Business may not earn this minor. Refer to the School of Business section of this catalog for restrictions on Business minors and limits on the number of Business courses available to non-Business students.

Requirements: To receive a minor in Business Fundamentals, a student must complete five (5) three credit, courses offered by the School of Business. Courses other than ACCT 2001 and BADM 2101 (or ACCT 2101) must be at the 3000/4000 level.

Required courses: ACCT 2001; any three of the following courses: BADM 2101 (or ACCT 2101); BADM 3720 (or BLAW 3175); BADM 3730 (or FNCE 3101); BADM 3740 (or MENT 3101); BADM 3750 (or MKTG 3101); BADM 3103 (or OPIM 3103); BADM 3104 (or OPIM 3104); and one additional three credit, 3000/4000-level Business course.

Students must complete five classes from at least four of the following subject areas: ACCT, BLAW, FNCE, HCMI, MENT, MKTG, and OPIM. Classes taken as BADM will count toward the corresponding subject areas of their equivalent course.

Credits from internships cannot be used to satisfy requirements of the Business Fundamentals minor.

Courses designed for students pursuing this minor can be found in the Business Administration (BADM) course description section of the *Catalog*. Other courses offered to business majors may be available to students pursuing a Business Fundamentals minor, but students will typically require departmental permission to register for those classes. Students should also note that they must meet all prerequisites for those classes. Access to courses for this minor is on a space available basis, and the School of Business cannot guarantee completion of this minor.

The minor is offered by the School of Business. For more information, contact the Undergraduate Programs Office, School of Business, room 248 or phone 860-486-2315. Permission number requests for these courses can be found at [undergrad.business.uconn.edu/advising/forms](http://undergrad.business.uconn.edu/advising/forms).

## Business Management and Marketing

The minor will provide an overview of marketing, management, and financial principles and concepts in applied business and economics. Analytical and applied decision-making skills are emphasized.

Students wishing to minor in Business Management and Marketing must take a total of at least 15 credits from the courses listed below. At least nine credits must be taken from the Core Courses and at most six credits must be taken from the Elective Courses.

**Core Courses** (nine or more credits): ARE 2210, 2215, 3221, 3222, 3223.

**Elective Courses** (at most six credits): ARE 2260, 2464, 3225, 3333, 4205, 4217, 4279, 4476; Additional Elective Courses with Minor Advisor Approval (up to three credits): ANSC 3452, 4662W; ARE 4999; ECON 2411; SPSS 3540.

*Note:* ARE 1150 or ECON 1201 may be a prerequisite for some 2000-level or above Agricultural and Resource Economic courses. Other courses listed may have additional prerequisites as well.

Students must earn a grade of "C" (2.0) or higher in each individual course listed above. Students must earn a combined grade point average of 2.5 or higher for all courses listed above. This minor is not open to Applied and Resource Economics majors who are concentrating in Business Management and Marketing.

The minor is offered by the Department of Agricultural and Resource Economics.

## Cannabis Cultivation

The minor in Cannabis Cultivation provides training pertaining to the propagation, cultivation, commercial production, maintenance, processing, and potential markets for and uses of Cannabis Sativa.

### Requirements

All students are required to complete a minimum of 15 credits including:

#### Core Courses:

- SPSS 2130 (three credits)
- SPSS 3680 (three credits)
- One of the following: SPSS 3990 (three credits)\* or SPSS 3999 (three credits)\*\*

\*The field study internship topic and company/grower with whom the student will intern needs to be approved by an advisor for this minor. This course is intended to provide students with experiential learning opportunities and exposure to jobs in the cannabis industry. An advisor for the minor can assist students with setting up the internship.

\*\* Independent study with available faculty member conducting cannabis research.

In addition, all students are also required to complete a total six credits listed below out of the options provided, three credits from Plant/Soil Cultivation group and three credits from Pest Management group.

#### Plant/Soil Cultivation (select one)

- SPSS 2120 (three credits)
- SPSS 3640 (three credits)
- SPSS 3670 (three credits)

#### Pest Management (select one)

- SPSS 3810 (three credits)
- SPSS 3830 (three credits)
- SPSS 3840 (three credits)

At least 12 credits taken for this minor must not duplicate courses used to satisfy the 36-credit requirement for the student's major, or for another minor in the College of Agriculture, Health, and Natural Resources. Students must earn a combined grade point average of 2.5 or higher for all courses listed above.

The minor is offered by the Plant Science and Landscape Architecture Department.

## Chemistry

Students taking this minor must take at least 15 credits of 2000-level or above Chemistry courses. The following courses are required: CHEM 2443, 2444, and 2445\*; CHEM 3332.

\*CHEM 2446 may be used in place of CHEM 2445 by Chemical Engineering and Biomedical Engineering majors only.

Further, students must take one course from the following list: CHEM 3210, 3334, 3442W, 3563, 3564, 3661.

The minor is offered by the Chemistry Department.

## Chinese

This minor requires a minimum of 15 credits of Chinese courses at the 2000 level or above.

### Requirements

- One required course: CHIN 3210
- Two language courses from the following: CHIN 3171, 3211, 3220, 3240, 3250W, 3260
- Two content courses from the following: CHIN 3171, 3220, 3230, 3250W, 3260, 3270, 3271, 3275, 3282

With the advisor's consent, any of the above courses may be replaced by an appropriate course from study abroad programs. AP credits may not be counted toward the minor. Up to six credits taken in study abroad programs may count toward the minor.

The minor is offered by the Literatures, Cultures, and Languages Department.

## Classics and Ancient Mediterranean Studies

This minor allows students to pursue an interest in Greek, Latin, Biblical literature, history, art, and philosophy through an organized course of study. Students who wish to work in the original language may elect to do so as well. Students electing the minor must complete a minimum of 15 credits from the following:

- At least two courses on Classical or Biblical literature: courses in English: CAMS 3241W, 3242W; INTD 3260; CAMS 3207, 3208, 3211, 3212, 3213, 3221, 3224, 3225, 3226, 3227, 3293\*, 3295\*, 3298\*, 3299\*; courses involving reading in Greek and/or Latin: CAMS 3101, 3102, 3232, 3293\*, 3298\*, 3299\*.
- At least one course dealing with the ancient world more generally: CAMS 2020, 3244, 3245, 3251, 3254, 3257/W, 3293\*, 3295\*, 3298\*, 3299\*, 3301, 3320, 3321, 3325, 3326, 3330, 3335, 3340, (These may be cross-listed under Art History, History, Hebrew and Judaic Studies, and Philosophy); HEJS 3201.

\*May count toward minor only with consent of advisor.

The minor is offered by the Literatures, Cultures, and Languages Department.

## Climate Science

Students must complete at least 15 credits from the courses listed below. At least one course must come from the list of Climate in Social Sciences courses and at least three courses must come from the list of Climate in Natural Sciences.

#### Climate in Social Sciences

- ANTH/EVST 3340E;
- ARE 4444;
- ENVE/ENVS/EVST 3100;
- ENVE 4850;
- GEOG 2320E, 2400E, 3350, 4240;
- MARN 2801WE;
- POLS 3240E;
- SOCI 2701E/WE, 2709E/WE.

#### Climate in Natural Sciences

- CHEM 4370;
- EEB 2100E;

- ENVE 3230, 4810;
- ERTH 2800, 4430, 4560, 4720, 4810, 4850;
- GEOG 2300E, 3400, 4300;
- MARN 3000E, 4052, 4060;
- NRE 3115, 3145, 3146, 4170.

The minor is offered by the College of Agriculture, Health and Natural Resources, the College of Liberal Arts and Sciences, and the School of Engineering.

## Cognitive Science

Cognitive Science is the interdisciplinary study of mind and intelligence, bringing together course content from Psychology; Linguistics; Artificial Intelligence; Anthropology; Speech, Language and Hearing Sciences; Neuroscience; and Philosophy. While available with any undergraduate major, the minor in Cognitive Science is especially appropriate for majors in the fields listed above.

### Requirements

To earn a minor in Cognitive Science, students must complete 15 credits at the 2000 level or above. COGS 2201 is required, plus four additional courses coming from at least three areas (A through F). No more than two courses may be counted from any one department.

- Cognition: ANTH 3250; CSE 4705; PHIL 3247/W, 3250/W; PSYC 2500, 2501
- Language: LING 3610W; LING 2010Q; PHIL 3241; PSYC 3500
- Perception: PHIL 3256/W; PSYC 3501, 3502
- Development: PSYC 2400; PSYC 3470/W or SLHS 2204; SLHS 4254/W, 4376
- Neuroscience: PHIL 3249W; PNB 3251; PSYC 2200, 3270; SLHS 4245/W
- Formal Systems: CSE 2500, 3502; LING 3000Q, 3310Q, 3410Q, 3511Q; PHIL 2211Q, 3214

The minor is offered by the College of Liberal Arts and Sciences. For the Cognitive Science minor, contact Prof. William Snyder, Director of Undergraduate Studies in Cognitive Science, Oak Hall, Room 350.

## Communication

Students wishing to complete this minor must take at least 15 2000-level or above credits in COMM courses, these must include:

- COMM 2000Q or 2010Q, or equivalent research methods course. Most students complete this requirement by taking COMM 2000Q. If an equivalent research methods course is used, 15 credits in 2000-level or above COMM courses are required. Students using an equivalent research methods course must still meet the pre-requisite requirement of COMM 2000Q to enroll in the following advanced courses: COMM 4200/W, 4300/W, 4501, 4510, 4982, and 4996.
- At least two from the following Core courses: COMM 2100, 2200, 2300, 2500, and 2600. Students are encouraged to take three or more core courses.

Students in this program do not receive priority registration for Communication courses. The minor is offered by the Communication Department. The Minor Plan of Study form is available in the Arjona Building, Room 245 or from the department website: [communication.uconn.edu/undergrad/undergrad-program-info/comm-minor](http://communication.uconn.edu/undergrad/undergrad-program-info/comm-minor).

## Computer Science

The minor program in Computer Science addresses a growing demand for professionals who have both strong discipline-specific knowledge and substantial competency in computer science. The minor program in Computer Science is intended to educate non-computing majors in the core computer science topics of programming and data structures, plus other advanced computer science coursework that fits the student's interests.

Fifteen credits are necessary to fulfill the requirements of the Computer Science minor. All students must pass either CSE 2050 or 2100. The additional 12 credits in CSE courses must be from courses numbered 2000 or higher.

The minor is not open to students majoring in Computer Science and Engineering, Computer Science, or Computer Engineering.

The minor is offered by the Computer Science and Engineering Department. For more information, contact the CSE Office at 860-486-3719 or [engr-csoffice@uconn.edu](mailto:engr-csoffice@uconn.edu).

## Construction Engineering and Management

The Construction Engineering and Management minor exposes engineering students to the fundamentals and applications of construction engineering and management. It includes principles of construction engineering and management, including project management, scheduling, life cycle cost analysis, construction principles, and project financing. Application projects throughout will help reinforce the principles and theory.

The minor requires the completion of 15 credits including as follows:

**Group I** (Required course): CE 3220;

**Group II** (Elective courses): Twelve or more credits from the following list of Construction Engineering and Management minor electives: AH 3275; BADM 3104, 3720, 3730; CE 4210, 4220; FNCE 3101; OPIM/BADM 3603. Group II courses can simultaneously be used towards the student's major requirements.

This minor is offered by the Civil and Environmental Engineering Department.

## Crime and Justice

The purpose of the minor is to introduce students to the interdisciplinary study of crime and justice. Students pursuing this minor will be able to explore how crime is defined, what its causes are, what its impact is, and how social, political, and legal institutions shape and respond to it.

### Requirements

Eighteen credits at the 2000-level or higher are required:

- Three credits each from Group 1 (Crime and Justice), Group 2 (Deviance and Violence), and Group 3 (Law).
- Six additional credits from any of the Groups 1, 2, and 3.
- Three credits of approved internship or field experience (Group 4) in one of the institutions of the criminal justice system or an agency that interacts on a day-to-day basis with such criminal justice system institutions.

Variable topics, special topics, and education abroad courses may be used to meet the requirements of the minor when these focus on the theme of the minor. Approval by the minor advisory group is required.

A maximum of six credits in the minor may be part of the major; minor courses may contribute to the related field courses of the major with the major department's consent.

#### 1. Crime and Justice

HIST 2810; POLS 2998 (when offered as "Criminal Justice in Practice"), 3827; SOCI 2301, 2310; SOCI/WGSS 3317.

#### 2. Deviance and Violence

HDFS 3420; PSYC 2300; SOCI 2305, 2320; WGSS/HRTS 2263.

#### 3. Law

HDFS 3520, 3540; PHIL 3226; POLS 3807, 3817; SOCI 3823.

#### 4. Internship

HDFS 3080; INTD 3590; POLS 3991; PSYC 3880; SOCI 3990 (two credits) and SOCI 3991 (one credit); URBN 3991 (two credits) and URBN 3981 (one credit); another 2000-level or higher internship or field experience course approved in advance by a minor advisor.

The minor is administered by the Individualized and Interdisciplinary Studies Program (IISP), Rowe 419. A list of Crime and Justice minor advisors from participating departments can be found on the IISP website.

## Culture, Health, and Human Development

The minor in Culture, Health, and Human Development (CHHD) is an interdisciplinary minor that fosters an integrative cultural perspective on human development and health, including issues related to diversity both within and across various populations. By providing students an opportunity to explore systematic relationships among culture, health, and human development, the minor can address gaps between the traditional

disciplines. It is intended to improve understanding and respect across perceived cultural, racial, and ethnic boundaries, and to encourage culturally informed approaches in the social and health services.

Fifteen credits at the 2000-level or above are required for the CHHD minor, to be chosen from the courses listed below. No more than six credits can be applied from any one category: culture, health, or human development. Further, students can count toward this minor no more than six credits in their major. Other credit restrictions may apply by major.

**Category 1: Culture:** AAAS 2200, 2201, 2210; AFRA 2250, 2510; AH 2330, 4501, 4503; ANTH 3202W, 3251, 3300, 3325; COMM 3220, 3222, 3321, 3322, 4411; FREN 3210; GERM 3251; HDFS 2001, 3141, 3310, 3421, 3442, 3473, 3550, 5020; HRTS 2170W; LLAS 3264, 3250, 3322, 3470; NURS 2175; PHIL 2170W; PSYC 2101, 2701; SLHS 4123, 4254; SPAN 3204; WGSS 2124, 2263, 3105, 3257, 3260.

**Category 2: Health:** AFRA 2250; AH 2330, 4501, 4503; ANTH 3202W, 3300, 3325; HDFS 3442, 5020; HRTS 2170W; LLAS 3250; NURS 2175; NUSC 2200; PHIL 2170W; SLHS 4123, 4254; WGSS 2124, 2263, 3105, 3257.

**Category 3: Human Development:** HDFS 2001, 3141, 3310, 3421, 5020; NUSC 2200; SLHS 4123, 4254.

The CHHD minor is organized by the Center for the Study of Culture, Health, and Human Development, and managed by the Department of Human Development and Family Sciences.

## Dairy Management

This minor provides interested students with an in-depth exposure to all aspects of dairy farm management. Students will have the opportunity to manage a portion of the UConn dairy herd and be responsible for daily activities and short and long-term decision-making. All students are required to complete 18 credits from the following courses: ANSC 3261, 3663, 4662W; ARE 2215, 4217; PATH 2301. At least 12 of the credits taken to satisfy the minor must be from courses that are not required for the student's major or other minors within the College of Agriculture, Health and Natural Resources.

Students must earn a combined grade point average of 2.5 or higher for all courses listed above.

The minor is offered by the Department of Animal Science.

## Development Economics and Policy

The minor will provide an overview of the core issues in international and U.S. economic development. Special focus is given to practical analysis and real-world problems. Students wishing to minor in Development Economics and Policy must take a total of at least 15 credits from the courses listed below. At least nine credits must be taken from the Core Courses and at most six credits must be taken from the Elective Courses.

**Core Courses** (nine or more credits): ARE 2260, 2464, 3305E, 4279 or 4476, 4305.

**Elective Courses** (at most six credits): ARE 2434E, 3333, 4444; ECON 2474 or 3473.

**Additional Elective Courses with Minor Advisor Approval** (up to three credits): ANTH 3325; ARE 4999; GEOG 3200; POLS 3406; WGSS 2267.

*Note:* ARE 1150 or ECON 1201 may be required for some 2000-level or above ARE courses. Other courses listed may have additional prerequisites as well.

Students must earn a grade of "C" (2.0) or higher in each individual course listed above. Students must earn a combined grade point average of 2.5 or higher for all courses listed above. This minor is not open to Applied and Resource Economics majors who are concentrating in Development Economics and Policy.

## Digital Arts

This 15-credit interdepartmental minor provides students with an interdisciplinary education in the field of digital arts. Students in this minor must complete FINA 3510 and 12 additional credits at the 2000 level or above (a minimum of six credits must be at the 3000 level or higher). No more than six credits may be taken from any one academic department.

Courses to be selected from the following:

- ART 2011, 2410, 3130, 3131, 3132, 3410;

- ARTH 3570;
- DMD 2010, 2200, 2300, 2500;
- DRAM 3220, 4705, 5511, 5316;
- MUSI 3341, 3777.

A maximum of six credits of ART 3995, 3999; DMD 3099; DRAM 3199, 4194; or MUSI 3982, 4995, 4999 may be used to fulfill requirements of the minor, but only with the written pre-approval of the coordinator of the minor. The minor is offered by the School of Fine Arts.

*The Digital Arts Minor is not currently accepting new students.*

## Digital Humanities

The Digital Humanities Minor within the Digital Media and Design Department/School of Fine Arts provides undergraduates majoring in humanities disciplines from across the University with a grounding in the digital methods and approaches relevant to humanities scholarship. Students accepted to this highly selective minor must be rising juniors (or above) with a 3.4 GPA or better. Successful applicants will also demonstrate a working knowledge of at least one of the following: web design and development, image/video/sound editing, web content management, web writing and editing, statistical analysis, or similar skill areas. Accepted students are restricted to no more than 12 credits of coursework offered by DMD. Students majoring in non-humanities disciplines may not earn this minor.

**Requirements:** Four 3-credit courses are required for the minor: DMD 2010, 2020, 2610, and a course in advanced practice in digital culture, learning, and advocacy.

Transfer credits, Education Abroad credits, and credits from internships cannot be used to satisfy requirements of the minor. Access to courses for this minor is on a space available basis, and the Digital Media and Design Department and School of Fine Arts cannot guarantee completion of the minor.

## Digital Marketing and Analytics

The minor is designed to offer a basic understanding of digital marketing and analytics topics. This minor is not available to Marketing majors.

**Requirements:** Four 3-credit 3000/4000 level MKTG (BADM) courses are required. Business students should register for the MKTG sections; non-business students should register for the BADM sections.

The four required courses are:

- MKTG 3101 (BADM 3750);
- MKTG 3661 (BADM 3661);
- MKTG 3665 (BADM 3665);

and one 3000/4000-level MKTG course.

MKTG 3661 (BADM 3661) and MKTG 3665 (BADM 3665) must be taken in residence at the University of Connecticut. A minimum of nine credits for this minor must be earned in residence at the University of Connecticut. Education Abroad courses may not be used to meet this residency requirement.

**Additional Details:** Students must meet all prerequisites before registering for a course. Access to courses for this minor is on a space available basis, and the School of Business cannot guarantee completion of this minor. Students may require departmental permission to register for courses in the minor.

Refer to the School of Business section of this catalog for restrictions on Business minors and limits on the number of Business courses available to non-Business students.

## Digital Public History

Digital Public History (DPH) is an interdisciplinary minor that prepares students for digitally-informed work in public history and adjacent fields at museums, libraries, historical societies and other cultural organizations. The minor is designed for students majoring in History or Digital Media and Design (DMD). Students gain technical skills in disciplines such as web design, game design, video, or animation; historical content expertise and a grounding in the critical thinking methods of the humanities; and rich opportunities to build portable portfolio pieces and work histories through experiential learning in the classroom and external internships.

Students undertaking the minor must complete three prerequisite courses for a total of nine credits.

For History majors, the three prerequisites are: DMD 1101 and two 2000/3000-level technical specializations courses (e.g. in Web/Interactive Media Design, Digital Film/Video Production, Game Design, or Motion Design and Animation; with advisor approval, students may substitute other courses).

For Digital Media and Design majors, the three History prerequisites are: HIST 2100 and two 2000/3000-level History courses in one Group (A, B, C, or D). With advisor approval, students may substitute other courses.

Students must work closely with the DPH minor advisor to select their History and DMD technical specialization requirements.

Students undertaking the minor must also complete the following five courses for a total of 15 credits: HIST 3102; DMD 3610/HIST 3103; DMD 3620/HIST 3104; three credits of a Digital Public History internship or HIST 3880; DMD/HIST 4640.

Students may not use more than six credits of the following courses to fulfill both requirements for the History major and the Digital Public History minor: DMD 3610/HIST 3103; DMD 3620/HIST 3104; HIST 3880; HIST 3991; DMD/HIST 4640.

## Diversity Studies in American Culture

Students should consider taking appropriate 1000-level courses in preparation for junior-senior level coursework in Diversity Studies. These might include SOCI 1501/W, as well as ENGL 1601W; HIST 1203; PHIL 1107; PSYC 1100 and 1101/1103; WGSS 2204, and 1105.

**Requirements:** 15 credit hours. No more than one course in Diversity Studies can be counted towards both the student's major and the Diversity Studies in American Culture minor. No more than two courses may be taken within a single subject area. Classes not listed below, such as three-credit "Special Topics" courses, may be used to fulfill Diversity Studies requirements with the approval of the Director of Diversity Studies in American Culture. (If possible, students should seek such permission before taking the course).

One required three-credit course: INTD 2245

- A. Students must take four courses which must include at least one from each category to fulfill the remaining twelve credits. (Please note that some of these courses have prerequisites).
- B. To fulfill the twelve remaining credits, students must take four courses which must include at least one from each of the following categories:
  1. Gender, Physicality, and Sexual Identities: AAAS/SOCI 2210; DRAM 3130; ENGL 3609, 3613; HDFS 2001, 3261; POLS/WGSS 3052; LLAS 3231/WGSS 3259; LLAS 3251/HDFS 3268; PSYC 3102/WGSS 3102/W; SOCI/WGSS 2680/W, 3453; SOCI 3601/W; WGSS 2267, 3252, 3269
  2. Ethnicity, Culture, and Race: AAAS 3201; AAAS/ENGL 3212; AFRA/DRAM 3131/W; AFRA/SOCI 2510; ENGL 3605/LLAS 3232; ENGL 3607/LLAS 3233; ENGL 3210, 2214, 3218W; LLAS 3210; LLAS 3230/WGSS 3258; PSYC/AFRA 3106/W, PSYC 2101, 2701; SOCI 2510W; SOCI/AFRA/HRTS 2520, 2530; SOCI 2503/W
  3. History and Politics: HIST 2570; HIST/WGSS 3562; HIST/AFRA/HRTS/3563; HIST/AFRA 3564; HIST/AAAS 3531; HIST 3674/LLAS 3220; HIST 3575/LLAS 3221/HRTS 3221; HIST 3530/AAAS 3578; POLS/AFRA/WGSS 3652; POLS/AFRA 3642; POLS 3662/LLAS 3270; SOCI/HRTS 2830/W

The minor is offered by the College of Liberal Arts and Sciences. For more information, contact Katharine Capshaw at [capshaw@uconn.edu](mailto:capshaw@uconn.edu).

## Dramatic Arts

Students wishing to complete this minor must fulfill the following requirements:

1. Students must complete a minimum of 18 credits in DRAM courses, at least 12 of which must be at the 3000 or 4000 level.
2. Students must complete work on at least one production crew (costume, sound, lighting or set-running) by completing one semester of either DRAM 1216, 1217, 1218, or 1282.

3. The remainder of the minor must be selected from: DRAM 1201, 1202, 1216 (if 1282 fulfills the production crew requirement), 1217 (if 1282 fulfills the production crew requirement), 1218 (if 1282 fulfills the production crew requirement), 1710, 2130, 2131, 2134, 2141, 2711, 2712, 2800, 2902, 3103, 3121, 3130, 3131, 3132, 3133, 3137, 3138, 3139, 3141, 3142, 3199 (only with written pre-approval of the minor coordinator), 3201, 3202, 3220, 3301, 3302, 3401, 3402, 3501, 3502, 3601, 3602, 3603, 3604, 3605, 3607, 3608, 3609, 3611, 3721, 4122, 4135/W and 4711W.

The minor is offered by the Dramatic Arts Department.

## Ecology and Evolutionary Biology

Students wishing to complete this minor must take at least 15 credits of 2000-level (or higher) EEB courses, which must include both 2244 (or 2244W) and 2245 (or 2245W).

The minor is offered by the Ecology and Evolutionary Biology Department.

## Economics

Students wishing to minor in Economics must complete 15 credits at the 2000 level and above, including ECON 2201 or 2211Q; ECON 2202 or 2212Q; and one course numbered 2301Q-2328 or at the 3000 level or above. ECON 2481 does not count toward fulfilling the minor requirements.

The minor is offered by the Economics Department.

## Electronics and Systems

This minor requires at least 15 credits of course work. The minor is not open to students who are pursuing majors in electrical engineering, computer engineering, or engineering physics.

Course requirements are as follows:

- A. ECE 2001/W
- B. ECE 3101 or BME 3400
- C. Three additional courses from CSE 2300W, 2301; or 2000-level or above ECE courses

The minor is offered by the School of Engineering. For information about the Electronics and Systems minor, contact John Chandy at [john.chandy@uconn.edu](mailto:john.chandy@uconn.edu).

## Engineering Management

To receive a minor in Engineering Management, a student must earn a "C" or better in each of four (4) three-credit courses. Students must complete the following courses:

- One course from the following list on project management: OPIM 3801, 3512, or 5270.
- One course from the following list on operations and production: BADM 3104 (or OPIM 3104) or ME 3222.
- Two courses from the following list on managerial and operational topics: MEM 2211, 3221; MENT 3225; BADM 3234 (or MENT 3234); BADM 3235 (or MENT 3235); MGMT 3236, 3237, 3238, 3239; ENGR 3500 (or MENT 3500); or ENGR 3501 (or MENT 3501).

The minor is offered by the School of Business and School of Engineering. Management and Engineering for Manufacturing Majors cannot earn this minor. School of Business Majors cannot earn this minor.

For more information and to declare the minor, contact the Undergraduate Programs Office in the School of Business. Access to courses for this minor is on a space available basis, and the School of Business cannot guarantee completion of this minor. Students may require departmental permission to register for courses in the minor. Refer to the School of Business section of this catalog for restrictions on Business minors and limits on the number of Business courses available to non-Business students.

## English

Students wishing to complete this minor must take at least 15 credits of English courses at the 2000-level or above.

Students are advised to consult the tracks listed for the major as models for an optional focus.



No more than three credits each of ENGL 3091, 3693, and transfer credit may count toward the minor. ENGL 2011 may not count toward the minor. The minor is offered by the English Department.

## Entertainment Engineering

This minor teaches engineering principles for the design of products that are used in productions of the Department of Dramatic Arts. The minor focuses on developing safe, creative, and functional stage effects and machines through student-led projects.

Students must complete 12 credits at the 2000-level or above. Appropriate courses will be determined in consultation with and pre-approved by the Entertainment Engineering Minor Coordinator.

The Entertainment Engineering Minor is offered by the School of Fine Arts. Students interested in the minor must meet with the Entertainment Engineering Minor Coordinator to develop an initial plan of study and fill out and submit the Entertainment Engineering Minor Declaration Form.

## Entrepreneurship

This minor creates an opportunity for undergraduate students to develop essential skills in entrepreneurial thinking and new venture creation. This minor is not available to Management majors.

### Requirements

To receive this minor, a student must complete four (4) three credit, 2000-level or above courses with entrepreneurship content. As part of the four courses required for the Entrepreneurship minor, at least two must be from the following list of MENT or BADM core entrepreneurship courses offered by the Management Department:

1. BADM/MENT 2234;
2. BADM/MENT 3234;
3. BADM/MENT 3235;
4. BADM/MENT 3741;
5. BADM/MENT 3742;
6. BADM/MENT 4741;
7. BADM/MENT 4742;
8. BADM/MENT 4895 when offered as Intro to Venture Capital or Student Managed Venture Fund.

Students must complete two more three-credit 3000-level or above courses with entrepreneurship content approved by the Management Department. These courses can be any of the core courses listed above, if not already counted toward a core requirement, or Management department-approved courses with entrepreneurship content from a list. For more information, contact the Undergraduate Programs Office, School of Business, Room 248, undergrad.business@uconn.edu, phone (860) 486-2315, or the Management Department, School of Business, room 336, mgmt@business.uconn.edu, phone (860) 486-3638.

Courses towards the minor may not be simultaneously used towards another minor, and only one class used to satisfy this minor may be simultaneously used towards the student's major requirements.

Credits from department approved internships focused on entrepreneurship may be used to satisfy the two additional three-credit, 3000/4000-level courses for the minor.

Refer to the School of Business section of this catalog for restrictions on Business minors and limits on the number of Business courses available to non-Business students. Access to courses for this minor is on a space available basis, and the School of Business cannot guarantee completion of this minor.

The minor is offered by the School of Business. For more information, contact the Management Department, School of Business, phone 860-486-3638. Permission number requests for these courses can be found at: undergrad.business.uconn.edu/forms.

## Entrepreneurship and Technology Innovation

This minor is jointly offered by the School of Business and the School of Engineering to expose students to the fundamentals of entrepreneurship and technology innovation, with a focus on the product design process, business principals required for viable startups, and physical prototyping.

## Requirements

To receive a minor in Entrepreneurship and Technology Innovation, a student must complete four 3000/4000 level course including the required courses. Engineering students who elect to use their first semester of senior design to satisfy these requirements will only be required to complete 11 total credits if that course is a two-credit course. All other students would take 4 three-credit courses.

### Group 1: Required Courses

ENGR/MENT 3500 and 3501 (six credits)

### Group 2: Elective Courses

Five-six credits selected from the following courses: ACCT 4204, 4261; BADM/BLAW 3678, 3681; BADM/MENT 3234, 3235; BADM/MKTG 3625, 3753; BME 4900, BME 6086/BADM 5894/ MENT 5895; CE 4900W, 4901W; CHEG 4140; CSE 4939W, 4950; ECE 4901; ENGR 3195 when offered as "Innovation Zone Projects"; ENVE 4910W; FNCE 4319, 4430; ME 4972; MEM 4225, 4971W; MENT 3236, 3982, 4271, 4895 when offered as "Managing Creativity and Innovation"; MKTG 4362; MSE 4901W; OPIM 3401, 3507.

Engineering students may use the first semester of the senior design course as approved on their major plan of study, and may only do so with a project approved by the director of the Entrepreneurship and Technology Innovation Minor or the Associate Dean for Undergraduate Education.

Group 1 and 2 classes may not be simultaneously used towards another minor, and only one class used to satisfy this minor may be simultaneously used towards the student's major requirements. Credits from internships cannot be used to satisfy requirements for the minor. Substitutions of Engineering classes are allowed but must be approved by the Associate Dean for Undergraduate Education. Substitutions of Business classes are allowed but must be approved by the Associate Dean for Undergraduate Programs.

Refer to the School of Business section of this catalog for restrictions on Business minors and limits on the number of Business courses available to non-Business students. Access to courses for this minor is on a space-available basis, and the School of Business and the School of Engineering cannot guarantee completion of this minor.

For more information, contact the Peter J. Werth Institute for Entrepreneurship and Innovation by phone at 860-486-4299 or by email at kathy.rocha@uconn.edu.

## Environmental Economics and Policy

The minor will provide an overview of key concepts and methods used by economists to analyze problems associated with human use and misuse of natural resources and the environment and to evaluate policy options for better management of these resources for current and future generations.

Students wishing to minor in Environmental Economics and Policy must take a total of at least 15 credits from the courses listed below. At least nine credits must be taken from the Core Courses and at most six credits must be taken from the Elective Courses.

**Core Courses** (nine or more credits): ARE 2434E, 3438E, 4438E, 4444, 4462E.

**Elective Courses** (at most six credits): ARE 2235, 2464, 3305E, 3333, 3436, 3437E, 4305; ECON 2467E or NRE 3245E. Additional Elective Courses with Minor Advisor Approval (up to three credits): ARE 4999; EVST 3100 or ENVE 3100 or ENVS 3100, EVST 3110E or ENVE 3110E or ENVS 3110E; GEOG 2400E; NRE 2600E.

*Note:* ARE 1150 or ECON 1201 may be required for some 2000-level or above Agricultural and Resource Economic courses. Other courses listed may have additional prerequisites as well.

Students must earn a grade of "C" (2.0) or higher in each individual course listed above. Students must earn a combined grade point average of 2.5 or higher for all courses listed above. This minor is not open to Applied and Resource Economics majors who are concentrating in Environmental Economics and Policy.

The minor is offered by the Department of Agricultural and Resource Economics.

## Environmental Engineering

This minor can significantly enhance and strengthen the educational experience of students to provide a firm basis for understanding the impact of human activity and pollutants on the environment as well as the need for environmentally sound manufacturing processes and sustainable development.

It requires completion of 18 credits including the following:

1. An approved *Plan of Study* and ENVE/CE 2310E; ENVE 3220, 3230, 4310.
2. Six elective credits chosen as follows:
  - a. Any 3000 level or higher ENVE courses; or
  - b. Any courses from the following list: AH 3275; ARE 3434E, 4462E; CE 2410, 2411, 2412, 2500, 3220, 3510, 4210, 4410; CHEG 3151, 4147; CHEM 2241, 2443, 4370; EEB 3205E; GEOG 3320W, 3340, 3400; LAND 3230WE; MARN 3030, 4030W; ME 3239, 3263, 3270, 3285; MEM 2221; NRE 3105, 3125, 3145, 3146, 3245, 3535, 4135, 4165, 4205, 4255, 4340; OPIM 3801.

No substitutions are allowed in the Environmental Engineering Minor. All students must fulfill the appropriate prerequisites of all required courses.

The minor is offered by the Environmental Engineering Program.

## Environmental Health Specialist/Sanitarian

This minor is for students, particularly those in the various life science, physical science, environmental science, and health science majors, who may wish to pursue employment as an environmental health specialist/sanitarian. Environmental health specialists work in public health departments/districts on a variety of outdoors and indoor environmental health and food inspections (both pre and post facility/system installation), conduct health investigations, ensure compliance, and promote environmental health awareness and emergency preparedness.

The minor requires 18 credits, of which 15 may also be used to fulfill requirements in the major. Specifically, students must pass with a "C" or better, each of the following courses:

AH 3175; ANSC 4341; NRE 4255; SPSS 2120.

Students must also pass, with a "C" or better, at least six additional credits from among the following:

AH 3571; ANSC 4642; NRE 3105, 4135, 4340; DIET/NUSC 3272; SPSS 2125.

This minor is offered by the College of Agriculture, Health and Natural Resources.

## Environmental Studies

Environmental Studies focuses on the interaction between humans and the environment. The Environmental Studies Minor is an interdisciplinary (humanities, social sciences, and biophysical sciences) program for students interested in environmental problems on a local, national, and global level. This minor provides students the opportunity to focus their related area and/or electives on environmental issues. None of the courses in the minor can be used within the student's major.

### Introductory Courses

All students must take EVST 1000E, NRE 1000E and BIOL 1102 are recommended.

### Core Courses

(Nine credits) All minors must take one course from each core area. Additional core courses in a single category can be applied to the additional minor requirements beyond the core requirements.

- **Humanities Core:** PHIL 3216/W; GERM 2400; HIST 3540E or 3542, HIST/MAST 2210E; ENGL 3240E or 3635 or 3715E or JOUR 3046.
- **Social Sciences Core:** ARE 3434E or 4462E or ECON 3466E; GEOG 2400 or 3350; NRE 3000, 3245; POLS/EVST 3412; SOCI 2701 or 2709.
- **Natural Science Core:** AH 3175, EEB 2208, EARTH 3010; GEOG 3400, NRE 4170.

## Additional requirements for the minor

In addition, Environmental Studies minors must take six credits of electives at the 2000 level or above, as approved by the program director or academic advisor. Courses listed above that are not used to meet the core requirements may be used to meet this requirement.

Total credits (2000 level or above): 15 credits.

Students may also incorporate off-campus study with the minor advisor's approval, such as internships, Biosphere, or Education Abroad.

The minor is offered jointly by the College of Liberal Arts and Sciences and the College of Agriculture, Health and Natural Resources. For more information, please contact Sara Tremblay at [sara.tremblay@uconn.edu](mailto:sara.tremblay@uconn.edu).

## Equine Business Management

The minor provides interested students with an overview of marketing, management, and financial principles and concepts in equine management. Analytical and applied decision-making skills are emphasized.

All students are required to complete 18 credits from the following two groups:

1. Nine credits from the core courses: ANSC 2251, 3452; ARE 2210, 2215.
2. Nine credits from the following courses: ARE 3221, 3222, 3225, 4217, 4438E, and any one 2000-level or above ARE course, if approved by the minor advisor.

Students must earn a combined grade point average of 2.5 or higher for all courses listed above.

The minor is offered by the Department of Agricultural and Resource Economics.

## Equine Sports Rehabilitation

The Equine Sports Rehabilitation minor provides students an opportunity to gain theoretical and practical skills in rehabilitation of equine athletes.

The requirements for this minor are at least 18 credits of coursework. Students must complete all of the following courses: ANSC 3311 or KINS 4500; ANSC 3552, 3554, 3555, 3691.

Students must also complete a minimum of nine credits from the following courses: AH 3234; KINS 3522, 4510; ARE 2210, 2215; NUSC 4250.

At least 12 of the credits taken to satisfy the minor must be from courses that are not required for the student's major or other minors within the College of Agriculture, Health and Natural Resources.

Students must earn a combined grade point average of 2.5 or greater for all courses listed above.

The minor is offered by the Department of Animal Sciences.

## European Studies

This minor focuses on western, central, and Eastern Europe as well as Russia and enables students to pursue an interest in the social, historical, political, and cultural dimensions of this region.

Students electing this minor must complete a minimum of 15 credits of coursework at the 2000-level or higher from the European Studies minor course list. Courses must be drawn from at least three different departments. Note that units within Literature, Cultures and Languages (e.g. CAMS, CLCS, FREN, GERM, ILCS, SPAN or other) are all part of the same department.

Students are strongly encouraged to take HIST 2402. Education Abroad courses, special topics courses, and variable topics courses may count towards the minor when these focus on Europe or Russia. Three credits of independent study may be included when the independent study is focused on Europe or Russia. Students should select the courses in the minor in close consultation with a European studies minor advisor.

In addition to completing the required coursework, European Studies minors must meet one of four tools and experience requirements:

1. Participation in an approved Education Abroad program that includes at least six weeks residence in Europe or Russia.
2. Completion of six credits of coursework at any level in a European language other than English.

3. Completion of an internship (with or without pay) of at least six weeks duration with an organization in Europe or Russia or an internship with a strong European or Russian component in an organization in the United States.
4. A combination of an approved Education Abroad program that includes three weeks residence in Europe or Russia and three credits of coursework at any level in a European language other than English.

This minor is administered by the Individualized and Interdisciplinary Studies Program, Rowe 419. For more information, including contact information for European Studies minor advisors, refer to the [iisp.uconn.edu/european-studies-minor](http://iisp.uconn.edu/european-studies-minor) or call IISP at 860-486-4223.

## Film Studies

Students electing this minor must take one course from the first Distribution Group (Core Film Studies) and two courses from the second and third Distribution Groups (National Cinemas and Interdisciplinary Courses):

- **One course in core film studies:** CLCS 3207, 3208, 3293\*\*\*; DRAM 4152; ENGL 2640/W\*\*.
- **Two courses in national cinemas:** ARAB 3771; ARIS 2200\*\*; CHIN 3270, 3282; CLCS 3211, 3293\*\*\*; DRAM 4151; ENGL 3640/W\*\*; FREN 3223\*, 3226\*\*; GERM 3261W, 3264W\*\*; ILCS 3259\*, ILCS 3260W\*\*; SPAN 3250\*\*, 3251\*, 3252, 3254\*\*.
- **Two interdisciplinary courses:** AAAS/ENGL 3212; CLCS 2204, 3201, 3293\*\*\*; CAMS 3245; COMM/LLAS 3320; COMM/LLAS 3322; ENGL 3621; DRAM/HEJS/HRTS 2203; ILCS 3258W; JOUR 2010; LLAS 3575; POLS 3426; POLS 3822; WGSS 2217, 3253/W.

\* May be taught in English.

\*\* Taught in English.

\*\*\*With advisor's consent.

This interdisciplinary minor is offered by the Literatures, Cultures, and Languages Department.

## Financial Analysis

This minor will allow students to demonstrate an advanced understanding of business reporting and decision making and will give students the opportunity to broaden their skills and increase their employment opportunities. The minor is not open to Accounting majors.

ACCT 2001 and 2101, or the equivalent, must be completed before starting the minor.

### Requirements

Students must complete four courses: ACCT 3201 (or BADM 3201); ACCT 3202 (or BADM 3202); ACCT 3221 (or BADM 3221); ACCT 5327.

### Additional Details

To participate, students must have a "C" (2.0) grade or better in each of the four courses. Access to courses for this minor is on a space available basis, and the School of Business cannot guarantee completion of this minor. Students may require departmental permission to register for courses in the minor. Refer to the School of Business section of this catalog for restrictions on Business minors and limits on the number of Business courses available to non-Business students.

This minor is offered by the Accounting Department.

## Food Science

This minor addresses food science as an academic discipline that utilizes approaches for solving applied science problems associated with the acquisition and processing of food. All students are required to complete at least 15 credits as outlined below:

- A. All of the following: ANSC/NUSC 1645; ANSC 4341; NUSC 3233.
- B. One of the following: ANSC 3343, 3641.
- C. Additional course from Group B, or the following list to meet the 15 credit total minimum requirement: ANSC 3318, 5641; ARE 2260; NUSC 5500; SPSS 2100.

Students must earn a combined grade point average of 2.5 or higher for all courses listed above.

The minor is offered by the Animal Science Department and the Nutritional Sciences Department.

## French

The French minor consists of a minimum of six courses (18 semester credit hours) at the 3200 level in French. Ideally students should take two courses from each distribution group:

- A. **Language:** Six credits from FREN 3268/W or 3269, 3250, 3251, 3257.
- B. **French and Francophone Culture:** Six credits from FREN 3210, 3211/W, 3215 or 3216, 3217, 3218, 3224, 3226, 3267.
- C. **French Literary Studies:** Six credits from FREN 3261/W and/or 3262/W, 3223, 3220, 3221, 3222, 3231, 3234, 3235, 3270W, 3272, 3280.

Students may, however, substitute up to two courses from any distribution group and use them for any other distribution group and still have them count towards a minor.

Study abroad in our Paris program or our Toulouse summer program is highly recommended; students studying in Paris may earn up to nine credits towards the French Minor; students studying in Toulouse may earn up to seven credits towards the French Minor. Any of the Minor courses may be replaced by an appropriate FREN 3293 from Paris or Toulouse.

Upon request from native French speakers or heritage speakers, a committee can evaluate their speaking skills and waive the FREN 3257 Phonetics requirement. This course will be replaced by any course listed to meet the 18-credit requirement for the minor. Students must demonstrate proficiency in French at a level equivalent to FREN 1004 as a prerequisite for beginning the minor.

The minor is offered by the Literatures, Cultures, and Languages Department.

## Geographic Information Science

The minor consists of courses that provide a strong introduction to the field of Geographic Information Science – the acquisition, evaluation, modeling and analysis of geospatial data. Students electing this minor must complete at least fifteen credits from the following:

1. GEOG 2500.
2. At least three credits from the following GEOG 2505 and 3530. Students are encouraged to take both.
3. At least three elective credits from GEOG methods classes: GEOG 2510, 3110, 3500Q, 3505, 3510, 3512, 4090\*, 4091\*, 4095\*, 4099\*, 4130, 4230, 4515, 4516, 4518, 4519.
4. At least three additional credits from either the list of GEOG classes in the previous two points or the list of approved, related classes associated with the GIS Major.

\* Using GEOG 4090, 4091, 4095, 4099 requires permission of the undergraduate advisor or department head.

Only two courses in the GIS minor may also be used in the GEOG major.

The minor is offered by the Geography Department.

## Geography

The requirements for this minor are GEOG 2100 or 2200, and 2300E, and an additional nine credits of 2000-level and above Geography courses selected in consultation with an advisor to form a coherent program of study. Only two courses in the GEOG minor may also be used in the GIS major.

The minor is offered by the Geography Department.

## Geoscience

The minor in Geoscience provides instruction in the core concepts and principal methods of investigation in the study of the Earth. This course of study complements a major in anthropology, biological sciences, chemistry, civil engineering, ecology and evolutionary biology, environmental engineering, environmental science, environmental studies, geography, marine sciences, natural resources, or physics.

Students wishing to complete the minor in Geoscience must take at least 15 credits of 2000-level and above Geoscience courses.

A maximum of three credits of 2000-level and above courses from other departments or programs may be used to fulfill requirements of the minor, but only with the written pre-approval of the coordinator of the minor.

Credits from internship and independent study courses cannot be used to satisfy the requirements of the minor.

The minor is offered by the Department of Geosciences.

## German

This minor allows students to develop knowledge and skills in the areas of German language, literature, and culture through a coherent course of study. Students electing this minor must complete a minimum of 15 credits at the 2000 level and above distributed across the following categories:

1. **Language skill courses:** students must choose two of the following courses: GERM 3231, 3233, 3234, 3245, 4246.
2. **Content Courses (in literature, film, culture, etc.):** students must choose two of the following, or they may substitute the combination of all three one-credit courses GERM 3220, 3221, and 3222 for one of the following 3-credit courses: GERM 3254W, 3255W, 3261W, 3265, 3293, 3294, 3295 (if taught in German).
3. **Courses in English:** students must choose one of the following: GERM 3251, 3258, 3264W.

The minor is offered by the Literatures, Culture, and Languages Department.

## Gerontology

Specialized training in aging is available through this minor. The minor offers students preparing for careers in aging the opportunity to pursue a formally recognized program of studying gerontology. The 15-credit minor consists of course work and field experiences working in community settings serving older adults.

### Course Requirements

1. Two of the following three courses (six credits): HDFS 2200, 3240, 3249
2. Three courses (nine credits) from the following: HDFS 2200\*, 3080\*\*, 3092\*\*, 3098, 3240\*, 3249\*, 3252, 3510, 3530, 4099\*\*, AH 3203; PSYC 3105

\* Any course listed above under required (item 1) and not used to fulfill the required courses may be taken as an elective (item 2).

\*\* Only three credits from each of these courses may count toward the nine elective credits.

The minor is administered by the Department of Human Development and Family Sciences.

## Global Environmental Change

The Global Environmental Change minor provides a comprehensive understanding of earth's interconnected environmental systems and the consequences of those changes to human well-being. Topics include climate change, land and ocean use, governance and policy, and related subjects in natural sciences. A maximum of three credits towards the minor may be transfer credits of courses equivalent to University of Connecticut courses. A maximum of six credits in the minor may be part of the major. Students cannot receive the minor within the same Environmental Sciences degree concentration.

### Requirements

Total of at least 15 credits 2000-level or above, including one course from each area A-E. The same course cannot be used to fulfill more than one area.

- A. Climate Change and its Impacts:** EARTH 3010; GEOG 3400, 4300; MARN 3000E; NRE 3115, 3146, or 4170
- B. Land and Ocean Use and its Impacts:** EEB 2208; EARTH3020; EARTH/MARN 3230; EARTH 4735/NRE 4135; GEOG 3310, 3410; MARN 3001, 3030, 4066; NRE 2215E, 2345, 3105, 3115, or 4340
- C. Natural Sciences:** CHEM 4370, 4371; EEB 2244/W, 2245/W; EEB 3230/MARN 3014; EEB 3247; EEB/ERTH 4120; EARTH 4110, GEOG 2300E; 4210; MARN 2002, 2060, 4030W, 4060, 4202Q; NRE 2455, 3125, 3145, 4205; SPSS 2120, or 3420
- D. Methods:** CE 2251; CE/ENVE 3530/ERTH 3710; EEB 4230W; EARTH 4735/NRE 4135; GEOG 3500Q; GEOG/MARN 3505;

GEOG/ERTH 4230; MARN 4202Q; NRE 2000, 2010, 3305, 3345/W, 3535, 4335, 4475, 4535, 4544, 4545, 4575, 4665; PHYS 2400; STAT 2215Q, or 3025Q

- E. Governance and Policy:** AH 3174; ARE 2235, 3434E, 3437E, 4438E, 4462E; ECON/MAST 2467; GEOG 3320W; MAST/POLS 3832; NRE 3000, 3201, 3245; POLS/EVST 3412, or SOCI 3407/W

The minor is offered jointly by the College of Liberal Arts and Sciences and the College of Agriculture, Health and Natural Resources.

## Global Studies

This minor introduces students to the study of global issues and transnational processes and allows them to explore such themes as: peace, conflict, and security; international economics and development; natural resources and the environment; global health; and comparative cultures, arts, and identities.

### Course Requirements (18 credits)

1. One course that serves as an introduction to Global Studies, drawn from the following list: GEOG 2000; HIST 1201; NRE 2600E; POLS 1402; SOCI 1701; WGSS 2124.
2. Three courses selected from a single theme from the approved courses list. The themes are: peace, conflict, and security; international economics and development; natural resources and the environment; global health; and comparative cultures, arts and identities.
3. Two other courses. These courses may come from the approved courses list, or may be regionally-focused courses. If both courses are regionally-focused, they must be from two different regions. Regions are defined as: Sub-Saharan Africa, Middle East and North Africa, South Asia, Central Asia, Southeast Asia, East Asia, Europe, Latin America and the Caribbean, Oceania.

Education abroad courses, special topics courses, and variable topics courses may count towards the minor when these courses focus on one of the regions defined above or global issues, processes, trends, and systems. Three credits of independent study may be included when the independent study is focused on a global theme or one of the regions defined above.

No more than six credits may be taken in any one department or overlap with the plan of study of any one other major or minor.

### International Experience Requirement

Participation in an approved Education Abroad program that includes at least six weeks residence in a country other than the United States.

In exceptional circumstances, and with the approval of the Global Studies Minor Committee, this requirement may also be satisfied by either:

1. An approved Education Abroad experience of shorter duration; or
2. Completion of two semesters of college-level language study in addition to the university requirements. This may be advanced study of a language the student has already begun to learn or more basic study of a different language; or
3. Completion, virtually or in-person, of a credit-bearing internship of at least three credits with an organization outside the United States or with a strong international component in an organization in the United States; or
4. Extended period of residence abroad or period of service learning abroad.

Students pursuing this minor should select their program of study in close consultation with a minor advisor.

This minor is administered by the Individualized and Interdisciplinary Studies Program with oversight by the Global Studies Minor Committee. For more details, including the approved courses list, see the Global Studies minor website. For more information, visit [iisp.uconn.edu/global-studies-minor](http://iisp.uconn.edu/global-studies-minor) or call IISP at 860-486-3631.

## Healthcare Management and Insurance Studies

Refer to the School of Business section of this catalog for restrictions on Business minors and limits on the number of Business courses available to non-Business students. Healthcare Management Majors may not earn this minor. The minor is designed to offer a basic understanding of health care management and insurance topics.

Requirements: To receive a minor in Healthcare Management and Insurance Studies, a student must complete four 3-credit 3000-4000 level School of Business courses, to include HCMI 3240, 3243, and two of the following courses: HCMI 3221, 4225, 4243, 4250, 4325, 4326, 4448.

Credits from internships cannot be used to satisfy requirements of the minor. No more than one 3-credit course used to satisfy requirements for this minor may be from any transfer or Education Abroad credits earned. Access to courses for this minor is on a space available basis, and the School of Business cannot guarantee completion of this minor.

The minor is offered by the School of Business. For more information, contact the Finance Department, School of Business, phone 860-486-3040. Permission number requests for these courses can be found at [undergrad.business.uconn.edu/forms/](http://undergrad.business.uconn.edu/forms/).

## History

Students must pass five courses (15 credits), by completing (A) five courses across at least three distribution groups, or (B) HIST 2100 and four courses across at least three distribution groups.

### List of Courses

**Group A - Ancient, Medieval, and Early Modern:** HIST 2020, 2350, 2470, 3300 (ANTH 3513), 3301 (CAMS 3301), 3320 (CAMS 3320), **3321 (CAMS 3321)**, 3325 (CAMS 3325), 3326 (CAMS 3326), 3330 (CAMS/HEJS 3330), 3335 (CAMS 3335), 3340 (CAMS 3340), 3360, 3361, 3362 (HEJS 3362), 3370, 3371, 3400, 3420, 3460, 3704.

**Group B - Modern Europe:** HIST 2205, 2206 (SCI 2206), 2222E, 2240, 2401, 2402, 2412, 2413, 2421, 2451, 2471, 3201 (HRTS 3201), 3203 (HDFS 3423), 3204W, 3207 (HRTS 3207), 3208 (AFRA 3208, LLAS 3208), 3416 (WGSS 3416), 3418 (HEJS 3203), 3419 (HEJS 3204), 3426, 3430, 3440, 3456, 3463.

**Group C - United States:** HIST 2206 (SCI 2206), 2207 (AMST 2207, ENGL 2207), 2222E, 2530 (AAAS 2530), 2541 (URBN 2541), 2570, 2810, 3201 (HRTS 3201), 3204W, 3206, 3208 (AFRA 3208, LLAS 3208), 3209 (ANTH 3531, MAST 3531), 3232 (HRTS 3232), 3502, 3504, 3510, 3516, 3519, 3520, 3522, 3531 (AAAS 3531), 3540E, 3542, 3544 (MAST 3544), 3550, 3551, 3554, 3555, 3556W, 3559, 3560 (WGSS 3560), 3561 (WGSS 3561), 3562 (WGSS 3562), 3563 (AFRA 3563, HRTS 3563), 3564 (AFRA 3564), 3568 (AFRA 3568), 3569 (AFRA 3569), 3575 (LLAS 3221/HRTS 3221), 3618 (AFRA 3618, LLAS 3618), 3660W (LLAS 3660W), 3674 (LLAS 3220). Either HIST 3520 or 3522, but not both, may be counted for credit toward the minor.

**Group D - Africa, Asia, Latin America, and Middle East:** HIST 2101 (AAAS 2101), 2210E (MAST 2210E), 2222E, 2621, 2622 (AFRA 2622, LLAS 2622, WGSS 2622), 2752 (AFRA 2752), 2841 (AAAS 2841), 2842 (AAAS 2842), 3201 (HRTS 3201), 3202 (HRTS 3202), 3206 (AFRA 3206), 3208 (AFRA 3208, LLAS 3208), 3210 (MAST 3532), 3232 (HRTS 3232), 3569 (AFRA 3569), 3575 (LLAS 3221/HRTS 3221), 3607 (LLAS 3607), 3608W, 3609, 3610, 3618 (AFRA 3618, LLAS 3618), 3619 (AFRA 3619, LLAS 3619), 3620 (AFRA 3620), 3635 (LLAS 3635), 3640, 3643, 3650 (URBN 3650), 3660W (LLAS 3660W), 3674 (LLAS 3220), 3704, 3705, 3712, 3753 (AFRA 3753), 3760, 3770, 3808 (AAAS 3808), 3809 (AAAS 3809), 3810, 3812 (AAAS 3812), 3820, 3822, 3832, 3845, 3863, 3875 (AAAS 3875, LLAS 3875).

**Courses with Variable Content** (HIST 2993, 3095, 3098, 3100W, 3101W, 3102, 3991, 3993, 4989, 4994W, 4996, 4997W, 4999, or a graduate level History course) may be applied to any of the four distribution groups as determined by course content and with Advisor consent. No more than six credits of HIST 3991 will count toward the minor requirements.

The minor is offered by the History Department.

## Human Development and Family Sciences

Specialized training in Human Development and Family Sciences is available through this minor. The minor offers students the opportunity to study the well-being and healthy development of individuals and families over the life course.

Course Requirements

1. HDFS 1070
2. 15 credits of HDFS courses 2000-level or above

Only three credits of the following options may count toward the 15 elective credits: HDFS 3080, 3090, 3092, 3180, 3181, 3182, 4099.

No more than three credits of HDFS 92000 or higher (transfer credits) may be applied towards the 15 elective credits. Transfer credits are any credits received from a non-University of Connecticut source.

The minor is administered by the Department of Human Development and Family Sciences.

## Human Rights

This minor provides interdisciplinary instruction in theoretical, comparative, and historical perspectives on human rights through classroom courses, and valuable practical experience in the human rights field through a supervised internship. Fifteen credits at the 2000 level or above are required; at least three credits from Group A (Institutions and Laws or History, Philosophy, and Theory) and three credits from Group B (Applications and Methods); no more than six credits from Group C (Electives); and three credits from Group D (Internship). No more than six credits taken in any one department may be applied to this minor.

### Group A.

#### Institutions and Laws

ANTH/HRTS 3230/W; HIST/HRTS 3202; HRTS 3050, 3055, 3200/W, HRTS/POLS 3212; HRTS 3420, 3428; HRTS/SOCI 2800, 2845/W.

#### History Philosophy and Theory

ANTH/HRTS 3326; ANTH/HRTS/LLAS 3327, DMD/HRTS 3828; ENGL/HRTS 3631; ENGR/HRTS 2300; HIST/HRTS 3201, 3207, 3232; HRTS/LLAS 2450; HRTS/POLS 3042; HRTS/PHIL 3220; HRTS 2100/W, 2200, 3460, 3710.

### Group B. Applications and Methods

BADM 3252 or BLAW 3252/HRTS 3252; BADM 3254 or BLAW 3254 or HRTS 3254; DMD/HRTS

3640, 3641; DRAM/HRTS 3139; ENGR 3257 or HRTS 3257; HRTS 3149/W, 3250/W, 3401, 3475, 3540; POLS/HRTS 3256/W, 3430; SOCI/HRTS 3835.

### Group C. Electives

Any HRTS course numbered 2000 or above; AAAS/HRTS/SOCI 2220; ANTH/HRTS 3028/W, 3153W; ANTH 3150/W; ANTH/WGSS 3350; ARTH/HRTS 3575; DRAM/HEJS/HRTS 2203; ECON 2445/HRTS/WGSS 3445; ECON 2120, 3473/W; EDCI 2100, 3100; ENGL/HRTS 3619; ENGL 3629; GEOG 2400, 3240; HDFS 3251; HIST/AAAS 3531; HIST/WGSS 3562; HIST/HRTS/AFRA 3563; HIST 3100W, 3418, 3570; LLAS/HRTS 3221/HIST 3575; LLAS 3271/POLS 3834; NRE 2600E; NURS 3225; PHIL/HRTS 2170W, 3219/W; PHIL 2215/W, 3218; POLS/HRTS 3418/W; 3807; POLS/WGSS 3249; POLS 3672/WGSS 3052; POLS 3211, 3214, 3240; POLS/ENGR/HRTS 3209; SOCI/HRTS 2830/W, 2898; SOCI 2503/W; SOCI/HRTS/AFRA 2530, 3505; WGSS/HRTS 2263; WGSS 2255, 3105, 3257, 3269.

### Group D. Internship

HRTS 4291

The minor is offered by the College of Liberal Arts and Sciences.

## India Studies

Completion of a minimum of fifteen credits at the 2000 level or above is required, including at least three courses from Group A. Any remaining credits can be completed in Group B courses; INDS courses, including those in Group A; or any independent study that focuses on India (approved by coordinator of India Studies). The India Studies minor requires one of the following:

1. The completion of INDS 4296W (thesis) or
2. The completion of any thesis focusing on India and approved by coordinator of India Studies or
3. Participation in an approved, credit-bearing Education Abroad program in India or
4. An approved independent study which is completed in India

Also recommended are appropriate courses that provide an introduction to the advanced courses, such as PHIL 1106. Students are strongly encouraged (although not required) to take an Indian language course in the Critical Languages Program.

### Group A: Core courses

AAAS/HIST 3812; AAAS/HRTS/SOCI 2220; ART/AAAS/INDS 3375; ENGL 3320, 4301W (when offered with South Asia as topic and approved by India Studies Advisor); INDS 3210; POLS 3472/W.

### Group B: Related courses

ARE 4305; ENGL 2301/W; ECON 3473/W; POLS/WGSS 3216; SOCI 3701/W.

The minor is offered by the Asian and Asian American Studies Institute. For more information, contact Betty Hanson, [betty.hanson@uconn.edu](mailto:betty.hanson@uconn.edu), 860-604-1970, or Cathy Schlund-Vials, 860-486-9412.

## Industrial Design

This minor teaches students design thinking and making skills across disciplines in order to generate creative solutions to complex problems. Through project-based coursework, students will study and practice the core principles of Industrial Design and will develop capacities for creating products, environments and systems in the context of real-world challenges.

Students must complete 12 credits at the 2000-level or above. Appropriate courses will be determined in consultation with and pre-approved by the Industrial Design Minor Coordinator.

The Industrial Design Minor is offered by the School of Fine Arts. Students interested in the minor must meet with the Industrial Design Minor Coordinator to develop an initial plan of study and fill out and submit the Industrial Design Minor Declaration Form.

## Information Assurance

The minor is designed to offer a basic understanding of computer security and information assurance to support the increased demand for information security professionals.

### Requirements:

**Group I.** Required courses (six credits): OPIM 3207 and a course as approved by the advisor.

**Group II.** Three courses from the following (totaling at least nine credits)

1. OPIM 3701
2. ECE 4451
3. Special Topics courses (if related to information assurance): CSE 4095, ECE 4095, OPIM 4895
4. Independent Study courses (if related to information assurance): CSE 4099, ECE 4079, ECE 4099, OPIM 4899
5. Senior/design/thesis courses (if related to information assurance): CSE 4905, CSE 4951, ECE 4901, ECE 4902, OPIM 4997

Students in any major may earn this minor. Refer to the School of Business section of this catalog for restrictions on Business minors and limits on the number of Business courses available to non-Business students. At the most, two OPIM courses taken toward the Information Assurance minor can be counted toward the Business major. OPIM 4895 and OPIM 4899 must be taken for three or more credits each if any of those courses are used toward the Information Assurance minor.

The minor is jointly offered by the Department of Operations and Information Management, School of Business and by the Departments of Electrical and Computer Engineering and Computer Science and Engineering, School of Engineering. For the Information Assurance minor, contact John Chandy ([john.chandy@uconn.edu](mailto:john.chandy@uconn.edu)), Steven Demurjian ([steve@enr.uconn.edu](mailto:steve@enr.uconn.edu)), or Manuel Nunez ([manuel.nunez@uconn.edu](mailto:manuel.nunez@uconn.edu)) for more information.

## Information Technology

This program extends the benefits of an Information Technology education to engineering majors who are not participating in one of the School of Engineering's Computer Science majors.

### Course Requirements:

1. Two required courses (six credits) CSE 2050 and 2500

2. Two courses from the following (six credits) CSE 2102, 2304, 3300, 3500, 3502, 3504, 3802, 4100, 4300, 4500, 4701, 4703, and 4705
3. One additional course to be determined by the student and the faculty advisor (three credits)

The minor is offered by the Computer Science and Engineering Department. For more information, contact the CSE Office at 860-486-3719 or [enrsoffice@uconn.edu](mailto:enrsoffice@uconn.edu).

## Integrated Pest Management

This minor introduces fundamentals of plant health and integrated pest management in agronomy, horticulture and turfgrass systems. Not open to students in the Sustainable Plant and Soil Systems major. Students are required to complete all of the following courses: SPSS 3810, 3820, 3830, and 3840. Students must earn a combined grade point average of 2.5 or higher for all courses listed above.

The minor is offered by the Department of Plant Science and Landscape Architecture.

## Interpreting Between American Sign Language and English

All students enrolled in this minor are required to complete the following four courses (12 credits): ASLN 2500, 2600, 2700, 2800.

Beyond these, students must complete one additional course from the following list (three credits): ASLN 3292, 3295, 3298, 3299, 3305, 3306W, 3360, 3650; LING 2850, 3850; ASLN/LING 3800 or ASLN/WGSS 3254.

Only one overlapping course may be used by students doing a minor in both American Sign Language/Deaf Studies and Interpreting American Sign Language and English.

The minor is offered by American Sign Language Studies.

## Italian Literary and Cultural Studies

Beyond satisfying the foreign language requirements in Italian at UConn, students electing this minor must complete six courses (18 credits) which must include ILCS 3239 and 3240 (or their ECE equivalent). The remaining 18 credits may be fulfilled by taking any ILCS courses offered at the 3000 and 4000 levels.

**Education Abroad in Italy:** Students are strongly encouraged to participate in a variety of UConn-sponsored Education Abroad programs (and also have the option of enrolling in non-sponsored programs). In either case, students should consult with the ILCS faculty to determine which courses will receive credits. Students who enroll in study abroad programs not sponsored by UConn do not necessarily receive UConn credits for their coursework. In addition, the following rules apply:

- A minimum of 12 of the minor credits must consist of Italian courses taken in residence.
- Up to six credits may be met by ILCS 3293, with the consent of the advisor.
- UConn's Early College Experience courses may be counted towards the minor.

This minor is offered by the Literatures, Cultures, and Languages Department.

## Judaic Studies

The purpose of this minor is to provide in-depth study of topics in Judaic Studies reflecting the history, literature, and culture of the diverse experiences of Jews throughout the world stretching back four millennia to biblical Israel.

### Course Requirements

HEJS 1103 is required of all minors. At least one year of Biblical or Modern Hebrew is strongly recommended.

Students are required to take one class from each of three time periods: ancient (Group A), medieval (Group B), and modern (Group C).

Students must complete at least 15 credits of course work beyond HEJS 1103.

A minimum of three credits in Group A (Ancient): HEJS 3201, 3202, 3241; HEJS/CAMS/HIST 3330/W; CAMS 3244; CAMS/HIST 3301; INTD

3260. A minimum of three credits in Group B (Medieval): HEJS 3202, 3241, 3301, 3362.

A minimum of three credits in Group C (Modern): HEJS 2104, 2200, 2203, 2204, 2301, 3202; HEJS 3203/HIST 3418; HEJS 3279, 3401/W; HEJS/HIST 3419; ENGL 3629; HIST 3705, 3712; SOCI 2509W.

Six additional credits may be drawn from courses in Groups A, B, or C. Courses which appear in more than one group may only be counted toward one group at a time.

The following courses may be substituted for either Group A, Group B, or Group C courses with the approval of the student's HEJS advisor: HEJS 3251, 3252, 3293, 3295, 3298, 3299; SPAN 3200. The student's HEJS advisor may also approve variable topics courses from other departments when the topics are appropriate to the minor.

Some HEJS Graduate courses are open to undergraduates. These may be substituted for either Group A, Group B, or Group C courses with the approval of the student's HEJS advisor.

The minor is offered by the Hebrew and Judaic Studies Section of the Literatures, Cultures, and Languages Department.

## Latin American Studies

The interdisciplinary minor in Latin American Studies offers a basic understanding of the peoples and cultures of Latin America and the Caribbean, their history and contemporary economic, social, and political problems, and the region's relations with the United States.

### Requirements

The minor consists of a minimum of 15 credit hours of course work selected from at least three disciplines distributed from the courses below.

LLAS 2011W, 2012, 2293, 2995, 3293, 3990, 3998, 3999, 4212, 4994W; ANTH/LLAS 3021, ANTH/LLAS 3029, ANTH 3041/LLAS 3241; ANTH 3042, 3150; ANTH/AFRA 3152; ANTH/LLAS/HRTS 3327; ARTH 3630/W, 3640/W, 3645/W; LLAS/HRTS 2450; ECON/LLAS 2474; GEOG 4710; HIST/URBN 2650; HIST/LLAS/AFRA 3618, HIST/LLAS/AFRA 3619/W; HIST/AFRA 3620; HIST 2621; HIST/LLAS/AFRA/WGSS 2622; HIST 3643; HIST 4994W; HIST/AFRA 3206; HIST/LLAS/AFRA 3208; HIST/LLAS 3607, HIST/LLAS 3608W, HIST/LLAS 3609, HIST/LLAS 3635, HIST/LLAS 3660W; POLS 3218, 3235, 3237; POLS/LLAS 3667; POLS 3834/LLAS 3271; SPAN 3201, 3205, 3207, 3214, 3233, 3234, 3250, 3251, 3254, 3260, 3266, 3267W; SPAN/LLAS 3265.

With approval of the minor advisor, appropriate sections of 3293 courses taken through Education Abroad may count towards the minor. Appropriate sections of special or variable topic courses, including AFRA 3898, ANTH 3098, HIST 3098, HRTS 3298, POLS 2998, SPAN 3298, and WGSS 3998 may also count towards the minor with advisor consent.

### Language Requirement

(Credits do not apply to minor's 15-credit minimum) Students may demonstrate elementary proficiency in a Latin American language in one of the following ways:

1. One 2000 level or above language course
2. Pass equivalent language exam administered by the Department of Literatures, Cultures and Languages
3. Requirement waived for native speakers

Students minoring in Latin American Studies should also consider participating in an Education Abroad program in Latin America or the Caribbean. Courses taken abroad may be counted toward the minor if they are equivalents of the courses listed above.

The minor is offered by El Instituto: Latino/a, Caribbean and Latin American Studies Institute. For information, contact Anne Gebelein. Anne.Gebelein@uconn.edu or call 860-486-5508.

## Latino Studies

This minor advances a critical understanding of Latinos/as as an integral social and cultural component of United States society and of the American hemisphere. Since it employs interdisciplinary research methods, this minor enhances a variety of majors and fields of study.

**Requirements:** The Latino Studies minor requires a minimum of 15 credits of coursework. At least nine of these credits must be from courses listed as,

or cross-listed with LLAS: LLAS 2001, 2011W, 2012, 2995, 3210, 3211, 3470, 3990, 3998, 3999, 4212; LLAS 3241/ANTH 3041; LLAS/COMM 3320, LLAS/COMM 3322; LLAS 3232/ENGL 3605, LLAS 3233/ENGL 3607; LLAS 3250/HDFS 3442, LLAS 3251/HDFS 3268; LLAS 3220/HIST 3674, LLAS/HRTS 3221/HIST 3575; LLAS/HIST 3660W; LLAS/HIST/AFRA 3618; LLAS/HIST 2662; LLAS/HIST/WGSS 3675; LLAS 3270/POLS 3662, LLAS 3271/POLS 3834, LLAS/POLS 3667; LLAS/SOCI 3525; LLAS/SPAN 3265; LLAS 3230/WGSS 3258, LLAS 3231/WGSS 3259; LLAS 3264/WGSS 3260/COMM 3321.

Additional courses elected from the following list may be counted for up to six credits permitted toward satisfaction of the required total of fifteen: AAAS/HIST/LLAS 3875; AFRA/SOCI 2510; AFRA/HIST/LLAS/WGSS 2622; AFRA/HRTS/SOCI 2520; ANTH 3021, 3029, 3042, 3150, 3152; ARTH 3640; COMM 3220, 4450W, 4802; DRAM 3133; ECON 2444, 2456; ECON/LLAS 2474; ENGL 3218, 3265W, 4203W; HDFS 3421; HIST 2621, 3554, 3608W, 3610, 3620, 3660W; HIST/LLAS 3607, 3609, 3619, 3635; INTD 2245; POLS 3218, 3235, 3237; SOCI/HRTS 2830/W, 3831; SOCI 2820, 2503, 2901, 2907, 3911, 3971; SPAN 3204, 3205, 3208, 3214, 3265, 3266; URBN 3276; WGSS 2267.

The minor is offered by El Instituto: Latino/a, Caribbean and Latin American Studies Institute. For information, contact Anne Gebelein (Anne.Gebelein@uconn.edu) or call 860-486-5508.

## Linguistics

This minor requires 15 credits of 2000 level or above course work. Required courses are: LING 2010Q, 3310Q, 3410Q, 3511Q, and one additional 2000 level or above course in linguistics.

The minor is offered by the Linguistics Department.

## Literary Translation

In the Literary Translation Minor, students will practice the craft of translating literary texts from any language into English and explore international theories of literary translation. The Literary Translation Minor consists of a minimum 15 credits at the 2000-level or above.

Requirements

- A. Two required translation courses: TRST 3010 and 3011.
- B. Two literary/cultural courses chosen from: ARAB, CAMS, CHIN, CLCS, CRLP, FREN, GERM, HIND, ILCS, JAPN, KORE, MGRK, PERS, PLSH, PORT, RUSS, SPAN, TRST, VIET.
- C. One creative writing or related genre course from English chosen from: ENGL 3701; 3703, 3705, 3711, 3715E. Genre course: ENGL 2401, 2405, 2407, 2408/W, 2409, 2413/W, 3403, 4401W, 4405W, 4407W.

With the Minor Advisor's approval, students may count up to six credit hours in independent study in lieu of courses from sections B and C. Advanced Placement credits may not be counted toward the Minor. Courses used to fulfill the field requirements of the student's Major can also be used to fulfill the Literary Translation Minor.

The Minor is offered by the Literatures, Cultures and Languages Department. For further information, please contact peter.constantine@uconn.edu.

## Management

*Effective for the 2022-23 catalog, the MGMT subject code was changed to MENT.*

This minor creates an opportunity for School of Business students to develop essential management skills in entrepreneurial thinking, creativity and innovation, teamwork, leadership, managing diversity, international business, and negotiation in complex business environments.

This minor is only open to students enrolled in the School of Business (not open to Management majors). Refer to the School of Business section of this catalog for restrictions on Business minors.

**Requirements:** To receive a minor in Management, a student must complete five (5) 3-credit, 3000/4000-level courses offered by the School of Business to include: MENT 3101 (or BADM 3740) and MENT 4900 (or MENT 4902); and three additional 3-credit, 3000/4000-level MENT courses.

Credits from internships may be used to satisfy one of the three additional 3-credit, 3000/4000-level MENT courses for the minor. Courses taken through the Education Abroad program and accredited at the MENT

3000/4000 level may satisfy the requirements of this minor. No more than one 3-credit course used to satisfy requirements for this minor may be from transfer credits earned.

Courses designed for students pursuing this minor can be found in the Management (MENT) course description section of the Undergraduate Catalog. Students should note they must meet all class prerequisites. Access to courses for this minor is on a space available basis, and the School of Business cannot guarantee completion of this minor.

The minor is offered by the School of Business. For more information, contact the Management Department, phone: 860-486-3638; email: pamela.costa@business.uconn.edu.

## Manufacturing

This minor exposes engineering students to the fundamentals and applications of manufacturing. This minor is not allowed for Management and Engineering for Manufacturing (MEM) engineering students. This minor includes design and fabrication techniques, including evaluating the impact on the human and environmental factors, process, and profit associated with the steps from design through production. Actual case studies will help reinforce the concepts. The two core classes are ENGR 2215 and 3215. The minor relies on the two core manufacturing courses and an elective as well as a manufacturing-focused senior design from the student's home department. This elective can also be counted as an elective in their home department. The minor requires the completion of 15 credits including as follows:

- Application for the minor two semesters before graduation;
- An approved Plan of Study one semester before graduation;
- **Group I (Required Courses):** ENGR 2215 and 3215;
- **Group II:** Nine or more credits selected from the list of Manufacturing minor electives from any engineering department, which may include Senior Capstone from the student's home department related to a manufacturing problem, subject to approval by Minor advisor. Group II courses can simultaneously be used towards the student's major requirements.
- **Manufacturing minor electives:** MEM 3221, 4225; ME 3217, 3221, 3222, 3225, 3295 (when taught as Principles of Machining and Machine Tools); MSE 2101, 2102, 3004, 4004, 4040.

## Marine Biology

The Marine Biology minor is a unique interdisciplinary minor that provides a foundation in the study of marine organisms and their behaviors and interactions with the environment.

This minor requires at least 15 credits of 2000-level or above course work.

Required courses are: MARN 3014/EEB 3230; MARN 4010.

In addition, students must take at least three electives from the following courses: EARTH 4130; MARN 2801WE; MARN 3012\*/5012\* or EEB 4275; MARN 3015\*/5015\*; MARN 3017\*/5017\*; MARN 3811\*; MARN 3812\*; MARN 4018\*/5018\* or EEB 4200; EEB 3250; MARN 4210Q\*; MCB 3849W; NRE 4335 or 3385W.

\*Course offered only at the Avery Point campus

With written pre-approval of the Marine Biology Minor Coordinator, the following courses may be substituted for one of the three electives: MARN 2899/3899/4899 or EEB 3899 or MCB 3899; MARN 2995/3995/4995 or EEB 3895 or MCB 3895; MARN 4898 or EEB 3898 or MCB 3898; MARN 2893/3893/4893 or EEB 2893/3893 or MCB 3893/4893.

Students may not count the same course towards the Marine Sciences minor or the Marine Sciences major offered by the Department of Marine Sciences.

The minor is offered by the Marine Sciences Department.

## Marine Sciences

Students wishing to complete this minor must take at least 15 credits of 2000-level or higher MARN courses.

MARN 2996, 3996, 4160 and 4996 cannot be used toward the minor.

A maximum of three credits in any combination of MARN 2893, 3893, 3899, 4891, 4893.

A maximum of three credits of 2000-level or above courses from other departments may be used to fulfill the requirements of the minor with the written pre-approval of the coordinator of the minor. Students may not count the same course towards the Marine Biology minor offered by the Department.

The minor is offered by the Marine Sciences Department.

## Maritime Archaeology

Maritime Archaeology is an interdisciplinary field of study, global in scope, focusing on the investigations of human interactions with the seas, lakes, and rivers through the excavation and documentation of submerged settlements and coastal facilities, wrecked vessels, lost cargoes, and human remains. The program integrates technology, such as side-scan sonar and undersea robotic vehicles, and science with traditional archaeological and historical studies. The minor introduces students to the development and application of current and future methods of exploration, research, and management of maritime heritage sites and resources. Students interested in pursuing this minor are advised to complete appropriate 1000-level courses in a number of fields as preparation for advanced courses in their program in Maritime Archaeology. These should include some of the following courses: ANTH 1006; EARTH 1050 or 1051; GEOG 1000; HIST 1201, 1300, 1400; MARN 1002 or 1003.

**Requirements for the Minor:** 18 Credit hours of course work as follows: ANTH 2501, 2510

Select one course from the Science/Technology list: EARTH/MARN 3230; GEOG 2300E, 2500

Select nine credits from the History/Anthropology/Marine Studies list: six credits of ANTH 3990\*; HIST 2100; HIST 3544/MAST 3544; ANTH 3531/HIST 3209/MAST 3531, ANTH 3532/HIST 3210/MAST 3532; ANTH 3701, 3902; one to three credits of MAST 3991\* (with advance approval by advisor and MAST program coordinator)

\* Students may count either ANTH 3990 or MAST 3991\* but not both for this category.

The minor is offered by Maritime Studies. Interested students may contact Kroum Batchvarov at Kroum.Batchvarov@uconn.edu.

## Materials Science and Engineering

This minor provides a firm basis for understanding the relationships between the structure of all classes of materials, the processing conditions, and the properties of these materials that are critical to science and engineering. It requires the completion of 15 credits including the following:

- Application for the minor two semesters before graduation;
- An approved Plan of Study one semester before graduation;
- MSE 2001 (or 2101) and 2002 (or 2102);
- Nine credits, any courses among MSE 3000-level courses, MSE 4000-level courses (but not more than three credits of independent study or directed research), BME 3700, and CHEG 3156.

This minor is offered by the Materials Science and Engineering Department. For more information, contact the MSE Office by email at mseinfo@engr.uconn.edu or by phone at 860-486-4620.

## Mathematics

The requirements for this minor are 15 or more credits in one of the following two tracks:

### Track A:

- MATH 2110Q and 2210Q;
- One course from MATH 2410Q, 2620, or 2710; and
- At least two distinct MATH courses at the 3000-level or above. Each of these courses must be for three or more credits.

### Track B:

- The advanced calculus sequence: MATH 2141Q, 2142Q, 2143Q, and 2144Q.

The minor is offered by the Mathematics Department.

## Medieval Studies

Students must complete at least five upper-level courses in Medieval Studies disciplines, for a total of 15 credits. No more than three of these credits may



be transferred from another college or university. Coursework must be at the 2000 level and above, and may also include Variable Topics, Special Topics, Independent Study, Foreign Study, and graduate-level courses, as determined by the course content and consent of one of the Minor Advisors.

The five courses must be drawn from at least four of the following categories:

- Arab and Islamic Civilizations: ARAB 2751, 3550W, 3551, 3559, 3751
- Art History: ARTH 3210/W, 3220/W, 3230/W, 3240/W, 3260/W
- Classics and Ancient Mediterranean Studies: CAMS 3102, 3213, 3224, 3232, 3244; CAMS/HIST 3320, CAMS/HIST 3321, CAMS/HIST 3325, CAMS/HIST 3326, CAMS/HIST 3330, CAMS/HIST 3335, CAMS/HIST 3340
- English: ENGL 3111, 3301, 3303, 3501, 3603
- French: FREN 3230
- Hebrew and Judaic Studies: HEJS 3201, 3241, 3301, 5316; HEJS/HIST 3362
- History: HIST 2350, 3360, 3361, 3420, 3460, 3704; CAMS/HIST 3320, CAMS/HIST 3321, CAMS/HIST 3325, CAMS/HIST 3326, CAMS/HIST 3330, CAMS/HIST 3335, CAMS/HIST 3340, HEJS/HIST 3362
- Interdepartmental: INTD 3260
- Italian Literary and Cultural Studies: ILCS 3253, 3254, 3255W
- Music: MUSI 3401
- Philosophy: PHIL 3261
- Political Science: POLS 3002
- Spanish: SPAN 3200, 3231, 3261

The Minor is offered by the Medieval Studies Program. For further information, contact Sherri Olson, Wood Hall, Room 229, 860-486-3552.

## Middle Eastern Studies

This minor is intended to enable students to pursue a multi-disciplinary approach to the Middle East and to acquire a thorough understanding of the area from anthropological, economic, historical, literary, political, and religious perspectives.

Students electing this minor must complete at least 15 credits at the 2000, 3000, and 4000 level from at least three fields that satisfy the following criteria.

1. The basic required course is HIST 3705.
2. In addition, students must complete four courses from the following list: ANTH 3038; ANTH 3513/HIST 3300; CLCS 3201, 3203; FREN 3218; HEJS 3201; HIST 3704, 3712; HIST 3301/CAMS 3253; HIST 3330/CAMS 3256/HEJS 3218; INTD 3260; POLS 3447, 3462, 3464/W; and any 2000, 3000 and 4000-level courses in Middle East Languages.

Education Abroad courses, POLS 2998, and those offered by the Comparative Literary and Cultural Studies (CLCS) Program count toward the minor when the topic contains substantial Middle Eastern material.

With the approval of a student's Middle Eastern Studies Advisor, one other course not listed above or a 3-credit independent study course with substantial Middle Eastern content may also be counted toward the minor.

Students are strongly encouraged to take a Middle Eastern language such as Arabic, Hebrew, Persian, or Turkish. Students are strongly encouraged to study abroad at a university in the Middle East.

The minor is offered by the College of Liberal Arts and Sciences and supervised by a committee of affiliated faculty. For information, visit [mideast.uconn.edu](http://mideast.uconn.edu).

## Molecular and Cell Biology

Students wishing to complete this minor must take at least 15 credits of 2000- level or above MCB courses, including at least one course from each of the following three groups:

- A. MCB 2400, 2410, 3201, or 3617
- B. MCB 2000 or 3010
- C. MCB 2210, 2215, or 2610

The minor is offered by the Molecular and Cell Biology Department.

## Music

This minor requires a minimum of 18 credits in Music:

1. Completion of MUSI 1011 and 1012 or MUSI 1313 and 1314 if the student qualifies (six credits).
2. Completion of two courses from the following (six credits): MUSI 1003, 1004, 1021, 1022, 3401, 3405, and 4999.
3. At least six additional credits in Music, selected from courses for which the student has the necessary prerequisites or instructor consent, except MUSI 1001, which may not be applied toward the minor. The courses selected may be in performance or academic studies.\*

\* Music minors may register for one-credit applied study, MUSI 1221, with the permission of the instructor and the Head of the Music Department. May be repeated for credit.

The minor is offered by the Music Department.

## Nanomaterials

This minor exposes non-Materials Science and Engineering students to the fundamentals and applications of nanoscale materials. This includes synthesis and characterization techniques, nano-device fabrication methods, testing and applications, and underlying Materials Science and Engineering, physics and chemistry principles. Content in this fast developing area is frequently based on recent progress and reports documentation in the nanoscience and nanotechnology disciplines, and is extensively interdisciplinary. The minor requires the completion of 15 credits including as follows:

- Application for the Nanomaterials Minor two semesters before graduation
- An approved Plan of Study one semester before graduation
- Group I – Required Courses: MSE 2001 (or 2101) and 2002 (or 2102)
- Group II: Nine credits selected from the following courses: MSE 4001, 4240, 4241; ENGR 3195 and/or MSE 4095 (if related to nanomaterials, subject to approval by Minor advisor)

**Note:** Group II courses cannot be simultaneously used towards multiple minors, e.g. the Materials Science and Engineering Minor and the Nanomaterials Minor.

This minor is offered by the Materials Science and Engineering Department. For more information, contact the MSE Office 860-486-4620 or [mseinfo@engr.uconn.edu](mailto:mseinfo@engr.uconn.edu).

## Nanotechnology

The emerging field of nanotechnology, which involves studying and manipulating matter on an ultra-small scale (a nanometer is one-billionth of a meter), is expected to have far-reaching consequences in engineering applications as diverse as sustainable energy and next-generation microprocessors and flash memories.

A minor in nanotechnology requires the completion of at least 15 credits as follows:

**Group I: Required courses (nine credits):** ECE 4211/5211; ECE/ENGR 4243/6243 and ECE/ENGR 4244/6244.

**Group II: Two courses from the following list (at least six credits):** ENGR 2243; ECE 3223, 3243, 4223, 4225, 4242, 4095 (or any engineering special topics course if related to nanoscience/technology), ECE 4079 or any engineering independent design laboratory course (if related to nanoscience/technology), ECE 4099 or any engineering independent studies course (if related to nanoscience/technology), the two-course sequence ECE 4901 and 4902 (if the project is related to nanoscience/technology), ECE 5223, 5225, 5242.

The minor is offered by the School of Engineering. For information about the Nanotechnology minor, contact John Chandy at [john.chandy@uconn.edu](mailto:john.chandy@uconn.edu).

## Native American and Indigenous Studies

Students must complete a minimum of 15 credits from the following list of courses. The 15 credits must be distributed across at least three disciplines. Students who register for ANTH/HRTS 3028 must count ANTH as one of

their three disciplines even if they register for the course under the HRTS designation.

ANTH 3026, 3027, 3030, 3902, 3904; ANTH /HRTS 3028; CLCS 3211; ENGL 3210, 3218; HIST 2570, 3502, 3640; HIST/LLAS 3607; POLS 3218.

This minor is offered by the College of Liberal Arts and Sciences. For more information, contact Kevin McBride at Kevin.McBride@uconn.edu.

## Neuroscience

The requirements for this minor are at least 15 credits of 2000-level or above courses, with a minimum of five credits coming from each department (PSYC and PNB), which are structured in the following manner:

Required lecture courses: All students must take PSYC 2200 or PNB 3251.

Lab requirement: Students must take at least one of the following: PSYC 3250W, 3251, 3252, 3253, PNB 3263WQ, or PNB 3264W.

Additional courses required to satisfy the 15-credit requirement (if not used as a required course or for the lab requirement) may include: PSYC 2200, 2201, 2208, 2209, 2500, 3200, 3201, 3250W, 3251, 3252, 3253, 3270, 3501; PNB 3251, 3252, 3255, 3260, 3262, 3263WQ, 3264W, 3275, 3700, 4162, 4400.

Graduate courses in PSYC or PNB may be counted with permission of the neuroscience minor advisor. The additional courses should be selected in consultation with a neuroscience advisor in psychology or physiology and neurobiology and may include a lab course that was not used to fulfill the lab requirement. Up to three credits of undergraduate research or independent study (PNB 3296, 3299, 4296; PSYC 3889, 3899; COGS 3589) may be counted towards the minor with permission of the neuroscience minor advisor, provided that the research has a strong neuroscience component. A maximum of six credits may overlap with a major or another minor.

The minor is offered by the Department of Psychological Sciences and the Physiology and Neurobiology Department. Interested students should contact John Salamone at john.salamone@uconn.edu.

## Nutrition for Exercise and Sport

This minor is offered by the Department of Nutritional Sciences in cooperation with the Departments of Allied Health Sciences and Kinesiology. Students interested in earning the minor will need to complete prerequisite coursework for required courses. Prerequisites include NUSC 1165; PNB 2264, 2265; and MCB 2000. All students are required to complete a minimum of 18 credits for the minor.

Required courses students must complete for the minor are: NUSC 4236, 4250; KINS 4500, 4510. Any two of the following courses may be completed for the additional six credits: NUSC 4260, 4299; KINS 3098, 3099, 3320, 3530, 3545; AH 3101, 3231, or 3234.

Students must earn a combined grade point average of 2.5 or higher for all courses listed above.

The minor is offered by the Department of Nutritional Sciences.

## Ornamental Horticulture

The minor in Ornamental Horticulture provides an introduction to the production, maintenance and use of plants to enhance human environments. Not open to students declaring the Environmental Horticulture concentration in the Sustainable Plant and Soil Systems major.

All students are required to complete a minimum 15 credits including SPSS 3640 and:

- Six credits from among: SPSS 2430, 3410, 3560
- Three credits from among: SPSS 3550, 3660, 3670
- Three credits from among: SPSS 3810, 3820, 3830, 3840

At least 12 credits must not duplicate courses used to satisfy the 36-credit requirement for the student's major, or for another minor in the College of Agriculture, Health and Natural Resources. Students must earn a combined grade point average of 2.5 or higher for all courses listed above.

The minor is offered by the Department of Plant Science and Landscape Architecture.

## Personal Brand Entrepreneurship

With introductory content intended for first-year and second-year students of any major, this minor offers students an introduction to the entrepreneurial, personal finance, legal, and marketing aspects of a person-as-brand business, including name-image-likeness and media-content based industries.

The courses required for this minor are at the 2000-level and thus are not subject to the restrictions on Business minors or limits on the number of Business courses available to non-Business students described in the School of Business section of this catalog. Courses towards the minor must be unique to the minor and cannot be used to fulfill the requirements of any other major or minor.

### Requirements

To receive a minor in Personal Brand Entrepreneurship, a student must complete the following four (4) three-credit courses offered by the School of Business.

**Required courses:** BUSN/BADM 2235; MENT/BADM 2236; MKTG/BADM 2237; BLAW/BADM 2238.

Course seats for non-Business students pursuing this minor can be found in the Business Administration (BADM) course description section of the Catalog. Access to courses for this minor is on a space available basis, and the School of Business cannot guarantee completion of this minor.

The minor is offered by the School of Business. For more information, contact the Undergraduate Programs Office, School of Business, room 248, or phone (860) 486-2315.

## Philosophy

A student must take at least 15 credits of philosophy, at the 2000 level or higher, including one course from at least three of the following categories:

- Category I: History of Philosophy: PHIL 2221 (CAMS 3257), 2222, 3261, 3263, 3264
- Category II: Metaphysics and Epistemology: PHIL 2208, 2210, 2212, 3250
- Category III: Logic and Philosophy of Language: PHIL 2211Q, 3214, 3241
- Category IV: Value Theory: PHIL 2215, 2217, 3216, 3218, 3220 (HRTS 3220)

The minor is offered by the Philosophy Department.

## Physics

Although this minor is particularly suitable for students in the physical or life sciences as well as in engineering, it will also serve other students who have the appropriate First-Year/Sophomore calculus-based physics preparation. The minor introduces the students to the core concepts in mechanics, electricity and magnetism, thermal physics, and quantum physics, and provides further opportunities to study laser physics, optics, nuclear and particle physics, and astrophysics. The minor requires a minimum of fifteen credits of 2000-level or higher course work.

### Course Requirements

- A. Nine credits of required courses: PHYS 3101; PHYS 2300 or 3401; and PHYS 3201 or ECE 3001.
- B. Six credits of elective courses chosen from any of the PHYS 2000-level or higher courses, other than the ones already taken above, with no more than three credits from PHYS 3089, 4096W and 4099.

The minor is offered by the Physics Department.

## Physiology and Neurobiology

The PNB minor is suitable for students wishing to further their understanding of body and brain functions at the molecular, cellular and systemic level. Course offerings span comparative and model system physiology, nervous system function and development, endocrinology, cardiorespiratory physiology, and associated diseases.

Students pursuing a minor in Physiology and Neurobiology must complete 15 in PNB at the 2000-level or higher level, including:

PNB 2264 and 2265 or PNB 2774, 2775, and 2776.

No more than three credits of PNB 3296, 3299 or 4296 may be applied toward the 15-credit requirement.

The minor is offered by the Physiology and Neurobiology Department.

### Political Science

Students must complete an introductory 1000-level course selected from among POLS 1002, 1202, 1207, 1402/W, or 1602/W. At least one additional 1000-level course is recommended. Students must complete at least 15 credits of course work at the 2000's level or higher. POLS 2998/W courses apply to the minor and may count towards this subdivision requirement. The subdivisions assigned to these courses can be found at polisci.uconn.edu. POLS 3995 courses may be counted toward this distribution only with consent of the advisor. A W or Q course may be substituted for the same numbered course.

Of the 15 credits for the minor, nine credits (three courses) must be taken from three of the six disciplinary subdivisions as they appear below. Cross-listed courses may count only once towards this subdivision requirement.

**Theory and Methodology:** POLS 2023/W, 2062/W, 2072Q, 2073Q, 3002, 3012/W, 3017, 3019/W, 3022W, 3023/W, 3030, 3032, 3042, 3062/W, 3072, 3082, 3672

**Comparative Politics:** POLS 2222/W, 3202/W, 3203, 3205, 3206, 3208/W, 3209, 3211/W, 3212, 3214/W, 3216, 3228, 3235, 3237/W, 3239/W, 3240E, 3245, 3249, 3250/W, 3252, 3255, 3256/W

**International Relations:** POLS 2450, 2460E, 3040, 3247, 3402, 3406/W, 3410, 3412, 3413/W, 3414, 3418/W, 3422, 3426, 3428, 3429/W, 3430, 3432, 3434/W, 3437, 3438W, 3442, 3447, 3450, 3457, 3462, 3464/W, 3472/W, 3476, 3710

**American Politics:** POLS 2602W, 2607/W, 2622, 3027/W, 3600, 3601, 3602, 3603WQ, 3604/W, 3606, 3608, 3610/W, 3612, 3613/W, 3615/W, 3617, 3618, 3622, 3625, 3627, 3632/W, 3642, 3647, 3652, 3662, 3667, 3720, 3850

**Public Administration, Policy and Law:** POLS 2062, 2803W, 2807/W, 2827W, 3802, 3807, 3812, 3815, 3817, 3822/W, 3827, 3832, 3834, 3837/W, 3842, 3847, 3857

**Intersectional Indigeneity, Race, Ethnicity, and Politics:** POLS 2602/W, 3019, 3030/W, 3082, 3210/W, 3216, 3218/W, 3247, 3249, 3252, 3418, 3464, 3632, 3633, 3642, 3647, 3652, 3662, 3667, 3672, 3807, 3834, 3837

The minor is offered by the Political Science Department.

### Professional Sales Leadership

The Professional Sales Leadership minor is designed to offer a basic understanding of professional sales and sales management and leadership topics. This minor is not available to Marketing majors.

#### Requirements

Four 3-credit 3000-4000 level MKTG (BADM) courses are required. Business students should register for the MKTG sections; non-business students should register for the BADM sections.

The four required courses are: MKTG 3101 (BADM 3750); MKTG 3452 (BADM 3452); MKTG 3454 (BADM 3454); and one 3000/4000-level MKTG course.

MKTG/BADM 3452 and MKTG/BADM 3454 must be taken in residence at the University of Connecticut.

A minimum of nine credits required for this minor must be earned in residence at the University of Connecticut. Education Abroad courses may not be used to meet this residency requirement.

#### Additional Details

Students must meet all prerequisites before registering for a course. Access to courses for this minor is on a space available basis, and the School of Business cannot guarantee completion of this minor. Students may require departmental permission to register for courses in the minor. Refer to the School of Business section of this catalog for restrictions on Business minors and limits on the number of Business courses available to non-Business students.

## Psychological Sciences

Students seeking to complete a minor in Psychological Sciences are required to take at least 15 2000-level and above psychology credits from among the following courses, which are grouped as follows:

**Foundation:** 2100Q or 2100WQ.

**Area I. Social, Developmental, Clinical, and Industrial/Organizational:** PSYC 2300/W, 2301, 2400, 2600, 2700.

**Area II. Experimental and Behavioral Neuroscience:** PSYC 2200, 2208, 2209, 2500, 2501, 3201 (EEB 3201), 3500, 3501.

**Area III. Cross Area (I and II):** PSYC 2110, 2201, 3100/W, 3102, 3105, 3400, 3601.

**Area IV. Advanced and Specialty Lecture Courses:** PSYC 2101, 2701, 3101, 3104, 3106 (AFRA 3106), 3200/W, 3241 (COMM 3241), 3300/W, 3301, 3405, 3470/W, 3502, 3600/W, 3644, 3670/W, 3770, 3883, 3884, 3885.

**Laboratory Courses:** PSYC 3150, 3250W, 3251, 3252, 3253, 3350W, 3450W, 3550W, 3551W, 3552.

**Research:** PSYC 3889, 3899, 4197W.

The requirements for the Minor in Psychology are as follows:

- One Area I course;
- One Area II course;
- Any three additional 2000-level and above Psychology courses listed above.

No more than three credits of either PSYC 3889 or 3899 may be counted toward the minor. PSYC 3880 cannot be used. A maximum of three 2000-level or above transfer credits in psychology may count toward the minor upon approval of the transfer coordinator in the Department of Psychological Sciences. The courses composing the minor should be selected in consultation with the student's major advisor to form a coherent program relevant to the student's academic and/or career interests and objectives.

The minor is offered by the Department of Psychological Sciences.

### Public Policy

This minor provides an overview of public policy processes and the design, management, and evaluation of public policies and programs. The minor requires 15 credits at the 2000 level or above.

#### Requirements

Students choose 15 credits of Public Policy undergraduate or graduate courses in consultation with their academic advisors. One course from the following list may be used to meet this requirement: PP/URBN 2100; ECON 2201, 2211Q, 2311Q, 2328/W, 2431, 2439, and 2456.

Prospective students should contact Catherine Guarino, Program Director, Department of Public Policy.

### Puppet Arts

The Puppet Arts minor provides students with an introduction to the art, history, design and fabrication of puppets and object performance. Through project-based coursework, students will study and practice the core forms of puppet arts from around the world and develop capacities for designing and fabricating new puppets, creating puppet plays, and producing puppet-related projects. Students must complete DRAM 1501 Introduction to World Puppetry plus 12 credits at the 3000-level or above. Appropriate courses will be determined in consultation with and pre-approved by the Puppet Arts Minor Coordinator. Students interested in the minor must meet with the Puppet Arts Minor Coordinator to develop an initial plan of study and fill out and submit the Puppet Arts Minor Declaration Form.

Students must complete a total of at least 15 credits, as follows.

#### Requirements

DRAM 1501; Plus 12 credits from the following courses: DRAM 3601, 3602, 3603, 3604, 3605, 3607, 3608, 3609.

The minor is offered by the School of Fine Arts.

## Real Estate

Refer to the School of Business section of this catalog for restrictions on Business minors and limits on the number of Business courses available to non-Business students. The minor is designed to offer a basic understanding of real estate topics. Real Estate majors may not earn this minor.

Requirements: To receive this minor, a student must complete four 3-credit, 3000-level courses to include: FNCE 3230 or BADM 3730 (FNCE 3101); and three additional courses from the following: FNCE 3230 or BADM 3730 (FNCE 3101); FNCE 3332, 3333, 3334, 3335, 3336; BLAW 3274; ECON 3439.

Credits from internships cannot be used to satisfy requirements of the minor. No more than one 3-credit course used to satisfy requirements for this minor may be from any transfer or Education Abroad credits earned.

Courses designed for students pursuing this minor can be found in the Finance (FNCE) and Business Administration (BADM) course description sections of the Undergraduate Catalog. Other courses offered to business majors may be available to students pursuing a minor, but students will typically require departmental permission to register for those classes. Students should also note that they must meet all prerequisites for those classes. Access to courses for a Real Estate minor is on a space available basis, and the School of Business cannot guarantee completion of this minor.

The minor is offered by the School of Business. For more information, contact the Center for Real Estate and Urban Economic Studies, phone 860-486-3227. Permission number requests for these courses can be found at [undergrad.business.uconn.edu/forms](http://undergrad.business.uconn.edu/forms).

## Religion

Fifteen credits at the 2000 level or above are required, six credits from Group A, *Foundational Courses*, and nine additional credits from either Group A or B, *Topical Courses*. No more than six credits may be taken in any one department. A maximum of three credits toward the minor may be transfer credits of courses equivalent to University of Connecticut courses. Substitutions for required courses are possible only with the consent of the minor coordinator.

**Group A. Foundational Courses:** ANTH 3400, 3401, 3405; INTD 3260; PHIL 3231; SOCI 2670/W.

**Group B. Topical Courses:** AAAS/ART/INDS 3375; ANTH 2400, 3098\*, 3402, 3403, 5331; ANTH/HEJS 3050; ARTH 2020, 3140, 3150, 3210, 3220, 3230, 3240, 3260/W, 3710/W, 3995\*; CAMS 3213, 3244, 3245, 3295\*, 3298\*; CAMS/HIST 3301, 3320, 3321, 3325, 3326, 3330/W, 3335, 3340; ENGL 2603, 3617, 3621\*, 3623\*, 3627\*, 3629; HEJS 2104, 3201, 3202, 3241, 3295\*, 3298\*, 3301, 3629; HDFS 3252; HIST 3095\*, 3098\*, 3360, 3361, 3371, 3704; INDS 3293\*, 3295\*, 3298\*, 3299\*; ILCS 3247, 3256, 3255W; INTD 3999\*; PHIL 3261/W, 3263; SOCI 2240/W.

\*Variable subject courses may be applied to the Minor depending on content and the approval of the Minor Coordinator.

The minor is offered by the College of Liberal Arts and Sciences. For more information, contact the Literatures, Cultures, and Languages Department by phone 860-486-3313 or e-mail [sara.johnson@uconn.edu](mailto:sara.johnson@uconn.edu).

## Social Justice Organizing

This minor provides interdisciplinary classroom instruction in the theories, histories and formation of social identities, structural inequalities, and movements to foster social justice and equity in the United States. Students learn about valuable experiences and practical skills in social justice community organizing through a supervised internship. Fifteen credits at the 2000-level or above are required by taking three credits each from Groups A, B, and D, and six credits from Group C. No more than six credits may be taken in any one department or overlap with the plan of study of any one other major or minor.

### Group A: Identities, Intersections, and Categories of Analysis

AAAS/SOCI 2210, 2220; AAAS 3201, 3473; AFRA 2211, 3106, AFRA/ ANTH 3152; ANTH/LLAS 3241; HDFS 3110, 3250, 3261, 3277; HEJS/ SOCI 3511/W; HRTS 3042, 3212, 3220/W; LLAS 3210, 3251, LLAS/ POLS 3667; POLS 3012/W, 3017, 3032, 3062/W, 3072, 3082; PHIL 2217,

3216, 3218; PSYC/WGSS 3102; SOCI 2503/W, 2509/W; WGSS 2250, 3257/W, 3270/W.

### Group B: State Structures and Systems of Inequality and Control

AAAS 3531, 3578, AAAS/LLAS 3875; AFRA 2211; AFRA/HRTS/SOCI 2520; AFRA/SOCI 2510; AFRA 3033, AFRA 3563, 3564, 3618; ANTH 3027; ASLN 3254/WGSS 3254; COMM 3321/LLAS/WGSS 3260; COMM/WGSS 3210; ECON 2444, 2445, 2456; ENGL 2605; HDFS 3420, 3421, 3520, 3530, 3540/W, 3550; HIST/WGSS 3560; HIST/WGSS 3561; HIST/WGSS 3562; HIST 3575/HRTS/LLAS 3221; HIST/LLAS 3660W; HIST 3674/LLAS 3220; HRTS/WGSS 2263; HRTS 3201, HRTS/SOCI 2830; HRTS/WGSS 3445; LLAS/POLS 3271; LLAS 3525; POLS 2622, 2998/W, 3202/W, 3203, POLS/WGSS 3247, POLS/WGSS 3249; POLS 3612, 3613/W, 3615/W, 3617, 3618, 3622, 3625, 3627, POLS/URBN 3632/W; POLS 3672/WGSS 3052; POLS 3822/W, 3827, 3842, 3847, 3850, 3857; SOCI 2310, 2320/W, 2325/W, 2501/W, 2701, 2709/W, 2841/W, SOCI/WGSS 3317; SOCI 2660, 2820/W, 3425, SOCI/WGSS 3453; SOCI 3457/W, 3471/W, 3507; SOCI /WGSS 2680; URBN 2000/W, 3276/W, 3632/W; WGSS 2267, 3255/W, 3264; ECON 2498/HRTS 3298/WGSS 3998 when offered as Economics of Gender and Inequality.

### Group C: Creating Social Justice, Equity and Freedom

AAAS 3220, 3212; AFRA 3206, 3213/W, 3215, 3050/W, 3131, 3217/W, 3568, 3569, 3642, 3647; AFRA/HRTS/SOCI 2530; AFRA/POLS/WGSS 3652; ENGL/WGSS 3609; ENGL/WGSS 3611; ENGL/WGSS 3613; HRTS 3252, 3254, 3256/W, 3257, 3326, 3430, 3475, 3575, 3807, HRTS/ SOCI 3831; HRTS/SOCI 3835/W; LLAS 2011W, 2012, LLAS 3230/ WGSS 3258; LLAS 3270/POLS 2662; POLS 3203, 3210/W, POLS/WGSS 3216; POLS 3218/W, 3426, 3429/W, 3837/W; SOCI 3821/W; WGSS 2255/W, WGSS 3269; ENGL 3629/WGSS 3998 when offered as Studies in Literature: Femme Fatales; MUSI 4995/WGSS 3998 when offered as Women in Music.

### Group D: Service Learning/Internship

AAAS/AFRA/LLAS/WGSS 4100.

In this interdisciplinary seminar, students learn and work alongside other University of Connecticut students, instructors and local activists as they examine the history of social justice organizing in the United States and gain practical skills in community organizing and political advocacy. Student practitioners gain familiarity with the theories, strategies, and practice of community organizing movements, such as those for immigration, environmental, reproductive, and racial justice.

The minor is offered by Africana Studies; Asian and Asian American Studies Institute; El Instituto: Latina/o, Caribbean, and Latin American Studies; and Women, Gender, and Sexuality Studies.

## Social Responsibility and Impact in Business

This minor is designed to offer a basic understanding of the role of business and government in environmental and social responsibility. This minor is available to all students, with the exception of students majoring in Marketing.

### Requirements

Four 3-credit 3000-4000 level BLAW (HRTS/BADM/MKTG) courses are required. Business students should register for the BLAW sections; Human Rights majors should register for the HRTS sections; other non-Business majors should register for the BADM sections.

The four required courses are: BLAW 3175 (BADM 3720); BLAW 3252 (HRTS/BADM/MKTG 3252); BLAW 3254 (HRTS/BADM/MKTG 3254); and one 3-credit 3000-4000 level BLAW course (with the exception of BLAW 4899) or any one 3-credit 3000-4000 BADM or HRTS course cross-listed with a BLAW course.

BLAW 3252 (HRTS/BADM/MKTG 3252) and BLAW 3254 (HRTS/ BADM/MKTG 3254) must be taken in residence at the University of Connecticut.

A minimum of nine credits for this minor must be earned in residence at the University of Connecticut. Education Abroad courses may not be used to meet this residency requirement.

Students must meet all prerequisites before registering for a course. Access to courses for this minor is on a space available basis, and the School of Business cannot guarantee completion of this minor. Students may require departmental permission to register for courses in the minor. Refer to the School of Business section of this catalog for restrictions on Business minors and limits on the number of Business courses available to non-Business students.

## Sociology

Students must complete SOCI 1001, 1251, 1501, or 1701 and five different 2000-level or above Sociology courses (totaling 15 credits), including either SOCI 3201 or 3251.

The minor is offered by the Sociology Department.

## Software Design

To receive a minor in Software Design, a student must earn a C+ or better in each of four (4) 3-credit, 3000/4000-level OPIM courses offered by the School of Business.

**Students must complete the following core courses:**

1. OPIM 3401
2. OPIM 3402
3. OPIM 3403 or OPIM/BADM 3603
4. and one 3000/4000-level OPIM course.

This minor is not open to Business Data Analytics or Analytics and Information Management majors. Students not enrolled in the School of Business must obtain permission to take courses for the minor. Refer to the School of Business section of this catalog for restrictions on Business minors and limits on the number of Business courses available to non-Business students.

The minor is offered by the School of Business. For more information, contact the Undergraduate Programs Office, School of Business, room 248, or phone (860) 486-2315.

## Spanish

Students wishing to complete a Minor in Spanish are expected to take at least 18 credits of 2000, 3000 and 4000-level Spanish courses. The requirements are:

- A. One advanced grammar or writing course from SPAN 3178, 3240W or 3293
- B. One course from each of the following groups:
  - **GROUP 1 (Literature):** SPAN 3207, 3208, 3230, 3231, 3232, 3233, 3234, 3260, 3261, 3262, 3263, 3264, 3266, 3267W, 3293, 4200W; SPAN/LLAS 3265.
  - **GROUP 2 (Culture):** SPAN 3179, 3200, 3201, 3204, 3205, 3206, 3207, 3208, 3214, 3250, 3251, 3252, 3254, 3293, 4200W.
  - **GROUP 3 (Language and Communication):** SPAN 3170, 3171, 3172, 3177, 3178/W, 3179, 3204, 3240W, 3241, 3242, 3261, 3267W, 3293, 4200W.
- C. Two additional courses from any group.

In addition, the following rules apply: AP courses may not be used toward the minor. A maximum of three transfer credits and a maximum of three SPAN 3293 may be used toward the minor, but students applying transfer credits toward completion of the minor may use only two SPAN 3293. In any case, a minimum of nine credits in residence are required.

The minor is offered by the Literatures, Cultures, and Languages Department.

## Statistics

This minor requires at least 15 credits at the 2000 level or above. Students must choose one of two options:

- Track I. STAT 2215Q, 3115Q, 3375Q, 3445, plus one course from the *Optional List* below.
- Track II. STAT 2215Q, 3025Q, 3115Q, plus two courses from the *Optional List* below.
- *Optional List:* STAT 3515Q, 3675Q, 3965, 4475, 4525, 4625, 4825, and 4875.

Students who have passed MATH 1132Q or 1152Q and also MATH 2110Q or 2130Q are strongly advised to take Track I. Students who have passed only MATH 1132Q or 1152Q should take Track II. The minor is not open to students majoring in Statistics, Mathematics-Statistics, Statistical Data Science, or Applied Data Analysis.

The minor is offered by the Statistics Department.

## Studio Art

The minor in Studio Art provides an opportunity to explore studio arts across a range of media and artistic practices. Students wishing to complete this minor must fulfill the following requirements:

1. A minimum of 18 credits in ART courses
2. Either ART 1010 or 1030 or 1040
3. Five ART courses at the 2000 level or above (minimum of 15 credits)

ART 4901 is not open toward the minor.

A maximum of six credits of ART 2993 or 3993, Foreign Study, may be used to fulfill the requirements of the minor.

No portfolio review is required for students enrolling in the minor.

The Studio Art minor is offered by the Department of Art and Art History. Students interested in the minor must meet with the Studio Art minor coordinator to develop an initial plan of study and fill out and submit the Studio Art Minor Declaration Form.

## Supply Chain

To receive a minor in Supply Chain, a student must earn a C+ or better in each of four (4) 3-credit courses satisfying the minor. MEM students are required to take both OPIM 3601 and 3602, and can use one of them as the 4<sup>th</sup> 3000/4000-level OPIM course.

**Students must complete the following core courses:**

1. OPIM/BADM 3104 or MEM 2211
2. OPIM 3601 or OPIM 3602
3. OPIM/BADM 3603 or OPIM/BADM 3301
4. and one 3000/4000-level OPIM course.

This minor is not open to Business Data Analytics or Analytics and Information Management majors. Students not enrolled in the School of Business must obtain permission to take courses for the minor.

Refer to the School of Business section of this catalog for restrictions on Business minors and limits on the number of Business courses available to non-Business students.

The minor is offered by the School of Business. For more information, contact the Undergraduate Programs Office, School of Business, room 248, or phone (860) 486-2315.

## Sustainable Community Food Systems

The Sustainable Community Food Systems (SCFS) minor provides an in-depth exploration of food systems through performing an intensive summer work experience and fall internship (six credits) and reflecting on the practice of working in a sustainable community food system. Farm experience through working at the Spring Valley Student Farm (or another approved farm or community garden) is required and residence at the farm for at least a summer is encouraged.

**Requirements**

The minor consists of 18 credits as follows:

- Two elective courses in social dimensions of food resources that complement the student's plan of study, as approved by the students' SCFS adviser. Options include: ARE 2260, 4438E; EVST 3200; HDFS 3425; NRE 3265; NUSC 3230; SOCI 2705.
- A capstone writing class: GEOG 4000W or EVST 4000W.
- Six credits of an internship class in a department appropriate to the SCFS minor.
- One elective class from the College of Agriculture, Health and Natural Resources, related to sustainable food production that complements the student's plan of study, as approved by the students' SCFS adviser. Options include SPSS 2100, 2500, and 3610.

This minor is offered by the Environmental Studies program and is offered jointly by the College of Liberal Arts and Sciences and the College of Agriculture, Health and Natural Resources.

## Sustainable Environmental Systems

The Sustainable Environmental Systems minor applies the principles of sustainability science, systems thinking, and the environmental sciences to help society move towards a more sustainable future. Topics include ecological systems, natural resources management, environmental ethics and cultural interactions, as well as selected economics and business perspectives. A maximum of three credits towards the minor may be transfer credits of courses equivalent to University of Connecticut courses. A maximum of six credits in the minor may be part of the major. Students cannot receive the minor within the same Environmental Sciences degree concentration.

### Requirements

Total of at least 15 credits at the 2000-level or above as follows:

I. Core courses (nine credits). All minors must take one course from areas A, B, and C. Additional core courses in a single category can be applied to the additional minor requirements beyond the core requirements. The same course cannot be used to fulfill more than one area.

- A. Resource Management: EEB 2208; GEOG 3340; MARN 3030; NRE 2010, 2215E, 2345, 3105, 3125, 3305, 3335, 3345/W, 3500, 3535, 4255, 4335, or 4575
- B. Ecological Systems: EEB 2244/W, 3247, 4230W; EEB 3230/MARN 3014; NRE 2455, 4205, or 4340
- C. Ethics, Values, and Culture: ANTH 3339; ENGL 3240E, 3715E; GEOG 3410; HIST 3540E/W, 3542; JOUR 3046; PHIL 3216/W; SOCI 2701, 2705, 2709W, or 3407/W

II. Six additional credits from the following areas: Choose at least three credits from two of the three areas D-F. Courses cannot be used to fulfill more than one area.

- D. Built Systems: AH 3175; GEOG 2400; LAND 3230WE, or NRE 3265
- E. Governance and Policy: AH 3174; ARE 2235, 3434E, 3437E, 4438E, 4462E; ECON/MAST 2467; EVST/POLS 3412; GEOG 3320W; MAST/POLS 3832; NRE 3000, 3201, 3245, or SOCI 3407/W
- F. Economics and Business: ARE 2235, 4305, 4438E, 4444, 4462E; ECON/MAST 2467; ECON 3466E, or 3473/W

The minor is offered jointly by the College of Liberal Arts and Sciences and the College of Agriculture, Health and Natural Resources.

## Sustainable Food Crop Production

This minor provides an overview of issues related to sustainable food crop production within the context of environmental stewardship. Not open to students declaring the Sustainable Agriculture concentration in the Sustainable Plant and Soil Systems major.

Students must complete a minimum of 15 credits including: SPSS 2100, 2500, and 3610 and two of: SPSS 1150, 3550, 3620, 3810, 3820, 3830, 3840, 3990.

To include SPSS 3990, the memorandum of understanding must be approved by the Minor Advisor.

Students must earn a combined grade point average of 2.5 or higher for all courses listed above.

The minor is offered by the Department of Plant Science and Landscape Architecture.

## Therapeutic Horsemanship Education

This minor provides students with an opportunity to pursue an interest in therapeutic riding programs, and provides a basis for further study and certification as a therapeutic riding instructor or director. Riding experience at Intermediate Level II is required to enroll in ANSC 4457, one of the required courses of this minor.

The requirements for this minor are at least 16 credits of coursework. The student must complete all of the following courses: ANSC 2251, 3551, 3691, 4457.

The student must also complete a minimum of eight credits of coursework by choosing from the following courses: ARE 2215, 4217; BADM 3740; HDFS 2100, 2200; PNB 2264 or 2265; PNB 2274 or 2275; SLHS 1150.

At least 12 of the credits taken to satisfy the minor must be from courses that are not required for the student's major or other minors within the College of Agriculture, Health and Natural Resources.

Students must earn a combined grade point average of 2.5 or higher for all courses listed above.

This minor is offered by the Animal Science Department.

## Turfgrass Management

The minor in Turfgrass Management provides an introduction to the management and maintenance of turfgrasses used for aesthetics (residential and commercial lawns, parks, institutional grounds), recreation (golf courses, athletic and sports fields), and functional purposes (sod farms, highway medians, inland and coastal erosion control sites, conservation). This minor will also assist those interested in sales, marketing, or any other business aspects of industries associated with turfgrass and ornamental horticulture. Not open to students declaring the Turfgrass Science concentration in the Sustainable Plant and Soil Systems major.

All students are required to complete a minimum of 15 credits including:

- SPSS 1060, 1100, 2120, 3150
- One of the following: SPSS 2210, 3300, 3620, 3810, 3820

At least 12 credits must not duplicate courses used to satisfy the 36-credit requirement for the student's major, or for another minor in the College of Agriculture, Health and Natural Resources. Students must earn a combined grade point average of 2.5 or higher for all courses listed above.

The minor is offered by the Department of Plant Science and Landscape Architecture.

## Urban and Community Studies

The minor in Urban and Community Studies is an interdisciplinary minor with a focus on educating citizens on the multiple dimensions of urban and community life and preparing students for careers in public and community service. While available with any undergraduate major, this minor provides an especially appropriate complement to majors in the social sciences, as well as departments and schools that emphasize human services such as Human Development and Family Sciences or Education.

The minor requires passing 15 credits at the 2000 or above level. A writing course is not required for the

minor, but students may register for these sections if offered.

1. **Required Core:** URBN 2000/W.
2. **Core:** Two of the following with no more than one per department (Cross-listed courses count towards the non-URBN department): ECON 2439, 2456; GEOG/URBN 3200/W; GEOG 2000, 2400E, 4210; HIST/URBN 2541/W; HIST 3554; HIST/AFRA 3564; HIST 3674/LLAS 3220; POLS 3842 or PP 3031; POLS/URBN 3632/W; PP 4034; SOCI/URBN 2901/W; SOCI 2820/W, 3425.
3. **Supporting:** Two additional courses selected from Group 2 or the following list:
  - ANTH 3150/W;
  - ECON 2327, 2328/W, 2431, 3431/W; ECON 3439/W/URBN 3439;
  - EDLR 3547/W;
  - ENGL 3235W;
  - GEOG/CE 2500; 2510, 3000, 3500Q, 4200W;
  - HIST/AAAS 2530; HIST/URBN 2650; HIST 2810, 3102, 3520; HIST/AFRA/HRTS 3563; HIST/AFRA 3568;
  - HDFS 2001, 3110, 3510, 3530, 3540/W;
  - INTD 3584;
  - NRE 3265;
  - POLS 2072Q, 2622; POLS/HRTS 3212; POLS 3240E; POLS 3406/W, 3617; POLS/AFRA 3642; POLS 3662/LLAS 3270;

- POLS 3847;
- PP/URBN 2100; PP 3020/W; PP/AFRA 3033/POLS 3633;
- SOCI 2301/W, SOCI/AFRA/HRTS 2530; SOCI 2651/W, 2705, 2709E/WE, 2907/W, 3201; SOCI 3459/W/HDFS 3240/W; SOCI 2510/W/AFRA 2510; SOCI 2655, 2670/W, 3601/W; SOCI/WGSS 2680/W; SOCI 3903/W/URBN 3276/W;
- STAT 2215Q;
- URBN 2301Q, 2302; URBN/AMST 2400; URBN 3981/3991 (three credits combined) or INTD 3594; URBN 3400E, 3993, 3995, 3998, 4999.

Students interested in pursuing a minor in Urban and Community Studies are advised to complete 1000-level courses in the social sciences that may be prerequisites for courses in the Urban and Community Studies minor. These include but are not limited to GEOG/URBN 1200; ECON 1201; POLS 1602; PP 1001; SOCI 1001, 1251; STAT 1000Q/1100Q; and URBN 1300W and 1400. They should also plan on enrolling in URBN 2000 as soon as possible.

The minor is offered by the Urban and Community Studies Program.

### **Wildlife Conservation**

This minor provides students with a basic understanding of wildlife resources management. Students will be required to complete at least 18 credits that include a common core for all students and a selection of courses based on a specific area of interest. Any student but Natural Resources majors can graduate with this minor.

Students will be required to complete NRE 2345 and 3335 and nine or more credits from the following courses: NRE 3201, 3105, 3305, 3345W, 3365, 3699 (wildlife topic related), 4335, 4689 (wildlife topic related), 4697W (wildlife topic related); and three or more credits from the following courses: NRE 2000, 2415, 3475, 4205.

At least 12 of the credits taken to satisfy the minor must be from courses that are not required for the student's major or other minors within the College of Agriculture, Health and Natural Resources.

Students must earn a combined grade point average of 2.5 or higher for all courses listed above.

The minor is offered by the Department of Natural Resources and the Environment.

### **Women's, Gender, and Sexuality Studies**

The Women's, Gender, and Sexuality Studies Program is a flexible interdisciplinary academic program devoted to pursuit of knowledge concerning women and the critical analysis of the production of gender and sexuality within transnational and cross-cultural contexts. Combining the methods and insights of traditional academic disciplines with the special insights of feminist studies, gender studies, and sexuality studies, our courses focus on understanding the origins of and changes in diverse cultural and social arrangements.

Students seeking a minor in Women's, Gender, and Sexuality Studies must complete 15 credits of course work at the 2000 level or higher as follows:

1. WGSS 2250 Critical Approaches to Women's, Gender and Sexuality Studies (three credits)
2. 12 additional credits of 2000-level or higher WGSS courses, those cross-listed with WGSS, and/or courses approved by the director of WGSS, with the below restrictions:
  - a. Not more than two courses may be counted toward both the minor and the major.
  - b. Not more than six credits for the Internship Program may be applied to the minor.
  - c. A maximum of three credits towards the minor may be transfer credits of courses equivalent to University of Connecticut courses.

The minor is offered by the Women's, Gender, and Sexuality Studies Program.

### **Writing**

The Writing minor promotes an interdisciplinary awareness of composing practices, histories, and theories. It encourages students to refine their writing abilities across diverse contexts and technologies.

The minor requires 15 credits at the 2000-level or above. All students must take ENGL 2013W or 2049W and 12 credits from the list below. Courses must be taken in at least two subject areas. No more than six credits may overlap with another major or minor. Please note that some classes are open only to majors in that subject area.

AFRA 4994W; AH 4239, 4240W; ASLN 3306W; BME 4910W; BUSN 3002W, 3003W; CE 4900W, 4910W, 4920W; CHEG 4143W; CHEM 3170W; CHIN 3250W; COMM 2100, 3120W, 4530W, 4710, 4720; CSE 4939W; ECON 2500W; EEB 2244WE, 2245W, 3244W, 4230W; EDCI 3100W, 4110W, 4205W, 4210W; EPSY 4120W; ENGL 2001, 2614, 2701, 3003W, 3010W, 3012, 3013, 3601, 3701, 3703, 3705, 3711, 3713, 3715, 3082, 3692, 4407W; ENVE 4910W, 4920W; FREN 3268W; EARTH 2050W, 4050W; HDFS 4007W; HIST 2100, 3100W, 3101W, 3556W; JOUR 2000W, 2001W, 3000W, 3005, 3012W, 3013W, 3040, 3046E; LLAS 2012; MCB 3841W, 3842W, 3843W, 3845W; ME 4973W; MEM 4971W, 4972W; MSE 4901W, 4902W; PNB 3120W; PSYC 2100WQ; SPAN 3240W; TRST 3010, 3011.

Students may petition to include other courses whose focus is on the theory and practice of writing by applying to Ellen Carillo at [ellen.carillo@uconn.edu](mailto:ellen.carillo@uconn.edu). Not every W course will count toward the Writing Minor.

The minor is offered by the College of Agriculture, Health and Natural Resources, the College of Liberal Arts and Sciences, the School of Business and the School of Engineering.

# Regional Campuses

The University of Connecticut expands beyond just the Storrs campus. With four regional campuses around the state, access to UConn is readily available throughout Connecticut. Small classes, access to talented faculty, and exclusive internships and majors provide unique opportunities while benefitting from a quality education. The regional campuses – Avery Point, Hartford, Stamford, and Waterbury – provide Connecticut’s citizens with diversified educational programs: master’s degrees, four-year undergraduate degrees, two-year general education programs for Storrs-bound students, and, for returning adult students, a bachelor of general studies degree and non-credit courses. Each regional campus has a specific mission based on the strengths and needs of its community and region, but all have faculty with active research programs and all take pride in individualized student support services. Faculty, students, and courses meet the same criteria as those at Storrs, and are also linked to Storrs and to each other through the latest technology for distance learning.

Students may initiate study in most of the undergraduate majors available at the University of Connecticut at any of the regional campuses. Students may also complete certain majors entirely at the regional campuses as indicated below.

## Avery Point Campus

Annemarie Seifert, Ph.D., *Director*

[averypoint.uconn.edu](http://averypoint.uconn.edu)

Situated on 72 acres of land and bordered on three sides by water, UConn’s Avery Point location fits well with its marine and maritime mission. This mission includes fulfilling UConn’s responsibilities as a sea grant institution. Avery Point contributes to the understanding – and solution – of problems relating to the intersection of oceans and people, both through the expertise of the faculty and the education of its students who will help ensure sustainable uses of marine resources and coastal regions and cities. Five core areas to fulfilling this role and scope are: liberal arts undergraduate programming, marine and maritime undergraduate programs, graduate and professional programs, research activities, and community outreach activities.

## Hartford Campus

Mark Overmyer-Velázquez, Ph.D., *Director*

[hartford.uconn.edu](http://hartford.uconn.edu)

UConn Hartford gives students from all backgrounds the opportunity to begin, continue, or complete their education in a small college environment while still providing access to the resources and faculty of a world-class research university. The programs incorporate experiential learning engaged with and informed by the many cultural, political, social, and economic institutions of the surrounding metropolitan area. With a high priority on community outreach and service, UConn Hartford is home to the School of Social Work, Department of Public Policy, Urban and Community Studies Program, and the Connecticut State Historian. UConn Hartford strives to fully develop the inherent excellence of every student and challenge each to generate positive change in our communities, state, nation, and world.

## Stamford Campus

Jennifer Orlikoff, Ph.D., *Director* [stamford.uconn.edu](http://stamford.uconn.edu)

Located at One University Place, at the corner of Washington Boulevard and Broad Street in downtown Stamford and is easily accessible by car, train, or bus. The campus offers four-year undergraduate degrees in a number of majors: American Studies, Business and Technology, Digital Media Design, Economics, English, General Studies, Human Development and Family Sciences, History, Political Science, and Psychology. The Stamford campus’ location in lower Fairfield County provides access to internships, field placements and jobs with Fortune 500 companies, investment and banking institutions, non-profit organizations, and civic, education and community agencies.

## Waterbury Campus

Fumiko Hoefft, Ph.D., *Director* [waterbury.uconn.edu](http://waterbury.uconn.edu)

The Waterbury campus has served the state’s residents for over 75 years. Located between two major hospitals, the campus is recognized as an

educational hub for health-related and community-based programs. The campus offers nine undergraduate programs including the newest Allied Health Sciences major. Additional degrees in business as well as liberal arts, focus on literature, cultural studies, urban and social change, the family life span, and more. The campus provides the greater Waterbury area access to a high-quality education with classes taught by leading faculty in their discipline. The campus has a strong and supportive relationship with the community it serves.



# Directory of Courses

The following directory lists all active undergraduate courses which may be offered at the University. Schedules for current and upcoming academic terms are available via the Student Administration System or at catalog.uconn.edu.

**Numbering System.** Courses numbered 0000-0999 are courses in the Ratcliffe Hicks School of Agriculture; baccalaureate students may not register for these courses. Courses numbered 1000-1999 are introductory courses, usually with no prerequisites, primarily for first-year and sophomores; courses numbered 2000-2999 usually have no more than one prerequisite and are primarily intended for sophomores; courses numbered 3000-3999 are advanced undergraduate courses primarily intended for juniors and seniors; courses numbered 4000-4999 are advanced undergraduate courses primarily intended for seniors. Courses numbered 5000 and above are for graduate students and appear in the Graduate School Catalog or as School of Pharmacy courses that are available to Doctor of Pharmacy majors listed in the Undergraduate Catalog. University regulations allow undergraduates to take courses at the 5000 level only if they have a cumulative grade point average of 2.6 or above and if they are in the seventh or eighth semester of University standing; individual schools and colleges may have more stringent requirements which students must meet. Exceptions can be made only by the instructor and the dean of the school or college in which the student is registered.

**Skill Codes.** W and Q skill code designations and combinations of these have been added to courses where applicable. Students may find a comprehensive explanation of W and Q skill codes under "Competencies" in the General Education Requirements section of this publication. Note: The same 4-digit numerics are not repeatable, i.e. 1107, 1107W. Skill code versions of courses share the same attributes of the non-skill versions regarding credit restrictions.

**Environmental Literacy.** Courses that may be used to satisfy the Environmental Literacy general education requirement, which is described in the General Education Requirements section of this publication, are indicated by an E at the end of the catalog number.

**Content Areas.** Content area designations (CA 1-4) have been added to course descriptions to identify those that meet General Education content requirements. Content areas 1 through 4 are defined in the General Education Requirements section of this publication.

Refer to the Academic Regulations section of this Catalog for further information regarding registration for courses.

## Accounting (ACCT)

### 2001. Principles of Financial Accounting

Three credits. Prerequisite: Not recommended for first year students. May not be taken out of sequence after passing ACCT 2101, 3005, or 3260.

The study of the generation and interpretation of accounting information as a basis for financial statement analysis and management decision-making.

### 2101. Principles of Managerial Accounting

(Also offered as BADM 2101.) Three credits. Prerequisite: ACCT 2001; open only to Business majors of sophomore or higher status. May not be taken out of sequence after passing ACCT 3201, 3221, or 4881.

Internal reporting to managers for use in planning and controlling operating systems, for use in decision making, formulating major plans and policies, and for costing products for inventory valuation and income determination. Formerly offered as BADM 2710.

### 3005. Introduction to a Profession

One credit. Prerequisite: ACCT 2001 which may be taken concurrently; open only to Business majors of sophomore or higher status. Required for Accounting majors.

Designed to help students (1) understand the professional responsibilities of accountants, (2) enhance one's knowledge of the structure of the accounting profession and the reporting process, (3) evaluate alternative accounting careers, and (4) prepare for accounting internship and career opportunities. Consists of a series of evening seminars. Topics include (among others): alternative accounting careers, accounting standard setting, professional certification for accountants, and analysis and interpretation of accounting information. The course will also introduce and allow students to interact with UConn accounting alumni in a variety of accounting careers.

### 3201. Intermediate Accounting I

(Also offered as BADM 3201.) Three credits. Prerequisite: ACCT 2101 or BADM 2101; ECON 1200 or both ECON 1201 and 1202; open only to business majors of junior or higher status. Accounting majors must also complete ACCT 3005 either before or concurrently. May not be taken out of sequence after passing ACCT 3202 or 4881.

An in-depth study of financial accounting, giving particular emphasis to balance sheet valuations and their relationship to income determination.

### 3202. Intermediate Accounting II

(Also offered as BADM 3202.) Three credits. Prerequisite: ACCT or BADM 3201; open only to business majors of junior or higher status; Accounting majors must also complete ACCT 3005 either before or concurrently. May not be taken out of sequence after passing ACCT 4203 or ACCT/BADM 4243.

A continuation of ACCT/BADM 3201.

### 3221. Cost Accounting

Three credits. Prerequisite: ACCT 2101 or BADM 2101; open only to business majors of junior or higher status.

The study of (1) product costing as a basis for income determination and inventory valuation and (2) accounting concepts for planning and controlling organizational operations.

### 3260. Federal Income Taxes

(Also offered as BADM 3260.) Three credits. Prerequisite: ACCT 3201 or BADM 3201; open only to business majors of junior or higher status. May not be taken out of sequence after passing ACCT 4261.

A study of the underlying concepts of federal income taxation. Emphasis to be placed upon the impact of taxes on business decisions.

### 3265. Volunteer Income Tax Assistance for Preparers

(Also offered as BADM 3265.) Two credits. Prerequisite: ACCT 2001; open only to business majors of sophomore or higher status. May not be taken out of sequence after passing ACCT 4265.

IRS Certification in Basic Domestic and International Student and Scholar tax returns. Research and analyze current tax issues, interview a diverse group of real taxpayers, prepare real returns and respond to immediate feedback while working in a controlled setting under the supervision of a CPA. Students learn practical accounting and tax skills and procedures, while providing a valuable service to our community. Gives students the rare opportunity to gain technical industry experience in an academic environment. ACCT/BADM 4265 can be taken for one credit subsequent to ACCT/BADM 3265. Students in ACCT/BADM 4265 serve as qualified reviewers.

### 4203. Advanced Accounting

Three credits. Prerequisite: ACCT 3202 or BADM 3202; open only to Business majors of junior or higher status. Not open for credit to students who have passed or are taking ACCT 5603.

An in-depth study of accounting for business combinations. Coverage will also be given to accounting for nonprofit entities and contemporary issues in financial accounting.

### 4204. Financial Statement Analysis and Business Valuation

Three credits. Prerequisite: Instructor consent; open only to Business majors of junior or higher status; recommended for Honors students. Recommended preparation: ACCT 3202 or BADM 3202.

Advances the understanding of financial information to analyze and value firms. Involves the application of accounting, economics, finance and other skills to better understand information contained in financial reports.

### 4243. Assurance Services

(Also offered as BADM 4243.) Three credits. Prerequisite: ACCT 3202 or BADM 3202; open only to business majors of junior or higher status.

Focuses on issues relevant to the public accounting profession, such as legal liability and ethics, audit risk analysis, planning of audit engagements, audit reports, and other assurance services and reports. Students will learn to think critically about issues facing the accounting profession, primarily by analyzing cases and completing a number of individual and group research projects.

**4261. Taxation of Business Entities**

Three credits. Prerequisite: ACCT 3260 or BADM 3260; open only to business majors of junior or higher status.

Application of basic tax concepts to business entities, with particular emphasis on C corporations and partnerships. At the end of the course, students should be able to identify and address the tax issues faced when forming, operating, and liquidating a business entity.

**4265. Advanced Volunteer Income Tax Assistance for Reviewers**

One credit. Prerequisite: ACCT 3265 or BADM 3265; open only to Business majors of sophomore or higher status. Not open for credit for students in or who have completed BADM 4265.

Advanced IRS Certification in Domestic and International Student and Scholar tax returns. Research and analyze current tax issues on an advanced level, with supervisory responsibility, while working in a controlled setting under the supervision of a CPA. Students develop mentoring skills as well as supplement practical accounting and tax skills, while providing a valuable service to our community. Gives students the rare opportunity to gain technical industry experience in an academic environment.

**4881. Internship in Accounting**

Variable (1-6) credits. Prerequisite: ACCT 2101 or BADM 2101; ACCT 3201 or BADM 3201, and at least three credits of 3000-level ACCT courses; consent of instructor and department head; open only to Business majors of junior or higher status. May be repeated for credit.

Designed to provide students with an opportunity for a supervised internship. Students will work with one or more professionals in their major academic area. Student performance will be evaluated on the basis of an appraisal by the field supervisor and an appropriate summative activity submitted by the student. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

**4893. Foreign Study**

Variable (1-6) credits. Prerequisite: Open only to business majors of junior or higher status. May be repeated for a total of 6 credits.

Special topics taken in a foreign study program.

**4895. Special Topics**

Variable (1-6) credits. Prerequisite: Prerequisites and recommended preparation vary by section; open only to business majors of junior or higher status. May be repeated for credit.

Classroom course in special topics as announced in advance for each semester. Credit and hours by arrangement.

**4899. Independent Study**

Variable (1-6) credits. Prerequisite: Open only to business majors of junior or higher status. May be repeated for credit.

Individual study of special topics as mutually arranged between a student and an instructor.

**4997W. Senior Thesis in Accounting**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open only to Accounting Department honors students; open to juniors or higher.

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**African Studies (AFRI)**

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**3293. Foreign Study**

Variable (1-15) credits. Prerequisite: Consent of director required, normally to be granted prior to student's departure. May be repeated for credit.

Consent of Director required, normally to be granted prior to student's departure.

**3995. Special Topics**

Variable (1-3) credits. May be repeated for credit.

**3999. Independent Study**

Variable (1-6) credits. Prerequisite: Instructor consent. May be repeated for credit.

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**Africana Studies (AFRA)**

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**1100. Afrocentric Perspectives in the Arts**

(Also offered as FINA 1100.) Three credits.

Lectures and discussions about assigned readings focus on historical and aesthetic perspectives of African American Arts and their African sources, with emphasis on how social and aesthetic context impacts on creative expression by African American artists. Presentations by guest lecturers and University of Connecticut faculty plus small group discussions. CA 1. CA 4.

**2211. Introduction to Africana Studies**

Three credits. Prerequisite: May not be taken out of sequence after passing AFRA 4994.

Interdisciplinary overview of Africana studies, giving consideration to the artistic, intellectual, political and cultural experiences of black people in the United States, Caribbean, Europe, and Africa. Significant movements, ideas, people and events that have shaped and continue to shape Africa and the Diaspora.

**2214. African American Literature**

(Also offered as ENGL 2214.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Critical and historical examination of the literature of African American writers from Phyllis Wheatley to the present. CA 4.

**2214W. African American Literature**

(Also offered as ENGL 2214W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Critical and historical examination of the literature of African American writers from Phyllis Wheatley to the present. CA 4.

**2222. Race, Gender, Sexuality, and the Power of Looking**

(Also offered as AAAS 2222 and ARTH 2222.) Three credits. Prerequisite: Not open for credit to students who have passed ARTH 2198 when offered as "Race, Gender, and the Power of Looking."

A beginning investigation into the issues of what constitutes visual culture and how race, gender, and sexuality are seen and not seen. The goals of the course include engaging with the history and scholarly dialogues around visual studies, becoming more active and critical visual consumers and critics, and understanding personal stakes and diverse positions in dialogues about visualizing gender and race. CA 1. CA 4.

**2250. Racial Disparities in Health**

(Also offered as SOCI 2250.) Three credits.

Social determinants of health. Racial differences in health outcomes. Social, economic, and political structures and their impacts on health organization and inequalities in care delivery. Patient-provider interactions; meanings of illness. CA 2.

**2345. Language and Racism**

(Also offered as COGS 2345.) Three credits. Prerequisite: Open to sophomores or higher. Recommended preparation: One course in AFRA or COGS.

Examines the relationships between language use, both historically and across the lifespan, and the social construction of race, racism, and racial identity, with particular emphasis on racial politics in the United States.

**2461. Race, Gender, and U.S. Health Care**

(Also offered as SOCI 2461.) Three credits. Recommended preparation: AFRA/SOCI 1001.

Factors of race and gender at work in U.S health care. Focus on African Americans and Black immigrants as care recipients and care providers in health care institutions. CA 2. CA 4.

**2510. Ethnicity and Race**

(Also offered as SOCI 2510.) Three credits.

Ethnic groups, their interrelations, assimilation, and pluralism. Culture, and identity that arise from differences in race, religion, nationality, region, and language. Formerly offered as AFRA/SOCI 3501.

**2520. White Racism**

(Also offered as SOCI 2520 and HRTS 2520.) Three credits.

The origin, nature, and consequences of white racism as a central and enduring social principle around which the United States and other modern societies are structured and evolve. Formerly offered as AFRA/HRTS/SOCI 3505. CA 4.

**2530. African Americans and Social Protest**

(Also offered as SOCI 2530 and HRTS 2530.) Three credits.

Social and economic-justice movements, from the beginning of the Civil Rights movement to the present. Formerly offered as AFRA/HRTS/SOCI 3825.

**2621. Cuba in Local and Global Perspective**

(Also offered as HIST 2621 and LLAS 2621.) Three credits.

Major themes in Cuban politics and culture. Local and global perspective. Key topics include race, gender, class, cultural movements and practices, slavery, political economy and movements, nationalism. CA 1. CA 4-INT.

**2622. History of Gender and Sexuality in Latin America and the Caribbean**

(Also offered as HIST 2622, LLAS 2622, and WGSS 2622.) Three credits.

Topics may include: empire and colonialism/anti-colonialism; slavery, science, and the state; cultural practices and institutions; feminisms and masculinities; law and public policies; immigration; forms of labor and political mobilization; sex and reproduction; and human rights from historical perspective. Formerly offered as AFRA/HIST/LLAS/WGSS 3622.

**2752. Africa in Global History**

(Also offered as HIST 2752.) Three credits.

Broad historical survey of civilizations in Africa, including origins of human life in Africa, economic livelihoods, socio-economic and political structures, state formation, trade, commerce, urbanization, and indigenous systems of belief and world religions. Formerly offered as AFRA/HIST 3752. CA 1. CA 4-INT.

### 3025. Contemporary Africa

(Also offered as ANTH 3025.) Three credits.

Africa since its partition in 1884. Urbanization, social stratification, racial and ethnic conflict.

### 3033. Race and Policy

(Also offered as PP 3033 and POLS 3633.) Three credits.

Examination of contemporary public policy through the lens of race.

### 3042. Baseball and Society: Politics, Economics, Race and Gender

(Also offered as HDFS 3042, WGSS 3042, and AMST 3042.) Three credits. Prerequisite: Open to juniors or higher.

Baseball in historical, political, sociological, and economic contexts. Topics may include: impact on individuals and families; racial discrimination and integration; labor relations; urbanization; roles of women; treatment of gay athletes; and implications of performance-enhancing drugs.

### 3050. African-American Art

(Also offered as ARTH 3050.) Three credits.

The artistic and social legacy of African American art from the eighteenth century to the present day. CA 4.

### 3050W. African-American Art

(Also offered as ARTH 3050W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

The artistic and social legacy of African American art from the eighteenth century to the present day. CA 4.

### 3106. Black Psychology

(Also offered as PSYC 3106.) Three credits. Prerequisite: PSYC 1100; PSYC 1101 or 1103.

Empirical and theoretical literature on psychological experiences of African Americans. Impact of race, culture, and ethnicity on psychological development. CA 4.

### 3131. African-American Theatre

(Also offered as DRAM 3131.) Three credits.

The significant developments in African American theatre and its antecedents and an examination of selected play scripts that exemplify those developments. CA 4.

### 3132. African-American Women Playwrights, 1900 to the present

(Also offered as DRAM 3132.) Three credits. Recommended preparation: AFRA/DRAM 3131.

African American women's playwriting in relationship to social, historical, and political contexts. CA 1. CA 4.

### 3152. Race, Ethnicity, and Nationalism

(Also offered as ANTH 3152.) Three credits.

Popular and scholarly theories of human group identity and diversity, in cross-cultural and historical perspective. Topics include: an overview of 'race' and 'ethnicity' in Western thought, ethnic group formation and transformation, political

mobilizations of group identity, and systems of inequality. CA 2. CA 4.

### 3155. Anthropology of the African Diaspora

(Also offered as ANTH 3155.) Three credits.

An exploration of the racial, political, and social similarities and differences within and between the communities constituting the African Diaspora from an anthropological perspective.

### 3206. Black Experience in the Americas

(Also offered as HIST 3206.) Three credits. Recommended preparation: AFRA 3563/HIST 3563/HRTS 3563; AFRA 3564/HIST 3564, AFRA 3620/HIST 3620; or HIST 3609/LLAS 3609.

Major themes in recent scholarship of African-descended communities in the Americas and their interconnection beyond geopolitical boundaries; race, gender, sexuality, class, religion, cultural movements and practices, slavery, political economy, political movements, and African consciousness, from historical perspective. CA 1. CA 4-INT.

### 3208. Making the Black Atlantic

(Also offered as HIST 3208 and LLAS 3208.) Three credits. Recommended preparation: AFRA/HIST/HRTS 3563 or AFRA/HIST 3564 or 3620; or HIST/LLAS 3609.

Recent scholarship on the central role played by African-descended communities in shaping the early history of the Americas and their interconnection beyond geopolitical boundaries; race, gender, sexuality, class, religion, cultural movements and practices; slavery, political economy, and political movements.

### 3213. Eighteenth- and Nineteenth-Century African American Literature

(Also offered as ENGL 3213.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

Broad historical survey of African American literature from its origins through the turn of the twentieth century. CA 4.

### 3213W. Eighteenth- and Nineteenth-Century African American Literature

(Also offered as ENGL 3213W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

Broad historical survey of African American literature from its origins through the turn of the twentieth century. CA 4.

### 3215. Twentieth- and Twenty-First Century African American Literature

(Also offered as ENGL 3215.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

Broad historical survey of African American literature from the twentieth and twenty-first century. CA 4.

### 3215W. Twentieth- and Twenty-First Century African American Literature

(Also offered as ENGL 3215W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

Broad historical survey of African American literature from the twentieth and twenty-first century. CA 4.

### 3217. Studies in African American Literature and Culture

(Also offered as ENGL 3217.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher. May be repeated for credit.

Focused study of a theme, form, author, or movement in African American literature or culture. CA 4.

### 3217W. Studies in African American Literature and Culture

(Also offered as ENGL 3217W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher. May be repeated for credit.

Focused study of a theme, form, author, or movement in African American literature or culture. CA 4.

### 3224. History of Pan Africanism

(Also offered as HIST 3770.) Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: At least one of HIST 3752, 3753, 3563 or 3564.

The development of ideas of Pan-Africanism, beginning with the proto-Pan-Africanists in the nineteenth century; examination of the linkages between those ideas in Africa and the evolution of Pan-Africanism as a movement in the African Diaspora.

### 3252. Politics In Africa

(Also offered as POLS 3252.) Three credits. Prerequisite: Open to juniors or higher.

The political systems in contemporary Africa; the background of the slave trade, imperialism, colonialism, and the present concerns of nationalism, independence, economic development and military rule. Emphasis on sub-Saharan Africa.

### 3295. Special Topics

Variable (1-6) credits. May be repeated for credit.

Prerequisites and recommended preparation vary.

### 3299. Independent Study

Variable (1-6) credits. Prerequisite: Instructor consent. May be repeated for credit.

Supervised reading and writing on a subject of special interest to the student.

### 3320. Race, Culture, and Reproductive Health

(Also offered as ANTH 3320.) Three credits.

An examination of the reproductive health experiences of women in the United States, including those focused on sexuality, birth, and motherhood. An exploration of the complex relationship between women's reproductive experiences and their contemporary racial and socioeconomic locations in American society.

### 3512. African Archaeology

(Also offered as ANTH 3512.) Three credits.

An archaeological perspective on more than three million years of human social and behavioral change in Africa, from Stone Age societies that are the earliest in the world to sweeping changes brought about by the development and spread of cattle and crops, sophisticated metallurgy, and the later rise of kingdoms and complex polities situated at a global crossroads of trade and interaction.

**3563. African American History to 1865**

(Also offered as HIST 3563 and HRTS 3563.) Three credits.

History of African-American people to 1865, from their West African roots, to their presence in colonial America, through enslavement and emancipation. Adaptation and resistance to their conditions in North America. Contributions by black people to the development of the United States.

**3564. African American History Since 1865**

(Also offered as HIST 3564.) Three credits.

History of African-American people since the Civil war. Contributions by black people to American development. African-American activity in international arenas.

**3568. Hip Hop, Politics and Youth Culture in America**

(Also offered as HIST 3568, AMST 3568, and MUSI 3568.) Three credits.

History of hip-hop, its musical antecedents and its role in popular culture. Race, class, and gender are examined as well as hip-hop's role in popular political discourse.

**3569. Slavery in Film**

(Also offered as HIST 3569.) Three credits. Recommended preparation: AFRA/HIST 3206 or 3563 or 3564; or CLCS 1110.

Depictions of chattel slavery in cinema and popular media over time. Topics include histories of slavery, race and identity, media studies, and cultural studies.

**3575. Black Documentary Film Archival Practices**

(Also offered as JOUR 3575.) Three credits. Prerequisite: Students must have taken a film or media course where they learned how to edit.

Critical and historical examination of Black American archival usage through documentary films and media.

**3618. Comparative Slavery in the Americas**

(Also offered as HIST 3618 and LLAS 3618.) Three credits.

The rise and fall of trans-Atlantic slavery. Topics include resistance, migration, antislavery mobilization, abolitionism, empire, revolution, cultural production, political economy, labor, gender, race and identity formation.

**3619. History of the Caribbean**

(Also offered as HIST 3619 and LLAS 3619.) Three credits.

Encounter experience; slavery, antislavery mobilization, and abolitionism; colonialism; citizenship and nation building; race and gender; political cultures and movements; migration/immigration; cultural production; and political economy; topics will be examined from a historical perspective. CA 1. CA 4-INT.

**3619W. History of the Caribbean**

(Also offered as HIST 3619W and LLAS 3619W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Encounter experience; slavery, antislavery mobilization, and abolitionism; colonialism; citizenship and nation building; race and gender; political cultures and movements; migration/immigration; cultural production; and political

economy; topics will be examined from a historical perspective. CA 1. CA 4-INT.

**3620. Cuba, Puerto Rico, and the Spanish Caribbean**

(Also offered as HIST 3620.) Three credits.

Discovery and settlement, slavery and plantation economy, recent political and economic developments, and United States relations with the Spanish Caribbean.

**3642. African-American Politics**

(Also offered as POLS 3642.) Three credits. Prerequisite: Open to juniors or higher.

Political behavior, theory, and ideology of African-Americans, with emphasis on contemporary U.S. politics. CA 4.

**3647. Black Leadership and Civil Rights**

(Also offered as POLS 3647.) Three credits. Prerequisite: Open to juniors or higher.

Black leadership, emphasizing the principles, goals, and strategies used by African-American men and women to secure basic citizenship rights during the civil rights era.

**3652. Black Feminist Politics**

(Also offered as POLS 3652 and WGSS 3652.) Three credits. Prerequisite: Open to juniors or higher.

An introduction to major philosophical and theoretical debates at the core of black feminist thought, emphasizing the ways in which interlocking systems of oppression uphold and sustain each other.

**3753. History of Modern Africa**

(Also offered as HIST 3753.) Three credits.

The history of African perceptions of and responses to the abolition of the slave trade, Western imperialism and colonialism, and the development of nationalism and struggle for independence.

**3898. Variable Topics**

Three credits. Prerequisite: Prerequisites and recommended preparation vary. May be repeated for credit.

**4100. Experiential/Service Learning Seminar**

(Also offered as AAAS 4100, LLAS 4100, and WGSS 4100.) Four credits.

Interdisciplinary examination of the history of social justice organizing in the U.S.; theories, strategies, and practice of community organizing movements such as those for immigration, environmental, reproductive, and racial justice. Includes practice in community organizing and political advocacy.

**4994W. Senior Seminar**

Three credits. Prerequisite: AFRA 2211; ENGL 1007 or 1010 or 1011 or 2011; course is required for majors and is generally taken in the senior year. May be repeated for credit.

Critical training and comprehensive examination of African American studies, using primary and secondary sources.

**4996. Honors Thesis Preparation**

Three credits. Prerequisite: AFRA 2211; open to honors students, juniors or higher; instructor consent required. Recommended preparation: Students complete several courses in the disciplinary field of their research interest.

Preliminary reading in primary and secondary sources or key texts in research field in consultation with thesis advisor.

**4997W. Senior Thesis in Africana Studies**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; AFRA 2211 and 4996; open to students in the Honors Program; instructor consent required; may be open to non-honors students with consent of instructor.

Honors Research and writing in the major with close supervision of multiple drafts.

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## Agricultural and Resource Economics (ARE)

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**1110E. Population, Food, and the Environment**

Three credits.

The role of agriculture in the growth and development of societies throughout the world. Economic, social, and environmental problems of food production and resource needs in developing and advanced societies. CA 2.

**1150. Principles of Applied and Resource Economics**

Three credits. Prerequisite: Not open for credit to students who have passed ECON 1201.

An introduction to microeconomic analysis with applications to food, nutrition, health, natural resources, and the environment. Topics include consumer and firm behavior, supply, demand, markets, and economic policy. CA 2.

**2150. Intermediate Applied and Resource Economics**

Three credits. Prerequisite: ARE 1150 or ECON 1200 or ECON 1201. May not be taken out of sequence after passing ARE 3223.

Applications of intermediate level microeconomic theory to problems and policy issues in agriculture, natural resources, and the environment. Topics include supply, demand, market equilibrium, consumer and producer behavior, perfect competition, and welfare economics. Emphasis will be placed on using the theory in applied and computational exercises.

**2155. Imperfect Competition and Behavioral Economics**

Three credits. Prerequisite: ARE 2150 or ECON 2201 or 2211Q.

Extension of intermediate microeconomic theory to include noncompetitive markets and psychology to consumer behavior. Topics include monopolies and oligopolies (and their welfare implications); game theory (including adverse selection and moral hazard); and behavioral economics (such as time inconsistency, loss aversion, and pro-social preferences). Emphasis will be placed on real-world applications of theory in agriculture, health, natural resources, and the environment.

**2210. Essentials of Accounting and Business**

Three credits.

An analysis of basic business principles, fundamentals and concepts for agribusiness entrepreneurs. Taught with SARE 460.

**2215. Business Management**

Three credits.

Analysis of marketing, management, and financial decision-making tools in agribusiness. Formerly offered as ARE 3215.

### **2235. Marine Economics and Policy**

Three credits. Recommended preparation: ARE 1150 or ECON 1200 or ECON 1201.

Fundamental theory, methods, and policy implications of environmental and resource economics, with an emphasis on coastal and marine environments. Topics include pollution policy, fisheries, water quality and allocation, international trade, wildlife and biodiversity, land use, and economic valuation. Designed for students with diverse departmental affiliations. CA 2.

### **2260. Food Policy**

Three credits. Recommended preparation: ARE 1150 or ECON 1200 or 1201; basic skills in Excel.

Analysis of food and agricultural policies in the United States and abroad. Designed for students with diverse departmental affiliations. Formerly offered as ARE 3260.

### **2261W. Writing in Food Policy**

One credit. Prerequisite: ARE 2260, may be taken concurrently; ENGL 1007 or 1010 or 1011 or 2011; open to Applied and Resource Economics majors, others with instructor consent.

A writing intensive course on issues related to food policy, integrated with course content in ARE 2260. Formerly offered as ARE 3261W.

### **2434E. Environmental and Resource Policy**

Three credits.

Emergence of environmental policies from the local, legal, and regulatory angles. Formalization and structure of environmental policy with a focus on the hurdles, design, and implementation of policy, particularly air and water policy. Suitable for all majors.

### **2435W. Writing in Environmental and Resource Policy**

One credit. Prerequisite: ARE 2434E, which may be taken concurrently; ENGL 1007 or 1010 or 1011 or 2011; open only to Environmental and Natural Resource Economics, Economics of Sustainable Development and Management, and Applied and Resource Economics majors, others by consent.

A writing intensive course integrated with course content in ARE 2434E. Formerly offered as ARE 3440W.

### **2464. Measuring Impact of Programs that Raise Human Well-being**

Three credits. Recommended preparation: ARE 1150 or ECON 1200 or 1201. Not open to students who have completed ARE 3464.

The theory and practice behind measuring impacts and costs of programs that raise human welfare through poverty alleviation, economic development, and social and environmental justice. Case studies will show how governments and organizations can best optimize programming. Examples include how to increase incomes and farm productivity, how to decrease disease and child mortality, and how to improve resilience to climate change. Topics include survey design, performance indicators, the logical framework and results matrix, sample design, impact evaluation methodologies and project appraisal. Formerly offered as ARE 3462.

### **3221. Managerial Economics and Business Strategies**

Three credits. Prerequisite: ARE 1150 or ECON 1200 or ECON 1201. Recommended preparation: MATH 1071Q or 1110Q or 1120Q or 1131Q or 1151Q; or STAT 1000Q or STAT 1100Q.

The application of microeconomic analysis to decision-making techniques of businesses and management units with a particular focus on the food industry covering topics such as electing or developing products, deciding on product output and pricing, organizational design, promotional strategies, worker hiring and training, and investment and financing.

### **3222. Marketing and Consumer Behavior**

Three credits. Prerequisite: ARE 1150 or ECON 1200 or ECON 1201.

This course focuses on principles of contemporary marketing, including consumer behavior, social media, product, promotion, distribution and pricing strategies, with special emphasis on food and health.

### **3223. Business Organization and Labor Markets**

Three credits. Prerequisite: ARE 2150 or 3150.

Analytical tools that economists use to evaluate the organizational and hiring decisions of firms. Emphasis on the effect of government policies and programs on how many workers are hired, how much they are paid, and how other forms of compensation are structured. Specific areas of consideration may include: minimum wages, federal income tax, payroll and self-employment taxes, unemployment insurance, immigration, health insurance, retirement account contributions, the use of contractors in place of employees (the so-called "gig economy"), legal form of organization, and business liability. Special emphasis on using original sources, including federal statistical agency data products, reports from federal oversight bodies, US Code, and IRS publications.

### **3225. Price Analysis and Futures Trading**

Three credits. Prerequisite: ARE 1150 or ECON 1200 or ECON 1201; STAT 1000Q or 1100Q or equivalent.

Principles and applications of market price determination, with special emphasis on the use of futures markets for profit and price risk management. Includes food and energy case studies, internet applications, and a futures simulation exercise.

### **3305E. Economic Development, Environment, and Policy**

Three credits. Prerequisite: ARE 1150 or ECON 1201 or ECON 1200.

Integrating the topics of economic development and the environment. Overview of economic development and growth in developed and developing nations. Classical and modern theories of economic growth and measures of economic inequality. Population growth, sustainable economic development, rural-urban interactions, agricultural transformation, and impacts on the environment. The role of education and health, policies for economic development, and climate adaptation.

### **3333. Computational Analysis in Applied Economics**

Three credits. Prerequisite: STAT 1000Q or STAT 1100Q, or similar; laptop computer in class. Recommended preparation: ECON 1200 or ECON 1201 or ARE 1150.

Learn fundamental concepts of statistics and economics through analysis of economic data using computer spreadsheets.

### **3436. The Economics of Integrated Coastal Management**

Three credits. Recommended Preparation: ARE 1150 or ECON 1200 or 1201.

Explores the theory and practice of integrated coastal management (ICM); introduces major concepts, processes, tools and methods of ICM; and analyzes United States and international experiences with ICM.

### **3437E. Marine Fisheries Economics and Policy**

Three credits. Recommended Preparation: ARE 1150 or ECON 1200 or 1201.

Explores the various natural, human and management components of the fishery system and presents the application of economic and policy analysis for the optimal allocation of resources to a fishery.

### **3438E. Climate Economics**

Three credits. Prerequisite: ARE 1150 or ECON 1201 or ECON 1200.

Analysis of the interactive relationship between the economy and climate change. Use of principles and tools of economics to focus on the costs of changes in the severity and frequency of weather events, how these costs are influenced by markets and policies, and how costs and benefits are distributed across populations within the U.S and across the globe in the short and long terms. Examination of household, firm-level, national and international decision-making as influenced by climate change, taking into account uncertainty, diverging interests, external costs, and evaluation of models used to alternative scenarios.

### **4205. Market Planning and Survey Research in the Food Industry**

Three credits. Prerequisite: ARE 1150 and 3333.

Overview of market planning in the food industry, with emphasis on survey design and implementation. Student groups will work with clients to develop tailored market plans.

### **4217. Business Finance and Investment Management**

Three credits. Prerequisite: ARE 1150 or ECON 1200 or 1201; open to juniors or higher.

Theory and practice of business finance and investment management, including sources of funding, the capital structure of corporations, the actions that managers take to increase the value of the firm, and the tools and analysis used to allocate financial resources. Emphasis on investment decision-making, corporate risk management, capital flow management, and mergers and acquisitions. Use of real-world applications to provide students with a solid background in the economic theory of business finance and investment management in food and resource industries.

**4279. International Commodity Trade**

Three credits. Recommended preparation: ARE 1150 or ECON 1200 or 1201.

The basic principles of international commodity trade and market institutions. Applications to current problems of international commodity trade and policy.

**4305. Sustainable Economic Development**

Three credits. Prerequisite: ARE 1150 or ECON 1200 or ECON 1201; MATH 1071Q or 1110Q or 1120Q or 1126Q or 1131Q. Credit may not be received for both ARE 4305 and 5305.

The role of sustainable economic development of less developed economies. Microeconomic dimensions of agricultural development, food security, agricultural production and supply, foreign assistance, and government programming.

**4438E. Valuing the Environment**

Three credits. Prerequisite: ARE 1150 or ECON 1200 or ECON 1201.

Conceptual and practical understanding of main methods used to evaluate economic benefits of environmental protection and damages from degradation. Methods include: change in productivity, hedonic pricing, travel cost method, contingent valuation, defensive expenditures, replacement costs, and cost-of-illness. Topics covered include: recreation, soil-erosion, energy, forestry, hazardous waste, air pollution, deforestation, wetlands, wildlife, biodiversity, noise, visibility, water, and water pollution.

**4444. Economics of Energy, Climate, and the Environment**

Three credits. Prerequisite: ARE 1150 or ECON 1200 or ECON 1201; open to juniors or higher.

Economics of energy issues with special reference to local and regional environmental quality, global climate change, and energy markets. Environmental and economic implications of developing alternative sources of energy. Regulatory policies in relation to transportation, industry, commercial and residential energy use.

**4462E. Environmental and Resource Economics**

Three credits. Prerequisite: ARE 1150 or ECON 1200 or ECON 1201; MATH 1071Q or 1110 or 1120 or 1126 or 1131Q; open to juniors or higher. Credit may not be received for both ARE 4462 and 5462.

Natural resource use and environmental quality analysis using economic theory. Reviews of empirical research and relevant policy issues.

**4476. International Trade and Policy**

Three credits. Prerequisite: ARE 1150 or ECON 1200 or 1201. Recommended preparation: MATH 1071Q or 1110Q or 1120Q or 1131Q or 1151Q; or STAT 1000Q or 1100Q. Not open for credit to students who have passed ARE 5476.

Analysis of international trade and trade policy focusing on agricultural and food markets. Covers trade-related issues concerning economic development and growth. Focus on current challenges to the multilateral trading system and the theoretical foundation for understanding the economic importance of firms, international trade, and global capital flows. Introduction of methods and tools for counterfactual evaluation of trade policies. Taught concurrently with ARE 5476.

**4897. Honors Thesis**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to seniors; open only with consent of instructor to students in the Honors Program.

**4900. Farm Credit Fellows Seminar**

One credit. Prerequisite: One or more of the following courses: ARE 2150, 2210, 2215; ACCT 2001; BADM 3730; or FNCE 3101.

Course offered with Farm Credit East. Students learn agribusiness concepts from the lender's perspective. Students taking this course will be assigned a grade of S (satisfactory) or U (unsatisfactory).

**4991. Professional Internship**

Variable (1-6) credits. Prerequisite: Open to junior or senior Applied and Resource Economics majors with Independent Study Authorization. May be repeated for a total of 6 credits.

Provides students with a meaningful experience in a formalized applied resource economics program under supervised conditions. Each student taking this course must submit a formal written report for evaluation and meet all other course requirements as specified by the instructor. Requires Independent Study Authorization with consent of department head and advisor.

**4993. Foreign Study**

Variable (1-15) credits. May be repeated for credit.

Special topics taken in a foreign study program. Consent of department head required, normally to be granted prior to the student's departure.

**4994. Seminar**

Variable (1-6) credits. May be repeated for credit.

Participation in staff conferences and discussions, reviews of important books, and reports on recent developments in economic theory and research. Credits and hours by arrangement.

**4995. Special Topics**

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

Topics and credits to be published prior to the registration period preceding the semester offerings.

**4999. Independent Study**

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

Designed primarily for Resource Economics majors. Open to students with Independent Study Authorization.

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## Agriculture and Natural Resources (AGNR)

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**1089. Introduction to Research in Agriculture and Natural Resources**

Variable (1-3) credits. Prerequisite: Open to First-Year or Sophomore students only. May be repeated for a total of 6 credits.

Supervised student involvement with faculty projects to introduce students to current areas of research in their field of interest. Credits and hours by arrangement. Students taking this course will be assigned a final grade of S (satisfactory) of U (unsatisfactory).

**1093. Foreign Study**

Variable (1-6) credits. Prerequisite: Department consent. May be repeated for credit.

Courses taken in agriculture, natural resources, and related areas as part of approved Study Abroad programs. Credits and topics must be approved by department head or dean of the College of Agriculture and Natural Resources.

**1098. Current Topics in Agriculture and Natural Resources**

One credit. Prerequisite: Open to freshmen and sophomores only, others by instructor consent. May be repeated for a total of 4 credits.

Readings, lectures, seminars, and field applications exploring content and associated scientific and social implications of current topics in agricultural, environmental, nutritional and health sciences. Students taking this course will be assigned a final grade of S (satisfactory) of U (unsatisfactory).

**3091. Agriculture and Natural Resources Internship**

Variable (1-6) credits. Prerequisite: Junior or senior in the College of Agriculture and Natural Resources. May be repeated for a total of 6 credits.

Designed to provide students with a meaningful experience in a formalized agricultural or natural resources program under supervised conditions. Each student taking this course must submit a formal written report for evaluation and meet all other course requirements as specified by the instructor.

**3093. Foreign Study**

Variable (1-12) credits. Prerequisite: Department consent. May be repeated for a total of 12 credits.

Courses taken in agriculture, natural resources, and related areas as part of approved Study Abroad programs. Credits and topics must be approved by department head or dean of the College of Agriculture and Natural Resources.

**3095. Special Topics**

Variable (1-6) credits. Prerequisite: Instructor consent. May be repeated for credit.

**3099. Independent Study**

Variable (1-6) credits. Prerequisite: Open only to students with Independent Study Authorization. May be repeated for credit.

A course designed for the student who wishes to pursue an investigation of specific problems related to domestic and foreign agriculture with particular emphasis on current problems in instruction, extension education, and research.

**3316. Introduction to Agricultural Mechanics and Safety**

Two credits. Prerequisite: Open only to students majoring in Agriculture and Natural Resources; Animal Science; Natural Resources; and Sustainable Plant and Soil Systems.

Operation, safety, and applications of equipment and mechanical systems used in agricultural enterprises. Field Trips may be required.

**3350. Hispanic Culture and Communication in Agriculture**

Three credits. Prerequisite: Open only to students in the College of Agriculture, Health and Natural Resources.

Covers everyday conversations in Latin American Spanish needed at the workplace in agriculture and natural resources. Emphasizes dialogues, commands and directions to improve the relationship and understanding of workers and employers in several fields of agriculture. Prepares students in landscape, horticulture, animal science and agriculture economics with basic communication skills in Spanish and familiarizes students with Latin American cultural traditions. Taught with SAAG 350. Not intended for students with advanced Spanish language skill. Does not fulfill the General Education foreign language requirement.

### 3681. Internship Experience

Zero credits. Prerequisite: Open to students who have earned a minimum of 24 credits and instructor consent. May be repeated.

Practical experience, knowledge, and professional skills in a work environment related to careers in agriculture, health and the environment. Students make arrangements with an instructor and worksite supervisor, develop a plan and learning agreement for meaningful and educational tasks and experiences, and submit written reports and related documentation at the conclusion of the internship. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

### 4100. College to Career Transition

One credit. Prerequisite: Open only to seniors in the College of Agriculture, Health and Natural Resources.

Enhances preparedness for post-college life in and outside of the office. Develops skills and strategies for creating personal growth and professional success. Topics include personal finances, emotional intelligence, professional development, community involvement, and lifestyle.

### 4500. Leadership Development in Extension Education

Three credits. Prerequisite: Junior or senior standing or graduate student; open to students from the College of Agriculture, Health and Natural Resources, others with instructor permission.

Introduces students to Extension, outreach education and other forms of public engagement (governmental and nongovernmental). Intended for students interested in a career in or knowing about outreach education and public engagement. The Extension mission, history, organization, programming, program development, extension teaching and delivery methods, and the involvement and use of volunteers will be covered. Students will learn about and practice team-based collaborations, informal teaching/learning methods as well as social processes and influences, organizational behavior and relationships, program evaluation and assessment, communications, ethics, and decision-making.

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## Air Force Studies (AIRF)

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### 1000. Heritage and Values of the United States Air Force

One credit.

Introduction to the United States Air Force with overview of the basic characteristics, missions,

and organization of the Air Force. The two-hour laboratory period is for cadets only.

### 1200. Heritage and Values of the United States Air Force

One credit.

History and evolution of the United States Air Force; overview of the Department of the Air Force, its major commands, and an introduction of the principles and tenets of US airpower during warfare. The two-hour laboratory period is for cadets only.

### 2000. Team and Leadership Fundamentals

One credit.

Foundation for teams and leadership on a personal level and within a team. The two-hour laboratory period is for cadets only.

### 2200. Team and Leadership Fundamentals

One credit.

Team and leadership fundamentals to include listening, followership, problem solving and conflict management. The two-hour laboratory period is for cadets only.

### 3000. Leading People and Effective Communication

Three credits. Prerequisite: AIRF 1200 and AIRF 2200, or six weeks field training.

Advanced skills and knowledge in management and leadership. Special emphasis on enhancing leadership skills and communication.

### 3200. Leading People and Effective Communication

Three credits. Prerequisite: AIRF 3000.

Advanced skills and knowledge in management and leadership. Special emphasis on enhancing leadership skills and communication.

### 3500. Aviation Ground School

Three credits.

Fundamentals of flight, flight operations, aviation, weather, navigation, human factors and integration of pilot skills with Federal Aviation Administration (FAA) regulations. Meets all requirements for the FAA private pilot's written examination.

### 4000. National Security Affairs/Preparation for Active Duty

Three credits. Prerequisite: AIRF 3000-3200; open only with the consent of instructor.

Role of military officers in American society; sophisticated overview of the complex social and political issues facing the military profession.

### 4200. National Security Affairs/Preparation for Active Duty

Three credits. Prerequisite: AIRF 4000; open only with the consent of instructor.

Role of military officers in American society; sophisticated overview of the complex social and political issues facing the military profession.

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## Allied Health Sciences (AH)

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### 1030. Interdisciplinary Approach to Obesity Prevention

(Also offered as NUSC 1030.) Three credits. Prerequisite: Open to freshmen and sophomores in the Honors Program.

Explores the biology of obesity including genetic predispositions and behaviors that increase

obesity risk (dietary, physical activity, social, psychological), the obesigenic environment, including how communities are physically built, as well as the economic relationship to obesity risk, and policy and ethical implications for obesity prevention. Multi-level obesity prevention approaches that involve the individual, family, organization, community, and policy. CA 3.

### 1095. Special Topics Lecture

Variable (1-6) credits. May be repeated for credit.

Credits, prerequisites and hours as determined by the Senate Curricula and Course Committee.

### 1100. Introduction to Allied Health Professions

One credit.

Overview of health professions, team approach to health care delivery.

### 1200. Introduction to the Martial Arts

One credit. Prerequisite: Students may not exceed three credits toward graduation of combined AH 1200 and KINS 1160 credits. May be repeated for a total of 3 credits.

Introduction to the techniques and philosophies of traditional Martial Arts disciplines. Development of practical martial arts skills (varies by discipline), and building of a state of mind which permits the successful application of self-defense. This course may be repeated with a change of activity and/or skill level.

### 2001. Medical Terminology

Two credits. Prerequisite: Open to CAHNR students and following majors: Biological Sciences; Health Care Management; HDFS; MCB; NURS; Pharmacy Studies; PNB; PSYC; SLHS; DGS; MLS and others by instructor consent.

Introduction and mastery of medical terminology through presentation of word roots, prefixes and suffixes. Disease processes, symptoms, diagnosis, and treatments that affect various body systems. Terminology associated with disease processes, symptoms, diagnosis, clinical procedures, laboratory tests, and treatments that affect various body systems.

### 2093. International Study in Allied Health

Variable (1-6) credits. Prerequisite: Department Head consent required prior to study abroad. May be repeated for credit.

Courses taken in Allied Health and related areas as part of an approved Study Abroad Program. May be repeated for credit; may count up to six credits toward the major with consent of advisor and Department Head. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

### 2330. Italy's Mediterranean Food and Our Health

Three credits.

Production and processing of the characteristic foods of Italy. Summary of the Italian Mediterranean diet: definitions, culture, history, food consumption patterns, nutrient composition and potential health benefits. Emphasis on the difference in diet between Italians and Americans in relation to the health differences between the two populations. May not be counted toward the Allied Health Sciences major's group A or science elective requirements. CA 4-INT.

**3000. U.S. Healthcare System and Professional Practice**

Three credits. Prerequisite: Open only to Allied Health Sciences majors juniors and higher, others by consent. Not open to students who have passed NURS 1130.

Essentials of the U.S. healthcare system, its history to present day structure including the role of the government and delivery systems; patient, ethical and legal responsibility; financing and reimbursement structures; and Allied Health professionals' practice within the system.

**3005. Biostatistics for Health Professions**

(Also offered as STAT 3005.) Three credits. Prerequisite: A course in pre-calculus or higher; STAT 1000Q or 1100Q or higher. Open to CAHNR students and Statistics majors, juniors or higher; others with instructor consent.

Introduction to biostatistical techniques, concepts, and reasoning using in a broad range of biomedical and public health related scenarios. Specific topics include description of data, statistical hypothesis testing and its application to group comparisons, and tools for modeling different type of data, including categorical, and time-event, data. Emphasis on the distinction of these methods, their implementation using statistical software, and the interpretation of results applied to health sciences research questions and variables.

**3021. Environment, Genetics and Cancer**

Three credits. Prerequisite: BIOL 1107; MCB 2400 or 2410; open to juniors or higher; open to DGS, ENVS, and Allied Health Sciences majors, others with instructor consent. Recommended preparation: MCB 2000 or 2210.

Basic principles in tumor biology will be presented including the biochemical basis of cell transformation, proliferation, and metastasis. Molecular mechanisms by which environmental chemicals interact with DNA and other cellular components will be discussed. The role of proto-oncogenes, tumor suppressor genes, and their products will be covered. Biological markers of cancer risk and exposure will be included.

**3025. Human Physiology in Health and Disease**

Three credits. Prerequisite: BIOL 1107; open to juniors or higher in the following majors: Allied Health Sciences, Diagnostic Genetic Sciences, Environmental Sciences (Human Health concentration only), Exercise Science, Medical Laboratory Sciences, and Nutritional Sciences; others with instructor consent. Students who have passed PNB 2264 or 2274 or equivalent, including transfer equivalents, will receive only two credits for AH 3025 but three credits will be used for calculating GPA.

An overview of the structure and function of the human body in health and common pathologic conditions associated with each organ system. Does not satisfy the anatomy and physiology admission requirements for undergraduate or post-baccalaureate health programs that require anatomy and physiology with lab.

**3030. Fundamentals of Brain, Behavior, and Health**

Three credits. Prerequisite: 1000 level Biology, Psychology, or Physiology and Neurobiology course or equivalent. Open only to Allied Health

majors; sophomores or higher; others by instructor consent.

An interdisciplinary overview of the significant impact of brain and behavior conditions on health outcomes. Includes key concepts in brain biology, related mechanisms of behavior, risk factors to mental health, a survey of brain disorders and their impact on society, disparities in mental health care, and strategies to promote better outcomes.

**3060. Healthcare Genetics and Genomics**

Three credits. Prerequisite: BIOL 1107; open to AHS majors sophomore or higher; others by instructor consent.

An introduction to the evolving role of genetics and genomics in healthcare. Use of genetic testing in diagnoses, treatment, and prevention of disease. Importance of health professionals in patient education. Social and ethical implications of genetic testing and genomic medicine.

**3091. Allied Health Sciences Internship**

Variable (1-6) credits. Prerequisite: Open to Department of Allied Health Sciences students; open to juniors or higher. May be repeated for credit.

Provides Allied Health students actual work experience in their area of concentration. Students work with professionals in their concentration to meet objectives consistent with their major. Students may only count a maximum combined credit total of six credits toward the Allied Health major of International Study, Independent Study and Internship credits. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

**3099. Independent Study In Allied Health**

Variable (1-4) credits. Prerequisite: Open only with consent of instructor, advisor and department head. May be repeated for credit.

Individualized study in a specialized area in the field of allied health. Students may only count a maximum combined credit total of six credits toward the Allied Health major of International Study, Independent Study and Internship credits.

**3101. Health and Wellness for Life**

Three credits. Prerequisite: BIOL 1103 or 1107 or equivalent; open only to Allied Health Sciences majors juniors or higher; all others by instructor consent. Not open to students who have passed AH 1201.

Wellness, holistic health, mind-body connection, health and wellness models, mental wellness, positive self-concept, preventing heart disease and cancer, licit and illicit drugs, stress management, diet, nutrition, weight control, aerobic and anaerobic exercise, healthy lifestyle behaviors, application to life. All students are required to participate in at least one Community Based Outreach Engagement Program.

**3121. Immunology for the Medical Laboratory Sciences**

Three credits. Prerequisite: MLSC 3130 or MCB 2610 which may be taken concurrently; open to students in: Allied Health Sciences, Diagnostic Genetic Sciences, Medical Laboratory Sciences and Diagnostic Genetic Sciences certificate students; open to juniors or higher.

Mechanisms of innate and acquired immunity, antigen-antibody interactions, function of the

human immune system in normal and diseased states.

**3133. Cancer and Your Health**

Three credits. Prerequisite: One course in Biology which may be taken concurrently; open to juniors or higher; open only to Allied Health Sciences majors, others by instructor consent.

Introduces cancer risk reduction education, causes, early detection methods, prevention, and public education.

**3173. Psychology of Workplace Safety**

Three credits. Prerequisite: Open only to BGS students and Allied Health Sciences majors, juniors or higher, and OSH Certificate students; others with consent. Recommended preparation: One 1000-level or above psychology course.

Knowledge of the human factors and behaviors that have an impact upon the safety performance of employees in the workplace, and intervention strategies to improve individual and organizational safety performance.

**3175E. Environmental Health**

Three credits. Prerequisite: BIOL 1102 or higher; CHEM 1122 or higher; open to Allied Health Sciences, Environmental Sciences, Environmental Studies and Engineering majors, others with instructor consent; open to juniors or higher. Recommended preparation: A course in animal anatomy and physiology.

The environmental health consequences of exposure to toxic chemicals, food contaminants and radiation. Basic principles of toxicology and topics such as cancer, occupational hazards, radiation, genetic biomonitoring, risk assessment techniques, risk/benefit analysis, social/legal aspects of regulating toxic chemicals, and other related topics.

**3203. Aging: Implications for Health Professionals**

Three credits. Prerequisite: Open to Allied Health Sciences majors, others with instructor consent; open to juniors or higher.

Age-related physiological changes and pathologies, health behaviors and care issues unique to older populations, interdisciplinary approaches to diagnosis, treatment, prevention and health promotion.

**3231. Program Planning for Health Promotion**

Three credits. Prerequisite: Open to Allied Health Sciences majors, others with consent of instructor; open to juniors or higher.

Presents meaningful and constructive tools, methods and techniques for Health Care practitioners to plan, develop and deliver community based (outreach) Health Promotion programs which would provide opportunities to improve the quality of life as well as the quantity.

**3234. Fitness for Health**

Three credits. Prerequisite: Open only to Allied Health Sciences majors, others with instructor consent; open to juniors or higher.

Emphasizes preventative health practices, which promote healthful lifestyles and reduce risk factors associated with disease. Designed to provide theory and concepts related to the development and maintenance of physical fitness, general health and performance.



**3275. HAZWOPER**

Three credits. Prerequisite: Open only to Allied Health Sciences majors, Environmental Sciences majors, Environmental Engineering majors, and OSH Certificate students, others with instructor consent; open to juniors or higher.

Provides individuals the necessary knowledge and training to meet the criteria for certification recognized by the Occupational Safety and Health Administration (OSHA) in work activities related to hazardous waste sites and clean up operations involving hazardous substances. Mandatory off-site field exercise required.

**3278. Worker's Compensation**

Three credits. Prerequisite: Open only to BGS students and Allied Health Sciences majors, juniors or higher, and OSH Certificate students; others with consent.

Review of the application of worker's compensation laws to workplace injuries and illnesses inclusive of the handling of filed claims, available benefits, medical management, return-to-work programs, financial costs, interaction with workplace safety and health programs, and emerging issues.

**3289. Research in Allied Health Sciences**

Variable (1-3) credits. Prerequisite: Open only with consent of instructor, advisor, and department head. May be repeated for credit.

Provides students in the department of Allied Health Sciences research experience under the guidance and supervision of a department faculty member; designed to engage a student in inquiry and investigation on a topic of interest. Guidelines, learning agreement, and supporting documentation required. Students may only count a maximum combined credit total of six credits toward the Allied Health major of international study, independent study, internship, and research credits.

**3303. Disability Law, Policy, Ethics, and Advocacy**

Three credits. Prerequisite: Open to AHS majors; juniors or higher; others by instructor consent.

Aspects of public policy and social issues that affect the lives of persons with disabilities and their families, including federal legislation, discrimination in employment, the principles of self-determination, self-advocates' roles in planning and implementing policy, and bioethical issues surrounding life and death decisions.

**3320. Introduction to Infectious Diseases**

Two credits. Prerequisite: BIOL 1107; open only to junior or higher Allied Health majors, others with instructor consent. Recommended preparation: CHEM 2241 or 2443 and 2444.

The role of the healthcare professional in dealing with infectious diseases. Epidemiology and public health, healthcare epidemiology, pathogenesis and diagnosing of infectious diseases, overview of the major infectious diseases of humans.

**3570. Health and Safety Management in the Workplace**

Three credits. Prerequisite: Open only to BGS students and Allied Health Sciences majors, juniors or higher, and OSH Certificate students; others with consent.

Knowledge and skills necessary to develop a sustainable occupational health and safety management program in the workplace toward the

goal of preventing illness and injury, and property damage.

**3571. Health Hazards in the Workplace**

Three credits. Prerequisite: Open only to BGS students and Allied Health Sciences-OEHS, Public Health and Health Promotion, Standard Plan, and Healthcare Admin concentration majors, juniors or higher, and OSH Certificate students; others with consent. Recommended preparation: AH 2001.

Anticipation, recognition, evaluation, control, and communication of health hazards in the workplace.

**3573. Health and Safety Standards in the Workplace**

Three credits. Prerequisite: Open only to BGS students and Allied Health Sciences-OEHS concentration majors juniors or higher, and OSH Certificate students; others with consent.

Comprehensive overview of workplace health and safety regulatory processes and standards.

**3574. Ergonomics**

Three credits. Prerequisite: Open only to BGS students, Allied Health Sciences, and OSH Certificate students, others with consent; open only to juniors or higher.

Knowledge and skills for achieving optimal relationships between humans and their work environment.

**4025. Sociocultural Aspects of Aging and Health**

Three credits. Prerequisite: Open to junior or higher Allied Health Sciences majors and Gerontology minors, others by instructor consent.

An overview to sociocultural aspects of health among the aging population in the United States. This course focuses on the implications of gender, race, social welfare, family relations, sociocultural relationships on healthy aging from the perspective of health professionals.

**4092. EMT Training**

Four credits. Prerequisite: Instructor consent.

Instruction in basic life support skills, treatment of bleeding control and shock recognition, care for trauma victims, medical emergencies. Supervised practice experience and hands-on instruction of theory. Includes a 10 hour observation experience outside of classroom instruction. Meets the performance requirements of the National Registry of Emergency Medical Technicians (NREMT) certification exam. Students must first register for Hartford Hospital's EMT training program (separate Hartford Hospital program costs apply).

**4093. International Study in Allied Health**

Variable (1-6) credits. Prerequisite: Department Head consent required prior to study abroad. May be repeated for a total of 6 credits.

Courses taken in Allied Health and related areas as part of an approved Study Abroad Program. May be repeated for credit; may count up to six credits toward major with consent of advisor and Department Head. Department Head consent required prior to study abroad. Students may only count a maximum combined credit total of 6 credits toward the Allied Health major of foreign study, Independent Study and Internship credits. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

**4095. Special Topics**

Variable (1-6) credits. Prerequisite: Instructor consent. May be repeated for credit.

Investigation of a special topic in allied health related to the basic core or interdisciplinary areas. Credits and hours by arrangement.

**4221W. Trends in Environmental and Occupational Safety and Health**

Three credits. Prerequisite: AH 3570; ENGL 1007 or 1010 or 1011 or 2011; open to BGS students and Allied Health Sciences OEHS concentration majors juniors or higher; others with instructor consent.

Impact of issues in the workplace in promoting prevention of injuries and illness to workers, and protection of property and the environment.

**4225. Genetic Testing and Genomic Medicine**

Three credits. Prerequisite: BIOL 1107 and MCB 2400 or 2410; open to juniors or higher.

Genetic testing and genome analyses with emphasis on topics relating to the clinical laboratories and to the diagnosis and treatment of human disease. Scientific and clinical aspects of genetics and genomics in health care integrated with case presentations, current literature, and discussions.

**4239. Research Methods in Allied Health**

Two credits. Prerequisite: A course in statistics; open only to Allied Health Sciences majors; others with instructor consent; open to juniors or higher. Corequisite: AH 4240W. Not open for credit to students who have passed AH 4241.

Research questions/hypothesis, finding and using research literature, ethical considerations, research design, sampling, measurement, reliability and validity, descriptive and inferential statistics, computer analysis of data, evaluating research, reviews of literature and proposals.

**4240W. Writing for Allied Health Research**

One credit. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; a course in statistics; open only to Allied Health Sciences majors; others with instructor consent; open to juniors or higher. Corequisite: AH 4239. Not open to students who have passed AH 4241W.

Develop scientific writing skills through completing a scientific research proposal.

**4241. Research for the Health Professional**

Two credits. Prerequisite: A course in statistics; open to juniors or higher; open to Allied Health OEHS concentration majors, Dietetics, DGS, MLS majors, DGS or MLS certificate students (others with consent of instructor). Not open to students who have passed AH 4239.

Research questions/hypothesis, finding and using research literature, ethical considerations, research design, sampling, measurement, reliability and validity, descriptive and inferential statistics, computer analysis of data, evaluating research, reviews of literature and proposals.

**4242. Counseling and Teaching for the Health Professional**

Three credits. Prerequisite: Open to Allied Health Sciences, Dietetics, Medical Laboratory Sciences, Diagnostic Genetic Sciences and Nutritional Sciences majors, others with instructor consent; open to juniors or higher.

Learning theory and counseling strategies; role of health professional as teacher and counselor; communicating with special groups, individuals and groups.

#### **4243. Current Issues in Health**

Three credits. Prerequisite: Open to Allied Health Sciences, Dietetics, Medical Laboratory Sciences, Diagnostic Genetic Sciences, Nutritional Sciences and Health Systems Management majors, others with consent of instructor; open to juniors or higher.

Individual, community and institutional health care needs and issues from a bio-medical and socio-cultural point of view. Health and its relationship to genetics, poverty, ethnicity, life-cycle events, ethics, etc.

#### **4244. Management for the Health Professional**

Three credits. Prerequisite: Open to Allied Health Sciences, Dietetics, Medical Laboratory Sciences, Diagnostic Genetic Sciences and Nutritional Sciences majors, others with instructor consent; open to juniors or higher.

Basic management principles and concepts of planning, organizing, supervising, controlling and evaluating in health care environments. Leadership, motivation, supervision, time management, labor relations, quality assurance/proficiency, financial management.

#### **4288. Instructional Assistant in Allied Health Sciences**

Variable (1-3) credits. Prerequisite: Successful completion of the course to be assisting in with a B grade or better; guidelines, learning agreement, and supporting documentation required; open to juniors or higher with consent of instructor, advisor and department head. May be repeated for a total of 3 credits.

Experience with Allied Health Sciences course development and faculty assistance; independent inquiry under the guidance and supervision of an Allied Health Sciences faculty. This course may not be used to meet requirements for the Group A or Group B AHS major requirements. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

#### **4289. Honors Research in Allied Health Sciences**

Variable (1-3) credits. Prerequisite: Open only with consent of instructor, advisor and department head. May be repeated for credit.

Provides students in the department of Allied Health Sciences advanced research experience under the guidance and supervision of a department faculty member; designed to engage a student in advanced independent inquiry and investigation on a topic of interest. For students in the Honors program, the understood purpose of the student's involvement in this course is to build toward the completion of an Honors Scholar thesis project. Guidelines, learning agreement, and supporting documentation required. Students may only count a maximum combined credit total of six credits toward the Allied Health major of international study, independent study, internship, and research credits.

#### **4291. OSH Internship**

(Also offered as OSH 4291.) Variable (1-6) credits. Prerequisite: Open only to BGS students and Allied Health Sciences-OEHS concentration majors

juniors or higher, and OSH Certificate students; others with consent. May be repeated for credit.

Application of the principles and concepts of hazard assessment and safety management to an actual workplace under the supervision of an approved onsite supervisor. May be repeated for credit to a maximum of 6 credits applied to the major. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

#### **4296. Undergraduate Research in Allied Health**

Three credits. Prerequisite: Department consent. May be repeated for credit.

Guided research in Allied Health.

#### **4297W. Honors Thesis in Allied Health Sciences**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; instructor consent required. Open only to Department of Allied Health Sciences students, juniors or higher.

Completion of written thesis based on student-designed honors research project under supervision of a faculty advisor.

#### **4501. International Health**

Three credits. Prerequisite: Open to AHS majors; juniors or higher; others by instructor consent.

Global (medical, cultural and economic) health challenges. Children's and women's health. Communicable and non-communicable diseases.

#### **4503. Poverty and Public Health**

Three credits. Prerequisite: Open to juniors or higher.

Social determinants of health and poverty. Health impact assessments. Improving the social determinants of health and poverty, including countries in conflict.

#### **4530. Health Equity and Social Determinants of Health**

Three credits.

Application of action frameworks targeting structural, social, and intermediary determinants of physical and mental health inequities with the goal of eliminating inequities in health.

#### **4660. Global Health Issues in South Africa**

Four credits. Prerequisite: Instructor consent; one semester of college level biology; open only to students in the Organization for Tropical Studies/Global Health Issues in South Africa Study Abroad Program.

Exploration of a range of health issues and medical practices in South Africa through an interdisciplinary lens. Integrated learning model incorporates both classroom and field instruction to help students understand the fundamental principle of health as a human rights issue. Includes collaborative research projects and participation in a three-night homestay in a village in the remote HaMakuya area of Limpopo Province. This course is offered in partnership with the Organization for Tropical Studies.

#### **4661. Tropical Diseases, Environmental Change and Human Health in Costa Rica**

Four credits. Prerequisite: Instructor consent; open only to students in the Organization for Tropical Studies Study Abroad Program.

This course emphasizes the biological and ecological nature of tropical diseases, the human health outcomes resulting from changes to weather and ecosystems, and how the health systems in

place in different countries deal with these diseases. Instruction focuses on field-based experiential learning. This course is offered in partnership with the Organization for Tropical Studies.

#### **4662. Field Research Methods in Tropical Diseases**

Four credits. Prerequisite: Instructor consent; open only to students in the Organization for Tropical Studies Study Abroad Program.

Research and writing-intensive course designed to provide applied, action-oriented, experiential opportunities for undergraduate research. Through structured field and/or laboratory research experiences in Costa Rica, this course is designed for students to gain advanced, practical skills in relevant, community-based research exploring topics in health in the broadest sense (i.e. centering on human, animal, or ecosystem health). This course is offered in partnership with the Organization for Tropical Studies.

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### **American Sign Language (ASLN)**

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#### **1101. Elementary American Sign Language I**

Four credits. Prerequisite: May not be taken out of sequence after passing ASLN 1102.

Introductory course in ASL designed for students who have little or no previous knowledge of ASL.

#### **1102. Elementary American Sign Language II**

Four credits. Prerequisite: ASLN 1101. May not be taken out of sequence after passing ASLN 1103, 2700, or 2800.

Continued development of basic knowledge of and understanding of conversational ASL.

#### **1103. Intermediate American Sign Language I**

Four credits. Prerequisite: ASLN 1102. May not be taken out of sequence after passing ASLN 1104.

Development of intermediate expressive and receptive skills in ASL.

#### **1104. Intermediate American Sign Language II**

Four credits. Prerequisite: ASLN 1103.

Continued development of intermediate expressive and receptive skills in ASL.

#### **1193. Foreign Study**

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

#### **2500. Introduction to Interpreting: American Sign Language and English**

Three credits. Prerequisite: ASLN 1101 or higher or consent of the instructor.

Basic theories, principles, and practices of professional interpreting.

#### **2600. Process of Interpreting: American Sign Language and English**

Three credits. Prerequisite: ASLN 1102 or consent of the instructor.

Theory and practice of ASL/English interpreting. Models of interpretation including text analysis and the goal of linguistic equivalency. Discourse analysis, visualization, listening and comprehending, shadowing, paraphrasing, abstracting, dual-task training, and cloze skills.

#### **2700. Interpreting in Various Settings**

Three credits. Prerequisite: ASLN 1102

The study of interpreting American Sign Language and English within a variety of settings with a primary focus on educational interpreting.

### **2800. Consecutive Interpreting**

Three credits. Prerequisite: ASLN 1102

Development of consecutive interpreting skills with an emphasis on text and situational analyses, current issues, and a focus on community, medical and video relay interpreting.

### **3254. Women and Gender in the Deaf World**

(Also offered as WGSS 3254.) Three credits. Prerequisite: One of WGSS 1104, 1105, or 2124.

The roles of women inside and outside the Deaf world. How language and cultural barriers perpetuate the roles defined for and by d/Deaf women within Deaf and hearing societies.

### **3266. Methods of Teaching American Sign Language**

Three credits. Prerequisite: ASLN 1104 or instructor consent.

Methods and practices of teaching American Sign Language to students who are Deaf or hard of hearing in K-12 education.

### **3290. Field Study**

Variable (1-3) credits. Prerequisite: Instructor consent required. May be repeated for a total of 6 credits.

A practical learning experience, working in an environment that fosters ASL communication and a deeper appreciation and understanding of the Deaf community. Field study placements are arranged or approved by the ASL Coordinator or course instructor.

### **3292. Experiential Learning**

Variable (1-3) credits. Prerequisite: Approval of Experiential Learning Supervisor, instructor consent required. Recommended preparation: Completion of the course for which the student will provide tutoring services. May be repeated for a total of 12 credits.

This course is for students who wish to extend their knowledge and experience in American Sign Language and Deaf studies as tutors and as Instructional Assistants in related courses.

### **3293. Foreign Study**

Variable (1-6) credits. May be repeated for credit.

### **3295. Special Topics**

Variable (1-6) credits. May be repeated for credit.

### **3298. Variable Topics**

Three credits. May be repeated for credit.

### **3299. Independent Study**

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

### **3305. Advanced American Sign Language**

Three credits. Prerequisite: ASLN 1104

Advanced study of American Sign Language and Deaf culture.

### **3306W. Advanced American Sign Language Level II**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; ASLN 3305 or instructor consent.

Continuation of advanced study of American Sign Language and Deaf culture. Emphasis on composition in ASL, involving critical engagement with primary research in ASL literature and Deaf

culture, and guidance on how to compose and revise in ASL using an online video recording platform.

### **3360. Deaf Art and Artists**

Three credits.

Introduction to Deaf art, Deaf artists, and the historical transformation of Deaf art including the De'VIA movement. Topics include diversity of Deaf artists as well as Deaf cultural norms and the role they play in the unique distinction of Deaf art. Varying perspectives and a comparative critical analysis between Deaf art and the various forms of art produced by non-Deaf artists.

### **3650. Deaf Writers and American Sign Language Literature**

Three credits. Prerequisite: ASLN 1104 or instructor consent.

Discussion of deaf, hard of hearing, and hearing scholars in the examination of original ASL poetry. Critical examination of comparative literature in the Deaf Community and linguistic themes from different perceptions and analyses.

### **3800. Structure of American Sign Language**

(Also offered as LING 3800.) Three credits. Prerequisite: ASLN 1102 or LING 2010Q. Recommended preparation: Both ASLN 1102 and LING 2010Q.

Linguistic analyses of American Sign Language focusing on the phonological, morphological, syntactic, and semantic levels.

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## **American Studies (AMST)**

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### **1002. Sing and Shout! The History of America in Song**

(Also offered as MUSI 1002.) Three credits.

Develop an understanding of American people, history and culture through the study and singing of American folk songs. CA 1. CA 4.

### **1201. Introduction to American Studies**

(Also offered as HIST 1503 and ENGL 1201.) Three credits.

What is an American? A multi-disciplinary inquiry into the diversity of American societies and cultures. CA 4.

### **1700. Honors Core: American Landscapes**

Three credits. Prerequisite: Open to freshmen and sophomores in the Honors Program.

Real and imagined landscapes in the Americas as seen through the history of the land and its uses and through changing representations of those landscapes in art, literature, science, and popular culture. CA 1.

### **2200. Literature and Culture of North America before 1800**

(Also offered as ENGL 2200.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

An examination of the early written and oral culture of the area that eventually became the United States. CA 1.

### **2201. Introduction to Asian American Studies**

(Also offered as AAAS 2201.) Three credits.

A multidisciplinary and interdisciplinary introduction to major themes in Asian American Studies. Concepts of identity and community, migration and labor histories, Asians and the law, representations of Asians in visual and popular

culture, gender issues, interracial and interethnic relations, and human rights. CA 1. CA 4.

### **2204. Jewish Culture in American Film**

(Also offered as CLCS 2204 and HEJS 2204.) Three credits.

Representations of the diversity of Jewish culture (historical, religious, secular) in American film. Introduction to film analysis and interpretation. CA 1. CA 4.

### **2207. Empire and U.S. Culture**

(Also offered as ENGL 2207 and HIST 2207.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

How the frontier and overseas ambitions have shaped U.S. institutions and culture. The impact of U.S. expansion on people outside its borders. These topics are explored through literary narratives and historical documents. CA 1. CA 4.

### **2274W. Disability in American Literature and Culture**

(Also offered as ENGL 2274W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

An interdisciplinary examination of the symbolic roles of disability and the social implications of those roles. CA 1. CA 4.

### **2276. American Utopias and Dystopias**

(Also offered as ENGL 2276.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Interdisciplinary approaches to American utopian and dystopian literature of the 19th, 20th, and 21st centuries. CA 1.

### **2276W. American Utopias and Dystopias**

(Also offered as ENGL 2276W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Interdisciplinary approaches to American utopian and dystopian literature of the 19th, 20th, and 21st centuries. CA 1.

### **2400. City and Community in Film**

(Also offered as URBN 2400.) Three credits.

Aesthetics, history, and contemporary relevance of American films that feature the urban, suburban, and/or small town landscape as a major "character" shaping plot and story. Films read closely as texts that make meaning through a range of tools, including narrative, mise-en-scene, editing, camera work, and genre conventions. CA 1.

### **2810. Crime, Policing, and Punishment in the United States**

(Also offered as HIST 2810.) Three credits.

A survey of political, legal, and cultural development of the American criminal justice system and its social impact from the early republic to the present. CA 1.

### **2993. International Study**

Variable (1-9) credits. Prerequisite: Department consent. May be repeated for a total of 12 credits.

Special topics taken in an international study program. Consent of department head required, normally to be granted prior to the student's departure.

### **3042. Baseball and Society: Politics, Economics, Race and Gender**

(Also offered as HDFS 3042, AFRA 3042, and WGSS 3042.) Three credits. Prerequisite: Open to juniors or higher.

Baseball in historical, political, sociological, and economic contexts. Topics may include: impact on individuals and families; racial discrimination and integration; labor relations; urbanization; roles of women; treatment of gay athletes; and implications of performance-enhancing drugs.

### 3082. Critical Race Theory as Political Theory

(Also offered as POLS 3082.) Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: POLS 1002.

Interdisciplinary scholarship on racial identity, legal decisions, and political action from the perspective of political science and political theory. Topics include interactions between states and social movements, the intersections of race, class, gender, and membership, and the problems with both post-racialism and identity politics.

### 3265W. American Studies Methods

(Also offered as ENGL 3265W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher. May be repeated for credit.

Interdisciplinary research and writing centered on a specific topic in U.S. culture. An introduction and overview of research methods in American Studies.

### 3267W. Race and the Scientific Imagination

(Also offered as ENGL 3267W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

How racism has been both reproduced and contradicted in the scientific imagination. Scientific texts and imaginative literature that explore the reparation of past harms and imagine new futures. CA 1. CA 4.

### 3271. Immigration and Transborder Politics

(Also offered as LLAS 3271 and POLS 3834.) Three credits. Prerequisite: Open to juniors or higher.

U.S. immigration policy, trans-border politics, and the impact diasporas and ethnic lobbies have on U.S. foreign policy, with emphasis on Latino diasporas.

### 3281. Internship

Variable (1-6) credits. Prerequisite: Open to juniors or higher. May be repeated for a total of 8 credits.

No more than eight credits may be earned in a single placement, and no more than three credits may be counted towards completion of requirements for the American Studies major. Students taking this course will be assigned a grade of S (satisfactory) or U (unsatisfactory). May be repeated for credit.

### 3440. Nineteenth Century American Art

(Also offered as ARTH 3440.) Three credits. Prerequisite: Open to sophomores or higher.

An overview of major artists and stylistic movements in the United States in the long 19th century.

### 3440W. Nineteenth Century American Art

(Also offered as ARTH 3440W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

An overview of major artists and stylistic movements in the United States in the long 19th century.

### 3502. Colonial America: Native Americans, Slaves, and Settlers, 1492-1760

(Also offered as HIST 3502.) Three credits.

The legacy of Columbus, creative survival of native Americans in the face of disease and warfare, religious utopianism and the profit motive in colonization. The growth of a distinctive Anglo-American political culture, gender and family relations, and the entrenchment of a racial caste system.

### 3502W. Colonial America: Native Americans, Slaves, and Settlers, 1492-1760

(Also offered as HIST 3502W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

The legacy of Columbus, creative survival of native Americans in the face of disease and warfare, religious utopianism and the profit motive in colonization. The growth of a distinctive Anglo-American political culture, gender and family relations, and the entrenchment of a racial caste system.

### 3531. Japanese Americans and World War II

(Also offered as HIST 3531 and AAAS 3531.) Three credits.

The events leading to martial law and executive order 9066, the wartime experience of Japanese Americans, and national consequences. CA 1. CA 4.

### 3542E. New England Environmental History

(Also offered as HIST 3542E.) Three credits. Recommended preparation: ENGL 1010 or 1011 or 2011 or 3800.

Interdisciplinary history of New England's terrestrial and marine environmental change. Links among land, sea, and human natural resource use and management, including precontact patterns, colonial impacts, agricultural decline, industrial pollution, overfishing, re-forestation, and the rise of eco-tourism.

### 3544. Atlantic Voyages: European Maritime Expansion, 1400-1650

(Also offered as HIST 3544 and MAST 3544.) Three credits.

Late medieval and early modern European expansion into the Atlantic and Indian oceans, with particular attention to European, Asian, African, and American contexts within which that expansion took place. Topics include the transatlantic slave trade; technology adoption and adaptation; convergence of trade, racial ideology, imperial expansion, and imperial identity construction; piracy and settlement; historiographical legacies and later imperialism; and decolonization of contemporary understandings.

### 3568. Hip Hop, Politics and Youth Culture in America

(Also offered as HIST 3568, AFRA 3568, and MUSI 3568.) Three credits.

History of hip-hop, its musical antecedents and its role in popular culture. Race, class, and gender are examined as well as hip-hop's role in popular political discourse.

### 3570. History and Theory of Digital Art

(Also offered as ARTH 3570 and DMD 3570.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to sophomores or higher.

Investigates forms of digital and Internet art and the mostly forgotten histories of the technologies behind them. Forms and themes to be explored include games/gaming, surveillance art, cyberfeminism, data visualization, and crowdsourced art. CA 1. CA 4.

### 3699. Independent Study

Variable (1-6) credits. Prerequisite: Open to juniors or higher. May be repeated for credit.

Supervised reading and writing on a subject of special interest to the student. May be repeated for credit with a change of topic.

### 3807. Constitutional Rights and Liberties

(Also offered as POLS 3807 and HRTS 3807.) Three credits. Prerequisite: Open to juniors or higher.

The role of the Supreme Court in interpreting the Bill of Rights. Topics include freedoms of speech and religion, criminal due process, and equal protection.

### 3822. Law and Popular Culture

(Also offered as POLS 3822.) Three credits. Prerequisite: Open to juniors or higher.

Exploration of themes in the study of law and courts by contrasting scholarly work against representations of such themes in movies, televisions, and other media of popular culture.

### 3822W. Law and Popular Culture

(Also offered as POLS 3822W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

Exploration of themes in the study of law and courts by contrasting scholarly work against representations of such themes in movies, televisions, and other media of popular culture.

### 4897. Honors Thesis

Variable (1-3) credits. Prerequisite: Open to juniors or higher.

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## Animal Science (ANSC)

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### 1001. Introduction to Animal Science

Three credits.

The biological, physical, and social factors that influence animal production and utilization.

### 1111. Principles of Animal Nutrition and Feeding

Three credits. Prerequisite: May not be taken out of sequence after passing ANSC 4311.

Digestive anatomy of various species and the classes of nutrients including their digestion, metabolism and sources. Nutrient requirements and feeding standards for livestock, companion animals, exotics and aquatics for purposes of reproduction, lactation, growth, work and maintenance. Classes of feedstuffs, their characteristics, proper utilization, formulating rations and nutritional programs for animal enterprise. Taught with SAAS 113.

### 1602. Behavior and Training of Domestic Animals

Three credits. Prerequisite: Open to Animal Science, Pathobiology and Veterinary Science, Agriculture and Natural Resources majors; others by consent. Recommended preparation: ANSC 1001.

Application of behavior of cattle, horses, sheep, goats, swine, poultry, and companion animals to their management, training, and welfare. Basic principles of genetics and physiology of behavior, perception, training, learning, motivation, and stress with consideration of integrated behavioral management and animal welfare. Students are required to have access to an animal that they will train throughout the semester; the Department of Animal Science will not necessarily provide animals for training. Taught concurrently with SAAS 202.

#### **1645. The Science of Food**

(Also offered as NUSC 1645.) Three credits.

An introductory level course for students interested in the application of science to food. Nutritional and functional attributes of various food constituents are discussed. Issues concerning food processing and food safety are covered. CA 3.

#### **1676. Introduction to Companion Animals**

Three credits.

Basic concepts of the nutrition, physiology, health and management of companion animals. Taught with SAAS 276.

#### **1693. Foreign Studies in Animal Science**

Variable (1-15) credits. Prerequisite: Instructor consent required. May be repeated for credit.

Variable topics.

#### **1695. Special Topics**

Variable (1-3) credits.

Credits, prerequisites and hours as determined by the Senate Curricula and Course Committee. May be repeated for credit with a change in topic.

#### **2251. Horse Science**

Three credits. Prerequisite: May not be taken out of sequence after passing ANSC 3456.

Valuable to animal science majors and includes horse types and breeds and their nutrition, breeding, evaluation, behavior, care and management with attention given to detailed studies of the problems and practices of horse production and use. Taught with SAAS 251.

#### **2271. Principles of Poultry Science**

Three credits.

The application of the basic scientific principles to the management of poultry, egg and meat production systems.

#### **2690. Animal Science Field Excursions**

One credit. Prerequisite: Instructor consent required. May be repeated for credit.

A multiple day field trip format. Students in this course will travel with the instructor to visit and tour agri-businesses that represent commercial aspects of different animal science activities. Students will interview agri-business personnel and gain an understanding of how agricultural principles are applied in the field. Each student must submit a formal written report for evaluation and meet all other course requirements as specified by the instructor. Field trip is required. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory). May be repeated for credit with a change in topic.

#### **2695. Special Topics**

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

Contact Department Main Office for list of current topics and instructors. May be repeated for credit with a change of topic.

#### **2699. Independent Study**

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

May be repeated for credit. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

#### **3121. Principles of Animal Genetics**

Three credits. Prerequisite: BIOL 1108; open to sophomores or higher. Recommended preparation: BIOL 1107.

Principles of Mendelian and molecular genetics. Biosynthesis and function of DNA, RNA, and protein. This course also includes introductions to population and quantitative genetics. Information on molecular methods of genetic analysis and examples of genetics in animals of agricultural significance are also provided.

#### **3122. Reproductive Physiology**

Four credits.

A study of the reproductive anatomy and physiology of domestic animals. Laboratory will include macro and micro anatomy, hormone action, and techniques used in reproductive management of domestic animals.

#### **3194. Career Paths in Animal Science**

One credit.

A discussion of current employment opportunities in animal sciences. In addition, students will prepare resumes and make oral presentations.

#### **3261. Dairy Cattle Management**

Three credits. Prerequisite: Open to juniors or higher.

Management of dairy cattle including milking procedures, sanitation, selection, nutrition, reproduction, physiology and anatomy of milk secretion and record keeping. Field trips required. Taught with SAAS 261.

#### **3272. Laboratory Animal Science**

Three credits. Prerequisite: BIOL 1107. Recommended preparation: BIOL 1108 or equivalent.

Principles and practices of laboratory animal care and management in relation to animal characteristics, handling and restraint, animal house design, reproduction and nutrition and legal regulations. Various laboratory animal techniques will be covered.

#### **3273. Livestock Management**

Four credits.

The production and management of beef cattle, sheep, and swine. Laboratories involve theory and practice in livestock management, skills, and techniques. Taught with SAAS 273.

#### **3311. Comparative Exercise Physiology**

Three credits. Prerequisite: PATH 2100 or PNB 2265 or 2275; open to juniors or higher.

A comparative study of the effects of exercise on the body, focusing on the three primary athletic species (canine, equine, human). Particular emphasis will be placed on the physiological mechanisms which allow for adaptation to exercise and inactivity.

#### **3312W. Scientific Writing in Comparative Exercise Physiology**

One credit. Prerequisite: ANSC 3311, which must be taken concurrently; ENGL 1007 or 1010 or 1011 or 2011 or 3800; open to juniors and higher.

A writing intensive class integrated with course content in ANSC 3311.

#### **3313. Growth Biology and Metabolism in Domestic Livestock**

Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: PATH 2100.

Focuses on the embryonic and postnatal growth and development of domestic livestock with emphasis on metabolic and hormonal regulation of processes that influence growth and development. Discussion period will focus on methods used to measure growth and metabolism.

#### **3314W. Scientific Writing in Growth Biology and Metabolism of Domestic Livestock**

One credit. Prerequisite: ANSC 3313 or 5613, which must be taken concurrently; ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

A writing intensive class integrated with course content in ANSC 3313.

#### **3316. Endocrinology of Farm Animals**

Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: PATH 2100 or equivalent.

Focuses on endocrine systems and endocrine function in farm animals with emphasis on hormones involved in metabolism, growth, lactation, feed intake and digestion in cattle, pigs, horses and poultry.

#### **3317W. Scientific Writing in Endocrinology of Farm Animals**

One credit. Prerequisite: ANSC 3316, which must be taken concurrently; ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

A writing intensive class integrated with course content in ANSC 3316, Endocrinology of Farm Animals.

#### **3318. Probiotics and Prebiotics**

Three credits. Recommended preparation: MCB 2610 or equivalent (can be taken concurrently).

Biology, uses, effectiveness and safety of probiotics and prebiotics. Molecular mechanisms underlying the health benefits attributed to the consumption of pre and probiotics. Application of pre- and probiotics to promote human and animal health, including safety and regulation.

#### **3323. Animal Embryology and Biotechnology**

Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: ANSC 3122 or MCB 4219.

Introduction to recent research in animal embryology and related reproductive biotechnologies. Basic principles, methodology and state of the technology for numerous established and emerging animal biotechnologies such as transgenesis and cloning.

#### **3324W. Scientific Writing in Embryo Biotechnology**

One credit. Prerequisite: ANSC 3323, which must be taken concurrently; ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

Writing intensive class integrated with course content in ANSC 3323 Animal Embryology and Embryo Biotechnology.

**3343. Animal Food Products**

Three credits. Prerequisite: Open to juniors or higher.

A study of the food products derived from animal agriculture, including dairy, meat, poultry and fish. Emphasis will be placed on inspection, grading, processing, biochemistry, nutritive value and food safety concerns of these products. Taught with SAAS 243.

**3344W. Scientific Writing in Animal Food Products**

One credit. Prerequisite: ANSC 3343, which must be taken concurrently; ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

A writing-intensive class integrated with course content in ANSC 3343.

**3420. Little I Training Assistant Practicum**

One credit. Prerequisite: Instructor consent. May be repeated for a total of 3 credits.

Develop and effectively communicate livestock animal handling, training, fitting, and showing techniques to Introduction to Animal Science students at weekly practices.

**3421. Little I Chair Practicum**

Two credits. Prerequisite: ANSC 3420 or SAAS 420; instructor consent required. May be repeated for a total of 6 credits.

Oversee and teach Little I Training assistants to ensure appropriate animal handling, training, fitting, and showing instruction to Introduction to Animal Science students. Teach and assist Introduction to Animal Science students at weekly practices, along with Little I Training assistants.

**3452. Horse Breeding Farm Management**

Three credits. Prerequisite: ANSC 2251. Open to juniors or higher.

Designed to develop technical and managerial skills necessary for operating horse breeding farms. Programs for herd health, hoof care, nutrition, breeding, foaling, and record keeping will be included.

**3453. Pleasure Horse Appreciation and Use**

One credit. Prerequisite: Not open to students who have passed ANSC 3456.

Open to all University students interested in pleasure horses. The principles of horse management and horsemanship.

**3454. Horse Selection and Evaluation**

Two credits. Prerequisite: Not open for credit to graduate students.

Comparative evaluation, classification and selection of horses according to conformation, breed characteristics and performance. Judging skills including justification of placings through presentation of oral reasons will be developed. The Intercollegiate Horse Judging Team may be selected from this course. Field trips are required. Taught with SAAS 254.

**3455. Developing the Driving Horse**

Two credits. Prerequisite: Open to juniors or higher.

Techniques related to training the driving horse will be described. Prior working experience with horses is recommended.

**3457. Advanced Broodmare and Foal Management**

Two credits. Prerequisite: ANSC 3452; instructor consent required.

Management of the pregnant mare and neonatal foal, including foaling practices, foal handling, and postpartum care of the mare.

**3551. Equine Training I - Foundations**

Two credits. Prerequisite: Instructor consent. May be repeated for a total of 4 credits.

Fundamental ground work and techniques used to train young horses. Prior working experience with horses recommended.

**3552. Equine Training II - Backing**

Two credits. Prerequisite: Instructor consent. Recommended preparation: Intermediate level riding skills. May be repeated for a total of 4 credits.

Theory, fundamentals and practice of backing a horse, training horse to accept the rider, and the natural aids. Intermediate level riding skills required. May be repeated once for a maximum of four credits.

**3553. Equine Training III - Advanced**

Two credits. Prerequisite: Instructor consent. Recommended preparation: Advanced level riding skills. May be repeated for a total of 4 credits.

Training horses for riding, showing, and lessons using the Dressage Training Scale. Advanced level riding skills are required. May be repeated once for a maximum of four credits.

**3554. Equine Sports Rehabilitation Practicum**

Two credits. Prerequisite: ANSC 3551 and instructor consent. May be repeated for a total of 4 credits.

Provides students with an opportunity to apply concepts of equine rehabilitation. May be repeated once with change in specific rehabilitation activity.

**3555. Equine Rehabilitation Seminar**

One credit. Prerequisite: Instructor consent.

Different modes of therapy, business topics, and management skills related to the equine rehabilitation field.

**3621. Animal Biotechnology Laboratory**

Two credits. Prerequisite: ANSC 3121 (or equivalent); SPSS 3210 (or equivalent). Recommended preparation: ANSC 3122 or equivalent.

Laboratory techniques used in agricultural biotechnology research, including embryo manipulation, immunofluorescence, real-time PCR, karyotyping, SNP analysis, high throughput sequencing, RNA-seq, genome construction and gene database searches.

**3641. Animal Food Products: Dairy Technology**

Three credits. Prerequisite: Open to juniors or higher.

Production and processing of milk and milk-products from a food science perspective including chemical, physical and microbiological components. Technological aspects of the transformation of milk into various food products. Public health regulations, good manufacturing practices, cleaning and sanitizing procedures. Unit operations in dairy food manufacturing, packaging, labeling and quality control procedures.

**3642W. Scientific Writing in Animal Food Products: Dairy Technology**

One credit. Prerequisite: ANSC 3641, which must be taken concurrently; ENGL 1007 or 1010 or 1011 or 2011.

A writing intensive course integrated with course content in ANSC 3641.

**3663. Dairy Management Decision-making**

One credit. Prerequisite: Open to juniors or higher. May be repeated for a total of 3 credits.

Participation in all phases of dairy herd management including decision-making activities, with particular emphasis on impact of decisions on financial health and stability. Course requires participation beyond specific semester calendars. May be repeated twice for credit.

**3664. Dairy Cattle Evaluation**

One credit. Prerequisite: Open to juniors or higher.

An introduction to the evaluation of dairy cattle on the basis of conformation. Breed classification and type improvement programs, score card criteria in relation to longevity, physiological efficiency and performance are included. Attention is also given to fitting and showing methods. Field trips may be required.

**3674. Livestock and Carcass Evaluation**

Two credits. Prerequisite: Not open for credit to graduate students.

Classification, form to function relationships, grades and value differences of livestock are included. Objective and subjective methods of appraisal are used to evaluate beef cattle, horses, sheep and swine. Taught with SAAS 274.

**3675. Advanced Animal and Product Evaluation**

One credit. Prerequisite: Open to juniors or higher. Not open for credit to graduate students. May be repeated for a total of 4 credits.

Intensive training in the evaluation of selected species of farm animals or their products. Type standards and the relation of anatomical features to physiological function are emphasized. Evaluation skills including justification of decisions will be developed. Intercollegiate dairy cattle, horse, livestock, poultry judging teams will be selected from this course. Field trips are required, some of which may occur prior to the start of the semester. Taught with SAAS 275.

**3681. Summer Internship Experience**

Zero credits. Prerequisite: Open to students who have earned a minimum of 24 credits and instructor consent. May be repeated.

Practical experience, knowledge, and professional skills in a work environment related to animal science. Based on a contract and learning experience syllabus. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

**3691. Professional Internship**

Variable (1-15) credits. Prerequisite: Open to juniors or higher. May be repeated for credit.

Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory). Credits and hours by arrangement.

**3693. Foreign Studies in Animal Science**

Variable (1-15) credits. Prerequisite: Instructor consent required. May be repeated for credit.

Variable topics.

**3695. Special Topics**

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

Credits and hours by arrangement. May be repeated for credit with a change of topic. Contact

Department Main Office for list of current topics and instructors.

### 3698. Variable Topics

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for a total of 6 credits.

Contact Department Main Office for list of current topics and instructors. May be repeated with a change of topic.

### 3790. Undergraduate Teaching Assistance in Animal Science

One credit. Prerequisite: Instructor consent required. Open only to students with demonstrated competency in target course material. May be repeated for a total of 3 credits.

Practical experience gained in teaching methods and materials preparation and assisting student learning through written and verbal communication.

### 4311. Advanced Animal Nutrition

Three credits. Prerequisite: ANSC 1111; open to juniors or higher.

A comparative study of nutritional, physiological, microbiological, immunological and biochemical aspects of digestion and metabolism in the non-ruminant and ruminant animal, particularly livestock and companion animals. Topics include digestive system structures, utilization of nutrients, energy metabolism, control of nutrient metabolism, and experimental techniques used in the study of animal nutrition.

### 4312W. Scientific Writing in Advanced Animal Nutrition

One credit. Prerequisite: ANSC 4311, which must be taken concurrently; ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

Writing-intensive class integrated with course content in ANSC 4311.

### 4341. Food Microbiology and Safety

Three credits. Prerequisite: Biology 1107; open to junior or higher. Recommended preparation: A one semester course in organic chemistry.

Current topics in food safety will be discussed, with special emphasis on microbial and chemical contamination of food. Specific topics including the safety of natural versus synthetic chemicals, food additives, irradiation and other practices, basic microbiology and toxicology, current regulatory practices and risk assessment will also be included. The Hazard Analysis Critical Control Points (HACCP) approach to food safety will be discussed.

### 4342W. Scientific Writing in Food Microbiology and Safety

One credit. Prerequisite: ANSC 4341, which must be taken concurrently; ENGL 1007 or 1010 or 1011 or 2011 or 3800; open to juniors or higher.

A writing-intensive class integrated with course content in ANSC 4341.

### 4457. Methods of Equitation Instruction

Two credits. Prerequisite: Intermediate II or above riding experience required.

The techniques and procedures of teaching equitation including the theories of riding and teaching methods. Practice teaching will be required under the supervision of the instructor. Taught with SAAS 257.

### 4642. Food Microbiology Laboratory

One credit. Prerequisite: Open to juniors or higher. Recommended preparation: MCB 2610.

An introductory laboratory course in sampling of foods for microbiological analysis, enumeration of microorganisms in foods, and isolation and identification of major foodborne pathogens from foods.

### 4662W. Dairy Herd Management

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; ANSC 3261; open to juniors or higher.

Dairy farm management practices with emphasis on business and economic decision making. The effects of various programs in selection, nutrition, facilities, reproduction and herd health on overall business health will be evaluated. Each student will manage a computer simulated herd during the semester. Field trips are required. Taught with SAAS 262.

### 4697W. Undergraduate Honors Thesis Writing in Animal Science

One credit. Prerequisite: Three credits of ANSC 2699 or 5692, which may be taken concurrently; ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

Writing of a formal thesis based on independent research conducted by the student. Thesis proposal and final thesis must follow guidelines developed by the department.

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## Anthropology (ANTH)

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### 1000. Peoples and Cultures of the World

Three credits.

An introduction to the anthropological understanding of human society through ethnographic case studies of selected peoples and cultures, exploring the richness and variety of human life. Encourages students to learn about different cultures and to apply their knowledge to make sense of their own society. CA 2. CA 4-INT.

### 1000W. Peoples and Cultures of the World

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

An introduction to the anthropological understanding of human society through ethnographic case studies of selected peoples and cultures, exploring the richness and variety of human life. Encourages students to learn about different cultures and to apply their knowledge to make sense of their own society. CA 2. CA 4-INT.

### 1001W. Anthropology Through Film

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

An introduction to cultural anthropology, approached through the medium of ethnographic film. Particular attention is given to how films represent humans' varied beliefs and behavior. CA 1. CA 4-INT.

### 1006. Introduction to Anthropology

Three credits.

The biological and cultural development of humans from their origin to the present. A brief survey of human evolution is followed by a comparative study of behavior and beliefs of our own and other societies. CA 2. CA 4-INT.

### 1010E. Global Climate Change and Human Societies

Three credits.

A multidisciplinary examination of the nature, anthropogenic drivers, range of expressions, and impacts of contemporary and future global climate change as well as cultural understandings of this significant environmental process and diverse human responses to it. CA 2. CA 4-INT.

### 1093. Foreign Study

Variable (1-17) credits. Prerequisite: Instructor consent required. May be repeated for credit.

Special topics taken in a foreign study program. May be repeated for credit to a maximum of 17.

### 1095. Special Topics Lecture

Variable (1-3) credits. Prerequisite: Credits, prerequisites, and hours as determined by the Senate Curricula and Courses Committee. May be repeated for credit.

May be repeated with a change in topic.

### 1500. Great Discoveries in Archaeology

Three credits.

Survey of important discoveries in archaeology spanning the whole of human prehistory across the globe. Current issues, methods, and techniques in the field of archaeology. CA 2. CA 4-INT.

### 2000. Social Anthropology

Three credits. Prerequisite: May not be taken out of sequence after passing ANTH 4001.

A comparative study of social structure including an analysis of kinship, marriage, community organization, political and economic institutions, and the role of the individual in these institutions. CA 2. CA 4.

### 2000W. Social Anthropology

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011. Not open to students who have passed ANTH 4001.

A comparative study of social structure including an analysis of kinship, marriage, community organization, political and economic institutions, and the role of the individual in these institutions. CA 2. CA 4.

### 2200. Race and Human Biological Diversity

Three credits.

An introduction to race and racism, concepts of racial difference, and the patterns of human biological variation. Special emphasis on understanding human biodiversity within historical, scientific, and social contexts. CA 3. CA 4.

### 2400. Honors Core: Analyzing Religion

Three credits. Recommended for first-year and sophomore students in the Honors Program.

An introduction to religion from interdisciplinary and cross-cultural perspectives. Theories, analytic frameworks, and critiques. Religious orientations. Components of religion. The science-and-religion debate. CA 2. CA 4-INT.

### 2501. Introduction to Archaeology

Three credits. Prerequisite: May not be taken out of sequence after passing ANTH 3521 or 3704.

The concepts, methods and practice of anthropological archaeology.

### 2502. Human Evolution

Three credits.

The processes and events leading to the origin of human beings. Human physical and cultural development from its beginning to the dawn of settled life, through the approaches of physical anthropology and archaeology.

### 2510. Methods in Maritime Archaeology

Three credits. Recommended preparation: ANTH 2501.

Methods and techniques in underwater archaeology covering both maritime (ships, ports, etc.) and submerged settlements archaeology. Overview of the aqueous environment, underwater archaeological methods, geophysical/geotechnical surveying and data interpretation, diver and ROV-based documentation and excavation techniques survey methods.

### 2600. Microscopy in Applied Archaeobotany Research

Four credits. Recommended preparation: STAT 1000Q or 1100Q; ENGL 1007 or 1010 or 1011 or 2011. Not open for credit to students who have passed ANTH 3095 when taught as Archaeobotany.

Introduction to research trends in archaeobotany and use of microscopy tools. Design and execution of a research project. CA 3-LAB.

### 3002. Culture, Language, and Thought

Three credits.

Anthropological contributions to the study of language, culture, and their relationship. Topics include the Sapir-Whorf hypothesis and the application of cognitive anthropological methods and theory to the study of folk classification systems.

### 3003. Field Research in Social Settings

Three credits. Prerequisite: ANTH 1000 or 1006.

Methods and techniques of field research in social settings, including observational procedures, interviewing, and the construction and use of questionnaires.

### 3004. Cultural Research

Variable (1-3) credits.

The theoretical foundations and basic methods used to collect and analyze cultural data.

### 3021. Contemporary Latin America

(Also offered as LLAS 3021.) Three credits.

Survey of anthropological contributions to the study of contemporary Mexico, Central America, South America, and the Hispanic Caribbean. Special focus on the comparative analysis of recent ethnographic case studies and local/regional/national/international linkages.

### 3025. Contemporary Africa

(Also offered as AFRA 3025.) Three credits.

Africa since its partition in 1884. Urbanization, social stratification, racial and ethnic conflict.

### 3026. Peoples and Cultures of North America

Three credits.

A survey of representative Native American cultures as they existed prior to the twentieth century, together with a view of the changing life of modern Native Americans.

### 3027. Contemporary Native Americans

Three credits.

Analysis of Native American reservations and urban communities and their relationship to the larger U.S. society. Special focus on federal policy

and economic development, cultural identity, and politics of Native Americans.

### 3028. Indigenous Rights and Aboriginal Australia

(Also offered as HRTS 3028.) Three credits. Recommended preparation: ANTH 2000.

An introduction to the study and understanding of Aboriginal ways of life and thought. An exploration of the complexity of contemporary indigenous social orders and land rights issues. CA 4-INT.

### 3028W. Indigenous Rights and Aboriginal Australia

(Also offered as HRTS 3028W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011. Recommended preparation: ANTH 2000.

An introduction to the study and understanding of Aboriginal ways of life and thought. An exploration of the complexity of contemporary indigenous social orders and land rights issues. CA 4-INT.

### 3029. The Caribbean

(Also offered as LLAS 3029.) Three credits.

Comparative perspectives on the cultural formation of Caribbean societies; the region's demographic, economic and political links with the wider world.

### 3030. Peoples of the Pacific Islands

Three credits.

Survey of the indigenous societies and cultures of the Pacific Islands, from the first settlement to the postcolonial period. Topics include prehistoric canoe voyaging, modes of subsistence, political forms, ritual and religion, ceremonial exchange, gender ideologies, European colonization, and modern indigenous nationalism. Ethnographic examples will be drawn from Polynesia, Melanesia, and Micronesia. CA 4-INT.

### 3038. Peoples and Cultures of the Middle East

Three credits.

Selected social and cultural features of past and contemporary Middle Eastern social forms, and the origins and varieties of Western perceptions of these features.

### 3041. Latin American Minorities in the United States

(Also offered as LLAS 3241.) Three credits.

Emphasis on groups of Mexican, Puerto Rican and Cuban origin, including treatment and historical background, social stratification, informal social relations, ethnic perceptions, relations and the concept of Latino identity.

### 3042. Contemporary Mexico

Three credits.

Analysis and interpretation of interrelated economic, political and cultural processes in the contemporary social life of Mexico and the U.S.-Mexico borderland. Draws broadly on the social science literature with a special focus on anthropological contributions.

### 3050. Anthropology of Jews and Jewishness

(Also offered as HEJS 3050.) Three credits. Recommended preparation: ANTH 1000 or 1006; ENGL 1007 or 1010 or 1011 or 2011.

Survey of the rich and growing ethnographic literature on Jews and Jewishness around the

globe. Course materials include ethnographic texts, music, and videos/films.

### 3081. Internship in Anthropology

Variable (1-6) credits. Prerequisite: ANTH 1000 or 1006 or 1500; instructor consent required.

Practical experience, knowledge, and professional skills in a work environment related to anthropology. Based on a contract and learning experience syllabus. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

### 3090. Directed Field Research in Anthropology

Variable (1-12) credits. Prerequisite: ANTH 3003 or consent of instructor. May be repeated for a total of 12 credits.

The investigation of a sociocultural and/or archaeological problem in some domestic or foreign field location. May be repeated for a maximum of 12 credits.

### 3091. Internship in Anthropology: Directed Study

One credit. Prerequisite: Instructor consent; ANTH 1000 or 1006 or 1500. Corequisite: Must be taken with ANTH 3081. May be repeated for a total of 2 credits.

Directed study, analysis, and reflection on internship experience.

### 3093. Foreign Study

Variable (1-6) credits. May be repeated for credit.

Special topics taken in a foreign study program. May count toward the major with consent of the advisor. May be repeated for credit.

### 3095. Special Topics

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

With a change of content, may be repeated for credit.

### 3096. Directed Research in Anthropology

Variable (1-6) credits. Prerequisite: Instructor consent.

The investigation of a sociocultural and/or archaeological problem in a non field-based setting. Hours by arrangement.

### 3098. Variable Topics

Three credits. Prerequisite: Prerequisites and recommended preparation vary. May be repeated for credit.

Prerequisites, required preparation, and recommended preparation vary. With a change of topic, may be repeated for credit.

### 3099. Independent Study

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

With a change of content, may be repeated for credit.

### 3120. Anthropology of Capitalism

Three credits.

Ethnographic approaches to classic and contemporary debates about capitalism's transformation of sociocultural dynamics.

### 3150. Migration

Three credits. Prerequisite: Recommended preparation: ANTH 1000 or 1006.

The social, cultural and economic causes and consequences of internal and international



migration in the modern era. Topics include migrant selection, social adaptation, effects on home and host societies, and cultural identity. CA 4.

### **3150W. Migration**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011. Recommended preparation: ANTH 1000 or 1006.

The social, cultural and economic causes and consequences of internal and international migration in the modern era. Topics include migrant selection, social adaptation, effects on home and host societies, and cultural identity. CA 4.

### **3152. Race, Ethnicity, and Nationalism**

(Also offered as AFRA 3152.) Three credits.

Popular and scholarly theories of human group identity and diversity, in cross-cultural and historical perspective. Topics include: an overview of 'race' and 'ethnicity' in Western thought, ethnic group formation and transformation, political mobilizations of group identity, and systems of inequality. CA 2. CA 4.

### **3153W. Human Rights in Democratizing Countries**

(Also offered as HRTS 3153W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Human rights, political violence, political and legal anthropology, prosecutions of human rights offenders, truth and memory, reconciliation, international justice. CA 4-INT.

### **3155. Anthropology of the African Diaspora**

(Also offered as AFRA 3155.) Three credits.

An exploration of the racial, political, and social similarities and differences within and between the communities constituting the African Diaspora from an anthropological perspective.

### **3200. Human Behavioral Ecology**

Three credits.

The application of the theory of natural selection to the study of human culture and behavior, with emphasis on the interaction between humans and their environment.

### **3202W. Illness and Curing**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Cross-cultural analysis of ethnomedicine, major medical systems, alternative medical systems, curing and healing illness and social control, gender and healing, and the role of traditional and cosmopolitan medical systems in international health. CA 4.

### **3230. Propaganda, Disinformation, and Hate Speech**

(Also offered as HRTS 3230.) Three credits. Prerequisite: Not open for credit to students who have passed ANTH 3098 when offered as Propaganda, Fake News and Hate Speech.

Draws on current social science research to understand the effects of false information and hate speech on our politics and culture and to evaluate various private and public initiatives to regulate speech. CA 2.

### **3230W. Propaganda, Disinformation, and Hate Speech**

(Also offered as HRTS 3230W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011. Not open for credit to students who have passed

ANTH 3098 when offered as "Propaganda, Fake News and Hate Speech."

Drawing on recent social science research, this course will seek to understand the effects of false information and hate speech on our politics and culture, and evaluate various private and public initiatives to regulate speech. CA 2.

### **3250. Cognitive Anthropology**

Three credits. Recommended preparation: ANTH 3002.

The study of how the content of thought or knowledge is created, organized, and distributed in human communities. Topics include cultural models of the mind, emotions, personality, and relationships.

### **3251. Psychological Anthropology**

Three credits.

Cross-cultural overview of critical issues regarding the relationship between individual personality and sociocultural systems, and mental health and illness.

### **3300. Medical Anthropology**

Three credits.

An introduction to the theory, method, and content of medical anthropology.

### **3302. Medical Ecology**

Three credits. Recommended preparation: ANTH 3300.

Anthropological perspectives on the interrelationships among culture, biology, environment, and disease. Major topics include ecology and adaptation, population dynamics, nutrition, reproduction, disease in sociological context, health seeking behavior, and the complexity of the interaction of western and non-western medical systems.

### **3304. Anthropology of Drug Use**

Three credits.

Uses the anthropological lens to examine the intersection of societies, cultures and psychoactive substances based on a historically informed, cross-cultural, ethnographic and political economic perspective on drug use and related behaviors.

### **3309. Violence and Human Rights**

Three credits. Prerequisite: Open to sophomores or higher.

Violence and human rights as cultural constructs; human rights claims; war, genocide, terrorism, street crime, domestic violence; deterrence and intervention policy.

### **3320. Race, Culture, and Reproductive Health**

(Also offered as AFRA 3320.) Three credits.

An examination of the reproductive health experiences of women in the United States, including those focused on sexuality, birth, and motherhood. An exploration of the complex relationship between women's reproductive experiences and their contemporary racial and socioeconomic locations in American society.

### **3325. Introduction to Global Health**

Three credits. Prerequisite: Open to sophomores or higher.

Anthropological perspectives on public health in a globalized world, health inequalities within and across countries; diverse social, cultural, and other determinants of global health; pressing global

health issues; organizational players involved in addressing global health issues.

### **3326. Global Health and Human Rights**

(Also offered as HRTS 3326.) Three credits.

Theories, methods and controversies in the interconnected fields of global health and human rights.

### **3327. Power and Health in Latin America and the Caribbean**

(Also offered as HRTS 3327 and LLAS 3327.) Three credits. Prerequisite: Open to sophomores or higher.

History, theories, and concepts about the human right to health and structural inequalities in the region.

### **3339. Cultural Designs for Sustainability**

Three credits. Prerequisite: Open to sophomores or higher.

Correspondences among cultural institution design, collective action failure and success, and cultural resilience.

### **3340E. Culture and Conservation**

(Also offered as EVST 3340E.) Three credits. Recommended preparation: ANTH 1000 or 1006; EVST 1000.

Interdisciplinary analysis of conservation and the human-environment relationship from a cross-cultural perspective. Major topics include sustainability, environmental ethics, climate change, natural disasters, health, and environmental justice. CA2. CA4-INT.

### **3350. Anthropological Perspectives on Women**

(Also offered as WGSS 3350.) Three credits.

Major conceptual and historical problems in the study of gender in anthropology. Women's roles in different historical and contemporary settings, and new understandings of family, kinship, power, and cultural ideologies.

### **3351. Sex and Gender**

Three credits.

Cross-cultural and interdisciplinary analysis of biological sex, gender, sex roles, and sexuality.

### **3400. Culture and Religion**

Three credits. Prerequisite: ANTH 1000 or 1006.

Major theories and approaches in the study of religion as a social institution and cultural system. Topics include myth, ritual, taboos and pollution beliefs, shamanism, magical practices, fundamentalism and religion in modern society.

### **3401. World Religions**

Three credits.

A survey of religious belief systems, both polytheistic and monotheistic, from around the world. CA 1. CA 4-INT.

### **3402. Women in the Bible**

(Also offered as WGSS 3402.) Three credits.

An introduction to Biblical interpretation from a feminist perspective, examining how women are represented in the Hebrew Scriptures and the New Testament. Issues of authorship, translation, point of view, cultural context and language.

### **3403. Women and Religion**

(Also offered as WGSS 3403.) Three credits.

Gender issues in the world's religions. Survey of women's theological standing, ritual activities and

participation in a cross-cultural sample of religions, both monotheistic and polytheistic.

### 3405. Religion and Mind

Three credits.

Cognitive and evolutionary anthropological perspectives on the mental underpinnings of religious thought and behavior.

### 3450W. Anthropological Perspectives on Art

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Approaches to cultural creativity and aesthetics in the graphic and plastic arts of prestate societies. Examples from North America, Oceania, and Africa. CA 1.

### 3503. Old World Prehistory

Three credits.

The origin of humanity in Africa, hunters and gatherers of the Paleolithic, the origins of agriculture and the transition to settled life, and the emergence of civilizations in Africa, Asia and the Near East.

### 3506W. Laboratory Techniques in Archaeology

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

The analysis, interpretation, and presentation of archaeological data sets including lithics, ceramics, floral and faunal remains and spatial information from excavated sites.

### 3512. African Archaeology

(Also offered as AFRA 3512.) Three credits.

An archaeological perspective on more than three million years of human social and behavioral change in Africa, from Stone Age societies that are the earliest in the world to sweeping changes brought about by the development and spread of cattle and crops, sophisticated metallurgy, and the later rise of kingdoms and complex polities situated at a global crossroads of trade and interaction.

### 3513. Near Eastern Prehistory

(Also offered as HIST 3300.) Three credits.

From the earliest hunter-gatherers to the rise of the state: the transition from food-gathering to food-production and the development of complex societies in the Near East.

### 3514. European Prehistory

Three credits.

Interdisciplinary survey of the archaeological, biological, cultural, and behavioral evolution of prehistoric humans and their societies across Europe and portions of western Asia.

### 3515. Ancient Civilizations of the Old World

Three credits. Recommended preparation: ANTH 1006 or 1500.

Examination of early civilizations in Mesopotamia, Egypt, the Indus Valley, and sub-Saharan Africa. Theories explaining the development and collapse of early state-level societies are critically considered.

### 3522. Ecological Anthropology Seminar

Three credits.

Interdisciplinary study of the ecology of humans, integrating ecological and anthropological theory with archaeological, historical, and contemporary case-studies.

### 3522W. Ecological Anthropology Seminar

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Interdisciplinary study of the ecology of humans, integrating ecological and anthropological theory with archaeological, historical, and contemporary case-studies.

### 3523. The Origins of Agriculture

Three credits.

The origins and spread of agriculture worldwide. Economic, social and ideological ramifications of the agricultural transition. Processes of plant and animal domestication.

### 3531. Maritime Archaeology of the Americas

(Also offered as MAST 3531 and HIST 3209.) Three credits. Recommended preparation: ANTH 1500, ANTH 2501, ANTH 2510 or HIST 3544.

Archaeological and historical sources to examine the development of seafaring practices, exploration, waterborne trade and economic systems, naval warfare and shipbuilding in the Americas from the fifteenth to the beginning of the twentieth century.

### 3532. Archaeology of the Age of Sail

(Also offered as MAST 3532 and HIST 3210.) Three credits. Recommended preparation: ANTH 1500, ANTH 2501, or ANTH 2510.

Overview of archaeological and historical sources on the development of seafaring and navigation, exploration, waterborne trade and economic systems, colonialism and empire building, naval warfare and shipbuilding in Europe, Asia and Australia from the fifteenth to the beginning of the twentieth century.

### 3555. Archaeological Science

Three credits. Prerequisite: Open to sophomores or higher.

Survey of scientific methods used to answer archaeological questions. Methods, applications and lab demonstrations.

### 3560. The Evolution of Human Diet

Three credits.

Investigation of ecological, anatomical, and physiological aspects that shaped the biological and cultural evolution of humans from the Pliocene to the Anthropocene.

### 3701. Lithic Technology

Three credits.

The properties of stone tools - the primary evidence of human behavior for humanity's first 2.5 million years - and the processes of their manufacture. Analysis of prehistoric tools and tool replication.

### 3702. Human Osteology

Three credits. Recommended preparation: ANTH 2502.

Human skeletal anatomy from an evolutionary and functional perspective. Identification and interpretation of bones of the human skeleton, methods for aging, sexing, and identifying pathologies.

### 3703. Zooarchaeological Method and Theory

Three credits.

Method and theory of archaeological faunal analysis, including training in the identification of skeletal materials, the formation of the

zooarchaeological record, and the interpretation of zooarchaeological data.

### 3704. Experimental Archaeology

Three credits. Prerequisite: ANTH 2501.

Method and theory of experimental archaeology, including hands-on study of past human behavior through experimentation with modern material culture, and the execution of an experimental research project addressing an archaeological question.

### 3704W. Experimental Archaeology

Three credits. Prerequisite: ANTH 2501; ENGL 1007 or 1010 or 1011 or 2011.

Method and theory of experimental archaeology, including hands-on study of past human behavior through experimentation with modern material culture, and the execution of an experimental research project addressing an archaeological question.

### 3705. Paleoanthropology

Three credits. Recommended preparation: ANTH 2501, 2502 or 3503.

Fossil evidence for the evolution of the human family, Hominidae. Anatomical features, behavior, and evolutionary relationships of extinct hominids; the use of biological, geological, and archaeological evidence to reconstruct past hominid adaptations.

### 3706. Archaeobotany

Three credits. Prerequisite: Instructor consent required.

Method and theory of studying archaeological plant remains in the laboratory, including sampling, identification, and interpretation of data.

### 3710. Technology and Society: Archaeological Perspectives

Three credits. Recommended preparation: Introductory coursework in archaeology.

Using a hands-on and field-based approach and the study of museum-based collections, an examination of archaeological approaches to understanding the ways in which various technologies are used by human societies in the present and past, how new technologies arise and spread, the impacts of technological changes, and how to study social choices in the implementation of various technologies as varied as stone tools, pottery, footwear, gravestones, and industrial-era mill sites.

### 3720. Lab Methods in Archaeological and Forensic Science

One credit. Prerequisite: Instructor consent required. May be repeated for a total of 3 credits.

Introduction to scientific lab methods used in archaeology and forensics. Includes three stand alone modules, each dedicated to a different method. Each module consists of 15 contact hours comprised of labs and lectures and takes place during a single weekend. Repeatable to a maximum of three credits.

### 3902. North American Prehistory

Three credits.

Prehistoric cultures of North America from the earliest traces to European contact, with emphasis on the region east of the Mississippi. CA 4.

### 3904. Ethnohistory of Native New England

Three credits.

Combines archaeological and ethnohistorical data to reconstruct the lifeways of the Native Americans of New England from the prehistoric period to the present. CA 4.

### **3980. Introduction to Field Ethnobiology**

Four credits. Prerequisite: ANTH 1000 or 1000W or 1006 or 2000 or 2000W; department consent required. Recommended preparation: ANTH 3003 or 3004 or 3340.

A field-based course examining the relationship between the diversity of environmental settings and human cultures, based out of the Organization of Tropical Studies in Costa Rica. Students will examine the interactions with and the uses of natural resources in human communities surrounding OTS field stations. Students will also review the ethical considerations of conducting scientific research involving human populations. Taught in Costa Rica.

### **3990. Field Work in Archaeology**

Variable (1-6) credits. Prerequisite: Instructor consent required.

Training in the techniques of archaeological site excavation; mapping; recording; field conservation, and preliminary analysis of materials.

### **4001W. The Development of Anthropological Theory**

Three credits. Prerequisite: ANTH 2000; ENGL 1007 or 1010 or 1011 or 2011. Recommended preparation: Recommended for seniors.

Historical and contemporary theories in social and cultural anthropology.

### **4097W. Honors Thesis**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open only with consent of instructor.

Research and writing of major project exploring a topic within anthropology, with close supervision and production of multiple written drafts.

### **4510. The Neanderthals**

Three credits. Recommended preparation: ANTH 1500 or 2501 or 2502.

An interdisciplinary consideration of the biological, cultural, technological, and behavioral evolution of the Neanderthals and their societies.

### **4801. Quantitative Methods for Archaeologists**

Three credits.

Quantitative methods appropriate to the analysis of artifact data, radiocarbon dating, and the spatial distribution of sites.

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## **Arabic (ARAB)**

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### **1001. Elementary Arabic I**

Four credits. Prerequisite: Not open to students who have had three or more years of Arabic in high school. Cannot be taken for credit after passing ARAB 1101 (equivalent), 1102, 1103, 1104, 1112, 1113, 1114.

Beginning Modern Standard Arabic. Basic conversation in formal Arabic. Development of basic reading and writing skills.

### **1002. Elementary Arabic II**

Four credits. Prerequisite: ARAB 1001 or instructor consent; not open to students who have had three or more years of Arabic in high school. Cannot be taken out of sequence after passing ARAB 1003, 1004, 1102, 1103, or 1104.

Development of ability to communicate in Modern Standard Arabic, orally and in writing. Not open for credit to students who have had three or more years of Arabic in high school.

### **1003. Intermediate Arabic I**

Four credits. Prerequisite: ARAB 1002 or instructor consent. Cannot be taken for credit after passing ARAB 1004, 1113, or 1114.

Lower to upper intermediate level in Modern Standard Arabic. Development of ability to communicate orally and in writing. Taught in English and Arabic.

### **1004. Intermediate Arabic II**

Four credits. Prerequisite: ARAB 1003 or instructor consent. May not be taken out of sequence after passing ARAB 3100 or 3212. Not open for credit to students who have passed ARAB 1104.

Development of ability to communicate in Modern Standard Arabic. Lower to upper intermediate skills in speaking and writing. Taught in English and Arabic.

### **1193. Foreign Study**

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

### **1751. Traditional Arab Literatures, Cultures, and Civilizations**

Three credits.

Representative works from the cultures of the Arab world. Pre-Islamic poets to later writers and thinkers. Relation of literary and artistic forms to their historical contexts. Taught in English. CA 1. CA 4-INT.

### **1771. Modern Arabic Culture**

Three credits.

Introduction to modern Arabic culture from Napoleon's Egyptian Campaign to modern Islamism. Survey of institutions, philosophy, and social customs seen through the medium of literature. Taught in English. CA 1. CA 4-INT.

### **2170. Levantine Arabic**

Three credits. Prerequisite: ARAB 1002 or three years of high school Arabic or instructor consent.

Effective communication in Levantine colloquial Arabic. Introduction to words, expressions and grammatical structures used frequently in everyday life. Taught in Levantine Arabic and English.

### **2751. Arabic Folk Tales and Mirrors for Princes**

Three credits.

Folk tales and advice to princes and rulers of the Muslim World: Arabic, Persian and Moghul texts read in translation, such as *The Thousand and One Nights*, the *Qabusname*, and *Jahangirname*. Comparisons with European frame-tales and advice literature (Chaucer, Boccaccio, Machiavelli). Manuals for rulership from India to Andalusia. Ethics, conduct, and political philosophy in folk literature and elite prose. Taught in English. CA 1. CA 4-INT.

### **3100. Advanced Arabic: Composition, Style, and Vocabulary**

Three credits. Prerequisite: ARAB 1004 or instructor consent.

Topics include advanced Arabic texts by writers from around the Arab world, covering a range of political, social, religious, and literary themes and that represent a range of genres, styles, and periods. Taught in Arabic.

### **3102. Media Arabic**

Three credits. Prerequisite: Two years of formal Arabic or equivalent proficiency; instructor consent required.

Modern standard Arabic of the media: television, press and internet. Taught entirely in Arabic.

### **3212. Arabic Composition and Conversation**

Three credits. Prerequisite: ARAB 1004 or instructor consent. May be repeated for a total of 6 credits.

In-depth development of speaking and writing skills.

### **3293. Foreign Study**

Variable (1-8) credits. Prerequisite: Consent of Department Head required, normally to be granted prior to the student's departure. May be repeated for a total of 8 credits.

Special topics taken in a foreign study program. May count toward the major with consent of the advisor.

### **3295. Special Topics**

Variable (1-6) credits. May be repeated for credit.

Prerequisites and recommended preparation vary.

### **3299. Independent Study**

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

### **3550W. Classical Arabic Literature**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Survey of Classical Arabic Literature from pre-Islamic Arabia to the Late Middle Ages, from the Fertile Crescent to the Iberian Peninsula. Recent scholarship and theory in the field of Arabic literature. Taught in English (Arabic readings optional). CA 1.

### **3551. Arabic Travel Narratives**

Three credits. Prerequisite: Two years of formal Arabic or equivalent proficiency; instructor consent required.

Travel accounts by medieval and modern Arab writers. Transcultural encounters: the Volga Vikings, Norman Sicily, al-Andalus, China, Africa and France. Development of advanced reading and translation skills. Review of grammar and syntax through textual analysis.

### **3559. Arabic Poetry and Poetics**

Three credits. Prerequisite: Two years of formal Arabic or equivalent proficiency; instructor consent required.

Selected Arabic poems from pre-Islamic times to the Middle Ages, from Iraq to the Iberian Peninsula. Modes, genres, periods and authors of the Arabic Classical poetic canon. Arabic poetic terminology, criticism and theory. Development of advanced reading, writing and translation skills. Taught in English and Arabic.

### **3570. Modern Arabic Literature**

Three credits. Prerequisite: Two years of formal Arabic or equivalent proficiency; instructor consent required.

Survey of fundamental texts in modern and contemporary Arabic Literature. Textual criticism in Arabic. Development of advanced oral and written skills in Modern Standard Arabic. Taught in Arabic.

**3751. Al-Andalus: Music, Literature, and Science in Muslim Spain**

Three credits.

The cultural heritage of Muslim Spain through literature, music, philosophy, medicine, art, and architecture. Christian, Jewish and Muslim interactions in medieval Europe. Religious and ethnic coexistence in medieval Iberia. Taught in English. CA 1. CA 4-INT.

**3771. Cinema in the Middle East and North Africa**

Three credits.

Film in the Arab World. Historical, social, religious and political phenomena that shape contemporary cultural discourse, analyzed through film screenings and readings. Gender, radicalization, war and displacement; key historical events such as the Arab-Israeli conflict, the Lebanese civil war, decolonization, and Islam in the 21st century. Taught in English. CA 1. CA 4-INT.

**3772. Stereotypes of Arabs and Muslims**

Three credits.

Representations of Muslims in medieval textbooks, 18th- and 19th-century Western travel accounts. Their influence on stereotypes of Arabs and Muslims in Western cinema and media from early Hollywood films to the present. Taught in English.

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## Arabic and Islamic Studies (ARIS)

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**1170. Women's Contemporary Writing in the Arab World**

(Also offered as WGSS 1170.) Three credits.

An exploration of feminist texts, literary texts, and popular fiction. Topics may include: the role of women's writing from the nineteenth century to the present in public life; women's writing in social and political movements such as the Arab Spring; the intersectionality of class, race, gender, and nation in Arabic literature; and the unique challenges faced by Arab women writers. Taught in English. CA 1. CA 4-INT.

**1170W. Women's Contemporary Writing in the Arab World**

(Also offered as WGSS 1170W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

An exploration of feminist texts, literary texts, and popular fiction. Topics may include: the role of women's writing from the nineteenth century to the present in public life; women's writing in social and political movements such as the Arab Spring; the intersectionality of class, race, gender, and nation in Arabic literature; and the unique challenges faced by Arab women writers. Taught in English. CA 1. CA 4-INT.

**1211. Introduction to Islam**

Three credits.

An introduction to the study of Islam as an intellectual and lived religious tradition. Revelation, literature, aesthetics, philosophy, theology, and law in relation to faith practices in diverse Muslim societies across time. CA 1. CA 4-INT.

**2200. Arabic Cinema**

Three credits.

Arabic films from Morocco to the Levant. Topics include identity, gender, war and displacement,

Islamic heritage, pluralism, decolonization, terrorism, and the Arab-Israeli conflict. Taught in English.

**3000. Classical Arabic**

Three credits. Prerequisite: ARAB 1114 or instructor consent.

Review of Arabic grammar through Qur'an and literary texts. Practice in translation and composition leading to command of idioms and vocabulary. Taught in English and Arabic.

**3293. Foreign Study**

Variable (1-15) credits. May be repeated for credit.

Special topics taken in a foreign study program. Consent of department head required, normally to be granted before the student's departure

**3295. Special Topics**

Variable (1-6) credits. Prerequisite: Prerequisites and recommended preparation vary. May be repeated for credit.

**3298. Variable Topics**

Three credits. Prerequisite: Prerequisites and recommended preparation vary. May be repeated for credit.

**3299. Independent Study**

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

**3710. Islamic Art History**

(Also offered as ARTH 3710 and HIST 3710.) Three credits. Prerequisite: Open to juniors or higher.

A survey of the arts associated with Islam from the life of Muhammad in the seventh century through the early modern period, with an emphasis upon the Middle East, North Africa, and the Iberian Peninsula. CA 1. CA 4-INT.

**3710W. Islamic Art History**

(Also offered as ARTH 3710W and HIST 3710W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

A survey of the arts associated with Islam from the life of Muhammad in the seventh century through the early modern period, with an emphasis upon the Middle East, North Africa, and the Iberian Peninsula. CA 1. CA 4-INT.

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## Art (ART)

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**1000. Art Appreciation**

Three credits. Prerequisite: Not open to ART majors.

Introduction to the visual arts, past and present. The visual language of artists, historical and cultural significance of works of art. Intended primarily for students who are not art majors. CA 1.

**1010. Foundation: Studio Concepts**

Three credits.

Introduction to key concepts and practices in art making.

**1020. Foundation: Criticism and Interpretation**

Three credits.

An introduction to various current critical approaches to the producers, contexts, audiences, and histories of contemporary visual culture.

**1030. Drawing I**

Three credits. Prerequisite: May not be taken out of sequence after passing ART 1040, 2011, 2110, 2310, 2410, 2510 or 2610.

Fundamental principles of drawing based on observation.

**1040. Drawing II**

Three credits. Prerequisite: ART 1030. May not be taken out of sequence after passing ART 2010, 3350.

Observational drawing; emphasis on spatial organization and structure.

**2010. Life Drawing I**

Three credits. Prerequisite: ART 1040. May not be taken out of sequence after passing ART 2210, 3010, or 3370.

Introduction to figure drawing.

**2011. Introduction to Digital Media**

Three credits. Prerequisite: ART 1010 and 1030. May not be taken out of sequence after passing ART 3130, 3132, or 3420.

Introduction to digital media.

**2110. Graphic Design: Process and Thinking**

Three credits. Prerequisite: ART 1010 and 1030. May not be taken out of sequence after passing ART 3170.

Introduction to the methods of design thinking and the process involved in translating that thinking into form. Content, meaning, form, typography, layout, structure, craft and process in graphic design, emphasizing conceptual analysis, visualization, and skillful making through the adept use of analog and digital tools.

**2120. Graphic Design 1: Typography**

Three credits. Prerequisite: ART 2110; portfolio review; consent of instructor. May not be taken out of sequence after passing ART 3130, 3131 or 3132.

Introduction to typographic terms, technology, and the foundations and fundamentals of typography and visual structure as a medium for expressive, conceptual, and intellectual communication.

**2210. Illustration**

Three credits. Prerequisite: ART 2010 and 2310. May not be taken out of sequence after passing ART 3210.

Introduction to principles of illustration, media, and techniques.

**2220. Animation Fundamentals**

Three credits. Prerequisite: ART 1040.

Fundamental skills required for animation.

**2310. Basic Studio, Painting**

Three credits. Prerequisite: ART 1010 and ART 1030.

Introduction to the principles and techniques of painting media.

**2410. Basic Studio, Photography**

Three credits. Prerequisite: ART 1010 and ART 1030. May not be taken out of sequence after passing ART 2420, 3410, 3420 or 3440.

Introduction to techniques and aesthetics of photography, with emphasis on the camera.

**2420. Intermediate Photography**

Three credits. Prerequisite: ART 2410. May not be taken out of sequence after passing ART 3430, 3450, 3455, 3460, 3465, 3470, 4410.

Principles and techniques of black-and-white photography in fine-art applications, with emphasis on darkroom work.

**2510. Basic Studio, Printmaking**

Three credits. Prerequisite: ART 1010 and 1030. May not be taken out of sequence after passing ART 3510 or 3520.

Introduction to practice and principles of printmaking, including intaglio, relief and lithographic processes.

**2610. Basic Studio, Sculpture**

Three credits. Prerequisite: ART 1010 and 1030. May not be taken out of sequence after passing ART 3610, 3620, 3625, 3630, 3640, 3650, 3655, 3660, 3670.

Introduction to principles and techniques of sculpture.

**2993. Foreign Study**

Variable (1-6) credits. Prerequisite: Department consent. May be repeated for credit.

Special topics taken in a foreign study program. Consent of Department Head required, normally before the student's departure to study abroad.

**2995. Special Topics Seminar**

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

Credits and hours as determined by the Senate Curricula and Courses Committee. This course may or may not count for credit toward graduation. Students should consult the course syllabus and the Dean's Office of their School or College.

**3010. Life Drawing II**

Three credits. Prerequisite: ART 2010. May not be taken out of sequence after passing ART 3020, 3030 or 3210.

Drawing from the figure.

**3020. Advanced Figure Drawing**

Three credits. Prerequisite: ART 3010; open to juniors or higher. May be repeated for credit.

Advanced studies in figure drawing.

**3030. Experimental Drawing**

Three credits. Prerequisite: ART 1040. Open only to Art majors; open to non-majors by instructor consent.

Advanced studio course designed to expand the practice of drawing. This may include collaboration, performance, animation, and/or the incorporation of new technologies. A wide range of drawing prompts will allow for personal interpretation and encourage experimentation. Research, reading, writing, discussions, critiques, instructor demonstrations, field trips, and lectures may supplement the course.

**3110. Graphic Design 2: Visual Systems**

Three credits. Prerequisite: ART 2120; open only to Art majors, others with instructor consent. May not be taken out of sequence after passing ART 4120. May be repeated for a total of 9 credits.

Investigate creative and effective visual design systems through the use of visual structure, typography, image, grid, information hierarchy and architecture.

**3120. Graphic Design 3: Relational Design**

Three credits. Prerequisite: ART 2120 and ART 3110; open only to Art majors, others with instructor consent. May not be taken out of sequence after passing ART 4110 or 4130.

Exploration of form, content, function, strategy; collaborative and integrative thinking in problem solving; using diverse communication design methodologies.

**3130. Fundamentals of Web Design**

Three credits. Prerequisite: ART 2011 and 2120 or instructor consent. May not be taken out of sequence after passing ART 3131.

Introduction to basic HTML web page design using Cascading Style Sheets.

**3131. Interactive Design**

Three credits. Prerequisite: ART 2120 and 3130 or instructor consent.

Introduction to the design of interactive screenbased experiences.

**3132. Graphic Design: Motion Graphics**

Three credits. Prerequisite: ART 2011 and 2110 or instructor consent; open only to majors, open to non-majors with instructor consent.

Introduction to the multi-faceted diversity of motion design - including film and television title sequences, data visualizations, web-based animations, and sound branding with an emphasis on typography in motion. Students develop competency in producing Motion Graphics via ideation and conceptualization, sketching, storyboarding and animatics, using both analog and digital methods, leading to final animations.

**3170. Graphic Design: Survey**

Three credits. Prerequisite: ART 2110; open to sophomores or higher; open only to majors, open to non-majors with instructor consent.

Survey of contemporary graphic design practice as an artistic and professional discipline in visual media. In addition to critical readings, presentations, and discussions, field trips are planned to engage in dialogues with practicing professional designers and studios.

**3210. Topics in Illustration**

Three credits. Prerequisite: ART 2210 and ART 3010; open to juniors or higher. May be repeated for credit.

Continuing problems in illustration. Projects may include book, editorial, reportage, or self-promotion illustration.

**3220. Experimental Animation: Studio Processes**

Three credits. Prerequisite: Open only to Art majors, others by instructor consent; open to juniors and higher.

Experimental approaches to the translation of still media into time-based form, informed by the student's prior studio art coursework and media approaches. Smart phone technology is employed to capture, organize, edit, and animate images.

**3235. Scientific Visualization**

(Also offered as DMD 3235.) Three credits. Prerequisite: ART 2210; instructor consent required. Recommended preparation: ART 3210.

Exploration of techniques for the development of still and animated graphics for use in science education and scientific publications and

presentations. Project-based coursework with involvement from scientific experts and close collaboration between student illustrators and animators.

**3250. Stop and Go: Explorations in Stop-Motion Animation**

Three credits. Prerequisite: ART 2220.

A survey of stop-motion animation techniques.

**3270. Going Pro**

Three credits. Prerequisite: ART 3210; open only to juniors or higher studio art majors. Others by instructor consent.

Professional practices in illustration and animation, including market preparedness, portfolio development, branding, business communication and tools, networking, and promotion.

**3310. Intermediate Painting**

Three credits. Prerequisite: ART 2310. May be repeated for a total of 6 credits.

Conceptually-oriented painting projects.

**3330. Advanced Painting**

Three credits. Prerequisite: ART 3310 or 3360; open to juniors or higher. May be repeated for a total of 6 credits.

Individually determined painting projects.

**3350. Aqua Media I**

Three credits. Prerequisite: ART 1040.

Introduction to the materials and methods of painting in aqua media.

**3360. Aqua Media II**

Three credits. Prerequisite: ART 3350.

Continuing study in aqua media.

**3370. Advanced Figure Studies**

Three credits. Prerequisite: ART 2010, 2310 and 3010; open only to juniors or higher. May be repeated for a total of 6 credits.

Advanced studies with the figure using a variety of media.

**3375. Indian Art and Popular Culture: Independence to the Present**

(Also offered as AAAS 3375 and INDS 3375.) Three credits. Prerequisite: Open to juniors or higher.

An interdisciplinary lecture/studio art course introducing diverse forms of Indian Art from the traditional through the contemporary. Students complete either research or studio art assignments responding to the course content. CA 1. CA 4-INT.

**3410. Introduction to Video Art**

Three credits. Prerequisite: ART 2410. Open to Art and Art History majors. May be repeated for credit.

Introduction to techniques and aesthetics of video art.

**3420. Digital Imaging**

Three credits. Prerequisite: ART 2011 and ART 2410; open to juniors or higher Art and Art History majors.

Introduction to the use of the computer to digitize and manipulate photographic imagery.

**3430. Alternative Processes (Photography)**

Three credits. Prerequisite: ART 2420; open to Art and Art History majors only; others by consent of instructor. May be repeated for credit.

Photographic printmaking systems outside conventional silver imaging processes.

#### **3440. Color Photography**

Three credits. Prerequisite: ART 2410; open to Art and Art History majors only; others by consent of instructor. May be repeated for credit.

The processes and aesthetics of color photography.

#### **3450. Documentary Photography and Video**

Three credits. Prerequisite: ART 2420; open to Art and Art History majors.

Investigation of techniques and aesthetics of documentary photography and video.

#### **3455. Portrait Photography**

Three credits. Prerequisite: ART 2420; open to Art and Art History majors.

Studio practice in fine art portraiture with discussion of contemporary and historical approaches to the genre.

#### **3460. Large Format Photography**

Three credits. Prerequisite: ART 2420; open to Art and Art History majors.

Introduction to the use of the large format camera to create photographs.

#### **3465. Landscape Photography**

Three credits. Prerequisite: ART 2420; open to Art and Art History majors.

Studio practice in landscape photography with discussion of contemporary and historical approaches to the genre.

#### **3470. Studio Photography**

Three credits. Prerequisite: ART 2420; open to Art and Art History majors.

Techniques and aesthetics of studio photography.

#### **3510. Intaglio Printmaking**

Three credits. Prerequisite: ART 2510.

Investigation of black-and-white and color intaglio techniques.

#### **3520. Lithography**

Three credits. Prerequisite: ART 2510.

Investigation of lithographic techniques.

#### **3530. Printmaking Workshop**

Variable (1-6) credits. Prerequisite: ART 3510 or 3520. May be repeated for a total of 18 credits.

Workshop for students to continue developing ideas in a print medium.

#### **3605. Ceramic Art: Materials and Methods**

Three credits. Prerequisite: ART 2610 or instructor consent.

Introduction to contemporary ceramic art materials, methods, and studio practices, including clay properties and preparation, ceramic surface treatment investigations, kiln function and firing. Studio assignments focus on enhancement of skill in design and fabrication of ceramic objects. Presentations, discussions and critiques explore ideas and issues in the field of ceramic art.

#### **3610. Ceramics: Vessel Constructions**

Three credits. Prerequisite: ART 2610; open only to Art majors, others by instructor consent. May be repeated for credit.

Investigation of principles, techniques, and processes for design and expression in ceramic art, with focus on the vessel form as cultural, historical, and contemporary object and idea. This course

extends research, development, and realization of artistic concept in clay and glaze. Projects explore a range of fabrication skills, including hand building and wheelwork, and encourage inventive approaches to material, form, and surface.

#### **3615. Ceramics: Wheel Work**

Three credits. Prerequisite: ART 2610; open only to Art majors, others by instructor consent. May be repeated for a total of 9 credits.

Investigation of techniques and processes for wheel-based ceramic art and design. Extends student research, development, and realization of concept in clay and glaze. Projects explore a range of wheel-throwing skills, encouraging inventive approaches to material, form, and surface. May be repeated for credit with a change in course content to a maximum of nine credits.

#### **3620. Ceramics: Sculptural Approaches**

Three credits. Prerequisite: ART 2610; open only to Art majors, others by instructor consent. May be repeated for a total of 9 credits.

Investigation of principles, techniques, and processes for design and expression in ceramic sculpture and sculptural installation. This course extends research, development, and realization of artistic concept in clay and glaze. Projects explore a range of fabrication skills and encourage inventive approaches to material, form, surface, space, and context.

#### **3625. Ceramics: Surface Engagement**

Three credits. Prerequisite: ART 2610; open only to Art and Art History majors, others by instructor consent. May be repeated for a total of 9 credits.

Principles and techniques for surface design and expression in ceramic art. Projects based on a variety of clay forming techniques emphasize two- and three-dimensional ceramic surface mark, image, and color development. Class presentations, discussions and critiques explore ideas and issues in the field of ceramic art.

#### **3630. Sculpture: Wood**

Three credits. Prerequisite: ART 2610. May be repeated for credit.

Investigation of sculptural form, process, and environment, using wood.

#### **3640. Sculpture: Metals**

Three credits. Prerequisite: ART 2610; open only to Art majors, others by instructor consent. May be repeated for credit.

Investigation of sculptural form, process, and environment, using metal fabrication techniques such as welding, forging, and cold forming.

#### **3650. Sculpture: Mold Making and Casting**

Three credits. Prerequisite: ART 2610; open only to Art majors, others by instructor consent. May be repeated for a total of 9 credits.

Investigation of sculptural mold making and casting principles, techniques, and processes. The course covers rigid and flexible mold making for casting in a variety of materials, emphasizing technical skill, formal design, and conceptual invention using cast forms for the creation of mixed media sculpture and installation art.

#### **3655. Ceramics: Mold Making and Casting**

Three credits. Prerequisite: ART 2610; open only to Art and Art History majors, others by instructor consent. May be repeated for a total of 9 credits.

Investigation of ceramic art mold making and casting principles, techniques, and processes. Covers plaster mold making for clay and slip casting, formal design and conceptual invention with cast forms, ceramic surface treatment, installation and display strategies.

#### **3660. Sculpture Seminar**

Three credits. Prerequisite: ART 2610; 9 credits in any area of concentration; open to juniors or higher.

For the advanced undergraduate in any area of concentration. Exploration of 3-dimensional issues in a studio seminar format.

#### **3665. Ceramics: Clay and Glaze Composition**

Three credits. Prerequisite: ART 2610 and one 3000-level Ceramics course from ART 3605, 3610, 3615, 3620, 3625, or 3655. Open only to Art and Art History majors, others by instructor consent. May be repeated for a total of 9 credits.

Advanced studio investigations exploring clay and glaze formulation and function, as means to technical control and creative discovery in ceramic art practice.

#### **3670. Sculpture/Ceramics: Digital Tools**

Three credits. Prerequisite: ART 2610; open to juniors or higher; open only to Art majors, non-majors with instructor consent. May be repeated for a total of 9 credits.

Investigation of the interaction between traditional processes and digital technology in the conception and making of sculptural objects and installations. Introduces design and fabrication methods such as 3D scanning, CAD (computer aided design) programs, and CAM (computer aided manufacturing) tools that include 3D printing, CNC routing, and laser cutting. Presentations, discussions, and critiques explore the social and cultural significance of digital fabrication, and the presence of digital processes in contemporary art.

#### **3701. Industrial Design: Materials and Techniques**

Three credits.

Introduction to a variety of processes used in prototyping, and fabrication for Industrial design. Coursework and instruction will focus on the development of skills required to design and engineer physical renderings of concepts with consideration for materials, methods and techniques, and sequence of operations.

#### **3705. Industrial Design: Form, Structure, and Space**

Three credits. Prerequisite: 1000 level course(s) in the major: ART 1010 or 1030; or DMD 1001 and 1102; or ENGR 1166; others by Instructor consent.

Introduces spatial visualization through hands-on exercises that explore the dynamics of form, structure and space. Topics progress from elements of design to explorations of scale and formal and functional relationships. Coursework includes basic construction techniques with hand tools and emphasizes sensitivity to materials and appreciation for craft.

#### **3710. Industrial Design: Drawing and Modeling for Design**

Three credits. Prerequisite: 1000 level course(s) in the major: ART 1010 or 1030; or DMD 1001 and 1102; or ENGR 1166; others by Instructor consent.

This course investigates drawing as a practice of exploration, ideation and visual communication

essential to the industrial design process. Techniques include basic freehand perspective drawing, sketching for concept development, mechanical drafting, and digital modeling and rendering methods used to represent three-dimensional objects and environments in space.

### **3720. Industrial Design: Process and Practice**

Three credits. Prerequisite: ART 3705 and 3710, others by instructor consent.

Introduction to industrial design processes including research methods, ideation, form generation and visual communication, with a focus on the development of sustainable design practices. Coursework emphasizes strategies for creating products, environments and systems in the context of real-world challenges.

### **3730. Industrial Design: Digital Fabrication**

Three credits. Prerequisite: 1000 level course(s) in the major: ART 1010 or 1030; DMD 1001 and 1102; ENGR 1166; others by instructor consent. Recommended preparation: basic proficiency in Illustrator, CAD, or similar computer modeling programs.

Introduces students to established and emerging technologies in the context of art and design practice, to expand their technical and creative capacities. Students will study and train on current industry standard software programs as well as learn to design for and with additive and subtractive manufacturing methods utilized extensively in the fields of art, design, and engineering. Enrollment is capped at 10 students per class, per semester to ensure adequate space for individual coursework, and manage workflow within the classroom based on current technology and equipment capabilities of the department.

### **3735. SolidWorks for Industrial Design**

(Also offered as ENGR 3735.) Three credits.

Introduction to basic computer aided design, including isometric, orthogonal views, sections and parametric modeling strategies, including advanced modeling techniques. First and third angle projections. Notions of measuring, tolerances and manufacturing techniques associated by hand and CAD modeling. General manufacturing processes and their relation to modeling individual parts and assemblies. CNC principles, GCODE.

### **3901. Advanced Studio Art Projects**

Three credits. Prerequisite: Open to juniors or higher.

Cross-media investigation of studio art ideas, processes and materials through both assigned and self-directed projects. Critical assessment occurs in discussion with faculty and peers.

### **3990. Cooperative Education in Art**

Three credits. Prerequisite: Open to juniors or higher.

Practicum for students participating in the off-campus Cooperative Education Program. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

### **3991. Studio Internship**

Three credits. Prerequisite: Open to juniors or higher.

Supervised practical experience in studio and studio related work. Section one: Communication Design Studio Internship. Supervised practical experience in a commercial design studio,

agency, or related work. Prerequisite: B average in communication design classes, ART 3120 and consent of instructor. Section two: Photography Studio Internship. Supervised practical experience in a commercial photography studio, agency or in related work. Prerequisite: B average in photography classes, ART 4410 and consent of a photography instructor. Section three: Art Studio Internship. Supervised practical experience in an art studio. Prerequisite: B average in major Junior - Senior course work and consent of instructor from the major. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

### **3993. Foreign Study**

Variable (1-6) credits. Prerequisite: Open to juniors or higher. May be repeated for credit.

Special topics taken in a foreign study program.

### **3995. Investigation of Special Topics**

Variable (1-6) credits. Prerequisite: Open to juniors or higher. May be repeated for credit.

Special topics. Field trips may be required.

### **3998. Variable Topics**

Variable (1-6) credits. Prerequisite: Prerequisites and recommended preparation vary. May be repeated for a total of 6 credits.

### **3999. Independent Study**

Variable (1-6) credits. Prerequisite: Open to juniors or higher who have a GPA of 3.0, with no outstanding incompletes for any other 3999. Exception only by the approval of the department head. May be repeated for a total of 6 credits.

For advanced students to develop a special project in advanced studio art.

### **4110. Graphic Design 4: Communication Dynamics**

Three credits. Prerequisite: ART 3120; open only to majors, open to non-majors with instructor consent.

Team taught by professional guest designers, this course explores graphic design as a personal, social, political, and cultural activity and investigates modality of production in visual media.

### **4120. Publication Design**

Three credits. Prerequisite: ART 3110.

Introduction to publication design.

### **4130. Graphic Design: Design Center Studio**

Three credits. Prerequisite: ART 3120; open only to majors; open only with consent of instructor. May be repeated for a total of 6 credits.

Professional graphic design studio housed in its own independent design environment providing students with real world practical experience. Design students work on commissioned, client based, collaborative, commercial and cultural projects from concept to delivery across all media platforms.

### **4410. Advanced Photography**

Three credits. Prerequisite: ART 2420; open to juniors or higher Art and Art History majors. May be repeated for credit.

Advanced problems in the use of photography as an art medium.

### **4901. Senior Project**

Three credits. Prerequisite: Open to juniors or higher.

Project developed in student's area of concentration, to be exhibited in the Annual Senior Show. A vigorous and consistent thematic body of work which articulates both technical and conceptual concerns required. To fulfill graduation requirement for B.F.A. students, must be passed with grade of C or better.

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## Art History (ARTH)

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### **1128. Global Perspectives on Western Art: Renaissance to the Present**

Three credits.

Survey of Western art (15th Century through the present) within a global perspective. Explores transformations in Western art in relation to the West's fundamental interconnection with non-Western societies. CA I. CA 4-INT.

### **1137. Introduction to Art History: Prehistoric - 14th Century**

Three credits.

Survey of art and architecture from prehistoric times through the fourteenth century. CA I.

### **1138. Introduction to Art History: 15th Century - Present**

Three credits.

Survey of art and architecture from the fifteenth century to the present day. CA I.

### **1140. Introduction to Asian Art**

Three credits.

Asian art and architecture from prehistory to the present. Asian artistic practices as well as transcultural artistic connections in Asia and beyond. CA I.

### **1141. From Sun Gods to Lowriders: Introduction to Latin American Art**

Three credits.

Survey of Latin American art from 200 B.C. to the present. CA I. CA 4-INT.

### **1162. Introduction to Architecture**

Three credits.

An introduction to the history of architecture considered in its social, technological and urban context. CA I.

### **1193. Foreign Study**

Variable (1-6) credits. Prerequisite: Consent of department head required, normally before the student's departure to study abroad. May be repeated for credit.

Special topics taken in a foreign study program. May be repeated for credit with a change in course content.

### **2020. Global Jerusalem**

Three credits.

An introduction to the art and architecture of Jerusalem and the diverse religious, social, and political contexts of related re-creations across the world, from prehistory to the contemporary period. CA I. CA 4-INT.

### **2030. Art, Politics, and Propaganda**

(Also offered as AAAS 2030.) Three credits.

Asian art and propaganda in the Cold War era (1949-1991) and its relation to Europe, the Soviet Union, and the United States. May include analysis of visual arts, film, photography, and multimedia.

**2198. Variable Topics**

Three credits. May be repeated for a total of 9 credits.

May be repeated for credit for a maximum of nine credits, with a change in topic.

**2210. Art and Activism**

(Also offered as HRTS 2210.) Three credits.

A history of the relationship between art and political activism around the world from the 1960s to the present.

**2222. Race, Gender, Sexuality, and the Power of Looking**

(Also offered as AAAS 2222 and AFRA 2222.) Three credits. Prerequisite: Not open for credit to students who have passed ARTH 2198 when offered as "Race, Gender, and the Power of Looking."

A beginning investigation into the issues of what constitutes visual culture and how race, gender, and sexuality are seen and not seen. The goals of the course include engaging with the history and scholarly dialogues around visual studies, becoming more active and critical visual consumers and critics, and understanding personal stakes and diverse positions in dialogues about visualizing gender and race. CA 1. CA 4.

**2993. Foreign Study**

Variable (1-12) credits. Prerequisite: Consent of department head required, normally before the student's departure to study abroad. May be repeated for credit.

Special topics taken in a foreign study program. May be repeated for credit with a change in course content.

**3005. Museums and the Interpretation of Culture**

Three credits. Prerequisite: Open to sophomores or higher.

The history and philosophy of museums.

**3005W. Museums and the Interpretation of Culture**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to Art History and Art majors, others with consent of instructor; open to juniors or higher. May be repeated for credit.

The history and philosophy of museums.

**3010. Art History's Feminisms**

Three credits. Prerequisite: Open to sophomores or higher.

Feminist approaches to the theory and practice of art history.

**3010W. Art History's Feminisms**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to Art History and Art majors, others with consent of instructor; open to juniors or higher.

Feminist approaches to the theory and practice of art history.

**3015. Women and Body Art**

Three credits. Prerequisite: Open to sophomores or higher. Not open for credit to students who have passed WGSS 3251.

Women's use of body art to express aspects of gender identity and interpretation of body art from a variety of cultures. "Body art" encompasses cosmetics, painting, hair styling, tattoo,

scarification, clothing, ornaments, plastic surgery and exercise.

**3020. Asian American Art and Visual Culture**

(Also offered as AAAS 3220.) Three credits. Prerequisite: Open to sophomores or higher.

Topics in contemporary Asian American art and visual culture, 1960's to present.

**3020W. Asian American Art and Visual Culture**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to Art History and Art majors, others with consent of instructor; open to juniors or higher. May be repeated for credit.

Topics in contemporary Asian American art and visual culture, 1960's to present.

**3030. The Artist and Society**

Three credits. Prerequisite: Open to sophomores or higher.

An investigation of the artist's professional function throughout history in different Western societies.

**3035. History of the Print**

Three credits. Prerequisite: Open to sophomores or higher.

Survey of printmaking in Europe and America from the Renaissance to the present.

**3050. African-American Art**

(Also offered as AFRA 3050.) Three credits. Prerequisite: Open to sophomores or higher.

The artistic and social legacy of African American art from the eighteenth century to the present day. CA 4.

**3050W. African-American Art**

(Also offered as AFRA 3050W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

The artistic and social legacy of African American art from the eighteenth century to the present day. CA 4.

**3140. Greek Art**

(Also offered as CAMS 3251.) Three credits. Prerequisite: Open to sophomores or higher.

Greek art and architecture from the ninth century B.C. to the first-century A.D.

**3140W. Greek Art**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to Art History and Art majors, others with consent of instructor; open to juniors or higher.

Greek art and architecture from the ninth century B.C. to the first-century A.D.

**3150. Roman Art**

Three credits. Prerequisite: Open to sophomores or higher.

History of Roman art and architecture.

**3150W. Roman Art**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to Art History and Art majors, others with consent of instructor; open to juniors or higher.

History of Roman art and architecture.

**3210. Late Antique and Byzantine Art**

Three credits. Prerequisite: Open to sophomores or higher.

Art and architecture of the late Roman empire and the Byzantine East.

**3210W. Late Antique and Byzantine Art**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to Art History and Art majors, others with consent of instructor; open to juniors or higher.

Art and architecture of the late Roman empire and the Byzantine East.

**3220. Early Medieval Art**

Three credits. Prerequisite: Open to sophomores or higher.

Early medieval art from the fifth through the tenth centuries. Germanic metalwork, Hiberno-Saxon manuscripts, and the art of the era of Charlemagne and his successors.

**3220W. Early Medieval Art**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to Art History and Art majors, others with consent of instructor; open to juniors or higher.

Early medieval art from the fifth through the tenth centuries. Germanic metalwork, Hiberno-Saxon manuscripts, and the art of the era of Charlemagne and his successors.

**3230. Romanesque Art**

Three credits. Prerequisite: Open to sophomores or higher.

Topics in medieval painting, architecture and sculpture through the twelfth century.

**3230W. Romanesque Art**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to Art History and Art majors, others with consent of instructor; open to juniors or higher.

Topics in medieval painting, architecture and sculpture through the twelfth century.

**3240. Gothic Art**

Three credits. Prerequisite: Open to sophomores or higher.

Gothic art and architecture, with emphasis on the court styles of England and France.

**3240W. Gothic Art**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to Art History and Art majors, others with consent of instructor; open to juniors or higher.

Gothic art and architecture, with emphasis on the court styles of England and France.

**3260. The Early Illustrated Book**

Three credits. Prerequisite: Open to sophomores or higher.

The early history of the illustrated book, from antiquity through the introduction of printing.

**3260W. The Early Illustrated Book**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to Art History and Art majors, others with consent of instructor; open to juniors or higher.

The early history of the illustrated book, from antiquity through the introduction of printing.

**3320. Art of the Italian Renaissance**

Three credits. Prerequisite: Open to sophomores or higher.

Italian art and architecture 1400-1600.



**3320W. Art of the Italian Renaissance**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to Art History and Art majors, others with consent of instructor; open to juniors or higher.

Italian art and architecture 1400-1600.

**3330. Art of the Northern Renaissance**

Three credits. Prerequisite: Open to sophomores or higher.

Painting, sculpture, graphic arts of the Lowlands and Germany, 1400-1600.

**3330W. Art of the Northern Renaissance**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to Art History and Art majors, others with consent of instructor; open to juniors or higher.

Painting, sculpture, graphic arts of the Lowlands and Germany, 1400-1600.

**3340. Baroque Art**

Three credits. Prerequisite: Open to sophomores or higher.

Art and architecture of the seventeenth and early eighteenth centuries with emphasis on Italy, Netherlands, France and Spain.

**3340W. Baroque Art**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to Art History and Art majors, others with consent of instructor; open to juniors or higher.

Art and architecture of the seventeenth and early eighteenth centuries with emphasis on Italy, Netherlands, France and Spain.

**3360. Eighteenth Century European Art**

Three credits. Prerequisite: Open to sophomores or higher.

Art and architecture of the eighteenth century with emphasis on England and France.

**3430. Nineteenth Century European Art**

Three credits. Prerequisite: Open to sophomores or higher.

European art from Neo-Classicism to Realism.

**3430W. Nineteenth Century European Art**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

European art from Neo-Classicism to Realism.

**3440. Nineteenth Century American Art**

(Also offered as AMST 3440.) Three credits. Prerequisite: Open to sophomores or higher.

An overview of major artists and stylistic movements in the United States in the long 19th century.

**3440W. Nineteenth Century American Art**

(Also offered as AMST 3440W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

An overview of major artists and stylistic movements in the United States in the long 19th century.

**3445. Impressionism and Post-Impressionism**

Three credits. Prerequisite: Open to sophomores or higher.

Topics in French Painting, 1860-1900.

**3445W. Impressionism and Post-Impressionism**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to Art History and Art majors, others with consent of instructor; open to juniors or higher.

Topics in French Painting, 1860-1900.

**3450. American Architecture**

Three credits. Prerequisite: Open to sophomores or higher.

American architecture from the colonial era to the present. Field trips may be required.

**3460. History of Photography: 1839 to World War I**

Three credits. Prerequisite: Open to sophomores or higher.

Topics in the history of photography from 1839 to World War I.

**3460W. History of Photography: 1839 to World War I**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

Topics in the history of photography from 1839 to World War I.

**3500. Urban Architecture: International Perspectives**

Three credits. Prerequisite: Open to sophomores or higher.

The historical development of the urban, built environment in Europe, Asia, and the Americas.

**3500W. Urban Architecture: International Perspectives**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

The historical development of the urban, built environment in Europe, Asia and the Americas.

**3510. Modern Art**

Three credits. Prerequisite: Open to sophomores or higher.

Topics in the art of the first half of the twentieth century.

**3510W. Modern Art**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to Art History and Art majors, others with consent of instructor; open to juniors or higher.

Topics in the art of the first half of the twentieth century.

**3530. Contemporary Art**

Three credits. Prerequisite: Open to sophomores or higher.

Topics in the art of the second half of the twentieth century.

**3530W. Contemporary Art**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

Topics in the art of the second half of the twentieth century.

**3560. History of Photography: World War I to Present**

Three credits. Prerequisite: Open to sophomores or higher.

Topics in the history of photography from World War I to the present.

**3560W. History of Photography: World War I - Present**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to Art History and Art majors, others with consent of instructor; open to juniors or higher.

Topics in the history of photography from World War I to the present.

**3570. History and Theory of Digital Art**

(Also offered as AMST 3570 and DMD 3570.)

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to sophomores or higher.

Investigates forms of digital and Internet art and the mostly forgotten histories of the technologies behind them. Forms and themes to be explored include games/gaming, surveillance art, cyberfeminism, data visualization, and crowdsourced art. CA 1. CA 4.

**3575. Human Rights, Digital Media, Visual Culture**

(Also offered as HRTS 3575.) Three credits. Prerequisite: Open to juniors or higher.

The problematics of digital media and visual representation in conceptualizing, documenting, and visualizing human rights and humanitarian issues. CA 1.

**3575W. Human Rights and Visual Culture**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to sophomores or higher.

The problematics of visual representation and media in defining, documenting and visualizing human rights and humanitarianism from the 19th century birth of photography to 21st century social media.

**3630. Alternative Modernities: Visual Culture of Latin America**

Three credits. Prerequisite: Open to sophomores or higher.

A thematic survey of Latin American art from the nineteenth century to present. CA 4-INT.

**3630W. Alternative Modernities: Visual Culture of Latin America**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to Art History and Art majors, others with consent of instructor; open to juniors or higher.

A thematic survey of Latin American art from the nineteenth century to present. CA 4-INT.

**3640. Mexican and Chicano Art from Muralism to La Raza**

Three credits. Prerequisite: Open to sophomores or higher.

Topics in Mexican and Chicano art from Mexican Independence to the present. CA 4.

**3640W. Mexican and Chicano Art from Muralism to La Raza**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to Art History and Art majors, others with consent of instructor; open to sophomores or higher.

Topics in Mexican and Chicano art from Mexican Independence to the present. CA 4.

**3645. From Revolution to Reggae: Modern and Contemporary Caribbean Art**

Three credits. Prerequisite: Open to sophomores or higher.

A survey of art and visual production in the Caribbean from the 1804 Haitian Revolution to the present. CA 4.

**3645W. From Revolution to Reggae: Modern and Contemporary Caribbean Art**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to Art History and Art majors, others with consent of instructor; open to sophomores or higher.

A survey of art and visual production in the Caribbean from the 1804 Haitian Revolution to the present. CA 4.

**3710. Islamic Art History**

(Also offered as HIST 3710 and ARIS 3710.) Three credits. Prerequisite: Open to juniors or higher.

A survey of the arts associated with Islam from the life of Muhammad in the seventh century through the early modern period, with an emphasis upon the Middle East, North Africa, and the Iberian Peninsula. CA 1. CA 4-INT.

**3710W. Islamic Art History**

(Also offered as ARIS 3710W and HIST 3710W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

A survey of the arts associated with Islam from the life of Muhammad in the seventh century through the early modern period, with an emphasis upon the Middle East, North Africa, and the Iberian Peninsula. CA 1. CA 4-INT.

**3720. The Art of China**

Three credits. Prerequisite: Open to sophomores or higher.

Survey of major art forms in China c. 2500 B.C. to the twentieth century.

**3720W. The Art of China**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

Survey of major art forms in China c. 2500 B.C. to the twentieth century.

**3740. Far Eastern Painting**

Three credits. Prerequisite: Open to sophomores or higher. Recommended preparation: ARTH 3720 or 3730.

Major trends in painting in China from the Han Dynasty to the present; in Japan from the Nara Period to the present.

**3740W. Far Eastern Painting**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

Major trends in painting in China from the Han Dynasty to the present, and in Japan from the Nara period to the present.

**3760. African Art**

Three credits. Prerequisite: Open to sophomores or higher.

A survey of African art from antiquity to present.

**3760W. African Art**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

A survey of African art from antiquity to present.

**3991. Field Studies Internship in Art History**

Variable (1-12) credits. Prerequisite: Two 1000 level ARTH courses; two 3000-4000 level ARTH courses; open to sophomores or higher. May be repeated for a total of 12 credits.

Supervised practical experience in museum and museum related work. Section one: Wadsworth Atheneum Internship. Participation in Museum Studies Seminars, staff meetings and completion of individual project at the Atheneum. Application must be approved by Wadsworth Atheneum Education Department; deadlines are in April for first semester and in November for second semester. May be repeated for credit.

**3992. Cooperative Education in Art**

Three credits. Prerequisite: Open to sophomores or higher.

Practicum for students participating in the off-campus Cooperative Education Program. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

**3993. Foreign Study**

Variable (1-6) credits. Prerequisite: Open to sophomores or higher. May be repeated for credit.

Special topics taken in a foreign study program. Consent of Department Head required, normally before the student's departure to study abroad. May be repeated with a change in course content.

**3995. Investigation of Special Topics**

Variable (1-6) credits. Prerequisite: Open to sophomores or higher. May be repeated for credit.

Special topics. May be repeated for credit with a change in course content.

**4020. Art History Capstone: Professional Development in Visual Culture and the Humanities**

Three credits. Prerequisite: Open only to Art History Majors; juniors and higher with 15 credits of art history at the 2000-level or above.

Introduction to educational and professional paths for students of art history and visual culture. Prepares students for professional paths that make use of critical thinking, communication, media and visual-literacy knowledge and skills gained through the study of art history. Course content brings together academic study with practical knowledge essential to careers in the cultural sector and beyond.

**4099. Independent Study**

Variable (1-6) credits. Prerequisite: Open to students who are juniors or higher and have a 3.0 departmental GPA or higher. May be repeated for a total of 6 credits.

Designed for advanced students who wish to pursue the study of a special topic, culminating in a project in art history. May be repeated for a total of six credits.

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**Asian and Asian American Studies (AAAS)**

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**1000. Pathways to Asian American Studies**

Three credits.

Keywords, themes, and career paths in Asian American Studies; critical and historical perspective on Asian diasporic peoples in the United States within a global framework. Topics may include popular culture, history, social justice, and activism. CA 1. CA 4.

**1001. Pathways to Asian Studies**

Three credits.

Keywords, themes, and career paths in Asian Studies. Topics may include geography, languages, international relations, intercultural communication, and geopolitics. CA 1. CA 4-INT.

**2030. Art, Politics, and Propaganda**

(Also offered as ARTH 2030.) Three credits.

Asian art and propaganda in the Cold War era (1949-1991) and its relation to Europe, the Soviet Union, and the United States. May include analysis of visual arts, film, photography, and multimedia.

**2101. The Pacific in World History**

(Also offered as HIST 2101.) Three credits. Recommended preparation: HIST 1201 and 2100. Not open for credit to students who have passed AAAS 3998 or HIST 3098 when offered as The Pacific in World History.

The Pacific Ocean as a lens for thinking about modern history. Topics include the flow of people, ideas, goods, elements of nature (such as whales and bird guano), and technology among the nations and peoples of the Pacific World; and the impact of colonialism, war, decolonization, and the Cold War on the history of the region and the fortunes of indigenous peoples. Sources include scholarly works, government documents, diaries, and literature. CA 1. CA 4-INT.

**2136. Asian Theatre and Performance**

(Also offered as DRAM 2136.) Three credits.

Asian theatre, opera, dance, and other performance forms and their elaboration, reworking, and dissolution in modern and contemporary times, examined in relation to changes in society, politics, religion, and culture. CA 1. CA 4-INT.

**2136W. Asian Theatre and Performance**

(Also offered as DRAM 2136W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Asian theatre, opera, dance, and other performance forms and their elaboration, reworking, and dissolution in modern and contemporary times, examined in relation to changes in society, politics, religion, and culture. CA 1. CA 4-INT.

**2200. Introducing India: Diversity and Dynamism**

(Also offered as SOCI 2200.) Three credits. Recommended preparation: One introductory AAAS or SOCI course.

An introduction to the historical, political, social, economic, and cultural diversity of India. Topics may include: cultural diversity in languages, religions, and regions; socio-political challenges; power relations that construct patterns of privilege and marginalization; and contemporary human rights issues.

**2200W. Introducing India: Diversity and Dynamism**

(Also offered as SOCI 2200W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011. Recommended preparation: One introductory AAAS or SOCI course.

An introduction to the historical, political, social, economic, and cultural diversity of India. Topics may include: cultural diversity in languages, religions, and regions; socio-political challenges; power relations that construct patterns of privilege and marginalization; and contemporary human rights issues.

**2201. Introduction to Asian American Studies**

(Also offered as AMST 2201.) Three credits.

A multidisciplinary and interdisciplinary introduction to major themes in Asian American Studies. Concepts of identity and community, migration and labor histories, Asians and the law, representations of Asians in visual and popular culture, gender issues, interracial and interethnic relations, and human rights. CA 1. CA 4.

**2210. Sociological Perspectives on Asian American Women**

(Also offered as SOCI 2210.) Three credits.

An overview of social structures, inter-group relations, and women's rights, focusing on the experience of Asian American women. Formerly offered as AAAS/SOCI 3221. CA 4.

**2210W. Sociological Perspectives on Asian American Women**

(Also offered as SOCI 2210W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

An overview of social structures, inter-group relations, and women's rights, focusing on the experience of Asian American women. CA 4.

**2220. Asian Indian Women: Activism and Social Change in India and the United States**

(Also offered as SOCI 2220 and HRTS 2220.) Three credits.

How gender, class, and ethnicity/race structure everyday lives of Asian Indian women in both India and the United States. Formerly offered as AAAS/SOCI 3222/HRTS 3573.

**2222. Race, Gender, Sexuality, and the Power of Looking**

(Also offered as AFRA 2222 and ARTH 2222.) Three credits. Prerequisite: Not open for credit to students who have passed ARTH 2198 when offered as "Race, Gender, and the Power of Looking."

A beginning investigation into the issues of what constitutes visual culture and how race, gender, and sexuality are seen and not seen. The goals of the course include engaging with the history and scholarly dialogues around visual studies, becoming more active and critical visual consumers and critics, and understanding personal stakes and diverse positions in dialogues about visualizing gender and race. CA 1. CA 4.

**2305. Modern Japanese Literature**

(Also offered as ENGL 2305 and JAPN 2305.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Japanese literature across genres from 1868 to the present, studied in English translation. CA 1. CA 4-INT.

**2530. Asian American Experience Since 1850**

(Also offered as HIST 2530.) Three credits.

Survey of Asian American experiences in the United States since 1850. Responses by Asian Americans to both opportunities and discrimination.

**2688. Foreign Relations of China Since 1949**

(Also offered as HIST 2688.) Three credits.

A survey of China's foreign policy from the Cold War to the present, including its domestic politics, Communist ideology, economic reforms, and changing role in global affairs. CA 1.

**2688W. Foreign Relations of China Since 1949**

(Also offered as HIST 2688W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

A survey of China's foreign policy from the Cold War to the present, including its domestic politics, Communist ideology, economic reforms, and changing role in global affairs. CA 1.

**2841. Empire and Nation in Southeast Asia**

(Also offered as HIST 2841.) Three credits.

Major themes in modern Southeast Asian history from the 17th century to the present: growth of global commerce; western imperialism; nationalism; emergence of independent nation-states; challenges of the post-independence period. Emphasis on the region's largest countries: Burma, Cambodia, Indonesia, Malaysia, the Philippines, Thailand, and Vietnam.

**2842. History of Vietnam**

(Also offered as HIST 2842.) Three credits.

Introduction to the history of the Vietnamese from the late Bronze Age to the present: the ancient culture of the Red River delta, the millennium of Chinese rule, the independent kingdom of Dai Viet and its successors, French colonialism, the Vietnam War, and postwar Vietnam. Formerly offered as AAAS/HIST 3842.

**3212. Asian American Literature**

(Also offered as ENGL 3212.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

Literature, theatre, film about Asian American communities and culture in the United States from the mid-nineteenth century to the present. CA 4.

**3220. Asian American Art and Visual Culture**

(Also offered as ARTH 3020.) Three credits. Prerequisite: Open to sophomores or higher.

Topics in contemporary Asian American art and visual culture, 1960's to present.

**3271. Topics in Chinese Literature**

(Also offered as CHIN 3271.) Three credits. Prerequisite: CHIN 1121 and 1122 or instructor consent.

Social and political issues in Chinese modernity and postmodernity. Taught in English.

**3282. Women in Chinese Literature and Film**

(Also offered as CHIN 3282.) Three credits. Recommended preparation: CHIN 1121 and 1122 or equivalent.

Critical study of representations of women in Chinese film and literature from the early twentieth century to the present. Development of feminist movements in China and gender issues. Taught in English.

**3295. Special Topics in Asian American Studies**

Variable (1-6) credits. Prerequisite: Prerequisites and recommended preparation vary by section; open to juniors or higher. May be repeated for credit.

Credits and hours by arrangement.

**3375. Indian Art and Popular Culture: Independence to the Present**

(Also offered as ART 3375 and INDS 3375.) Three credits. Prerequisite: Open to juniors or higher.

An interdisciplinary lecture/studio art course introducing diverse forms of Indian Art from the traditional through the contemporary. Students

complete either research or studio art assignments responding to the course content. CA 1. CA 4-INT.

**3473. Asian-Pacific American Families**

(Also offered as HDFS 3473.) Three credits.

Overview of social, cultural, educational, demographic and economic characteristics of Asian-Pacific American families. Examination and critique of values, customs, traditions and beliefs that distinguish families of this heterogeneous ethnic population.

**3531. Japanese Americans and World War II**

(Also offered as HIST 3531 and AMST 3531.) Three credits.

The events leading to martial law and executive order 9066, the wartime experience of Japanese Americans, and national consequences. CA 1. CA 4.

**3554. Immigrants and the Shaping of American History**

(Also offered as HIST 3554.) Three credits. Recommended preparation: One course in American history.

The origins of immigration to the United States and the interaction of immigrants with the social, political, and economic life of the nation after 1789, with emphasis on such topics as nativism, assimilation, and the "ethnic legacy." CA 1. CA 4.

**3712. The Middle East Crucible**

(Also offered as HIST 3712.) Three credits.

Twentieth-century developments in the Middle East, focusing on political Islam/Islamism, Orientalism, imperialism, the history of struggles for representative government, nationalism, the Israeli-Palestinian conflict, super-power rivalries, and the search for identity, independence, and peace with justice. CA 1. CA 4-INT.

**3808. East Asia to the Mid-Nineteenth Century**

(Also offered as HIST 3808.) Three credits.

The major problems and issues of traditional Chinese and Japanese history and historiography. Special emphasis on the "Great Tradition" in ideas of both civilizations.

**3809. East Asia Since the Mid-Nineteenth Century**

(Also offered as HIST 3809.) Three credits.

The reactions of East Asia to the Western threat, and the rise of Asian nationalism, communism, and fascism. Special attention to the tensions caused by the conflict of ideas.

**3812. Modern India**

(Also offered as HIST 3812.) Three credits.

An introduction to the history of India from the Mughal and European invasions of the 16th Century to the present. India's synthesis of Eastern and Western culture, traditional and new, will be the focus.

**3820. History of Modern Chinese Political Thought**

(Also offered as HIST 3820.) Three credits.

Survey of Chinese political ideas and ideologies since the nineteenth century, examining the influences of Confucianism and Western conceptions on the revolutionary changes in political thought in China over the last 100 years, including Marxism, liberalism, anarchism, authoritarianism, and democracy. CA 1. CA 4-INT.

**3822. Modern China**

(Also offered as HIST 3822.) Three credits.

Survey of patterns of modern China since 1800. Topics will include reforms and revolutions, industrialization and urbanization, and family and population growth. CA 1. CA 4-INT.

**3845. The Vietnam War**

(Also offered as HIST 3845.) Three credits. Prerequisite: Open to sophomores or higher.

Origins, evolution, and aftermath of the Vietnamese conflict: the prewar history of colonialism, nationalism, communism, and anticommunism; the formation and development of the three main Vietnamese belligerents; American intervention; culture and politics in wartime Vietnam; escalation and de-escalation of the war; the postwar legacy. CA 1. CA 4 INT.

**3875. Asian Diasporas in the Americas**

(Also offered as HIST 3875 and LLAS 3875.) Three credits. Prerequisite: Open to sophomores or higher. Recommended preparation: HIST 3607, 3609, 3610, 3635, 3660W, or 3674. Not open to students who have passed HIST 3995 Asian Diasporas in the Americas.

Transnational history of migration and settlement of Chinese, Japanese, Korean, and South Asian diasporas across South, Central, and North America and the Caribbean, colonial through national period. Emphasis on political economy, racial formations, and constructions of national identity.

**3998. Variable Topics**

Three credits. Prerequisite: Open to juniors or higher. May be repeated for a total of 6 credits.

Prerequisites and recommended preparation vary.

**4100. Experiential/Service Learning Seminar**

(Also offered as AFRA 4100, LLAS 4100, and WGSS 4100.) Four credits.

Interdisciplinary examination of the history of social justice organizing in the U.S.; theories, strategies, and practice of community organizing movements such as those for immigration, environmental, reproductive, and racial justice. Includes practice in community organizing and political advocacy.

**4999. Independent Study**

Variable (1-3) credits. Prerequisite: Open to juniors or higher. May be repeated for credit.

Credits, not to exceed three per semester, and hours by arrangement. With a change of subject, this course may be repeated for credit.

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## Biological Sciences (BIOL)

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**1102. Foundations of Biology**

Four credits. Prerequisite: Not open to students who have passed BIOL 1107, 1108 or 1110. Students may not receive more than 12 credits for courses in Biology at the 1000 level.

Major biological principles with emphasis on their importance to humans and modern society; designed for non-science majors. CA 3-LAB.

**1103. The Biology of Human Health and Disease**

Four credits. Prerequisite: Students may not receive more than 12 credits in Biology at the 1000 level.

A laboratory course designed for non-science majors to introduce the concepts of biology and their application to the individual, society and humankind by focusing on health and disease issues. CA 3-LAB.

**1107. Principles of Biology I**

Four credits. Recommended preparation: A course in high school level chemistry or concurrent enrollment in CHEM 1127Q. Students may not receive more than 12 credits in Biology at the 1000 level.

Designed to provide a foundation for more advanced courses in Biology and related sciences. Topics covered include molecular and cell biology, animal anatomy and physiology. Lab exercises include dissection of preserved animals. CA 3-LAB.

**1108. Principles of Biology II**

Four credits. Prerequisite: Students may not receive more than 12 credits for courses in BIOL at the 1000 level.

Designed to provide a foundation for more advanced courses in biology and related sciences. Topics covered include evolution and population genetics, plant physiology and diversity, animal diversity and behavior, and ecology. CA 3-LAB.

**1109. Topics in Modern Biology**

One credit. Prerequisite: Concurrent enrollment in BIOL 1107 or 1108 required. Students cannot earn more than 12 credits of 1000 level BIOL. May be repeated for credit.

Readings, lectures, seminars, films and field trips exploring current developments in biology and their social and scientific implications. May be repeated with a change of content.

**1110. Introduction to Botany**

Four credits. Prerequisite: Students may not receive more than 12 credits for courses in BIOL at the 1000 level.

Designed to provide a foundation for more advanced courses in biology and related sciences. Structure, physiology, reproduction, diversity, evolution and ecology of plants as a basis for understanding the broader principles of biology. Surveys important groups of plants, fungi and algae. CA 3-LAB.

**1195. Special Topics**

Variable (1-6) credits. Prerequisite: Credits, prerequisites, and hours as determined by the Senate Curricula and Courses Committee.

Credits, prerequisites and hours as determined by the Senate Curricula and Course Committee. May be repeated for credit with a change in topic.

**1199. Introduction to Biological Research**

Variable (1-3) credits. Prerequisite: BIOL 1107 or 1108 and consent of instructor. May be repeated for credit.

Internship in Biology research. May be repeated for credit with a change in content.

**2289. Introduction to Undergraduate Research**

One credit. Recommended preparation: BIOL 1107 and 1108 or equivalent. May be repeated for credit.

Introduction to the variety of research programs in the Life Sciences on the Storrs campus. Required of Sophomore Biology Honor students; also open to students interested in undergraduate research.

With a change of content, this course may be repeated for credit.

**3520W. Ethical Perspectives in Biological Research and Technology**

Three credits. Prerequisite: BIOL 1107, 1108 or 1110; ENGL 1007 or 1010 or 1011 or 2011.

Ethical and policy issues arising from advances in biological research and technology, including topics in ecology, molecular biology, and physiology.

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## Biomedical Engineering (BME)

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**1401. Honors Core: Computational Molecular Biology**

(Also offered as CSE 1401 and MCB 1401.) Three credits.

Introduction to research in computational biology through lectures, computer lab exercises, and mentored research projects. Topics include gene and genome structure, gene regulation, mechanisms of inheritance, biological databases, sequence alignment, motif finding, human genetics, forensic genetics, stem cell development, comparative genomics, early evolution, and modeling complex systems. CA 3.

**2101. Introduction to Biomedical Engineering**

Three credits. Prerequisite: MATH 1132Q, which may be taken concurrently; PHYS 1230 or 1501Q or 1530, each of which may be taken concurrently; open to non-BME majors with instructor consent. Recommended preparation: BIOL 1107.

Fundamental concepts and techniques of engineering and medical science and their integration. The art and science of medicine and the process of medical diagnosis and treatment. Topics include: diagnostic instrumentation, diagnostic measurements and their interplay; bioelectric phenomena, biomechanics, and biomaterials; biochemical engineering; computers in medicine; molecular medicine and biotechnology; medical imaging.

**2193. International Study**

Variable (1-6) credits. May be repeated for a total of 6 credits.

Special Biomedical Engineering topics taken in an international study program. May be repeated for up to six credits with change in topic. May count toward the major with consent of the adviser and approved plan of study.

**3100. Physiological Modeling**

Three credits. Prerequisite: MATH 1132Q, which may be taken concurrently. Open only to Biomedical Engineering majors. Recommended preparation: BIOL 1107.

Techniques for analysis and modeling of biomedical systems. Application of advanced mathematics (including Differential Equations, Laplace Transforms and Statistics) and computer-aided methods to study problems at the interface of engineering and biology. Elements of physiological modeling and the solution of the transient and forced response for a variety of biomechanical, biomaterial, bioelectrical and biochemical systems.

**3120. LabVIEW Basics for Engineers**

One credit. Prerequisite: CSE 1010 or 1100. Open only to Biomedical Engineering majors, others by

instructor consent. Not open for credits to students who have passed ENGR 3120.

Introduces LabVIEW programming environment. The fundamentals of using graphical programming to collect, analyze, display and store data are covered. Learn techniques for designing stand alone applications, creating interactive user interfaces and optimizing data flow.

### 3193. International Study

Variable (1-6) credits. May be repeated for a total of 6 credits.

Special Biomedical Engineering topics taken in an international study program. May be repeated for up to six credits with change in topic. May count toward the major with consent of the adviser and approved plan of study.

### 3300. Biochemical Engineering for Biomedical Engineers

Three credits. Prerequisite: BME 2101 and MATH 2410Q; CHEM 2443, which must be taken concurrently; open only to Biomedical Engineering majors.

Introduction to chemical reaction kinetics; enzyme and fermentation technology; microbiology, biochemistry, and cellular concepts; biomass production; organ analysis; viral dynamics.

### 3320. Biosensors and Nanodevices for Biomedical Applications

Three credits. Prerequisite: Open only to BME majors, others by instructor consent. Not open for credit to students who have passed BME 4985 when taught as Biosensors and Nanodevices for Biomedical Applications.

Current and emerging technologies in biosensors for biomedical applications. Topics include principles of molecular and bio/chemical sensing, techniques for sensor integration, nano/micro electro mechanical systems (NEMS/MEMS) technologies used in biosensors, and commercial/clinical applications of biosensors.

### 3400. Biosystem Analysis

Three credits. Prerequisite: ECE 2001; open only to Biomedical Engineering majors, others by instructor consent. This course and ECE 3101 may not be both taken for credit.

A lecture course that covers Fourier analysis, Laplace analysis and Z-transforms. Techniques for generating quantitative mathematical models of physiological control systems; the behavior of physiological control systems using both time and frequency domain methods.

### 3401. Introduction to Computational and Systems Biology

Three credits. Prerequisite: MATH 2210Q, 2410Q; STAT 3025Q or 3345Q or MATH 3160.

Introduction to the role of computational and mathematical analyses in biological sequence (DNA, RNA, proteins) analysis and quantitative mathematical models of cell biological processes (systems and quantitative biology). Algorithms for sequence alignment, analysis of networks involved in transcription, development, and signal transduction. Programming in the Python language will be an integral part of the course, but no prior experience with Python is necessary.

### 3420. Stem Cells for Regenerative Medicine

Three credits. Prerequisite: Open only to BME majors, others with consent. Not open for credit to students who have passed BME 4985 when taught as Stem Cells for Regenerative Medicine.

Introduces the fundamental concept and translational application of regenerative medicine such as stem cells, gene therapy, cell and tissue therapy. Topics include tissue-specific stem cells, embryonic stem cells, induced pluripotent stem cells and their potential therapeutic applications for musculoskeletal, cardiovascular and nervous systems.

### 3500. Biomedical Engineering Measurements

Four credits. Prerequisite: BME 3400 or ECE 3101, which may be taken concurrently; open only to Biomedical Engineering majors, others by instructor consent. Recommended preparation: BME 3120.

A lecture and laboratory course that covers fundamentals of biomedical measurement and patient safety. Measurements of physical quantities by means of electronic instruments, mechanical devices and biochemical processes. Analysis of measurement systems using mathematical models. Methods of measuring signals in the presence of noise. Use of computers in measurement systems.

### 3520. Developing Mobile Apps for Healthcare

Three credits. Prerequisite: Open only to BME majors, others with consent. Not open for credit to students who have passed BME 4985 when taught as Developing Mobile Apps for Healthcare.

Mobile apps are changing the way doctors and patients approach health care. Designed for use by doctors, patients or both, the apps available range from handy databases about drugs and diseases to sophisticated monitors that read a person's physiological signals. Students will learn the basic elements of apps development on Android platforms, including XML, and Java, UI amongst others. Topics include how to handle patient data in the cloud using HIPAA-Compliant web service and how to integrate machine learning models in app development. No previous programming experience is needed.

### 3540. Principles of Biomedical Optical Sensing: A Laboratory-Based Course

Three credits. Prerequisite: PHYS 1501Q and 1502Q, open only to Biomedical Engineering majors, others by instructor consent.

Undergraduate laboratory course that covers the fundamental optical sensing principles of devices used in medicine and research. Topics include laser beam manipulation and forming, optical fibers and photodetectors, polarizers and polarimetry, molecular sensing, pressure mapping via FTIR, blood oxygen concentration (Pulse Oximetry), interferometric-based imaging systems and photo spectrometry. The course is designed for students' who seek to acquire skills in handling and working with optical components.

### 3600. Biomechanics

Four credits. Prerequisite: BME 3150 or CE 2110; open only to Biomedical Engineering majors; others by instructor consent.

Application of solid mechanics theory to describe and analyze mechanical behaviors of biological tissues. Basic concepts in mechanics of materials, including the essential mathematics,

kinematics of deformation and motion, stress, constitutive relations. Biomechanics principles; identifying, formulating and solving problems related to bone, cartilage, tendon, cardiac and vascular tissues. Introduction of experimental methods and computational modeling of biological tissues. A separate laboratory component will introduce students to experimental methods in more detail. Laboratory reports with revisions are required.

### 3620. Failure Analysis for Biomedical Application

Three credits. Prerequisite: MSE 2001 or 2101; open only to Biomedical Engineering majors, others by instructor consent. Not open for credit to students who have passed BME 4985 when offered as Failure Analysis for Biomedical Application.

Study and analysis of the causes of material and device failures as it relates to biomedical engineering. Types of material failures and failure mechanisms. Discussion of appropriate material selection, design and application as it relates to mitigating failure risk. Case studies of historical material failures in biomedical engineering.

### 3630. Multiphysics Finite Element Analysis

Three credits. Prerequisite: MATH 1132Q and 2410Q, or by instructor consent.

The course material emphasizes basic mathematical and physical principles underlying finite element analysis (FEA), general procedure of identifying and solving engineering problems using COMSOL Multiphysics FEA software, and interpretation of FEA results.

### 3640. Human Factors Engineering

Three credits. Prerequisite: Open only to Biomedical Engineering majors, others by instructor consent. Not open for credit to students who have passed BME 4985 when offered as Human Factors Engineering.

This course introduces students to the field of human factors engineering. Topics include user-centered design and the different tools available to anticipate and solve human-use issues.

### 3700. Biomaterials

Four credits. Prerequisite: MSE 2101 and MATH 2410; open only to BME majors. Cannot be taken for credit after passing MSE 3700.

A lecture and laboratory course that introduces a series of implant materials including metals, ceramics, glass ceramics, polymers, and composites. These materials are compared with the natural materials, with consideration given to issues of mechanical properties, biocompatibility, degradation of materials by biological systems, and biological response to artificial materials. Particular attention is given to the materials for the total hip prosthesis, dental restoration, and implantable medical devices.

### 3720. Drug Delivery

Three credits. Prerequisite: BME 3700; open only to BME majors, others with consent. Not open for credit to students who have passed BME 4985 when taught as Drug Delivery.

Introduction to drug delivery systems that provide pharmaceutical agents at target tissues, the mechanism of pharmacokinetic regulation, the basics, technology, and applications of drug delivery systems. Emphasis on understanding the principles of pharmacokinetics and drug delivery

systems to improve clinical efficacy as well as to reduce side effects.

#### **3740. Introduction to Microscopy and Biophotonics**

Three credits. Prerequisite: BME 3400 or ECE 3101; open only to Biomedical Engineering majors, others by instructor consent.

Basic principles of modern light microscopy and related biophotonics techniques. Matlab will be used to model various imaging platforms. Topics include geometrical optics; image processing in spatial and Fourier domain; lensless microscopy imaging; light scattering and absorption in tissue; wave propagation; coherent and incoherent imaging; lens-based imaging systems; optical aberrations; phase retrieval; brightfield, darkfield, phase-contrast, and confocal microscopy; holographic imaging; light field microscopy; 3D tomographic imaging; autofocusing for whole slide imaging; two-photon imaging; structured illumination and other super-resolution techniques; Fourier ptychographic imaging; detectors and photon transfer curve; image denoising via regularization; optical coherent tomography.

#### **3750. Tissue Engineering Laboratory**

Three credits. Prerequisite: Open only to Biomedical Engineering majors, others by instructor consent.

This is an undergraduate laboratory course designed to provide hands on training in tissue engineering methods and techniques. Students will learn the necessary skills required for culturing and maintaining cells to practice tissue engineering strategies. The students will also learn basic tissue engineering lab techniques and develop assays and staining methods related to the development and evaluation of in vitro tissue engineering products.

#### **3760. Microfluidics and Lab-on-Chip**

Three credits. Prerequisite: Open only to Biomedical Engineering majors, others by instructor consent.

The course provides a broad overview of microfluidics technology, lab-on-chip, wearable/implantable devices and smartphone-based optical sensing technology, and their biomedical applications. It also covers the fundamentals of micro/nano fabrication technologies and additive manufacturing (e.g., 3D printing). In addition, the basic principles of biology and chemistry, with a focus on how to integrate them into microfluidic devices and biomedical microsystems are introduced and discussed.

#### **3780. Introduction to Biomanufacturing: Pharmaceutical Proteins**

Three credits. Prerequisite: Open only to Biomedical Engineering majors, others by instructor consent.

This course provides an overview of the large scale bioprocessing and biomanufacturing of biopharmaceutical products (biologics). Topics include conventional versus biologic drug manufacturing, key phases in the process of drug manufacturing (bench to bottle), upstream and downstream operations, bioreactor design, purification process, safety and efficiency of biologics, quality assurance, regulation and introduction to Good Manufacturing Practices (GMP) in bio-manufacturing.

#### **3810. Computational Genomics**

(Also offered as CSE 3810.) Three credits. Prerequisite: BIOL 1107; CSE 1729 or CSE 2050; STAT 3025Q or 3345Q or 3375Q or MATH 3160; open only to students in the School of Engineering and declared Computer Science minors.

Computational methods for genomic data analysis. Topics covered include statistical modeling of biological sequences, probabilistic models of DNA and protein evolution, expectation maximization and Gibbs sampling algorithms, genomic sequence variation, and applications in genomics and genetic epidemiology.

#### **3900. Junior Design**

Three credits. Prerequisite: BME 3500 and 3600; or CE 2110, ECE 2001, and MSE 2101.

Students work through a structured process that emulates an open-ended, real-world design of a biomedical engineering product. Project definition and product specifications, project scheduling and management, team interactions, failure and safety criteria, progress reporting, marketing concepts, ethical issues, prototype development, proper documentation and technical presentation of the final project outcomes. Includes a significant writing component, makes use of computers and design software, and involves hands-on design explorations. Students will complete a semester-long design project that demonstrates the skills and knowledge learned during the course in preparation for the capstone design experience.

#### **4120. Neural Information Processing and Sensory Coding**

Three credits. Prerequisite: BME 3400 or ECE 3101; open only to Biomedical Engineering majors, others by instructor consent.

Processing, transmission, and storage of information in the central and peripheral nervous systems. Mechanisms of signal generation, transmission and coding by neurons and dendrites. Analysis of invertebrate and vertebrate visual and auditory systems, including: mechanisms of neurosensory transduction, coding, and signal-to-noise ratio enhancement. Neural spatio-temporal filters for feature extraction and pattern recognition. Information theoretic analysis of signal encoding and transmission in the nervous system. Assumes a background in linear systems and feedback control systems.

#### **4130. Neural Prostheses**

Three credits. Prerequisite: Open only to Biomedical Engineering majors, others by instructor consent.

Development of neural prostheses. Topics will cover physiology of neurological disorders, key concepts of neural prostheses, electrode designs and materials, fabrication methodologies, measurement techniques, histological evaluations, and clinical translations. Students will also learn to critique journal articles and to write their own NIH research proposal.

#### **4170. Nanomedicine: From Concepts to Applications**

Three credits. Prerequisite: Open only to Biomedical Engineering majors, others by instructor consent. Not open for credit to students who have passed BME 4985 when taught as Nanomedicine: From Concepts to Applications.

Teaches students competency and practical skills in applying nanotechnology to solve problems in medicine. Upon completion of the course, the students will be able to understand the basic concept of Nanomedicine and have an overview of the Nanomedicine field; understand principles and experimental methods in designing, generating, characterizing and evaluating nanotechnology-enabled therapeutics; understand how Nanomedicine is translated from scientific innovation to clinical applications; understand how Nanomedicine is applied in the cutting-edge breakthroughs of biotechnology and medicine; develop critical thinking and independent learning skills; and design a successful Nanomedicine project.

#### **4201. Introduction to Medical Imaging**

Three credits. Prerequisite: PHYS 1502Q; BME 3500, and BME 3400 or ECE 3101; open only to Biomedical Engineering majors, others by instructor consent.

Introduction to spatial signals including spatial impulse response, spatial sampling and filtering, spatial Fourier transforms, and back projection. Principles, systems and clinical applications of X-ray, X-ray CT, ultrasound, Positron Emission Tomography (PET) and Single Photon Emission Tomography (SPECT), and MRI imaging.

#### **4300. Physiological Control Systems**

Three credits. Prerequisite: BME 3400 or ECE 3101; open only to BME majors.

Analysis of human physiological control systems and regulators through the use of mathematical models. Identification and linearization of system components. Systems interactions, stability, noise, and the relation of system malfunction to disease. The analysis and design of feedback systems to control physiological states through the automatic administration of drugs.

#### **4400. Dynamical Modeling of Biological Networks**

Three credits. Prerequisite: BME 3400 or ECE 3101; open only to Biomedical Engineering majors, others by instructor consent.

Construction and analysis of biochemical pathway models. Mass action kinetics and the S-matrix formalism, nonlinear differential equations, bistability, bifurcations, linear stability analysis, and nonlinear oscillations. Possible applications include kinetic proofreading, classical enzyme kinetics, biological switches, and dynamical behavior of simple biochemical circuits.

#### **4401. Computational Foundations of Systems Biology**

Three credits. Prerequisite: Open only to Biomedical Engineering majors, others by instructor consent.

Introduction to computational systems biology, which focuses on studying the dynamic and intelligent features (e.g., adaptation and robustness) of biological systems. Through a variety of assignments and projects using MATLAB, LabVIEW and C#, students will obtain a deeper understanding of physical and engineering principles and methods (e.g., computational physics, digital signal processing, control engineering, and digital logic) applied to biological systems.

**4410. Systems Biology of Cells and Tissues**

Three credits. Prerequisite: Open only to BME majors, others by instructor consent.

The course will present a broad systems level overview of how cells and tissues interact with each other at different physical scales to create complex physiological outcomes. In addition, it will cover a variety of techniques and experimental models in biology, as well as introduce examples to observe cells and tissues at multiple scales.

**4500. Bioinstrumentation**

Three credits. Prerequisite: BME 3500; BME 3400 (or ECE3101); open only to Biomedical Engineering majors, others by instructor consent.

Modeling, analysis, design, and operation of transducers, sensors, and electrodes, for physiological systems; operational and instrumentation amplifiers for bioelectric event signal conditioning, interfacing and processing; A/D converters and hardware and software principles as related to sampling, storing, processing, and display of biosignals and digital computers.

**4520. Digital Image Processing for Biomedical Engineering**

Three credits. Prerequisite: BME 3400 or ECE 3101; open only to Biomedical Engineering majors, others by instructor consent.

Fundamentals of digital signal processing with particular emphasis on problems in biomedical research and clinical medicine. Principles and algorithms for processing both deterministic and random signals. Topics include ECG, image modalities, discrete Fourier transform, Fast Fourier transform, data acquisition, sampling, filtering, denoising, regularization, coding, feature extraction and modeling, image segmentation and registration, and machine learning. Includes the training of a neural network to classify images with different diseases.

**4560. Biomedical Signal Processing Laboratory**

Three credits. Prerequisite: BME 3100, 3500, and BME 4500; Open only to Biomedical Engineering majors, others by instructor consent.

This course provides students the opportunity to develop skills to use computational methods in time- and frequency domains to analyze some of most commonly used biomedical signals such as ECG, photoplethysmogram (PPG), electromyogram (EMG), and electrodermal activity (EDA). All data analyses are performed using Matlab software.

**4600. Biosolid Mechanics**

Three credits. Prerequisite: BME 3600; open only to BME majors.

Mechanical behavior of biological solids. Applications of the theories of elasticity, viscoelasticity, and poroelasticity to bones, ligaments and tendons, skeletal muscle, and articular cartilage. Axial, bending, shearing and torsional loadings. Bone morphology and growth. Biphasic theory. Failure theories. Topics may be modified slightly to accommodate student interests.

**4701. Biomedical Materials and Implants**

Three credits. Prerequisite: BME 3700; open only to BME majors. Not open to students who have passed MSE 4701.

This advanced course will enable students to further expand their knowledge in various aspects of biomaterials science, engineering and applications. The course will focus on the strategies to improve cell-material and tissue-implant interaction. An emphasis is placed on the biomaterial innovations and technologies that integrate bioactivity, functionality to improve the performance of the implants. The course will also provide an overview of the FDA regulatory pathways for biomaterial and implant approvals.

**4710. Tissue Engineering**

Three credits. Prerequisite: BME 3700; open only to BME majors.

Presents basic principles of biological, medical, and material science as applied to implantable medical devices, drug delivery systems and artificial organs.

**4720. Cellular Engineering**

Three credits.

Cellular engineering emphasizes the navigation and understanding of discoveries in stem cell, molecular, and developmental biology from an engineering perspective. Student projects and an active learning approach enable students to practice the complex and open-ended process of synthesizing and translating basic discoveries for the rational design of tissue regeneration therapies.

**4800. Bioinformatics**

(Also offered as CSE 3800.) Three credits. Prerequisite: BIOL 1107; CSE 1729 or CSE 2050; STAT 3025Q or 3345Q or 3375Q or MATH 3160; open only to students in the School of Engineering and declared Computer Science minors, others by instructor consent.

Fundamental mathematical models and computational techniques in bioinformatics. Exact and approximate string matching, suffix trees, pairwise and multiple sequence alignment, Markov chains and hidden Markov models. Applications to sequence analysis, gene finding, database search, phylogenetic tree reconstruction.

**4810. Machine Learning Methods for Biomedical Signal Analysis**

Three credits. Prerequisite: CSE 1010 and STAT 3025Q; open only to Biomedical Engineering majors, others by instructor consent. Not open for credit to students who have passed BME 4985 when taught as Advanced Methods for Biomedical Signal.

The objective of this course is to learn the basic machine learning concepts and tools that are required in modern biomedical engineering to model, analyze, and classify physiological time series. Specific focus is on multivariate data and time series extracted from multiple physiological sources, including (but not limited to) ECG, EEG, and EMG. Through a mix of lectures and hands-on laboratory experiences, the students will learn how to design and implement a machine learning project, how to use advanced statistical tools and methods to classify data, infer predictions, and validate data-driven predictive models.

**4900. Biomedical Engineering Design I**

Three credits. Prerequisite: Open only to Biomedical Engineering majors; prerequisites vary by track as follows: Biomaterials and Tissue Engineering, BME 3500, 3600, 3700, and 3900; Biomechanics and Mechanobiology, BME 3600

and 3900; Computational and Systems Biology, BME 3900; Systems, Imaging and Instrumentation, BME 3500 and 3900; no track: BME 3500, 3600, and 3700.

Discussion of the design process; project statement, specifications project planning, scheduling and division of responsibility, ethics in engineering design, safety, environmental considerations, economic constraints, liability, manufacturing, and marketing. Projects are carried out using a team-based approach. Selection and analysis of a design project to be undertaken in BME 4910 is carried out. Written progress reports, a proposal, an interim project report, a final report, and oral presentations are required.

**4910W. Biomedical Engineering Design II**

Three credits. Prerequisite: BME 4900; ENGL 1007 or 1010 or 1011 or 2011; open only to Biomedical Engineering majors.

Design of a device, circuit system, process, or algorithm. Team solution to an engineering design problem as formulated in BME 4900, from first concepts through evaluation and documentation. Written progress reports, a final report, and oral presentation are required.

**4985. Special Topics in Biomedical Engineering**

Variable (1-6) credits. Prerequisite: Open only to BME majors. Prerequisites and/or consent announced separately for each topic. May be repeated for credit.

Classroom and/or laboratory courses in special topics as announced for each semester. With a change of topic, this course may be repeated for credit.

**4999. Independent Study**

Variable (1-6) credits. Prerequisite: Open only to Biomedical Engineering majors. May be repeated for credit.

Independent study project carried on by the student under the guidance of a faculty member. The student is required to submit a report on the study at the end of the semester. With a change in content, this course may be repeated for credit.

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**Business (BUSN)**


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**1801. Contemporary Issues in the World of Business**

Variable (1-3) credits. Prerequisite: Open only to freshmen and sophomores; others with instructor consent. May be repeated for a total of 3 credits.

Today's business world is a complex, challenging and exciting place. Each section of this course will capture some aspect of that challenge and excitement. Students will be exposed to undercurrents that challenge and perplex today's managers and executives around the globe. Students should consult the scheduling booklet for specific topics offered. May be repeated in different sections for up to three credits maximum. May not be used to satisfy junior-senior level major requirements of the School of Business.

**2235. Personal Financial Literacy**

(Also offered as BADM 2235.) Three credits. Prerequisite: Open only to business majors.

Introduction to essential topics in personal finance for individuals and entrepreneurs. Financial literacy, personal finance topics including recordkeeping, budgeting, risk, insurance,

credit, purchasing decisions, savings/investment options, income taxation of individuals and small businesses, and retirement savings.

### **2891. Foreign Study Internship**

Variable (1-6) credits. Prerequisite: Open only to School of Business students; consent of Associate Dean for Undergraduate Programs required.

Provides students the opportunity to be engaged in meaningful professional activity without the expectation of a significant level of prior academic experience in business. Student performance will be evaluated on the basis of an appraisal by the field supervisor and a detailed written report submitted by the student. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

### **3002W. Effective Business Writing**

One credit. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open only to Business Majors of sophomore or higher status. Not open for credit to students who have passed BUSN 3003W or BADM 4075W or MENT 3070W.

Techniques to improve written business communication skills. Requires a variety of written assignments and gives special attention to writing tasks that students are likely to encounter early in their careers, such as reports to supervisors, sales proposals, documentation of business policies, responses to complaints, as well as general business letters and memos. Students will receive critiques of their written assignments and will be required to revise their writing.

### **3003W. Business Communications**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; Open only to Business Majors of sophomore or higher status. Not open for credit to students who have passed BUSN 3002W or BADM 4075W or MENT 3070W.

Techniques for improving professional writing and oral communications skills and ways in which visual communications, document design, and use of workplace technologies shape the message.

### **3004W. Business Writing and Communication**

Two credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open only to Business Majors of sophomore or higher status. Not open for credit to students who have passed BADM 4075W; or BUSN 3002W or 3003W; or MENT 3070W.

Rhetorical strategies and practices for improving professional writing and oral communications, as well as ways in which visual communications, document design, and emerging genres (e.g., new media, social media) shape professional messages.

### **3005. Career Development in Business**

One credit. Prerequisite: Open only to Business majors of sophomore or higher status.

A roadmap for the college to career experience. Students will: gain an understanding of the job search lifecycle in order to create opportunities for internships, first entry level roles, or identify future career paths; complete a polished and professional job search communication portfolio (including a resume, cover letter, target-marketing plan, and social media presence); learn how to develop an effective job search marketing plan and gain insight on major labor market trends that impact employment; learn job search presentation skills including how to introduce themselves in

networking situations and other job search settings; practice interviewing skills and techniques.

### **3006. Career Development in FinTech**

One credit. Prerequisite: Open only to Business majors of sophomore or higher status.

A roadmap for the college to career experience. Students will: gain an understanding of the job search lifecycle in order to create opportunities for internships, first entry level roles, or identify future career paths; complete a polished and professional job search communication portfolio (including a resume, cover letter, target-marketing plan, and social media presence); learn how to develop an effective job search marketing plan and gain insight on major labor market trends that impact employment; learn job search presentation skills including how to introduce themselves in networking situations and other job search settings; practice interviewing skills and techniques.

### **4881. Internship in Business**

Variable (1-6) credits. Prerequisite: Open to juniors or higher; consent of the Associate Dean for Undergraduate Programs required; open only to students admitted to the School of Business.

Provides students with an opportunity for a supervised internship relevant to one or more major areas within the School. Students will work under the supervision of one or more professionals in the specialty in question. Student performance will be evaluated on the basis of an appraisal by the field supervisor and a detailed written report, submitted by the student. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

### **4895. Special Topics**

Variable (1-6) credits. Prerequisite: Prerequisites and recommended preparation vary by section; open only to business majors of junior or higher status. May be repeated for a total of 18 credits.

Classroom course in special topics as announced in advance for each semester.

### **4896. Business Research Methods**

Three credits. Prerequisite: Open to Juniors or higher; open only to Honors Students with consent of Honors Advisor; ENGL 1007 or 1010 or 1011 or 2011.

This course equips students with the skills to develop and undertake an honors research project. It provides the theoretical and practical preparation for business research, covering how to do library research in all business subjects; create a literature review, use qualitative and quantitative methods, developing a research proposal, and ethical implications of research.

### **4897W. Honors Leadership Seminar**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to senior School of Business honors students by permission of the honors advisor of the student's major.

An exploration of leadership from a multi-disciplinary perspective to help students better understand and harness their own leadership style and explore, in depth, the core elements of effective leadership, the traits and behaviors of exemplary leaders and leadership in practical application. This course may be used to fulfill an Honor's student's Honors Thesis Requirement.

### **4997. Senior Thesis in Business**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; BUSN 4896; open to Juniors or higher; open only to Honors Students with consent of Honors Advisor.

Students develop their own plan for a research project, conduct the research, and write-up this research, consulting periodically with a faculty advisor.

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## **Business Administration (BADM)**

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### **1801. Contemporary Issues in the World of Business**

Variable (1-3) credits. Prerequisite: Open to freshmen and sophomores, others with consent of instructor. May be repeated for a total of 3 credits.

The world of business has changed. No longer can we refer to the cliché "business as usual." Today's business world is a complex, challenging and exciting place. Each section of this course will capture some aspect of that challenge and excitement. Students will be exposed to undercurrents that challenge and perplex today's managers and executives around the globe. Students should consult the scheduling booklet for specific topics offered. May be repeated in different sections for up to three credits maximum. May not be used to satisfy Junior-Senior level major requirements of the School of Business.

### **2101. Principles of Managerial Accounting**

(Also offered as ACCT 2101.) Three credits. Prerequisite: ACCT 2001; open only to non-business students of sophomore or higher status.

Internal reporting to managers for use in planning and controlling operating systems, for use in decision making, formulating major plans and policies, and for costing products for inventory valuation and income determination. Formerly offered as BADM 2710.

### **2234. The Entrepreneurial Journey**

(Also offered as MENT 2234.) Three credits. Prerequisite: Open only to non-business majors; not open to students who have passed or are currently taking MENT or BADM 3234.

Interdisciplinary introduction to entrepreneurship; evaluating benefits and risks, assessing opportunities, and considering entrepreneurship as part of academics and career. Formerly offered as MGMT 2234.

### **2234. The Entrepreneurial Journey**

Three credits. Prerequisite: Open only to non-business majors; not open to students who have passed or are currently taking MENT 2234, 3234, or BADM 3234.

This introductory, interdisciplinary course nurtures interest and enthusiasm for entrepreneurship, raises awareness on the topic of entrepreneurship along with its benefits and risks, builds basic capabilities in assessing entrepreneurial opportunities, and helps students assess whether entrepreneurship might be part of their academics/career.

### **2235. Personal Financial Literacy**

(Also offered as BUSN 2235.) Three credits. Prerequisite: Open only to non-business majors.

Introduction to essential topics in personal finance for individuals and entrepreneurs.



Financial literacy, personal finance topics including recordkeeping, budgeting, risk, insurance, credit, purchasing decisions, savings/investment options, income taxation of individuals and small businesses, and retirement savings.

### 2236. Content Entrepreneurship

(Also offered as MENT 2236.) Three credits. Prerequisite: Open only to non-business majors.

Preparation to assess entrepreneurial opportunities as they relate to the content media sector. Building an accessible content media business to establish a unique niche, grow an audience, and create value from the content the business develops. Hiring and leading creative content and business teams; developing external networks as resources for growth; determining a strategy to guide business development; managing content production and delivery; formulating monetization strategies built on innovative business models.

### 2237. Personal Brand Management

(Also offered as MKTG 2237.) Three credits. Prerequisite: Open only to non-business majors.

Introduction to building, leveraging, and managing a personal brand; concepts and perspectives relevant to any student looking to build a personal brand and business. Consideration of various media to engage with target customers and businesses and how to choose among alternative media platforms and messages. Students will analyze their individual strengths, weaknesses, opportunities, and threats; learn how to position and design a personal brand; learn how to measure personal brand assets and performance over time; and create a personal brand portfolio and a plan for marketing themselves within their chosen industry.

### 2238. Legal Aspects of Name, Image, and Likeness Representation

(Also offered as BLAW 2238.) Three credits. Prerequisite: Open only to non-business majors.

The legal and ethical environment of Name, Image and Likeness Representation (NIL). The role of contract law, data privacy and integrity, trademark and intellectual property law, and the principal-agent relationship. Legal and regulatory questions related to Federal Trade Commission rules, laws regulating false and misleading advertising as well as rules specific to celebrity endorsements will also be discussed. Ethical issues related to NIL will be explored.

### 2710. Principles of Managerial Accounting

Three credits. Prerequisite: ACCT 2001; open only to non-business students of sophomore or higher status. Not open to students who have passed or are taking ACCT 2101.

A survey of internal reports to managers for use in planning and controlling operating systems, for use in decision-making, formulating major plans and policies, and for costing products for inventory valuation and income determination. May substitute for ACCT 2101 for students who enter the School of Business.

### 2891. Foreign Study Internship

Variable (1-6) credits. Prerequisite: Department consent.

Provides students the opportunity to be engaged in meaningful professional activity without the expectation of a significant level of prior academic experience in business. Consent of Associate Dean

for Undergraduate Programs required. Student performance will be evaluated on the basis of an appraisal by the field supervisor and a detailed written report submitted by the student. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

### 2893. Foreign Study

Variable (1-15) credits. Prerequisite: Department consent required. May be repeated for credit.

Special topics taken in a foreign study program. With a change in content, may be repeated for credit.

### 3103. Business Information Systems

Three credits. Prerequisite: Open only to non-business students of sophomore or higher status. May not be taken out of sequence after passing OPIM 3505, 3506, 3211, 3212, 3223, 3777. Not open to students who have passed or are taking OPIM 3103.

Information needs of managers, the structure of the information systems required to fill these needs, systems development, business computing technology, and management applications within major business functional subsystems. May substitute for OPIM 3103 for business majors.

### 3103. Business Information Systems

(Also offered as OPIM 3103.) Three credits. Prerequisite: Open only to non-business students of sophomore or higher status. May not be taken out of sequence after passing OPIM 3505, 3506, 3211, 3212, 3223, 3777.

Information needs of managers, the structure of the information systems required to fill these needs, systems development, business computing technology, and management applications within major business functional subsystems.

### 3104. Operations Management

(Also offered as OPIM 3104.) Three credits. Prerequisite: Open only to non-business students of junior or higher status.

Introduction to concepts, models, and information systems applicable to the planning, design, operation and control of systems which produce goods and services. Topics include process design, facility locations, aggregate planning, inventory control, and scheduling.

### 3104. Operations Management

Three credits. Prerequisite: Open only to non-business students of junior or higher status. Not open to students who have passed or are taking OPIM 3104.

Introduction to concepts, models, and information systems applicable to the planning, design, operation and control of systems that produce goods and services. Topics include process design, facility locations, aggregate planning, inventory control, and scheduling. May substitute for OPIM 3104 for business majors.

### 3201. Intermediate Accounting I

(Also offered as ACCT 3201.) Three credits. Prerequisite: ACCT 2101 or BADM 2710; ECON 1200, or ECON 1201 and 1202; open only to non-Business students of junior or higher status. May not be taken out of sequence after passing ACCT or BADM 3202.

An in-depth study of financial accounting, giving particular emphasis to balance sheet valuations and their relationship to income determination.

### 3202. Intermediate Accounting II

(Also offered as ACCT 3202.) Three credits. Prerequisite: BADM 3201 or ACCT 3201; open only to non-Business students of junior or higher status. May not be taken out of sequence after passing ACCT 4203 or ACCT/BADM 4243.

A continuation of ACCT/BADM 3201.

### 3203. Analytics for Business Intelligence

(Also offered as OPIM 3203.) Three credits. Prerequisite: Open only to non-business majors of junior or higher status.

The course introduces students to the field of analytics and business intelligence. It positions them to structure and successfully complete analytics projects. The course exemplifies and explores how businesses gather and use data as well as set up and execute business problems. Students will make use of programming tools to build predictive models. Formerly offered as BADM/OPIM 3802.

### 3221. Cost Accounting

Three credits. Prerequisite: ACCT 2101 or BADM 2101; open only to non-business majors of junior or higher status. Not open for credit to students who have passed ACCT 3221.

The study of product costing as a basis for income determination and inventory valuation and accounting concepts for planning and controlling organizational operations.

### 3234. Opportunity Generation, Assessment, and Promotion

(Also offered as MENT 3234.) Three credits. Prerequisite: Open only to non-business students of junior or higher status. It is highly recommended that students take BADM 3740 or MENT 3101, and ACCT or BADM 2101 prior to BADM 3234.

A hands-on experience in opportunity development, exposing students to three distinct modules. The first, creativity and innovation, stimulates the flow of ideas. The second, feasibility analysis, runs these ideas through a comprehensive assessment framework. The third module, getting the first customer, focuses on the initial sales and marketing process needed to get the idea off the ground. Formerly offered as MGMT 3234.

### 3234. Opportunity Generation, Assessment, and Promotion

Three credits. Prerequisite: Open only to non-business students of junior or higher status. Not open to students who have passed or are taking MENT 3234. It is highly recommended that students take BADM 3740 or MENT 3101 and ACCT 2101 or BADM 2710 prior to BADM 3234.

A hands-on experience in opportunity development, exposing students to three distinct modules. The first, creativity and innovation, stimulates the flow of ideas. The second, feasibility analysis, runs these ideas through a comprehensive assessment framework. The third module, getting the first customer, focuses on the initial sales and marketing process needed to get the idea off the ground. May substitute for MENT 3234 for Business majors.

### 3235. Venture Planning, Management, and Growth

(Also offered as MENT 3235.) Three credits. Prerequisite: Open only to non-BUSN students of junior or higher status. Recommended preparation:

BADM or MENT 3234; BADM 3740 or MENT 3101; and ACCT or BADM 2101.

An exposure to multiple facets of starting and managing new ventures in a very hands-on fashion. The course involves an integration of business skills that are required for preparing and pitching new business plans. Formerly offered as MGMT 3235.

### **3235. Venture Planning, Management, and Growth**

Three credits. Prerequisite: Open only to non-BUSN students of junior or higher status. Not open to students who have passed or are taking MENT 3235. Recommended preparation: BADM or MENT 3234; BADM 3740 or MENT 3101; and ACCT 2101 or BADM 2710.

An exposure to multiple facets of starting and managing new ventures in a very hands-on fashion. The course involves an integration of business skills that are required for preparing and pitching new business plans. May substitute for MENT 3235 for Business majors.

### **3252. Corporate Social Responsibility and Accountability**

(Also offered as BLAW 3252, MKTG 3252, and HRTS 3252.) Three credits. Prerequisite: Open only to non-business students of junior or higher status. Not open to students who have passed or are taking HRTS 3252.

This course provides an introduction to the human rights implications of multinational enterprises' global operations. Students learn how to assess corporate social impact through a human rights framework, consider the challenges of regulating the human rights impacts of global business, analyze international policy responses, and evaluate the effectiveness of different approaches to enforcing human rights standards for corporations.

### **3253. Sustainability, Markets, and Society**

(Also offered as BLAW 3253 and MKTG 3253.) Three credits. Prerequisite: Open only to non-business students of junior or higher status.

This course examines sustainability in the context of the natural and social ecosystems in which business operates. Students learn how the environmental and related social impacts of business are affected by the interactions of firms with laws, institutions, markets, and society. Students assess firm sustainability policies and practices and examine innovations undertaken by different business functions and industries. Students practice developing ethically-aware policies to achieve sustainability and resilience and to generate positive environmental and social outcomes.

### **3254. Business Solutions for Societal Challenges**

(Also offered as BLAW 3254, MKTG 3254, and HRTS 3254.) Three credits. Prerequisite: Open only to non-business students of junior or higher status. Not open to students who have passed or are taking HRTS 3254.

This course provides an introduction to market-based solutions to social and human rights challenges. Students learn how to identify societal challenges from a human rights perspective and business's role in addressing these challenges. Students will assess the modalities that businesses can adopt to generate positive social impact

and will critically analyze business responses to societal challenges.

### **3260. Federal Income Taxes**

(Also offered as ACCT 3260.) Three credits. Prerequisite: ACCT 3201 or BADM 3201; open only to non-Business students of junior or higher status.

A study of the underlying concepts of federal income taxation. Emphasis to be placed upon the impact of taxes on business decisions.

### **3260. Federal Income Taxes**

Three credits. Prerequisite: ACCT 2001; open only to non-Business students of junior or higher status. Not open to students who have passed or are taking ACCT 3260.

A study of the underlying concepts of federal income taxation. Emphasis on the impact of taxes on business decisions. May substitute for ACCT 3260 for students who enter the School of Business.

### **3265. Volunteer Income Tax Assistance for Preparers**

(Also offered as ACCT 3265.) Two credits. Prerequisite: ACCT 2001; open only to non-business majors of sophomore or higher status.

IRS Certification in Basic Domestic and International Student and Scholar tax returns. Research and analyze current tax issues, interview a diverse group of real taxpayers, prepare real returns and respond to immediate feedback while working in a controlled setting under the supervision of a CPA. Students learn practical accounting and tax skills and procedures, while providing a valuable service to our community. Gives students the rare opportunity to gain technical industry experience in an academic environment. ACCT/BADM 4265 can be taken for one credit subsequent to ACCT/BADM 3265. Students in ACCT/BADM 4265 serve as qualified reviewers.

### **3274. Real Estate Law**

(Also offered as BLAW 3274.) Three credits. Prerequisite: BLAW 3175 or BADM 3720; open only to non-business students of junior or higher status.

This course provides an introduction to the legal and ethical aspects of real estate law. Students learn to explain and distinguish basic legal concepts related to ownership, real estate interests, real estate closings, brokerage, property management, financing methods, and taxation. Students gain practical experience navigating legal documents and performing a limited title search.

### **3301. Spreadsheet Modeling for Business Analysis**

(Also offered as OPIM 3301.) Three credits. Prerequisite: OPIM or BADM 3103; Open only to non-business majors of junior or higher status.

This course provides an introduction to business decision and data analysis with electronic spreadsheets in Excel, the primary quantitative analysis software in business environments. Modeling and decision techniques are covered in combination with Excel functions and tools. Applications in different business functional areas are also covered. Each student is required to bring a laptop installed with Microsoft Excel that can connect to the internet. Formerly offered as BADM/OPIM 3803.

### **3302. Data Visualization**

(Also offered as OPIM 3302.) Three credits. Prerequisite: OPIM or BADM 3103; Open only to non-business majors of junior or higher status.

Introduces the techniques and best practices in visualizing data. Examines cognitive function and its role in data visualization designs; showing that data visualization can reveal answers and questions alike. Utilizing state of the art software, the use of parameters, filters, calculated variables, color, space and motion to visually articulate the data are surveyed. The use of dashboards to quickly reveal data-driven information that has daily relevance to executives, managers, supervisors and line personnel are investigated. Each student is required to bring a laptop (with Windows or Mac OS) that can connect to the Internet and handle required software (see School of Business specifications). Formerly offered as BADM/OPIM 3804.

### **3370. Global Marketing Strategy**

(Also offered as MKTG 3370.) Three credits. Prerequisite: MKTG 3101 or BADM 3750; open only to non-business students of junior or higher status.

This course focuses on developing sound marketing strategies in the global marketplace. Students learn to uncover and assess global market opportunities; analyze challenges and solutions posed by cultural, economic, and political differences; and develop effective international marketing strategies considering legal, ethical, and social sustainability issues. Students gain experience conducting research on global markets and applying their knowledge in complex business settings.

### **3403. UX / UI Design**

(Also offered as OPIM 3403.) Three credits. Prerequisite: OPIM or BADM 3401; Open only to non-business majors of junior or higher status.

Discusses the concepts of gamification and how to apply design thinking in a business setting. This course is practically oriented with a focus of applying user interface (UI) and user experience (UX) design. Various gamification concepts are discussed including prototyping, iterative design, and digital platform implementation. The use of point systems, digital badging, and leaderboards to engage users will be investigated. Formerly offered as OPIM 3805.

### **3452. Professional Selling**

(Also offered as MKTG 3452.) Three credits. Prerequisite: MKTG 3101 or BADM 3750; open only to non-business students of junior or higher status.

This course provides an introduction to the role of professional selling in generating customer demand and delivering compelling customer experiences as part of the marketing mix. Students learn concepts and skills to create mutual value at each stage of the sales process, with a focus on business-to-business marketing contexts. Students gain experience interacting virtually with clients and colleagues and practice these skills in an integrated manner to win orders for an organization.

### **3454. Sales Management and Leadership**

(Also offered as MKTG 3454.) Three credits. Prerequisite: MKTG 3101 or BADM 3750; open only to non-business students of junior or higher status.

This course provides an introduction to sales force management. Students learn to effectively work within, manage, and ultimately lead in a dynamic sales force environment from the perspectives of sales operations, sales management, sales strategy, and sales leadership. Students gain experience in executing practical selling and engagement techniques in a professional selling situation.

### **3603. Project Management and Planning**

(Also offered as OPIM 3603.) Three credits. Prerequisite: Open only to non-business majors of junior or higher status. Credit will not be given if OPIM 5270 has been taken to fulfill undergraduate degree requirements.

Provides an introduction to the concepts necessary for both project managers and project team members to deliver successful projects on time, on budget and in scope. The phases and knowledge areas of project management, as defined by the Project Management Institute (PMI), are covered as well as the tools and techniques in each area for successful project management. An introduction to Microsoft Project software will also be covered. Formerly offered as BADM/OPIM 3801.

### **3625. Integrated Marketing Communications in the Digital Age**

(Also offered as MKTG 3625.) Three credits. Prerequisite: MKTG 3101 or BADM 3750; open only to non-business students of junior or higher status.

This course provides an introduction to the design, coordination, integration, and management of marketing communications in the digital age. Students learn how advertising aligns with companies' strategic goals and to develop and evaluate media strategies. Students gain experience critiquing and developing key aspects of integrated marketing communications campaigns using traditional, social, and mobile media.

### **3660. International Business Law**

(Also offered as BLAW 3660.) Three credits. Prerequisite: BLAW 3175 or BADM 3720; open only to non-business students of junior or higher status.

This course provides an introduction to the legal and ethical environment of international business. Students learn the foundations of the international legal system, contrast laws and values of selected regions and countries, examine international treaties and entities, identify the law applicable to international trade and business transactions, distinguish rules and procedures governing international dispute resolution, and evaluate the impact of these factors on global business operations. Students gain experience negotiating and drafting international contracts.

### **3661. Marketing and Digital Analytics**

(Also offered as MKTG 3661.) Three credits. Prerequisite: MKTG 3101 or BADM 3750; open only to non-business students of junior or higher status.

This course provides an advanced understanding of how to analyze data to gain insights in digital marketing. Students learn to select appropriate analytical tools, conduct analyses, and extract insights from data analysis to support managerial decision making. Students gain hands-on

computer-based experience with basic and advanced analytical tools, analyzing digital data sets, and making marketing decisions.

### **3665. Digital Marketing**

(Also offered as MKTG 3665.) Three credits. Prerequisite: MKTG 3101 or BADM 3750; open only to non-business students of junior or higher status.

This course provides an introduction to digital marketing strategies. Students learn to align digital marketing strategies with companies' overall marketing goals, and to understand the major tools of digital marketing, such as web research, analytics, search engine optimization, online ads, and social media. Students gain experience developing, implementing, and evaluating digital marketing strategies.

### **3673. Corporate Governance and Business Organizations**

(Also offered as BLAW 3673.) Three credits. Prerequisite: BLAW 3175 or BADM 3720; open only to non-business majors of junior or higher status.

This course provides an advanced understanding of the legal, ethical, and public policy aspects of managing business organizations. Students learn how legal rules are used to establish a business organization; facilitate corporate decision making; manage the rights and duties of officers, directors, and shareholders; address financial, operational, and enterprise risks; execute corporate transactions; and ensure corporate integrity and responsibility. Students gain experience advising and assessing companies from the perspective of a manager, auditor, and investor.

### **3677. The Law of Business Transactions**

(Also offered as BLAW 3677.) Three credits. Prerequisite: BLAW 3175 or BADM 3720; open only to non-Business students of junior or higher status. Not open to students who have passed or are taking BLAW 3277.

This course provides an introduction to the law that shapes and guides commercial transactions. Students learn to understand and apply the legal rules governing contract formation, contract performance and breach, bankruptcy, and personal property, among other areas.

### **3678. Intellectual Property Law and Ethics in the Digital Age**

(Also offered as BLAW 3678.) Three credits. Prerequisite: BLAW 3175 or BADM 3720; open only to non-business students of junior or higher status.

This course provides an introduction to the legal and ethical environment of digital media. Students learn to apply intellectual property law and other legal concepts as they pertain to contemporary media and communication. Students gain experience identifying and solving legal and ethical dilemmas encountered by digital media and technology firms and to evaluate the global legal implications of digital media use.

### **3681. Legal Aspects of Entrepreneurship**

(Also offered as BLAW 3681.) Three credits. Prerequisite: BLAW 3175 or BADM 3720; open only to non-business students of junior or higher status.

This course provides an introduction to legal and ethical issues affecting new and growing

businesses. Students learn to distinguish and choose between legal forms for the business, identify, evaluate, and protect against legal risk inherent in starting, running, expanding and liquidating a business. Students gain experience protecting valuable assets by legal means.

### **3720. The Legal and Ethical Environment of Business**

(Also offered as BLAW 3175.) Three credits. Prerequisite: Open only to non-Business students of sophomore or higher status. May not be taken out of sequence after passing BADM/BLAW 3274, 3660, or BLAW 3277.

This course provides an introduction to law, ethics, and social responsibility, and the foundation for advanced business law electives. Students learn to evaluate the impact of the legal and regulatory system on business operations, consider the role and functioning of legal institutions, and apply legal rules such as the Uniform Commercial Code to anticipate and avoid liability. Students gain experience identifying and solving legal and ethical problems using analytical tools.

### **3730. Financial Management**

Three credits. Prerequisite: ACCT 2001; ECON 1200 or both ECON 1201 and 1202; MATH 1070Q, 1071Q, 1120Q, 1121Q, 1125Q, 1126Q, 1131Q, or 1151Q; STAT 1000Q or 1100Q; open only to non-Business students of junior or higher status. Not open for credit to students who have passed or are taking FNCE 3101.

An introductory examination of how a business plans its needs for funds, raises the necessary funds, and invests them to attain its goals. Will not substitute for FNCE 3101 for students who enter the School of Business. May not be used to satisfy Junior-Senior level major requirements of the School of Business.

### **3740. Managerial and Interpersonal Behavior**

Three credits. Prerequisite: Open to juniors or higher. Not open to students who have passed or are taking MENT 3101.

Topics covered include individual work motivation, interpersonal communications in organizations, team building and group processes, leadership, decision-making, and understanding and managing cultural diversity. Classes will emphasize interpersonal and leadership skill-building through the inclusion of exercises which rely on active participation of class members. May substitute for MENT 3101 for Business majors.

### **3741. Foundations of Venture Capital**

(Also offered as MENT 3741.) Three credits. Prerequisite: Open only to non-business students of sophomore or higher status.

This course introduces students to venture capital investing, one of the primary ways that early-stage entrepreneurial firms acquire funding for growth. This interdisciplinary course requires no prior knowledge and seeks to nurture interest and enthusiasm for venture capital investing and entrepreneurship. Students learn the structure of the venture capital industry, how venture firms operate, and key components of venture deals. The course helps students assess whether participation in Hillside Ventures – UConn's student-led venture investing fund might be part of their UConn career.

**3742. Venture Investment Sourcing and Analysis**

(Also offered as MENT 3742.) Three credits. Prerequisite: Open only to non-business majors of junior or higher status. Consent of instructor and Department Head required. Recommended preparation: MENT 3741 or BADM 3741.

Students learn to apply venture investment concepts and tools by engaging in real venture investing as part of Hillside Ventures – UConn's student-led venture investing fund. The course teaches students skills for sourcing potential deals, communicating with founders, and completing multi-faceted analyses of each opportunity. Students learn from industry experts and build their own network of founders, investors, and topic experts to support their hands-on skill development.

**3750. Introduction to Marketing Management**

(Also offered as MKTG 3101.) Three credits. Prerequisite: C in ACCT 2001; ECON 1200 or 1201/1202; ENGL 1007/1010/1011/2011; MATH 1070/1071, or 1131 and 1070/1132, or 1125,1126 and 1132/1070; STAT 1000 or 1100; open to non-BUSN jrs+. No out of sequence BADM 3625, 3753, 3757.

This course provides an introduction to key marketing principles and the foundation for advanced marketing electives. Students learn to explain the role of marketing in organizations, evaluate strategies and formulate recommendations. Students gain experience in using data to develop and effectively communicate marketing decisions.

**3753. Entrepreneurial Marketing**

(Also offered as MKTG 3753.) Three credits. Prerequisite: MKTG 3101 or BADM 3750; open only to non-business students of junior or higher status.

This course provides an introduction to the role of marketing in introducing new products and services. Students learn to assess market potential, develop marketing strategies, and make decisions with limited resources and under market uncertainty.

**3757. Strategic Brand Management**

(Also offered as MKTG 3757.) Three credits. Prerequisite: MKTG 3101 or BADM 3750; open only to non-business students of junior or higher status.

This course provides an introduction to building, leveraging, and enhancing brand equity and making strategic brand decisions. Students learn to design brands, build brand communities, measure brand performance, manage a brand portfolio, and conduct brand assessments.

**3801. Principles of Project Management**

Three credits. Prerequisite: Open only to non-business majors of junior or higher status. Credit will not be given if OPIM 5270 has been taken to fulfill undergraduate degree requirements. Not open to students who have taken or are taking OPIM 3801.

Provides an introduction to the concepts necessary for both project managers and project team members to deliver successful projects on time, on budget and in scope. The phases and knowledge areas of project management, as defined by the Project Management Institute (PMI), are covered as well as the tools and techniques in

each area for successful project management. An introduction to Microsoft Project software will also be covered.

**3802. Data and Text Mining**

Three credits. Prerequisite: STAT 1000Q or 1100Q, or equivalent; open only to non-business majors junior or higher, or permission of Dept. Head. No credit if OPIM 5604 was taken to fulfill undergrad degree. Not open to students who have taken or are taking OPIM 3802.

Provides an introduction to the concepts of data and text mining and positions students to structure and successfully complete information analytics projects. Various concepts and approaches are analyzed and subsequently implemented using state-of-the-art analytic toolsets. Each student is required to bring a laptop (with Windows or Mac OS) that can connect to the internet and handle required software (see School of Business specifications).

**3803. Spreadsheet Modeling for Business Analysis**

Three credits. Prerequisite: OPIM 3103 or corequisite BADM 3103, or instructor consent; open only to non-business majors of junior or higher status, others with permission of Department Head. Not open to students who have taken or are taking OPIM 3803.

This course provides an introduction to business decision and data analysis with electronic spreadsheets in Excel, the primary quantitative analysis software in business environments. Modeling and decision techniques are covered in combination with Excel functions and tools. Applications in different business functional areas are also covered. Each student is required to bring a laptop installed with Microsoft Excel that can connect to the internet.

**3804. Data Visualization**

Three credits. Prerequisite: OPIM 3103 or corequisite BADM 3103, or instructor consent; open to non-business majors juniors or higher. Not open to students who have taken or are taking OPIM 3804.

Introduces the techniques and best practices in visualizing data. Examines cognitive function and its role in data visualization designs; showing that data visualization can reveal answers and questions alike. Utilizing state of the art software, the use of parameters, filters, calculated variables, color, space and motion to visually articulate the data are surveyed. The use of dashboards to quickly reveal data-driven information that has daily relevance to executives, managers, supervisors and line personnel are investigated. Each student is required to bring a laptop (with Windows or Mac OS) that can connect to the Internet and handle required software (see School of Business specs).

**4243. Assurance Services**

(Also offered as ACCT 4243.) Three credits. Prerequisite: BADM 3202 or ACCT 3202; open only to non-Business students of junior or higher status.

Focuses on issues relevant to the public accounting profession, such as legal liability and ethics, audit risk analysis, planning of audit engagements, audit reports, and other assurance services and reports. Students will learn to think critically about issues facing the accounting

profession, primarily by analyzing cases and completing a number of individual and group research projects.

**4243. Assurance Services**

Three credits. Prerequisite: BADM 3202 or ACCT 3202; open only to non-Business students of junior or higher status. Not open to students who have passed or are taking ACCT 4243.

Focuses on issues relevant to the public accounting profession, such as legal liability and ethics, audit risk analysis, planning of audit engagements, audit reports, and other assurance services and reports. Students will learn to think critically about issues facing the accounting profession, primarily by analyzing cases and completing a number of individual and group research projects. May substitute for ACCT 4243 for students who enter the School of Business.

**4265. Volunteer Income Tax Assistance for Reviewers**

One credit. Prerequisite: ACCT 3265 or BADM 3265; open only to non-business majors of sophomore or higher status. Not open for credit for students in or who have completed ACCT 4265.

Advanced IRS Certification in Domestic and International Student and Scholar tax returns. Research and analyze current tax issues on an advanced level, with supervisory responsibility, while working in a controlled setting under the supervision of a CPA. Students develop mentoring skills as well as supplement practical accounting and tax skills, while providing a valuable service to our community. Gives students the rare opportunity to gain technical industry experience in an academic environment.

**4741. Advanced Venture Investing**

(Also offered as MENT 4741.) Three credits. Prerequisite: MENT 3742 or BADM 3742; open only to non-business students of junior or higher status; consent of instructor and Department Head required. May be repeated for a total of 6 credits.

This course strengthens students' understanding of what constitutes a quality venture capital investment opportunity through their role in Hillside Ventures – UConn's student-led venture investing fund. Members in this class lead teams through the venture investment cycle including sourcing investment opportunities, evaluating growth potential, completing due diligence assessments, and developing and finalizing deal terms.

**4742. Leading a Venture Fund**

(Also offered as MENT 4742.) Three credits. Prerequisite: MENT 4741 or BADM 4741; open only to non-business majors of junior or higher status; consent of instructor and Department Head required. May be repeated for a total of 6 credits.

These students lead in all phases of managing a student-led venture capital fund including designing processes and structures for making high quality investments, leading student peers, and communicating with external constituencies.

**4881. Internship in Business Administration**

Variable (1-6) credits. Prerequisite: Open to juniors or higher; consent of the Associate Dean for Undergraduate Programs required. May be repeated for credit.

Provides students with an opportunity for a supervised internship relevant to one or more major

areas within the School. Students will work under the supervision of one or more professionals in the specialty in question. Student performance will be evaluated on the basis of an appraisal by the field supervisor and a detailed written report, submitted by the student. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

#### **4882. Practicum in Professional Sales**

(Also offered as MKTG 4882.) Three credits. Prerequisite: MKTG 3101 or BADM 3750 and consent of instructor; open only to non-business majors of junior or higher status.

Course credit for a professional sales internship. Students are responsible for obtaining an internship with a host company in the field of professional sales. Student performance will be evaluated based on an appraisal by the host company and a detailed written report submitted by the student. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

#### **4893. Foreign Study**

Variable (1-6) credits. Prerequisite: Open to juniors or higher. May be repeated for credit.

Special topics taken in a foreign study program.

#### **4895. Special Topics**

Variable (1-6) credits. Prerequisite: Announced separately for each course offering; not open to students in the School of Business; open to juniors or higher. May be repeated for credit.

Classroom course in special topics in business administration as announced in advance for each semester. With a change in content, may be repeated for credit. May not be used to satisfy Junior-Senior level major requirements of the school of Business.

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## **Business Law (BLAW)**

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#### **2238. Legal Aspects of Name, Image, and Likeness Representation**

(Also offered as BADM 2238.) Three credits. Prerequisite: Open only to business majors.

The legal and ethical environment of Name, Image and Likeness Representation (NIL). The role of contract law, data privacy and integrity, trademark and intellectual property law, and the principal-agent relationship. Legal and regulatory questions related to Federal Trade Commission rules, laws regulating false and misleading advertising as well as rules specific to celebrity endorsements will also be discussed. Ethical issues related to NIL will be explored.

#### **3175. The Legal and Ethical Environment of Business**

(Also offered as BADM 3720.) Three credits. Prerequisite: Open only to business majors of sophomore or higher status. May not be taken out of sequence after passing BLAW 3274, 3277 or 3660.

This course provides an introduction to law, ethics, and social responsibility, and the foundation for advanced business law electives. Students learn to evaluate the impact of the legal and regulatory system on business operations, consider the role and functioning of legal institutions, and apply legal rules such as the Uniform Commercial Code to anticipate and avoid liability. Students gain experience identifying and solving legal and ethical problems using analytical tools.

#### **3252. Corporate Social Responsibility and Accountability**

(Also offered as BADM 3252, MKTG 3252, and HRTS 3252.) Three credits. Prerequisite: Open only to business students of junior or higher status. Not open to students who have passed or are taking HRTS 3252.

This course provides an introduction to the human rights implications of multinational enterprises' global operations. Students learn how to assess corporate social impact through a human rights framework, consider the challenges of regulating the human rights impacts of global business, analyze international policy responses, and evaluate the effectiveness of different approaches to enforcing human rights standards for corporations.

#### **3253. Sustainability, Markets, and Society**

(Also offered as BADM 3253 and MKTG 3253.) Three credits. Prerequisite: Open only to business majors of junior or higher status.

This course examines sustainability in the context of the natural and social ecosystems in which business operates. Students learn how the environmental and related social impacts of business are affected by the interactions of firms with laws, institutions, markets, and society. Students assess firm sustainability policies and practices and examine innovations undertaken by different business functions and industries. Students practice developing ethically-aware policies to achieve sustainability and resilience and to generate positive environmental and social outcomes.

#### **3254. Business Solutions for Societal Challenges**

(Also offered as BADM 3254, MKTG 3254, and HRTS 3254.) Three credits. Prerequisite: Open only to Business students of junior or higher status. Not open to students who have passed or are taking HRTS 3254.

This course provides an introduction to market-based solutions to social and human rights challenges. Students learn how to identify societal challenges from a human rights perspective and business's role in addressing these challenges. Students will assess the modalities that businesses can adopt to generate positive social impact and will critically analyze business responses to societal challenges.

#### **3274. Real Estate Law**

(Also offered as BADM 3274.) Three credits. Prerequisite: BLAW 3175 or BADM 3720; open only to business majors of junior or higher status.

This course provides an introduction to the legal and ethical aspects of real estate law. Students learn to explain and distinguish basic legal concepts related to ownership, real estate interests, real estate closings, brokerage, property management, financing methods, and taxation. Students gain practical experience navigating legal documents and performing a limited title search.

#### **3277. Law and Ethics for Professional Accountants**

Three credits. Prerequisite: BLAW 3175 or BADM 3720; open only to business majors of junior or higher status.

This course provides an introduction to the legal and professional liability of accountants,

ethical reasoning, integrity, and other core values of accounting institutions. Students learn to understand and apply the legal rules governing contract formation, contract performance, breach, bankruptcy, and the Uniform Commercial Code. Students gain experience in legal and ethical decision making in commercial transactions

#### **3660. International Business Law**

(Also offered as BADM 3660.) Three credits. Prerequisite: BLAW 3175 or BADM 3720; open only to business majors of junior or higher status.

This course provides an introduction to the legal and ethical environment of international business. Students learn the foundations of the international legal system, contrast laws and values of selected regions and countries, examine international treaties and entities, identify the law applicable to international trade and business transactions, distinguish rules and procedures governing international dispute resolution, and evaluate the impact of these factors on global business operations. Students gain experience negotiating and drafting international contracts.

#### **3673. Corporate Governance and Business Organizations**

(Also offered as BADM 3673.) Three credits. Prerequisite: BLAW 3175 or BADM 3720; open only to business majors of junior or higher status.

This course provides an advanced understanding of the legal, ethical, and public policy aspects of managing business organizations. Students learn how legal rules are used to establish a business organization; facilitate corporate decision making; manage the rights and duties of officers, directors, and shareholders; address financial, operational, and enterprise risks; execute corporate transactions; and ensure corporate integrity and responsibility. Students gain experience advising and assessing companies from the perspective of a manager, auditor, and investor.

#### **3677. The Law of Business Transactions**

(Also offered as BADM 3677.) Three credits. Prerequisite: BLAW 3175 or BADM 3720; open only to Business majors of junior or higher status. Not open to students who have passed or are taking BLAW 3277.

This course provides an introduction to the law that shapes and guides commercial transactions. Students learn to understand and apply the legal rules governing contract formation, contract performance and breach, bankruptcy, and personal property, among other areas.

#### **3678. Intellectual Property Law and Ethics in the Digital Age**

(Also offered as BADM 3678.) Three credits. Prerequisite: BLAW 3175 or BADM 3720; open only to business majors of junior or higher status.

This course provides an introduction to the legal and ethical environment of digital media. Students learn to apply intellectual property law and other legal concepts as they pertain to contemporary media and communication. Students gain experience identifying and solving legal and ethical dilemmas encountered by digital media and technology firms and to evaluate the global legal implications of digital media use.

**3681. Legal Aspects of Entrepreneurship**

(Also offered as BADM 3681.) Three credits. Prerequisite: BLAW 3175 or BADM 3720; open only to business majors of junior or higher status.

This course provides an introduction to legal and ethical issues affecting new and growing businesses. Students learn to distinguish and choose between legal forms for the business, identify, evaluate, and protect against legal risk inherent in starting, running, expanding and liquidating a business. Students gain experience protecting valuable assets by legal means.

**4881. Internship in Business Law**

Three credits. Prerequisite: BLAW 3175 or BADM 3720 and consent of instructor; open only to business majors of junior or higher status.

Internship with a host organization in the field of law, ethics, corporate social responsibility, sustainability, or public policy. Student performance will be evaluated on the basis of an appraisal by the host organization and a detailed written report submitted by the student. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

**4893. Foreign Study**

Variable (1-6) credits. Prerequisite: Open to juniors or higher. May be repeated for a total of 6 credits.

Special topics taken in a foreign study program.

**4895. Special Topics**

Variable (1-6) credits. Prerequisite: Prerequisites and recommended preparation vary by section; open only to business majors of junior or higher status. May be repeated for credit.

Classroom course in special topics in law as announced in advance for each semester. With a change in content may be repeated for credit.

**4899. Independent Study**

Three credits. Prerequisite: Open only to business majors of junior or higher status.

Individual study of special topics as mutually arranged between student and instructor.

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## Chemical Engineering (CHEG)

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**1200. Introduction to Food Science and Engineering**

Three credits. Prerequisite: Not open to ENGR or CHEG students. Recommended preparation: High school algebra and chemistry.

Introduction to the chemistry and engineering concepts related to the commercial and personal preparation of various foodstuffs, including meats, dairy, baking, and beverages. In-class demonstration and small laboratory projects. CA 3.

**2103. Introduction to Chemical Engineering**

Three credits. Prerequisite: CHEM 1128, or CHEM 1125 and 1126; MATH 1132. Recommended preparation: CSE 1010.

Application of the principles of chemistry and physics to chemical processes; units, dimensions, and process variables; material balances; equations of state (ideal and real); single component equilibria; energy balances; non reactive and reactive processes; combined mass and energy balances.

**2111. Chemical Engineering Thermodynamics I**

Three credits. Recommended preparation: MATH 2110, CHEM 1128, and CHEG 2103, or consent of Chemical Engineering Program Director.

First and second law of thermodynamics; thermal and PVT properties of matter; exact differentials and thermodynamic identities; design and analysis of power cycles; analysis of refrigeration and liquefaction processes.

**2193. International Study**

Variable (1-6) credits. Prerequisite: Consent of Department Head or Designee required, normally to be granted prior to the student's departure. May be repeated for a total of 6 credits.

Special engineering topics taken in an international study program. May count toward the major with consent of the advisor and approved plan of study.

**2201. Chemical Engineering Professional Skills I**

One credit. Prerequisite: CHEM 1128Q, or CHEM 1125Q and 1126Q; MATH 1132Q; open only to Chemical Engineering students.

Professional skills necessary to succeed in the chemical engineering industry: written and oral technical communication; working on diverse and inclusive teams. The complexity of these skills will build over CHEG 2201, 3201, and 4101.

**3112. Chemical Engineering Thermodynamics II**

Three credits. Prerequisite: CHEG 2111; MATH 2410Q; open only to School of Engineering students.

Properties and phase equilibria for ideal and non-ideal mixtures; design of equilibrium flash separators; phase equilibria using equations of state; chemical equilibria; optimum conditions for chemical reactions; applications include chemical, electrochemical and biochemical systems.

**3120. Transport Phenomena I**

Four credits. Prerequisite: MATH 2110Q and 2410Q; CHEM 1128Q; CHEG 2103 and 2111; open only to School of Engineering students.

Overall mass, energy, and momentum balances; fluid flow phenomena; theoretical and empirical relationships for design of incompressible fluid-flow systems. Conductive heat transfer; heat transfer coefficients and design of heat exchange systems. Radiation heat transfer, evaporation.

**3123. Fluid Mechanics**

Three credits. Prerequisite: MATH 2110Q and 2410Q; CHEM 1128Q; CHEG 2103; open only to School of Engineering students.

Overall mass, energy, and momentum balances; fluid flow phenomena; theoretical and empirical relationships for design of incompressible fluid-flow systems.

**3124. Heat and Mass Transfer**

Three credits. Prerequisite: CHEG 3123 and MATH 2410Q. Corequisite: CHEG 3128, 3151; open only to School of Engineering students.

Conductive heat transfer; heat transfer coefficients and design of heat exchange systems. Radiation heat transfer, evaporation; design of mass transfer processes including distillation and extraction; analysis and design of diffusional processes such as gas absorption and humidification. Analytical and numerical methods

for the solution of simple partial differential equations describing transport phenomena.

**3127. Fluid Mechanics Laboratory**

One credit. Prerequisite: Enrollment in the School of Engineering.

Provides hands-on experience with fluid mechanics phenomenon, including generation of pump curves, frictional losses in pipes, viscous forces versus inertial forces, and laminar versus turbulent flow regimes.

**3128. Chemical Engineering Junior Laboratory**

Two credits. Prerequisite: CHEG 3123; open only to School of Engineering students. Corequisite: CHEG 3124 and 3151.

Provides hands-on experience with heat, mass, and kinetics processes, including steady-state heat transfer, transient heat transfer, membrane separation, liquid-phase reaction kinetics, gas-phase polymerization kinetics, and microfluidic devices.

**3145. Chemical Engineering Analysis**

Three credits. Prerequisite: CHEG 2103 and MATH 2110Q and 2410Q; open only to School of Engineering students.

Mathematical and numerical methods for solving engineering problems; description and computer modeling of physical and chemical processes with ordinary and partial differential equations; treatment and interpretation of engineering data.

**3151. Process Kinetics**

Three credits. Prerequisite: CHEG 3112; open only to School of Engineering students. Corequisite: CHEG 3124, 3128.

Theory of chemical rate; homogeneous, heterogeneous and catalytic systems. Analysis and design of batch and flow reaction systems; analysis of rate data; temperature and catalytic effects in reactor design; mass transport effects; non-ideal reactor design.

**3156. Polymeric Materials**

(Also offered as MSE 3156.) Three credits. Prerequisite: Open only to School of Engineering students. Recommended preparation: CHEM 2444. Not open to students who have passed CHEM 3661.

Structure, properties, and chemistry of high polymers; solution and phase behavior; physical states, viscoelasticity and flow; production and polymer processing; design of polymers for specific applications.

**3173. Introduction to Biochemical Engineering**

Three credits. Prerequisite: CHEG 3151; open only to School of Engineering students.

Enzyme and fermentation technology; microbiology, biochemistry, and cellular concepts; biomass production; equipment design, operation, and specification; design of biological reactors; separation processes for bio-products.

**3193. International Study**

Variable (1-6) credits. Prerequisite: Department consent required. May be repeated for a total of 6 credits.

Special engineering topics taken in an international study program.

**3220. Transport Phenomena II**

Four credits. Prerequisite: CHEG 3120 and 3112; MATH 2410Q; open only to School of Engineering students.

Analysis and design of separation processes including distillation and extraction with graphical and computational solution approaches; Analytical and numerical methods for the solution of simple partial differential equations describing transport phenomena.

**3240. Junior Design and Process Safety**

Three credits. Prerequisite: Junior standing; CHEG 2103, 2111, 3112 and 3120.

Introduction to the design of chemical engineering processes and/or products. Major topics include comparison of alternative processing steps, cost estimation and economic analysis, safety and environmental concerns in design, and ethical and societal considerations.

**4137W. Chemical Engineering Laboratory**

Three credits. Prerequisite: CHEG 3112, 3123 and 3124; ENGL 1007 or 1010 or 1011 or 2011.

Open-ended laboratory investigations in chemical engineering focusing on fluid mechanics, heat transfer, thermodynamics, and combined heat and mass transfer; emphasis on student teamwork and on design of experiments to meet objectives; technical report writing; oral presentations.

**4139. Chemical Engineering Senior Laboratory**

Two credits. Prerequisite: CHEG 3112; CHEG 3123; CHEG 3124; open only to Chemical Engineering majors. Recommended preparation: CHEG 3151, 4137 and 4147.

Open-ended laboratory investigations in chemical engineering focusing on reaction kinetics, reactor design, process control, and mass transfer; emphasis on student teamwork and on design of experiments to meet objectives; technical report writing; oral presentations.

**4140. Chemical Engineering Capstone Design I**

Three credits. Prerequisite: CHEG 3112, 3123, 3124, and 3151; open only to Chemical Engineering majors. Corequisite: CHEG 4142

Theoretical treatment and design of chemical engineering processes and/or products. Comparison of alternative processing steps; instrumentation; cost estimation; economic analysis; process optimization; safety and environmental concerns in design; ethical considerations in chemical engineering design. Emphasis on the application of chemical engineering principles to conceptual design.

**4142. Unit Operations and Process Simulation**

Three credits. Prerequisite: Open only to School of Engineering students. Corequisite: CHEG 4140.

Design and analysis of chemical engineering unit operations and process equipment, computer-aided design of equipment and flow sheets; design and analysis of complete process plants. Computer-based simulation of chemical engineering processes and integration of multiple processes into a holistic plant design using modern chemical engineering process design tools.

**4143W. Chemical Engineering Capstone Design II**

Three credits. Prerequisite: CHEG 4140 and 4142; ENGL 1007 or 1010 or 1011 or 2011;

open to juniors or higher; open only to Chemical Engineering majors.

Continuation of work on chemical process and simulation projects assigned in CHEG 4140. Group work, written and oral communication, and presentation of the final project, which analyzes a chemical process from technical, economic, safety, and environmental perspectives.

**4144. In Silico Chemical Engineering Senior Laboratory**

Two credits. Prerequisite: CHEG 3112, 3220, 3240; open only to Chemical Engineering majors.

Various computation tools and software used to approximate the solution of chemical engineering problems focusing on reaction kinetics, reactor design, process control, fluid, and mass transfer; for data analysis and visualization; emphasis on student teamwork and on use of computational tools and software to meet the course objectives.

**4147. Process Dynamics and Control**

Three credits. Prerequisite: CHEG 3112 and 3124 and MATH 2110 and 2410; open only to School of Engineering students.

Chemical process modeling, dynamics, and analysis. Measurement and control of process variables, design, and computer simulation of simple processes and control systems.

**4989. Introduction to Research**

Variable (1-6) credits. Prerequisite: Instructor consent; open only to School of Engineering students. May be repeated for credit.

Methods of conducting research; design of laboratory investigations and experiments; correlation and interpretation of experimental results; writing of formal, technical reports; oral presentations; independent student effort, initiative and resourcefulness are required.

**4995. Special Topics in Chemical Engineering**

Variable (1-6) credits. Prerequisite: Announced separately for each course; open only to School of Engineering students. May be repeated for credit.

A classroom course on special topics as announced.

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## Chemistry (CHEM)

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**1122. Chemical Principles and Applications**

Four credits. Prerequisite: Not open to students who have passed CHEM 1124. May not be taken out of sequence after passing CHEM 1127Q or 1137Q or 1147Q.

Brief but comprehensive survey of important chemical theories and applications of chemistry. Preparation for one-semester courses in organic chemistry and biochemistry. Atomic structures, chemical bonding, chemical reactions, stoichiometry, states of matter, and theories of solutions. Does not fulfill the two-semester general chemistry requirement for majors in biology, chemistry, pharmacy, physics and agriculture and natural resources. Does not satisfy the admission requirements of medical and dental schools. CA 3-LAB.

**1124Q. Fundamentals of General Chemistry I**

Four credits. Prerequisite: Not open to students who have passed CHEM 1127Q, 1137Q, or 1147Q. Students who have passed CHEM 1122 will receive only two credits, but four credits will

be used for calculating the GPA. Recommended preparation: MATH 1011Q or equivalent.

The first semester of a 3-semester sequence that is designed to provide a foundation for the principles of chemistry with special guidance provided for the quantitative aspects of the material. Topics include the physical and chemical properties of some elements, chemical stoichiometry, gases, atomic theory and covalent bonding. CA 3-LAB.

**1125Q. Fundamentals of General Chemistry II**

Three credits. Prerequisite: CHEM 1124Q; Open by consent of instructor for 1 credit to students who have passed CHEM 1127, 1137 or 1147. Not open to students who have passed CHEM 1128, 1138 or 1148.

Follows CHEM 1124Q. Topics include the properties of aqueous solutions and chemical equilibria.

**1126Q. Fundamentals of General Chemistry III**

Three credits. Prerequisite: CHEM 1125Q; not open to students who have passed CHEM 1128, 1138 or 1148.

Follows CHEM 1125Q. Topics include the properties of kinetics, complex ions, thermodynamics and electrochemistry.

**1127Q. General Chemistry I**

Four credits. Prerequisite: May not be taken out of sequence after passing CHEM 1124Q, 1137Q, 1147Q. Students who have passed CHEM 1122 will receive only 2 credits but 4 credits will be used for calculating the GPA. Repeat restrictions apply; see [advising.uconn.edu/repeat-policy](http://advising.uconn.edu/repeat-policy) for more information.

Designed to provide a foundation for more advanced courses in chemistry. Atomic theory, laws and theories concerning the physical and chemical behavior of gases, liquids, solids, and solutions. Quantitative measurements illustrating the laws of chemical combination in the laboratory component. CA 3-LAB.

**1128Q. General Chemistry II**

Four credits. Prerequisite: CHEM 1127Q, 1137Q, or 1147Q. Not open to students who have passed CHEM 1126Q or 1138Q or 1148Q.

Equilibrium, thermodynamics, nuclear chemistry, and kinetics. Properties of some of the more familiar elements and their compounds. Equilibrium in solutions and reactions of the common cations and anions in the laboratory component. CA 3-LAB.

**1137Q. Enhanced General Chemistry I**

Four credits. Prerequisite: Not open for credit to students who have passed CHEM 1124Q or 1127Q or 1147Q. May not be taken out of sequence after passing CHEM 1138Q. Students who have passed CHEM 1122 will receive only two credits but four credits will be used for calculating the GPA.

Designed to provide a foundation for more advanced courses in chemistry. Atomic theory, laws and theories concerning the physical and chemical behavior of gases, liquids, solids, and solutions. Quantitative measurements illustrating the laws of chemical combination in the laboratory component. Primarily for majors in chemistry and related disciplines; can be used as an alternate wherever CHEM 1127Q is listed as a prerequisite. CA 3-LAB.

**1138Q. Enhanced General Chemistry II**

Four credits. Prerequisite: CHEM 1127Q, 1137Q, or 1147Q. Not open to students who have passed CHEM 1126Q or 1128Q or 1148Q.

Equilibrium, thermodynamics, nuclear chemistry and kinetics. Properties of some of the more familiar elements and their compounds. Equilibrium in solutions and reactions of the common cations and anions in the laboratory component. Can be used as an alternate wherever 1128Q is listed as a prerequisite. CA 3-LAB.

**1147Q. Honors General Chemistry I**

Four credits. Prerequisite: Open to Honors students, others with consent. Not open for credit to students who have passed CHEM 1124Q or 1127Q or 1137Q. Students who have passed CHEM 1122 will receive only two credits but four credits will be used for calculating the GPA.

Designed to provide a foundation for more advanced courses in chemistry. Atomic theory, laws and theories concerning the physical and chemical behavior of gases, liquids, solids, and solutions. Quantitative measurements illustrating the laws of chemical combination in the laboratory component. Considerable personal initiative will be demanded of students in carrying out the laboratory assignments. Designed primarily for exceptionally well-prepared science and engineering students, although any qualified honors student may take it; can be used as an alternate wherever CHEM 1127Q is listed as a prerequisite. CA 3-LAB.

**1148Q. Honors General Chemistry II**

Four credits. Prerequisite: CHEM 1147Q; or consent of instructor; designed primarily for exceptionally well-prepared science and engineering students, although any qualified honors student may take it. Not open to students who have passed CHEM 1126Q or 1128Q or 1138Q.

Equilibrium, thermodynamics, nuclear chemistry and kinetics. Properties of some of the more familiar elements and their compounds. Equilibrium in solutions and reactions of the common cations and anions in the laboratory component. Considerable personal initiative will be demanded of students in carrying out the laboratory assignments. Designed primarily for exceptionally well-prepared science and engineering students, although any qualified honors student may take it. Can be used as an alternate wherever 1128Q is listed as a prerequisite. CA 3-LAB.

**1189. Introduction to Chemical Research**

Variable (1-3) credits. Prerequisite: CHEM 1127Q or 1137Q or 1147Q.

Internship in research laboratories.

**1194. The Science of Chemistry**

One credit.

Readings, lectures, films and field trips exploring the field of chemistry and its scientific and social implications.

**1199. Independent Study**

One credit. Prerequisite: Instructor consent required.

With a change of content this course may be repeated for credit.

**2241. Organic Chemistry**

Three credits. Prerequisite: CHEM 1122 or 1124Q or 1127Q or 1137Q or 1147Q. May not be taken out of sequence after passing CHEM 2443.

An abridged course in organic chemistry designed to provide a background for related fields in which a general rather than a detailed knowledge of the compounds of carbon is required.

**2242. Organic Chemistry Laboratory**

One credit. Prerequisite: CHEM 2241, which may be taken concurrently. Not open for credit to students who have passed CHEM 2443.

**2443. Organic Chemistry**

Three credits. Prerequisite: CHEM 1128Q, 1138Q, 1148Q, or 1126Q (1126Q may be taken concurrently). Only two credits after passing CHEM 2241. May not be taken out of sequence after passing CHEM 2444, 2446, or 4370. Repeat restrictions apply; see [advising.uconn.edu/repeat-policy](http://advising.uconn.edu/repeat-policy) for more information.

Structure and reactions of the simpler classes of the compounds of carbon.

**2444. Organic Chemistry**

Three credits. Prerequisite: CHEM 2443. May not be taken out of sequence after passing CHEM 4370. Repeat restrictions apply; see [advising.uconn.edu/repeat-policy](http://advising.uconn.edu/repeat-policy) for information.

A continuation of CHEM 2443.

**2445. Organic Chemistry Laboratory**

Three credits. Prerequisite: CHEM 2444, which may be taken concurrently. Students who have passed CHEM 2242 or 2446 will receive only 2 credits. May not be taken out of sequence after passing CHEM 3442 or 4370.

**2446. Organic Chemistry Laboratory**

One credit. Prerequisite: CHEM 2443; open only to Chemical Engineering or Biomedical Engineering majors or by consent of instructor. Not open to students who have passed CHEM 2445.

Introduction to techniques, manipulations, calculations and spectroscopy.

**3170W. Technical Communications**

Three credits. Prerequisite: CHEM 2443; ENGL 1007 or 1010 or 1011 or 2011.

Covers various aspects of technical writing and oral presentation of technical reports. The student will be introduced to the broad spectrum of the chemical literature; various approaches to information retrieval, including computer searches, will be demonstrated. Short reports based on chemical literature will include references and bibliographies. A major paper on a technical topic will be evaluated and corrected at each stage of its development. An oral report based on this material will also be required.

**3189. Undergraduate Research**

Variable (1-3) credits. Prerequisite: Instructor consent required. May be repeated for credit.

Original investigation carried on by the student under the guidance of a staff member. The student is required to submit a brief report at the end of each semester.

**3193. Foreign Study**

Variable (1-6) credits. May be repeated for a total of 6 credits.

Consent of Department head required before student's departure. May count toward the major with consent of the Department Head.

**3194. Undergraduate Seminar**

One credit. Prerequisite: Open only to Chemistry majors, others with consent of instructor. May be repeated for a total of 2 credits.

Discussions of topics relevant to further study and work in the field of chemistry. Students taking this course will be assigned a final grade of S (satisfactory) or U (Unsatisfactory).

**3195. Special Topics**

Variable (1-6) credits. Prerequisite: Prerequisites and recommended preparation vary. May be repeated for credit.

**3198. Variable Topics**

Three credits. Prerequisite: Prerequisites and recommended preparation vary. May be repeated for credit.

**3199. Independent Study**

Variable (1-3) credits. Prerequisite: Instructor consent required. May be repeated for credit.

**3210. Descriptive Inorganic Chemistry**

Two credits. Prerequisite: CHEM 1126Q or 1128Q or 1138Q or 1148Q. May not be taken out of sequence after passing CHEM 3214.

Introduction to bonding, structure, spectroscopy, physical properties, and reactivity of inorganic compounds.

**3214. Intermediate Inorganic Chemistry**

Three credits. Prerequisite: CHEM 3210. Recommended preparation: CHEM 3564.

A systematic presentation of bonding, structure, properties, and reactions of inorganic compounds.

**3215. Inorganic Chemistry Laboratory**

Three credits. Prerequisite: CHEM 3214, which may be taken concurrently.

The preparation, isolation, purification, and characterization of inorganic compounds; special techniques and instrumentation may be required.

**3332. Quantitative Analytical Chemistry**

Four credits. Prerequisite: CHEM 1126Q or 1128Q or 1138Q or 1148Q. Recommended preparation: CHEM 3563. May not be taken out of sequence after passing CHEM 3334.

Fundamentals of analytical chemistry. While it is a course for chemistry majors, it is also suitable for students in other technical fields who have an interest in learning quantitative analytical chemistry procedures applicable to analytical instrumentation. Traditional wet chemical techniques and instrumental methods. Quantitative chemistry and chemical computations.

**3334. Instrumental Analysis I**

Four credits. Prerequisite: CHEM 3332. Recommended preparation: CHEM 3564.

Instrumental analytical techniques including molecular spectroscopy, atomic spectroscopy, electrochemistry, separations, and introductory electronics. This course is an extension of the instrumental portion of CHEM 3332.

**3442W. Advanced Organic Chemistry Laboratory**

Three credits. Prerequisite: CHEM 2445; ENGL 1007 or 1010 or 1011 or 2011.



Advanced techniques and fundamentals of organic synthesis and identification.

### 3563. Physical Chemistry I

Four credits. Prerequisite: CHEM 1126Q or 1128Q or 1138Q or 1148Q; PHYS 1230 or 1402Q or 1502Q or 1602Q; MATH 2110Q or 2130Q.

A study of gases, liquids, solids, solutions, and thermodynamics.

### 3564. Physical Chemistry II

Four credits. Prerequisite: CHEM 3563 or CHEG 3112; MATH 2410Q or 2420Q.

A study of kinetics, atomic and molecular theory and spectroscopy.

### 3565W. Physical Chemistry Laboratory

Two credits. Prerequisite: CHEM 3564, which may be taken concurrently; ENGL 1007 or 1010 or 1011 or 2011.

### 3566. Physical Chemistry Laboratory

One credit. Prerequisite: CHEM 3563, which may be taken concurrently. Not open for credit to students who have passed CHEM 3565.

Laboratory experiments in thermodynamics, kinetics and spectroscopy. This laboratory course is for students majoring in chemical engineering and cannot be counted toward the chemistry major group.

### 3661. Polymeric Materials

Three credits. Prerequisite: CHEM 2444. Not open to students who have passed CHEG 3156.

Structure, properties and chemistry of high polymers. Methods of production and applications.

### 4196W. Thesis for Undergraduate Chemistry Majors

Three credits. Prerequisite: Minimum of three credits in CHEM 3189 or 3199; ENGL 1007 or 1010 or 1011 or 2011; open only to Honors students.

A formal thesis is required, based on original investigation carried on by the student.

### 4370. Environmental Chemistry - Atmosphere

Three credits. Prerequisite: CHEM 2443, CHEM 2444, and CHEM 2445; or CHEM 2241, CHEM 2242; CHEM 3332 and 3563 both of which may be taken concurrently.

Sources, transport, effects, fate, analytical chemistry, monitoring and management of chemical species; chemical principles, equilibria and reactions. The earth's atmosphere and atmospheric pollution; acid rain, global warming, ozone. Intended for senior chemistry majors choosing the environmental chemistry option, or as an elective, and for environmental science majors pursuing a concentration in environmental chemistry.

### 4371. Environmental Chemistry - Hydrosphere

Three credits. Prerequisite: CHEM 2443, CHEM 2444, and CHEM 2445; or CHEM 2241, CHEM 2242; CHEM 3332 and 3563 both of which may be taken concurrently.

Sources, transport, effects, fate, analytical chemistry, monitoring and management of chemical species; chemical principles, equilibria and reactions. The hydrosphere, water and soil pollution. Inorganic metals and organic chemicals in the environment. Intended for senior chemistry majors continuing in the environmental chemistry option, or as an elective, and for environmental

science majors pursuing a concentration in environmental chemistry.

### 4551. Introduction to Quantum Chemistry

Three credits. Prerequisite: CHEM 3564.

An introduction to quantum theory and its applications to atomic and molecular structure and spectroscopy.

## Chinese (CHIN)

### 1101. Elementary Chinese I

Three credits. Prerequisite: Open only to students with no prior contact with Chinese.

Self-instruction in speaking, understanding, reading and writing elementary Chinese.

### 1111. Elementary Chinese I

Four credits. Prerequisite: Not open to students with three or more years of Chinese in high school; students with prior studies should contact the instructor or the program coordinator prior to registration. Cannot be taken for credit after passing CHIN 1101, 1112, 1113, or 1114.

Development of ability to communicate in Chinese, orally and in writing.

### 1112. Elementary Chinese II

Four credits. Prerequisite: CHIN 1111; not open to students who have had three or more years of Chinese in high school. Cannot be taken for credit after passing CHIN 1102, 1103, 1104, 1113, 1114.

Development of ability to communicate in Chinese, orally and in writing.

### 1113. Intermediate Chinese I

Four credits. Prerequisite: CHIN 1112. Cannot be taken for credit after passing CHIN 1103, 1104, 1114.

Development of ability to communicate in Chinese, orally and in writing.

### 1114. Intermediate Chinese II

Four credits. Prerequisite: CHIN 1113. Not open for credit to students who have passed CHIN 1104 or 3210.

Development of ability to communicate in Chinese, orally and in writing.

### 1121. Traditional Chinese Culture

Three credits.

Introduction to traditional Chinese culture prior to the 20th century. Survey of institutions, philosophy, art, literature, and social customs seen through a variety of media. Taught in English. CA 1. CA 4-INT.

### 1122. Modern Chinese Culture

Three credits.

Introduction to modern Chinese culture from the fall of the Qing Dynasty to the present period. Survey of institutions, philosophy, and social customs seen through literature and films. Taught in English. CA 1. CA 4-INT.

### 1193. Foreign Study

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

### 3171. Chinese for Engineers

Three credits. Prerequisite: CHIN 1114 or four years of Chinese in high school.

Introduction to the fields of engineering in Chinese. Preparation for the engineering and

industrial job market in the Chinese-speaking world. Designed to meet the needs of students desiring to use Chinese as a tool for industry or commerce.

### 3210. Chinese Composition and Conversation

Three credits. Prerequisite: CHIN 1114.

Development of high intermediate to advanced speaking and writing competency. Taught in Chinese.

### 3211. Chinese Composition and Conversation II

Three credits. Prerequisite: CHIN 3210 or instructor consent.

Development of high intermediate to advanced speaking and writing competency. Taught in Chinese.

### 3220. Business Chinese

Three credits. Prerequisite: CHIN 3210 or equivalent.

Introduction to Chinese business culture. Development of advanced Chinese written and oral competency in a business context. Taught in Chinese.

### 3230. Language and Identity in Greater China

Three credits.

The role of language, linguistic indexing of socio-economic class, dialects and regional language variation, impact of state policies, linguistic borrowings, bilingualism and bicultural identity, and language shift and attrition in greater China. Taught in English. CA 4-INT.

### 3230W. Language and Identity in Greater China

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; instructor consent required.

The role of language, linguistic indexing of socio-economic class, dialects and regional language variation, impact of state policies, linguistic borrowings, bilingualism and bicultural identity, and language shift and attrition in greater China. Taught in English. CA 4-INT.

### 3240. Contemporary Chinese Film

Three credits. Prerequisite: CHIN 1114 or equivalent

Study of language and culture through contemporary Chinese films. In-depth development of listening and speaking skills. Films in Chinese with English subtitles. Taught in Chinese.

### 3250W. Advanced Chinese

Three credits. Prerequisite: CHIN 3210 or equivalent; ENGL 1007 or 1010 or 1011 or 2011.

Development of advanced reading, speaking and writing competency in Chinese through modern and contemporary Chinese literature. Taught in Chinese. CA 1. CA 4-INT.

### 3260. Contemporary Chinese Culture

Three credits. Prerequisite: CHIN 3210 or equivalent.

Introduction to popular culture in China and Chinese-speaking societies through contemporary literature, art, documentaries, and feature films. Taught in Chinese.

### 3270. Chinese Film

Three credits. Prerequisite: CHIN 1121-1122.

Chinese film from the silent era to the present. Analytical skills and critical vocabulary to study

Chinese film in its social and historical contexts. Taught in English. CA 1. CA 4-INT

### 3271. Topics in Chinese Literature

(Also offered as AAAS 3271.) Three credits. Prerequisite: CHIN 1121 and 1122 or instructor consent.

Social and political issues in Chinese modernity and postmodernity. Taught in English.

### 3275. Introduction to Chinese Linguistics

Three credits. Prerequisite: CHIN 1112.

Introduction to Chinese phonetics, phonology, morphology, syntax, writing system, and sociolinguistic aspects. Taught in English.

### 3280. Networking in China

Three credits. Prerequisite: CHIN 1114 or equivalent.

Development of cross-cultural awareness by learning how to analyze and imitate observable behaviors in professional Chinese environments. Taught in both English and Chinese. CA 4-INT.

### 3282. Women in Chinese Literature and Film

(Also offered as AAAS 3282.) Three credits. Recommended preparation: CHIN 1121 and 1122 or equivalent.

Critical study of representations of women in Chinese film and literature from the early twentieth century to the present. Development of feminist movements in China and gender issues. Taught in English.

### 3293. Foreign Study

Variable (1-9) credits. May be repeated for credit.

Special topics taken in a foreign study program. May count toward the major with consent of the advisor.

### 3295. Special Topics

Variable (1-6) credits. Prerequisite: Prerequisites and recommended preparation vary. May be repeated for credit.

### 3299. Independent Study

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

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## Civil Engineering (CE)

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### 2010. Civil and Environmental Engineering Professional Issues Seminar

Zero credits. May be repeated.

Issues in the practice of Civil and Environmental Engineering: professional ethics, law/contracts, insurance/liability, global/societal issues (e.g., sustainable development, product life cycle), management, business, public policy, leadership, construction management and professional development and licensure. This course may be repeated. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

### 2110. Applied Mechanics I

Three credits. Prerequisite: MATH 1132Q.

Fundamentals of statics using vector methods. Resolution and composition of forces; equilibrium of force systems; analysis of forces acting on structures and machines; applications of friction; centroids; moment of inertia.

### 2120. Applied Mechanics II

Three credits. Prerequisite: CE 2110; MATH 2110Q or 2130Q.

Fundamentals of dynamics using vector methods. Rectilinear and curvilinear motion, translation, rotation, plane motion; work, energy and power; impulse and momentum.

### 2193. International Study

Variable (1-6) credits. May be repeated for a total of 12 credits.

Special civil engineering topics taken in a foreign study program. Credits and hours by arrangement, up to a maximum of six credits. Consent of Department Head or Designee required, normally to be granted prior to the student's departure. May count toward the major with consent of the advisor and approved plan of study. May be repeated for credit with change in topic.

### 2211. Engineering Economics I

One credit. Prerequisite: Open only to Civil and Environmental Engineering majors.

Time value of money. Simple, compound, nominal, and effective interest rate. Present, future, and annual worth methods. Single payment, annuity series, gradient series. Rate of return method. Evaluation of alternative projects.

### 2251. Probability and Statistics in Civil and Environmental Engineering

Three credits. Recommended preparation: MATH 1131Q or 1151Q. May not be taken out of sequence after passing CE 3220 or 4210.

Fundamentals of probability theory and statistics. Hypothesis testing, linear and multiple regression.

### 2310E. Environmental Engineering Fundamentals

(Also offered as ENVE 2310E.) Three credits. Prerequisite: CHEM 1128Q or 1148Q.

Concepts from aqueous chemistry, biology, and physics applied in a quantitative manner to environmental problems and solutions. Mass and energy balances, chemical reaction engineering. Quantitative and fundamental description of water and air pollution problems. Environmental regulations and policy, pollution prevention, risk assessment. Written and oral reports.

### 2410. Introduction to Geospatial Analysis and Measurement

Four credits. Recommended preparation: MATH 1060 or 1131.

Elementary plane surveying, geospatial coordinate systems, error and accuracy analysis, introduction to geographic information systems, theory and uses of global positioning systems, introduction to land-surface remote sensing in the context of civil and environmental engineering.

### 2411. Introduction to Computer Aided Design

(Also offered as ENVE 2411.) One credit. Prerequisite: Enrollment in the School of Engineering; this course and CE 2410 may not both be taken for credit.

Introduction to computer-aided design and drawing, emphasizing applications in civil and environmental engineering and landscape design. Introduction to fundamental CAD concepts and techniques, such as drawing commands, dimensioning, layers, editing techniques, and plotting, and additional software packages to create

planimetric and topographic maps. Related topics include scale, coordinate geometry, and terrain representation.

### 2412. Geomatics Field Methods

Two credits. Prerequisite: CE 2411; enrollment in the School of Engineering. Not open for credit to students who have passed CE 2410.

Introduction to field-based data measurement applications in civil and environmental engineering; Provides first-hand experience using data collecting technologies (e.g., Total Station, data collector, GPS, automatic levels) and applying basic geomatics principles to determine the positions of geospatial features; Introduces use of CAD and GIS software to visualize geospatial data.

### 2500. Introduction to Geographic Information Systems

(Also offered as GEOG 2500.) Four credits.

Fundamental principles of geographic information systems (GIS). Topics include history of the field, components of a GIS, the nature and characteristics of spatial data, methods of data capture and sources of data, database models, review of typical GIS operations and applications. Laboratory exercises provide experience with common computer-based systems.

### 2710. Transportation Engineering and Planning

Three credits. Prerequisite: PHYS 1201Q or 1401Q or 1501Q. Prerequisite or corequisite: CE 2251 or STAT 1100Q. Recommended preparation: CE 2410.

Design of transportation facilities. Traffic flow and capacity analysis. Travel demand analysis and planning methods.

### 3110. Mechanics of Materials

Three credits. Prerequisite: CE 2110; enrollment in School of Engineering.

Simple and combined stress, torsion, flexure and deflection of beams, continuous and restrained beams, combined axial and bending loads, columns.

### 3120. Fluid Mechanics

(Also offered as ENVE 3120.) Four credits. Prerequisite: CE 2110; MATH 2110Q and 2410Q; open only to students in the School of Engineering. Recommended preparation: CE 2120. Not open for credit to students who have passed ME 3250.

Statics of fluids, analysis of fluid flow using principles of mass, momentum and energy conservation from a differential and control volume approach. Dimensional analysis. Application to pipe flow and open channel flow. Laboratory activities and written lab reports.

### 3193. International Study

Variable (1-6) credits. Prerequisite: Consent of Department Head or Designee required, normally to be granted prior to the student's departure. May count toward the major with consent of the advisor and approved plan of study. May be repeated for a total of 12 credits.

Special advanced civil engineering topics taken in an international study program.

### 3220. Principles of Construction I

Three credits. Prerequisite: CE 2251, which can be taken concurrently; enrollment in School of Engineering.

Concepts and techniques of construction, including construction process and procedures, contracts and delivery methods, scheduling, cost estimation, project control, project change management, and construction safety issues.

### **3251. Civil and Environmental Engineering Applications of Probability and Statistics**

One credit. Prerequisite: STAT 1100Q; open only to CE and ENVE majors. This course and CE 2251 or ENVE 2251 may not both be taken for credit. Recommended preparation: MATH 1121 or 1131Q or 1151Q.

Multiple regression. Analysis of variance. Student project applying probability or statistics in a civil or environmental engineering context.

### **3510. Soil Mechanics**

Three credits. Prerequisite: CE 3110, which can be taken concurrently; enrollment in the School of Engineering. Recommended preparation: CE 3120.

Fundamentals of soil behavior and its use as a construction material. Effective stress principle, seepage and flow nets, consolidation, shear strength, limit equilibrium analysis. Written reports.

### **3520. Civil Engineering Materials Laboratory**

Three credits. Prerequisite: CE 3110 and CE 3510, which may be taken concurrently; enrollment in School of Engineering.

Engineering properties of steel, Sieve and Hydrometer analysis, properties and performance of soil, Portland cement concrete, Bituminous cement concrete, and timber; laboratory measurement of properties; interpretation of results. Written reports.

### **3530. Engineering and Environmental Geology**

(Also offered as EARTH 3710 and ENVE 3530.) Three credits. Recommended preparation: EARTH 1050 or 1051.

Application of geological principles to engineering and environmental problems. Topics include site investigation, geologic hazards, slope processes, earthquakes, subsidence, and the engineering properties of geologic materials. Course intended for both geoscience and engineering majors. Formerly offered as GSCI 3710.

### **3610. Basic Structural Analysis**

Three credits. Prerequisite: CE 3110, which may be taken concurrently; enrollment in the School of Engineering.

Analysis of statically determinate structures; influence lines; deflection of trusses, beams, and frames; introduction to indeterminate analysis using consistent deformation and slope deflection equations; computer programming.

### **3630. Design of Steel Structures**

Four credits. Prerequisite: CE 3610; enrollment in the School of Engineering.

Steel material and structural shapes; LRFD and ASD design philosophies; design of steel members for tension, compression, bending, and combined effects of axial forces and bending moments; design of simple connections; design project.

### **3640. Design of Reinforced Concrete Structures**

Four credits. Prerequisite: CE 3110; enrollment in the School of Engineering. Corequisite: CE 3610.

Loads; design philosophies, current design codes to analyze and design reinforced concrete beams, columns, slabs, foundations for flexure, shear, axial loads and torsion; serviceability considerations; applications to buildings, design project.

### **3995. Special Topics in Civil Engineering**

Variable (1-6) credits. Prerequisite: Announced separately for each course; open only to School of Engineering students. May be repeated for credit.

Classroom or laboratory courses as announced for each semester. For independent study see Civil Engineering 4999.

### **3997. Directed Research in Civil Engineering**

Variable (1-3) credits. Prerequisite: Open only to students in the School of Engineering. May be repeated for a total of 6 credits.

Individualized or group research conducted under the supervision of the instructor.

### **4210. Operations Research in Civil and Environmental Engineering**

Three credits. Prerequisite: CE 2251; MATH 2110Q; and enrollment in the School of Engineering. This course and CE 5200 may not both be taken for credit.

Critical path method for scheduling and managing engineering project tasks. Resource allocation subject to constraints. Facility location problems. One and two-phase simplex method for linear programming. Optimization of non-linear problems. Introduction to integer programming and network flow problems.

### **4220. Principles of Construction II**

Three credits. Prerequisite: CE 2211 and 3220.

Time, cost, productivity, decision-making, and sustainability challenges in the construction industry. Advanced scheduling, construction sequencing, economic analysis, financial management, construction equipment and methods, risk management, and sustainability issues.

### **4410. Computer Aided Site Design**

Three credits. Prerequisite: CE 2410 or CE 2411 or ENVE 2411; enrollment in the School of Engineering. Recommended preparation: CE 2710

Roadway and street network design and site development using computer software, including grading and earthwork, runoff and drainage structures.

### **4510. Foundation Design**

Three credits. Prerequisite: CE 3510; enrollment in the School of Engineering.

Application of soil properties to design of foundations, retaining structures, excavation drainage, shallow footings, deep foundations, specifications, subsurface exploration.

### **4530. Geoenvironmental Engineering**

(Also offered as ENVE 4530.) Three credits. Prerequisite: ENVE 2310E; open to juniors or higher in the School of Engineering. Recommended preparation: CE 3510.

Subsurface contaminant fate and transport, site characterization, overview of soil remediation techniques.

### **4541. Advanced Soil Mechanics**

Three credits. Prerequisite: CE 3510 or equivalent; enrollment in the School of Engineering. Not open for credit for students who have passed CE 5541.

Introduction of soil as a multi-phase material; stress and strain analysis in soil; soil compression and consolidation; shear strength of sand and clay; critical state soil mechanics; advanced topics in complex constitutive relationships; introduction to fracture mechanics.

### **4542. Earthquake Engineering**

Three credits. Prerequisite: CE 3510 and 3610. Recommended preparation: CE/ENVE 3530/ EARTH 3710. Not open for credit for students who have passed CE 5542.

Global tectonics and earthquake sources, seismic wave propagation, strong ground motion analysis, seismic hazards, site effects and liquefaction, seismic load to slopes, retaining structures and foundations, structure response to dynamic loads.

### **4560. Coastal Hazard Engineering**

Three credits.

Characteristics of wind hazards; characteristics of flooding and wave hazards; design of coastal infrastructures and resilience assessment. Group project and report.

### **4570. Bituminous Materials**

Three credits. Prerequisite: CE 3510, 3520; enrollment in the School of Engineering. This course and CE 5570 may not both be taken for credit.

Properties, performance and design of bituminous materials for highway and airport paving; physical and chemical properties of binders; testing methods; specifications; production and construction.

### **4610. Advanced Structural Analysis**

Three credits. Prerequisite: CE 3610; enrollment in the School of Engineering.

Analysis of indeterminate structures using force method and moment distribution method, matrix analysis of truss, beam, and frame structures using computer programming and graphical finite element software, particle dynamics, introduction of dynamic analysis of single degree of freedom structures under various loads.

### **4710. Case Studies in Transportation Engineering**

Three credits. Prerequisite: CE 2710; enrollment in the School of Engineering.

Analysis of case studies in transportation and urban planning and design. Application of transportation engineering and planning skills. Oral and written group reports, group discussions, individual written papers.

### **4720. Street and Highway Design**

Three credits. Prerequisite: CE 2710; enrollment in the School of Engineering. Recommended preparation: CE 4410. This course and CE 5720 may not both be taken for credit.

History of street and highway design; land-use context, street design data collection and analysis, speed, safety and street network characterization; pedestrian and bikers in design, cross-section and alignment design.

### **4730. Transportation Planning**

Three credits. Prerequisite: CE 2211, CE 2251, and CE 2710; enrollment in the School of Engineering. This course and CE 5730 may not both be taken for credit.

Transportation economics, urban transportation planning process, evaluation of transportation improvements, transportation systems management.

#### 4740. Traffic Engineering I

Three credits. Prerequisite: CE 2210 or 2251, CE 2710; enrollment in the School of Engineering. This course and CE 5740 may not both be taken for credit.

Traffic flow characteristics; traffic control devices; traffic signs and markings; traffic data collection; traffic signal timing and operation; capacity of streets, intersections, and highways; traffic impact studies; traffic simulation.

#### 4750. Pavement Design

Three credits. Prerequisite: CE 3110 and 3520; enrollment in the School of Engineering. This course and CE 5750 may not both be taken for credit.

Analysis and design of flexible and rigid pavements; testing and characterization of paving materials.

#### 4810. Engineering Hydrology

(Also offered as ENVE 4810.) Three credits. Prerequisite: CE 3120 or ENVE 3120 or CHEG 3123; enrollment in the School of Engineering.

Hydrologic cycle: precipitation, interception, depression storage, infiltration, evapotranspiration, overland flow, snow hydrology, groundwater and streamflow processes. Stream hydrographs and flood routing. Hydrologic modeling and design. Computer applications. Design project.

#### 4896. Thesis in Civil Engineering

Variable (1-3) credits. Prerequisite: Open only to students in the School of Engineering. May be repeated for a total of 3 credits.

Introduction to research through literature review and preparation of a research proposal, execution of the research proposal, preparation of written report and oral defense.

#### 4900W. Civil Engineering Projects I

Two credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011. Prerequisite or corequisite: CE 2251; CE 2410, CE 2411, or ENVE 2411; CE 2710; CE 3610; CE 3510; ENVE 2310E; and ENVE 3120. Open only to senior Civil Engineering majors.

Issues in the practice of civil and environmental engineering: management, business, public policy, leadership, importance of professional licensure, professional ethics, procurement of work, law/contracts, insurance/liability, global/societal issues (e.g., sustainable development, product life cycle), and construction management. Students working singly or in groups prepare proposals for civil engineering design projects, oral presentation and written reports.

#### 4910W. Civil Engineering Projects

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Design of Civil Engineering Projects. Students working singly or in groups produce solutions to Civil Engineering design projects from first concepts through preliminary proposals, sketches, cost estimations, design, evaluation, oral presentation and written reports. This course can be taken no sooner than the semester in which the student completes the Professional Requirements for the B.S. degree.

#### 4920W. Civil Engineering Projects II

Two credits. Prerequisite: CE 4900W and ENGL 1007 or 1010 or 1011 or 2011. Open only to junior and senior Civil Engineering majors.

Design of civil engineering projects. Students working singly or in groups implement previously developed proposals for civil engineering design projects from first concepts through preliminary proposals, sketches, cost estimations, design, evaluation, consideration of realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability, oral presentation and written reports.

#### 4997. Independent Research in Civil Engineering

Variable (1-3) credits. Prerequisite: Open only to students in the School of Engineering. May be repeated for a total of 6 credits.

Independent research conducted under the supervision of the instructor.

#### 4999. Independent Study in Civil Engineering

Variable (1-6) credits. Prerequisite: Open only to students in the School of Engineering. May be repeated for a total of 12 credits.

Individual study in specialized area of civil engineering as mutually arranged between student and instructor.

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### Classics and Ancient Mediterranean Studies (CAMS)

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#### 1101. Greek Civilization

Three credits.

A survey of classical Greece, with emphasis on literature, thought, and influence on contemporary culture. Taught in English. CA 1.

#### 1102. Roman Civilization

Three credits.

A survey of classical Rome, with emphasis on literature, thought, and influence on contemporary culture. Taught in English. CA 1.

#### 1103. Classical Mythology

Three credits.

Origin, nature, and function of myth in the literature and art of Greece and Rome and the re-interpretation of classical myth in modern art forms. Taught in English. CA 1.

#### 1121. Elementary Latin I

Four credits. Prerequisite: May not be taken out of sequence after passing CAMS 1122, 1123, 1124. May not be taken for credit after passing any 2000-level or above course taught in Latin, or three or more years of high school Latin.

A study of the essentials of Latin grammar designed to prepare the student to read simple classical Latin prose.

#### 1122. Elementary Latin II

Four credits. Prerequisite: CAMS 1121 or one year of Latin in high school. May not be taken out of sequence after passing CAMS 1123, 1124. May not be taken for credit after passing any 2000-level or above course taught in Latin, or three or more years of high school Latin.

Further study of the essentials of Latin grammar designed to prepare the student to read simple classical Latin prose.

#### 1123. Intermediate Latin I

Three credits. Prerequisite: CAMS 1122, two years of Latin in high school, or instructor consent. May not be taken out of sequence after passing CAMS 1124.

Review of the essentials of grammar. Reading of classical Latin prose and poetry with emphasis on Cicero and Ovid or Vergil.

#### 1124. Intermediate Latin II

Three credits. Prerequisite: CAMS 1123 or instructor consent.

Introduction to the reading of classical Latin prose and poetry with emphasis on Cicero, Ovid or Virgil, with particular attention given to a review of the essentials of grammar.

#### 1171. Intensive Elementary Ancient Greek

Four credits. Prerequisite: Not open to students who have had three or more years of Greek in high school. May not be taken out of sequence after passing CAMS 1172.

Intensive introduction to ancient Greek. Basic morphology, syntax, and vocabulary through simple readings from the New Testament.

#### 1172. Intensive Intermediate Ancient Greek

Four credits. Prerequisite: CAMS 1171. Not open to students who have had three or more years of high school Greek. May not be taken out of sequence after passing CAMS 3101.

Transition to classical Greek through selections from Xenophon, reading of Plato's Apology complete.

#### 1193. Foreign Study

Variable (1-6) credits. Prerequisite: Department Head consent, normally before the student's departure. May be repeated for credit.

Special topics taken in a foreign study program.

#### 2020. Pyramids, Pirates, and the Polis: The Ancient Mediterranean

(Also offered as HIST 2020.) Three credits.

Political and intellectual history of the civilizations that emerged around the ancient Mediterranean, including the Near East, Egypt, Greece, and Rome, with emphasis on their interactions and influences. CA 1. CA 4-INT.

#### 3101. Topics in Advanced Greek

Variable (1-6) credits. Prerequisite: CAMS 1172. May be repeated for credit.

Reading of Ancient Greek texts in the original. With a change in content, may be repeated for credit. Involves reading in Greek.

#### 3102. Topics in Advanced Latin

Variable (1-6) credits. Prerequisite: CAMS 1124 or 3 years or more of high school Latin. May be repeated for credit.

Reading of Latin texts in the original. With a change in content, may be repeated for credit. Involves reading in Latin.

#### 3207. Greek Philosophical Writings

Three credits.

Selections from Plato and Aristotle.

#### 3208. Homer

Three credits.

Selections from the Iliad or Odyssey. Taught in English.

**3211. Greek Drama**

Three credits.

Selected plays of Aeschylus, Sophocles, Euripides, and Aristophanes.

**3212. Greek Historical Writings**

Three credits.

Selections from Herodotus and Thucydides.

**3213. Ovid and Mythology**

Three credits.

Selections from Ovid, mainly from the *Metamorphoses*, and a study of the myths of Greece and Rome.

**3221. Survey of Classical Latin Literature**

Three credits.

Extensive reading of a relatively wide range of authors of representative classical Latin prose and poetry.

**3224. Vergil and the Roman Epic**

Three credits.

Books VII-XII of the *Aeneid* and a study of the relation of the *Aeneid* to earlier Greek epic and to the later epic tradition.

**3225. Latin Drama**

Three credits.

Selected plays of Plautus, Terence, and Seneca, with lectures on Roman theatre and the development of drama.

**3226. Latin Lyric Poetry**

Three credits.

Selections from the lyrics of Horace and Catullus, with lectures on metrical patterns and the influence of Greek lyrics.

**3227. Latin Historical Prose**

Three credits.

Selections from Sallust, Livy, and Tacitus.

**3232. Medieval Latin**

Three credits. Prerequisite: CAMS 1124 or 3 years or more of high school Latin.

Reading of texts from a number of periods and in a variety of styles, with consideration of morphological, syntactical, and semantic developments. Taught in Latin.

**3241W. Greek and Roman Epic**

Three credits. Prerequisite: ENGL 1010 or 1011 or 2011. Recommended preparation: CAMS 1101 or 1102 or 1103. A knowledge of Latin or Greek is not required.

A study of classical epic, with special emphasis on Homer's *Iliad* and *Odyssey* and Vergil's *Aeneid*, but including also other examples of the genre. Oral and literary epic, their social and political contexts, and the influence of classical epic on later literature. Taught in English.

**3242W. Greek and Roman Drama**

Three credits. Prerequisite: ENGL 1010 or 1011 or 2011. Recommended preparation: CAMS 1101 or 1102 or 1103. A knowledge of Latin or Greek is not required.

Selected plays from the works of Aeschylus, Sophocles, Euripides, Aristophanes, Plautus, Terence, and Seneca. The origin and development of Greek drama, its transformation in the Roman period, and the influence of classical drama on later literature. Taught in English.

**3244. Ancient Fictions**

Three credits.

Examines a range of novels and other fictions from the Greco-Roman world. Works read will include the Greek sentimental novels, the satirical Roman novels of Petronius and Apuleius, and a variety of other pagan, Jewish, and Christian fictions. Taught in English.

**3245. Ancient World in Cinema**

Three credits.

Representations of the ancient Mediterranean world in contemporary cinema.

**3251. Greek Art**

(Also offered as ARTH 3140.) Three credits. Prerequisite: Open to sophomores or higher.

Greek art and architecture from the ninth century B.C. to the first-century A.D.

**3257. Ancient Greek Philosophy**

(Also offered as PHIL 2221.) Three credits. Prerequisite: One from PHIL 1101, 1102, 1103, 1104, 1105, 1106 or 1107.

Greek philosophy from its origin in the Pre-Socratics through its influence on early Christianity. Readings from the works of Plato and Aristotle. May include related ancient philosophical traditions.

**3257W. Ancient Greek Philosophy**

(Also offered as PHIL 2221W.) Three credits. Prerequisite: At least one of PHIL 1101, 1102, 1103, 1104, 1105, 1106 or 1107; ENGL 1007 or 1010 or 1011 or 2011.

Greek philosophy from its origin in the Pre-Socratics through its influence on early Christianity. Readings from the works of Plato and Aristotle. May include related ancient philosophical traditions.

**3293. Foreign Study**

Variable (1-6) credits. Prerequisite: Consent of Department Head required, normally granted prior to the student's departure. May be repeated for credit.

Special topics taken in a foreign study program. May count toward the major with consent of the advisor.

**3295. Special Topics**

Variable (1-6) credits. Prerequisite: Prerequisites and recommended preparation vary. May be repeated for credit.

**3298. Variable Topics**

Three credits. Prerequisite: Prerequisites and recommended preparation vary. May be repeated for credit.

**3299. Independent Study**

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

**3301. Ancient Near East**

(Also offered as HIST 3301.) Three credits.

The history of Near Eastern civilization from the Neolithic period to the Persian Empire. The birth of civilization in Mesopotamia and Egypt. The political, economic, social and cultural achievements of ancient Near Eastern peoples. Taught in English.

**3320. Ancient Greece: Troy to Sparta**

(Also offered as HIST 3320.) Three credits.

The history of Greece from Minoan and Mycenaean times until the Hellenistic Period and Alexander the Great, with special emphasis on the Fifth Century and the "Golden Age" of Athens.

**3321. Hellenistic World: Alexander to Cleopatra**

(Also offered as HIST 3321.) Three credits.

The Eastern Mediterranean (the Greek east) from Alexander to Cleopatra (336-30 BCE), including historical, cultural, social, and religious developments.

**3325. Ancient Rome: Aeneas to Augustus**

(Also offered as HIST 3325.) Three credits.

From the beginning of Rome to the growth of the Roman Republic and the onset of Empire. Roman civilization and its influence upon later history.

**3326. Ancient Rome: Emperors and Barbarians**

(Also offered as HIST 3326.) Three credits.

The Roman Empire, from its beginnings until its transformation (or "fall") under the "barbarian" invasions, and its influence on later history. CA 1.

**3330. Palestine Under the Greeks and Romans**

(Also offered as HIST 3330 and HEJS 3330.) Three credits.

The political, historical and religious currents in Greco-Roman Palestine. Includes the Jewish Revolts, sectarian developments, the rise of Christianity and the Talmudic academies. May not be used to meet the foreign language requirement. Taught in English. Formerly offered as HEJS 3218.

**3330W. Palestine Under the Greeks and Romans**

(Also offered as HEJS 3330W and HIST 3330W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

The political, historical and religious currents in Greco-Roman Palestine. Includes the Jewish Revolts, sectarian developments, the rise of Christianity and the Talmudic academies. May not be used to meet the foreign language requirement. Taught in English. May not be used to meet the foreign language requirement. Formerly offered as HEJS 3218W/CAMS 3256W.

**3335. The Early Christian Church**

(Also offered as HIST 3335.) Three credits.

The evolution of Christian institutions, leadership and doctrines in the Roman Empire ca. 50-451 CE. Topics may include gnosticism, prophecy, martyrdom, asceticism, pilgrimage, heresy, orthodoxy. Taught in English.

**3340. World of the Later Roman Empire**

(Also offered as HIST 3340.) Three credits.

The profound social and cultural changes that redefined the cities, frontiers, and economies of the classical Mediterranean world and led to the Middle Ages. Developments in the eastern and western Mediterranean between the second and seventh centuries.

**4096W. Senior Thesis in Classics and Ancient Mediterranean Studies**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; 12 credits in CAMS at 2000-level or above, three of which may be taken concurrently.

**Cognitive Science (COGS)****2201. Foundations of Cognitive Science**

Three credits. Prerequisite: May not be taken out of sequence after passing COGS 3584, 3599 or 4596.

Origins of and current developments within scientific study of the mind-brain. Topics include: computational theories of mind, artificial and natural intelligence, cognitive neuroscience and the mind/body problem, embodied and distributed cognition, neural networks, self-organizing cognitive systems, learning and innateness. CA 3.

**2345. Language and Racism**

(Also offered as AFRA 2345.) Three credits. Prerequisite: Open to sophomores or higher. Recommended preparation: One course in AFRA or COGS.

Examines the relationships between language use, both historically and across the lifespan, and the social construction of race, racism, and racial identity, with particular emphasis on racial politics in the United States.

**2500Q. Coding for Cognitive Science**

Three credits.

Introduction to computer programming for students with little or no prior programming experience. Core concepts and essential skills, with special emphasis on typical tasks and applications in the Cognitive Sciences.

**3584. Seminar in Cognitive Science**

One credit. Prerequisite: COGS 2201; open only to Cognitive Science majors and minors who are juniors or higher. Recommended preparation: at least two of ANTH 3250, CSE 4705, LING 2010Q, PHIL 3250/W, PSYC 2501, or SLHS 4245/W.

Recent developments in Cognitive Science.

**3589. Undergraduate Research**

Variable (1-6) credits. Prerequisite: Open only with consent of instructor and program director of Undergraduate Studies. Recommended Preparation: At least two of ANTH 3002, CSE 4705, PHIL 3250, PSYC 2501. May be repeated for credit.

Participation in activities related to cognitive science research.

**3599. Independent Study**

Three credits. Prerequisite: COGS 2201; open only with the consent of instructor. Recommended preparation: At least two of ANTH 3002, CSE 4705, PHIL 3250, or PSYC 2501. May be repeated for credit.

Knowledge and skills necessary to perform a research project.

**3798. Variable Topics in Cognitive Science**

Three credits. Prerequisite: Open to sophomores or higher. May be repeated for a total of 6 credits.

**4596W. Senior Thesis in Cognitive Science**

Three credits. Prerequisite: COGS 2201 and 3599; ENGL 1007 or 1010 or 1011 or 2011. Recommended preparation: At least two of ANTH 3002, CSE 4705, PHIL 3250 or PSYC 2501.

Preparation of a research thesis.

**Communication (COMM)****1000. The Process of Communication**

Three credits.

A study of modern communication theories and principles useful in understanding how people affect and are affected by others through communication. CA 2.

**1100. Principles of Public Speaking**

Three credits.

Theory and performance in public speaking: overcoming apprehension; audience analysis; development of concepts; maximizing message impact; professional presentation skills; group projects; evidence; listening and speech evaluation.

**1993. Foreign Study**

Variable (1-9) credits. Prerequisite: Open to juniors or higher. May be repeated for credit.

Special topics taken in foreign study program. Consent of department head required, normally granted prior to the student's departure.

**2000Q. Research Methods in Communication**

Three credits. Prerequisite: COMM 1000. Recommended preparation: MATH 1011Q or equivalent.

The scientific approach as it specifically applies to communication.

**2010Q. Applied Communication Research Methods**

Three credits. Prerequisite: COMM 1000. Recommended preparation: MATH 1011Q or equivalent.

Principles and practices of research and data analysis in communication industries.

**2100. Professional Communication**

Three credits. Prerequisite: COMM 1000. Recommended preparation: COMM 1100.

The principles of communication in business and professional environments. Focus on the refinement of communication skills necessary to succeed in professional contexts.

**2110. Presenting in the Digital World**

Three credits. Prerequisite: COMM 1000. Recommended preparation: COMM 2100.

Fundamentals of applying computer mediated communication skills, with emphasis on best practices for producing a range of effective digital presentations.

**2200. Interpersonal Communication**

Three credits. Prerequisite: COMM 1000. May not be taken out of sequence after passing COMM 3222, 4200, or 4222.

An introduction, analysis and critique of recent theories of interpersonal communication. Topics include person perception, theories of communication management, and the structural analysis of face to face communication behavior.

**2300. Effects of Mass Media**

Three credits. Prerequisite: COMM 1000.

An analysis of the roles of the mass media and of the effects they exert on individuals and society.

**2500. Persuasion**

Three credits. Prerequisite: COMM 1000.

Introduction to theories of attitude formation, change and reinforcement. Research is used to evaluate past and present models of persuasion.

**2600. Media in the Information Age**

Three credits. Recommended preparation: COMM 1000, which may be taken concurrently.

The history, organizational structure, economics, policy, and functioning of technologically-based communication systems, and the relationship of these factors to media issues, effects, and culture.

**2700. Fundamentals of Digital Production**

Three credits. Prerequisite: COMM 1000. May not be taken out of sequence after passing COMM 4710 or 4720.

Fundamentals associated with the production of digital video, audio, and images to communicate with various audiences. Students rotate through various roles of pre-production, production, and post-production processes in the creation of multimedia projects.

**2993. Foreign Study**

Variable (1-9) credits. Prerequisite: Open to juniors or higher. May be repeated for credit.

Special topics taken in foreign study program. Consent of department head required, normally granted prior to the student's departure. May count toward major with consent of the advisor.

**3110. Organizational Communication**

Three credits. Prerequisite: COMM 2100 or 2200.

Communication in formal organizations; horizontal and vertical communication; effectiveness of different organizational structures and channels; feedback; networks; norms and roles.

**3110W. Organizational Communication**

Three credits. Prerequisite: COMM 2100 or 2200; ENGL 1007 or 1010 or 1011 or 2011.

Communication in formal organizations; horizontal and vertical communication; effectiveness of different organizational structures and channels; feedback; networks; norms and roles.

**3120. Small Group Communication**

Three credits. Prerequisite: COMM 2100 or 2200.

Approaches, methods, and findings of research in small group communication and development of an ability to engage effectively in small group situations.

**3120W. Small Group Communication**

Three credits. Prerequisite: COMM 2100 or 2200; ENGL 1007 or 1010 or 1011 or 2011.

Approaches, methods, and findings of research in small group communication and development of an ability to engage effectively in small group situations.

**3130. Communication in Conflict Management**

Three credits. Prerequisite: COMM 2100 or 2200.

The principles of communication underlying conflict and its management, including negotiation and intervention strategies, in interpersonal, group/organizational, and inter-group conflict.

**3198. Variable Topics in Professional Communication**

Three credits. Prerequisite: COMM 2100 or instructor consent. May be repeated for a total of 9 credits.

**3210. Gender and Communication**

(Also offered as WGSS 3210.) Three credits. Prerequisite: COMM 1000 or instructor consent. Recommended preparation: COMM 2200.

Differences in male/female communication, and an examination of cultural assumptions regarding gender in the communication process. Critically analyze the theory, politics and practice of communication and gender. Formerly offered as COMM 3450/WGSS 3268.

**3220. Intercultural Communication**

Three credits. Prerequisite: COMM 2200.

Communication behavior within and across cultures and subcultures. How cultures impact social structures, communication styles, and behavior.

**3220W. Intercultural Communication**

Three credits. Prerequisite: COMM 2200. ENGL 1007 or 1010 or 1011 or 2011.

Communication behavior within and across cultures and subcultures. How cultures impact social structures, communication styles, and behavior.

**3222. People of Color and Interpersonal Communication**

Three credits. Prerequisite: COMM 2200.

Impact of race, ethnicity, and culture on interpersonal interactions. Surveys key theories and empirical works of past and current race relations in the U.S., negotiation of identity, and ways identity is communicated in various personal relationships.

**3222W. People of Color and Interpersonal Communication**

Three credits. Prerequisite: COMM 2200; ENGL 1007 or 1010 or 1011 or 2011.

Impact of race, ethnicity, and culture on interpersonal interactions. Surveys key theories and empirical works of past and current race relations in the U.S., negotiation of identity, and ways identity is communicated in various personal relationships.

**3230. Family Communication**

Three credits. Prerequisite: COMM 2200.

The role of communication theories and processes in family contexts, construed broadly to include the biological, legal, and voluntary kin comprising diverse families today. Formerly offered as COMM 4240.

**3240. Nonverbal Communication**

Three credits. Prerequisite: COMM 2200 or 2500.

Facial expression, body movement, spatial behavior and para-language, with a consideration of applications for information theory.

**3241. Motivation and Emotion**

(Also offered as PSYC 3241.) Three credits. Prerequisite: PSYC 1100, and 1101 or 1103; open to juniors or higher.

Cognition, brain mechanisms, biofeedback, aggression, sex, competence, social influence, and conformity.

**3298. Variable Topics in Interpersonal Communication**

Three credits. Prerequisite: COMM 2200 or instructor consent. May be repeated for a total of 9 credits.

**3310. Media Literacy and Criticism**

Three credits. Prerequisite: COMM 2300 or 2600.

History, analysis and evaluation of technique, content and aesthetic effect of media messages. Cultural, political, economic, and institutional factors that help define the grammar of popular mass media content; social scientific perspectives addressing how audiences learn to comprehend media content including efforts to promote media literacy.

**3310W. Media Literacy and Criticism**

Three credits. Prerequisite: COMM 2300 or 2600; ENGL 1007 or 1010 or 1011 or 2011.

History, analysis and evaluation of technique, content and aesthetic effect of media messages. Cultural, political, economic, and institutional factors that help define the grammar of popular mass media content; social scientific perspectives addressing how audiences learn to comprehend media content including efforts to promote media literacy.

**3320. Media and Diverse Audiences**

(Also offered as LLAS 3320.) Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: COMM 1000, 2300 or 2600.

Issues of race, ethnicity, culture, class, gender, and sexuality in mainstream and alternative media. Analysis of how diverse groups use the media, are represented in, and interpret media content. Formerly offered as COMM/LLAS 4320.

**3321. Latinas and Media**

(Also offered as LLAS 3264 and WGSS 3260.) Three credits. Prerequisite: Open to juniors or higher.

The role of ethnicity and race in women's lives. Special attention to communication research on ethnic and racial minority women. CA 4.

**3322. Soap Opera/Telenovela**

(Also offered as LLAS 3322.) Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: COMM 1000, 2300 or 2600.

Socio-cultural functions of soap operas/telenovelas as mediated serials constructed by commercial organizations and consumed by United States and global audiences. Formerly offered as COMM/LLAS 4470.

**3330. Children and Mass Media**

Three credits. Prerequisite: COMM 2300.

Child development and the effects of mass media on young children. Educational television, frightening media, violent television, computer games, the Internet and media policy.

**3330W. Children and Mass Media**

Three credits. Prerequisite: COMM 2300; ENGL 1007 or 1010 or 1011 or 2011.

Child development and the effects of mass media on young children. Educational television, frightening media, violent television, computer games, the Internet and media policy.

**3398. Variable Topics in Media Effects**

Three credits. Prerequisite: COMM 2300 or instructor consent. May be repeated for a total of 9 credits.

**3410. Political Communication**

Three credits. Prerequisite: COMM 2300 or 2500.

Communication in political processes and the role of mass media in American politics. Topics may include campaigning, issue management, lobbying, interest-group strategies, government relations, grassroots action, and coalition building.

**3410W. Political Communication**

Three credits. Prerequisite: COMM 2300 or 2500; ENGL 1007 or 1010 or 1011 or 2011.

Communication in political processes and the role of mass media in American politics. Topics may include campaigning, issue management, lobbying, interest-group strategies, government relations, grassroots action, and coalition building.

**3415. Protest and Communication**

Three credits. Prerequisite: COMM 2300 or 2500.

Protest movement - past and current - in light of principles, models, and theories of communication.

**3420. Health Communication**

Three credits. Prerequisite: COMM 2300 or 2500. Recommended preparation: COMM 2000Q.

Overview of health communication, including health behavior change interventions, emergency communication, risk assessment, media influences, provider-patient communication, socialization and identity, stereotyping, social support, diverse populations, and new communication technologies.

**3420W. Health Communication**

Three credits. Prerequisite: COMM 2300 or 2500; ENGL 1007 or 1010 or 1011 or 2011. Recommended preparation: COMM 2000Q.

Overview of health communication, including health behavior change interventions, emergency communication, risk assessment, media influences, provider-patient communication, socialization and identity, stereotyping, social support, diverse populations, and new communication technologies.

**3430. Science Communication**

Three credits. Prerequisite: COMM 2300 or 2500.

The role of communication and media in shaping science and technology in society. Topics include theories and debates in the field, media coverage of science, activism and science campaigns, and using new and social media to communicate science issues.

**3430W. Science Communication**

Three credits. Prerequisite: COMM 2300 or 2500; ENGL 1007 or 1010 or 1011 or 2011.

The role of communication and media in shaping science and technology in society. Topics include theories and debates in the field, media coverage of science, activism and science campaigns, and using new and social media to communicate science issues.

**3498. Variable Topics in Specialized Communication**

Three credits. May be repeated for credit.

**3510. Marketing Communication**

Three credits. Prerequisite: COMM 2500 or 2600.

Principles, strategies, and theories of communication in product and brand marketing contexts.

**3520. Communication Processes in Advertising**

Three credits. Prerequisite: COMM 2500 or 2600.

Covers communication theory relevant to advertising, with specific application to the creative elements of art and copy. Students will create multimedia to support an advertising campaign.

### **3530. Public Relations**

Three credits. Prerequisite: COMM 2500 or 2600.

Practical applications of major theories of communication and mass media to public relations practiced by organizations.

### **3598. Variable Topics in Persuasion and Promotion**

Three credits. Prerequisite: COMM 2500 or 2600 or instructor consent. May be repeated for credit.

### **3600. New Communication Technologies**

Three credits. Prerequisite: COMM 2600.

An overview of new communication technologies. Topics include the uses, evolution, diffusion, operation, and effects of new communication technologies.

### **3600W. New Communication Technologies**

Three credits. Prerequisite: COMM 2600; ENGL 1007 or 1010 or 1011 or 2011.

An overview of new communication technologies. Topics include the uses, evolution, diffusion, operation, and effects of new communication technologies.

### **3605. Communication Technology and Social Change**

Three credits. Prerequisite: COMM 2300 or 2600.

Examination of new communication technologies and their influence on social change. Provides a foundation for students with professional as well as academic interests in communication technology.

### **3610. Computer Mediated Communication**

Three credits. Prerequisite: COMM 2200 or 2600.

How computer media increasingly influence communication processes and how computer media are changing society. Students will examine critically both exposure to and use of computer media with particular attention to how people use computer media and the effects of this use.

### **3610W. Computer Mediated Communication**

Three credits. Prerequisite: COMM 2200 or 2600; ENGL 1007 or 1010 or 1011 or 2011.

How computer media increasingly influence communication processes and how computer media are changing society. Students will examine critically both exposure to and use of computer media with particular attention to how people use computer media and the effects of this use.

### **3698. Variable Topics in Communication Technology**

Three credits. Prerequisite: COMM 2600 or instructor consent. May be repeated for credit.

### **3700. Visual Communications**

Three credits. Prerequisite: COMM 2500 or 2700.

Strategic use of imagery and multimedia to improve communication in professional and public contexts. Students will create media to solve communication-based problems.

### **3798. Variable Topics in Multimedia Production**

Three credits. Prerequisite: COMM 2700 or instructor consent. May be repeated for credit.

### **3993. Foreign Study**

Variable (1-9) credits. Prerequisite: Open to juniors or higher. May be repeated for credit.

Special topics taken in foreign study program. Consent of Department Head required, normally granted prior to the student's departure.

### **4200. Advanced Interpersonal Communication**

Three credits. Prerequisite: COMM 2000Q and 2200.

An advanced approach to interpersonal communication focusing on theories and their applications. Topics may include affection exchange theory, theories of uncertainty, attachment theory, communication privacy management theory, interpersonal deception theory, and relational dialectics theory.

### **4200W. Advanced Interpersonal Communication**

Three credits. Prerequisite: COMM 2000Q and 2200; ENGL 1007 or 1010 or 1011 or 2011.

An advanced approach to interpersonal communication focusing on theories and their applications. Topics may include affection exchange theory, theories of uncertainty, attachment theory, communication privacy management theory, interpersonal deception theory, and relational dialectics theory.

### **4300. Advanced Media Effects**

Three credits. Prerequisite: COMM 2000Q and 2300.

Contentious topics in current media effects research, and their theoretical implications. Topics may include sexual content on television, pornography, alcohol on television, video games, and media impact on body image. Formerly offered as COMM 4035.

### **4300W. Advanced Media Effects**

Three credits. Prerequisite: COMM 2000Q and 2300; ENGL 1007 or 1010 or 1011 or 2011.

Contentious topics in current media effects research, and their theoretical implications. Topics may include sexual content on television, pornography, alcohol on television, video games, and media impact on body image. Formerly offered as COMM 4035W.

### **4411. International Communication and Conflict**

Three credits. Prerequisite: COMM 2200 and 2500.

Communication in international conflicts and crises. Negotiation, mediation, and transformational approaches; globalization and the media; communication in war and peace; cultural, social, political, and economic effects.

### **4501. Advanced Persuasion and Communication**

Three credits. Prerequisite: COMM 2000Q and COMM 2500.

Advanced consideration and criticism of selected modern persuasion theories and research in communications.

### **4510. Communication Campaigns and Applied Research**

Three credits. Prerequisite: COMM 2000Q and 2500. Recommended preparation: COMM 2300.

Application of media, persuasion, and social change theories to the design of communication

campaigns, including focus groups, interviews and other background research. Students will work with community organizations.

### **4530W. Public Relations Writing**

Three credits. Prerequisite: COMM 3530; ENGL 1007 or 1010 or 1011 or 2011.

Philosophy and practice of good, ethical and effective public relations for advanced students. Writing projects such as press releases, media advisories, briefing packets, speech introductions, brochures, newsletters, and op-eds.

### **4540. Crisis Communication**

Three credits. Prerequisite: COMM 3530 or instructor consent. Not open for credit to students who have passed COMM 4995 when offered as "Crisis Communication."

Principles and practices of effective crisis response. The management processes and leadership skills necessary to anticipate, plan for, manage, communicate about, and recover from organizational and public crises.

### **4640. Social Media: Research and Practice**

Three credits. Prerequisite: COMM 2600; COMM 2200 or 2300 or 2500.

Examines social media from multiple perspectives, including understanding their effects through theoretical approaches and empirical research, as well as practical applications across various contexts.

### **4640W. Social Media: Research and Practice**

Three credits. Prerequisite: COMM 2600; COMM 2200 or 2300 or 2500; ENGL 1007 or ENGL 1010 or 1011 or 2011.

Examination of the use and effects of social media through theoretical approaches and empirical research; practical applications across various contexts.

### **4650. Human-Computer Interaction**

Three credits. Prerequisite: COMM 2600 or 3610. Recommended preparation: COMM 3600.

Human interaction with computer technology and methods of evaluating communication systems for different populations and usage goals.

### **4710. Narrative Digital Video Production**

Three credits. Prerequisite: COMM 2700 or instructor consent.

Hands-on work in narrative digital video production. Students rotate through all production positions for a digital production and complete field shoots and editing for a narrative production project. Preproduction skills such as proposal and script writing, storyboarding and budgeting included in each class project.

### **4720. Nonfiction Digital Video Production**

Three credits. Prerequisite: COMM 2700 or instructor consent.

Hands-on work in nonfiction video production. Role of documentary and informational media in various communication contexts. Students rotate through all production positions for a digital production and complete field shoots and editing for a nonfiction production project. Production skills such as proposal writing, interviewing, b-roll, and budgeting included in each class project.



**4799. Independent Study in Multimedia Production**

Variable (1-6) credits. Prerequisite: Open to juniors or higher with instructor consent. May be repeated for credit.

Credits and hours by arrangement.

**4979. Digital Portfolio**

Variable (1-3) credits. Prerequisite: At least 12 credits of 2000 level or above COMM courses; open to juniors or higher. Recommended preparation: COMM 2100 and 2700. May be repeated for a total of 3 credits.

Development of a digital portfolio for presentation to professional and graduate-level audiences. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

**4981. Internship in Communication**

Variable (1-3) credits. Prerequisite: At least 12 units of 2000 level or above Communication Sciences courses; open to juniors or higher. Should be taken senior year. May be repeated for a total of 6 credits.

Provides students with an opportunity for supervised field work in a professional communication organization. Student's performance will be evaluated both by the field supervisor and course instructor. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

**4982. Research Practicum in Communication**

Variable (1-3) credits. Prerequisite: At least 12 credits of 2000-level or above Communication courses which must include COMM 2000Q; open to juniors or higher. May be repeated once for a total of six credits. May be repeated for a total of 6 credits.

Participation in supervised research activities in communication. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

**4993. Foreign Study**

Variable (1-9) credits. Prerequisite: Open to juniors or higher. May be repeated for credit.

Special topics taken in foreign study program. Consent of Department Head required, normally granted prior to the student's departure. May count toward the major with consent of the advisor.

**4995. Special Topics**

Variable (1-6) credits. Prerequisite: Prerequisites and recommended preparation vary by section; open to juniors or higher. May be repeated for credit.

**4996. Undergraduate Research in Communication**

Variable (1-3) credits. Prerequisite: COMM 2000Q; at least 12 credits of COMM courses at the 2000 level or above; open only to junior or higher Communication majors; instructor consent required. May be repeated for a total of 6 credits.

Students conduct an original research investigation under the guidance of a faculty mentor. The student is required to submit a brief report at the end of the semester. May be repeated once for credit.

**4997W. Senior Thesis**

Variable (1-6) credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

Preparation of a thesis and its presentation to the department.

**4998. Variable Topics**

Three credits. Prerequisite: Prerequisites and recommended preparation vary by section; open to juniors or higher. May be repeated for credit.

**4999. Independent Study**

Variable (1-6) credits. Prerequisite: Open to juniors or higher. May be repeated for credit.

The course, for superior students, includes independent reading, periodic conferences, and such other work as desired by the instructor.

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## Comparative Literary and Cultural Studies (CLCS)

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**1002. Reading Between the Arts**

Three credits.

Introduction to interrelations between literature, music, and the visual arts, including multi-media. CA 1.

**1101. Classics of World Literature I**

Three credits.

Introduction to classics of world literature. Comparative approach to canonical works of Asia, Africa, the Middle East, and Latin America, as well as Europe, from antiquity to the early modern period (1600). CA 1. CA 4-INT.

**1102. Classics of World Literature II**

Three credits.

An introduction to classics of world literature. A comparative approach to representative works of culture of Europe, the Americas, Africa, the Middle East, and Asia, from the Renaissance (1600) to the present. CA 1. CA 4-INT.

**1103W. Languages and Cultures**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Develops an interdisciplinary understanding and critical awareness of basic issues concerning socio-cultural factors of languages, language use and language learning, linguistic diversity, language research methodology, and the differences among diverse modes of communication. CA 1. CA 4-INT.

**1110. Introduction to Film Studies**

Three credits.

Introduction to film and film studies. Tools for analyzing and reading film. Techniques and language of film. Film theories. CA 1.

**1193. Foreign Study**

Variable (1-15) credits. May be repeated for credit.

Special topics taken in a foreign study program. Consent of department head required, normally before the student's departure.

**2010. Media Literacy and Data Ethics**

Three credits.

An introduction to information literacy on the basis of media studies, research methods in the humanities, and media and data ethics. The course will address three or more interconnected areas that are pivotal to gathering, analyzing, and disseminating information in today's research and data landscapes, including, but not exclusive to, the study of media as a cultural product, structures of data, and aspects of ethics. CA 1. CA 4-INT.

**2201. Intercultural Competency Towards Global Perspectives**

Three credits.

Introduction to the interdisciplinary and international field of intercultural communication in cultural studies, including culturally determined communicative behaviors, identity, semiotics, multi-disciplinary theories of culture, and stereotypes. CA 1. CA 4-INT.

**2204. Jewish Culture in American Film**

(Also offered as AMST 2204 and HEJS 2204.)

Three credits.

Representations of the diversity of Jewish culture (historical, religious, secular) in American film. Introduction to film analysis and interpretation. CA 1. CA 4.

**2301. Jewish Humor**

(Also offered as HEJS 2301.) Three credits.

Prerequisite: Not open to students who have passed HEJS 3295 when taught as this topic.

The history of Jewish humor in modern times with attention given to its various forms, including oral traditions, fiction and humor writing, stand-up comedy, live performance, television, film, and music. CA 1. CA 4.

**2609. Fascism and its Opponents**

(Also offered as ENGL 2609.) Three credits.

Prerequisite: ENGL 1007 or 1010 or 1011 or 2011. Not open for credit to students who have passed AMST/ENGL 3265W when offered as "Fascism and Antifascism in the US."

A comparative study of fascist and antifascist movements, ideologies, aesthetics, and states across a number of national contexts, before and after the Second World War. Readings may consist of literary works, films and visual culture, autobiographies, political rhetoric, histories, and other cultural artifacts. CA 1.

**3201. Comparative Literary and Cultural Studies**

Three credits. May be repeated for credit.

Literary and cultural questions that go beyond national boundaries: the relationship of literature to other disciplines and to the other arts; cinema as a cultural phenomena. (No foreign language required.) This course may be repeated with a change of topic.

**3203. Comparative Studies in Cultural History**

Three credits. May be repeated for credit.

The comparative study of cultural movements in literature and the arts throughout history. Will explore different areas of cultural practice -- e.g., social, literary, political, aesthetic, anthropological, -- with an eye as to how they are shaped, and in turn shape, dominant institutions and values. Sample topics include: World War I and the emergence of Modernism; European Fascisms; Christian, Jewish, and Muslim culture in Medieval Spain; photography and the Colonial Encounter, etc. May be repeated for credit with change of topic.

**3207. Film Genres**

Three credits.

Conventions, history, and development of selected film genres.

**3208. Studies in Film History**

Three credits.

The history of cinema from its origins to the present in relation to relevant historical and cultural developments.

### 3211. Indigenous Film World Wide

Three credits.

A survey of films by and about Indigenous, American Indian, First Nations, Native, and Aboriginal people. Course will focus on contemporary films and artists. CA 1. CA 4-INT.

### 3293. Foreign Study

Variable (1-15) credits. May be repeated for credit.

Special topics taken in a foreign study program. Consent of department head required, normally to be granted prior to the student's departure. May count toward the major with consent of the advisor.

### 3299. Independent Study

Variable (1-6) credits. Prerequisite: Open to juniors or higher. May be repeated for credit.

### 3888. Variable Topics

Variable (1-6) credits. Prerequisite: Prerequisites and recommended preparation vary. May be repeated for credit.

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## Computer Science and Engineering (CSE)

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### 1000. Computers in Modern Society

Three credits. Prerequisite: Not open for credit to students who have passed CSE 110C or 1010 or 1100. Students who anticipate extensive study or use of computers in their future work should take CSE 1100-1102 rather than this course.

Introduction to computer applications in the humanities, social sciences, business, and other fields. Influence of the computer on modern society and technology. Elements of computer usage in the solution of numeric and non-numeric problems including introduction to programming methods. Students who anticipate extensive study or use of computers in their future work should take CSE 1100-1102 rather than this course.

### 1010. Introduction to Computing for Engineers

Three credits. Prerequisite: May not be taken out of sequence after passing CSE 1729 or 2050.

Introduction to computing logic, algorithmic thinking, computing processes, a programming language and computing environment. Knowledge obtained in this course enables use of the computer as an instrument to solve computing problems. Representative problems from science, mathematics, and engineering will be solved.

### 1102. Object Oriented Design and Programming

Three credits. Prerequisite: CSE 1010 or CSE 1100.

Principles of object oriented programming including classes, polymorphism, encapsulation and information hiding, and inheritance. Principles of object oriented design. Program debugging and documentation techniques. Implementation and simple analysis of algorithms for sorting and searching. Event-driven programming and the use of libraries for user interfaces. Introduction to computer history. Programming assignments.

### 1401. Honors Core: Computational Molecular Biology

(Also offered as BME 1401 and MCB 1401.) Three credits.

Introduction to research in computational biology through lectures, computer lab exercises, and mentored research projects. Topics include gene and genome structure, gene regulation, mechanisms of inheritance, biological databases, sequence alignment, motif finding, human genetics, forensic genetics, stem cell development, comparative genomics, early evolution, and modeling complex systems. CA 3.

### 1729. Introduction to Principles of Programming

Three credits. Prerequisite: CSE 1010.

Introduction to computer programming in a structured programming language including fundamental elements of program design and analysis. Data and functional abstraction as tools for constructing correct, efficient, and intelligible programs for a variety of common computing problems.

### 2050. Data Structures and Object-Oriented Design

Three credits. Prerequisite: CSE 1010 or 1729. Not open to students who have passed CSE 2100.

Introduction to fundamental data structures and algorithms. The emphasis is on understanding how to efficiently implement different data structures, communicate clearly about design decisions, and understand the relationships among implementations, design decisions, and the four pillars of object-oriented programming: abstraction, encapsulation, inheritance, and polymorphism.

### 2100. Data Structures and Introduction to Algorithms

Three credits. Prerequisite: CSE 1102. Students who have passed CSE 124C will receive only two credits for this course.

Fundamental concepts of data structures and the algorithms that proceed from them. Implementation and use of linked lists, stacks, queues, trees, priority queues, heaps and graphs. Emphasis on recursion, abstract data types, object oriented design, and associated algorithms and complexity issues. Design using specifications and requirements. Basic computer organizations, including memory organizations and allocations issues. Programming assignments.

### 2102. Introduction to Software Engineering

Three credits. Prerequisite: CSE 2050 or 2100, and 2500 which may be taken concurrently.

Software engineering concepts including the software life cycle and other software-development process models. Specification techniques, design methodologies, performance analysis, and verification techniques. Team-oriented software design and development, and project management techniques. Use of appropriate design and debugging tools for a modern programming language. Homework and laboratory projects that emphasize design and the use/features of a modern programming language.

### 2193. International Study

Variable (1-6) credits. May be repeated for a total of 6 credits.

Special Computer Science and Engineering topics taken in an international study program. May count toward the major with consent of the advisor and approved plan of study.

### 2300W. Digital Logic Design

Four credits. Prerequisite: CSE 1010 or 1100 or 1102, and secondary school physics or PHYS 1010Q or 1501Q; ENGL 1007 or 1010 or 1011 or 2011.

Representation of digital information. Analysis, design, and evaluation of combinational and sequential logic circuits. Debugging techniques. Use of computer facilities for circuit simulation, CAD, and report preparation and presentation. Introduction to structure and operation of digital computers. Design projects. Written reports with revisions are required for each project.

### 2301. Principles and Practice of Digital Logic Design

Four credits. Prerequisite: CSE 1010 and high school physics or PHYS 1010Q or 1201Q or 1401Q or 1501Q or 1601Q. Not open for credit to students who have passed CSE 2300W.

Representation of digital information. Analysis, design, and evaluation of combinational and sequential logic circuits. Debugging techniques. Use of computer facilities for circuit simulation, CAD, and report preparation and presentation. Introduction to structure and operation of digital computers. Design projects. Written reports with revisions are required for each project.

### 2304. Computer Architecture

Three credits. Prerequisite: CSE 2050 or 2100, and 2500; open only to students in the School of Engineering and declared Computer Science minors. Not open for credit after passing CSE 3666.

Structure and operation of digital systems and computers. Fundamentals of digital logic. Machine organization, control and data paths, instruction sets, and addressing modes. Hardwired and microprogrammed control. Memory systems organization. Discussion of alternative architectures such as RISC, CISC, and various parallel architectures.

### 2500. Introduction to Discrete Systems

Three credits. Prerequisite: CSE 1010 or 1729.

Introduction to formal mathematical thinking including discrete systems and proofs. Discrete system topics include logic, set theory, basic number theory, basic combinatorics, functions, relations, sequences, sums, products, recurrence, and countability. Proof topics include direct proof, including proof by cases and induction, and indirect proof, including proof by contrapositive and contradiction.

### 2550. Blockchain Technology I

Three credits.

Introduction to the basics of blockchain technology. The course will cover the semantics of blockchains, cryptocurrencies, types of blockchains and consensus algorithms, wallet operation, privacy, threat modeling and security aspects of blockchains and cryptocurrencies, the paradigm of decentralized internet, and some ethical and environmental concerns from a technical lens.

**3000. Contemporary Issues in Computer Science and Engineering**

One credit. Prerequisite: CSE 3100; CSE 2304 or 3666; open only to CSE and Computer Science majors.

Information management, the global and societal impact of computer science and engineering decisions, professional and ethical responsibility.

**3002. Social, Ethical and Professional Issues in Computer Science and Engineering**

Three credits. Prerequisite: CSE 3100. Open only to CSE and Computer Science majors.

Study of areas in which computer science interacts with ethical issues, and issues of public policy. Topics of professional growth, development, and responsibility. Practice in the analysis of complex issues brought about by modern technology.

**3100. Systems Programming**

Three credits. Prerequisite: CSE 2050 or 2100; open only to students in the School of Engineering and declared Computer Science minors.

Introduction to system-level programming with an emphasis on C programming, process management and small scale concurrency with multi-threaded programming. Special attention will be devoted to proficiency with memory management and debugging facilities both in a sequential and parallel setting.

**3101. Go Essentials**

Three credits. Prerequisite: CSE 2050.

System level programming in the Go language with a focus on concurrency and implementation of web applications and blockchain stacks. Students completing the course will be able to create and maintain applications written in Go.

**3140. Cybersecurity Lab**

Two credits. Prerequisite: CSE 2050.

Introduction to the design of secure systems. Explores issues that arise in multiple design phases to understand the limitations of the platform and the source of opportunities for attackers. Each unit will explore a system, its design, its vulnerabilities and how to exploit them, culminating with the creation, implementation and deployment of counter-measures to eliminate the vulnerabilities and nullify the threat.

**3150. C++ Essentials**

Three credits. Prerequisite: CSE 3100; open only to students in the School of Engineering and declared Computer Science minors.

Leverages existing knowledge of C and covers all the essential capabilities of the most recent C++ standard, illustrating their specificities as well as how the language can be used to model object-oriented implementation of a number of classic problems.

**3160. Functional Programming Fundamentals**

Three credits. Prerequisite: CSE 3100.

The course covers fundamental techniques in functional programming. While the primary focus is purely functional programming, side effects are explored for various purposes such as modeling I/O and rendering stateful objects. The course introduces elementary types, control flow, environments and scoping, closures, and other structural features of typical functional programs. The course may cover additional topics such as

typed functional programming languages, type inference, continuation-passing, streams, and monads.

**3193. International Study**

Variable (1-6) credits. May be repeated for a total of 6 credits.

Consent of the department head or undergraduate coordinator required, normally before the student's departure. May count toward the major with consent of the advisor and either the department head or undergraduate coordinator.

**3200. Mobile Application Development**

Three credits. Prerequisite: CSE 2102 and 3100; open only to students in the School of Engineering and declared Computer Science minors; typically only offered to Stamford Campus students.

Introduction to mobile application development. Its focus is on Android native development. Android Development is done using Java. The central objective is to develop students' problem-solving skills for mobile app development. This course is typically only offered to Stamford Campus students.

**3300. Computer Networks and Data Communication**

Three credits. Prerequisite: CSE 3100; open only to students in the School of Engineering and declared Computer Science minors.

Introduction to computer networks and data communications. Network types, components and topology, protocol architecture, routing algorithms, and performance. Case studies including LAN and other architectures.

**3302. Digital Systems Design**

(Also offered as ECE 3401.) Three credits. Prerequisite: CSE 2300W or 2301; open only to students in the School of Engineering and declared Computer Science minors.

Design and evaluation of control and data structures for digital systems. Hardware design languages are used to describe and design alternative register transfer level architectures and control units with a micro-programming emphasis. Consideration of computer architecture, memories, digital interfacing timing and synchronization, and microprocessor systems.

**3350. Digital Design Laboratory**

(Also offered as ECE 4401.) Three credits. Prerequisite: CSE 3302 or ECE 3401, which may be taken concurrently; open only to students in the School of Engineering and declared Computer Science minors.

Digital designing with PLA and FPGA, A/D and D/A conversion, floating point processing, ALU design, synchronous and asynchronous controllers, control path; bus master; bus slave; memory interface; I/O interface; logic circuits analysis, testing, and trouble shooting; PCB; design and manufacturing.

**3400. Introduction to Computer and Network Security**

Three credits. Prerequisite: CSE 2500; open only to students in the School of Engineering and declared Computer Science minors.

Introduction to computer security and the design of secure computer systems. Introduction to applied cryptography, including basic elements of symmetric-key and public-key ciphers,

authentication, and key exchange. Security issues in operating systems, software, databases, and networks. Attacks and countermeasures. Ethical, legal and business aspects.

**3500. Algorithms and Complexity**

Three credits. Prerequisite: CSE 2050 or 2100; and 2500; open only to students in the School of Engineering, Cognitive Science majors, and declared Computer Science minors.

Design and analysis of efficient computer algorithms. Algorithm design techniques, including divide-and-conquer, dynamic programming, and greedy approaches. Graph algorithms and advanced data structures. Worst-case and average-case analysis, reductions, and NP-completeness.

**3502. Theory of Computation**

Three credits. Prerequisite: CSE 2050 or 2100; and 2500; open only to students in the School of Engineering, Cognitive Science majors, and declared Computer Science or Cognitive Science minors.

Formal models of computation, such as finite state automata, pushdown automata, and Turing machines, and their corresponding elements in formal languages (regular, context-free, recursively enumerable). The complexity hierarchy. Church's thesis and undecidability. NP completeness. Theoretical basis of design and compiler construction.

**3504. Probabilistic Performance Analysis of Computer Systems**

Three credits. Prerequisite: CSE 2050 or 2100; CSE 2500; STAT 3025Q or 3345Q or 3375Q, or MATH 3160; open only to students in the School of Engineering and declared Computer Science minors.

Introduction to the probabilistic techniques which can be used to represent random processes in computer systems. Markov processes, generating functions and their application to performance analysis. Models which can be used to describe the probabilistic performance of digital systems.

**3580. Blockchain Technology II**

Three credits. Prerequisite: CSE 2550, 3400, 3500; STAT 3375Q or MATH 3160.

Introduction to the design and analysis of blockchain algorithms, with a focus on rigorous treatment of underlying consensus algorithms. The course will present and analyze relevant algorithms for consensus, computational and network models for consensus algorithms, and provide an introduction to the cryptographic tools that support these algorithms.

**3585. Smart Contracts**

Three credits. Prerequisite: CSE 2550. Recommended preparation: CSE 2102.

Introduction to the basics of smart contracts and decentralized internet applications. Smart contract semantics, the design of smart contract-enabled blockchains, security and performance issues, privacy preserving smart contract schemes. Smart contract environments and applications in decentralized finance.

**3666. Introduction to Computer Architecture**

Three credits. Prerequisite: CSE 2050 or 2100 and 2500; open only to students in the School of Engineering and declared Computer Science minors. Not open for credit after passing CSE

2304. May not be taken out of sequence after passing 4302.

Structure and operation of digital systems and computers. Instruction sets and assembly language. Integer and floating-point arithmetic. Machine organization, control and data paths, pipeline, and the memory hierarchy.

#### **3800. Bioinformatics**

(Also offered as BME 4800.) Three credits. Prerequisite: BIOL 1107; CSE 1729 or CSE 2050; STAT 3025Q or 3345Q or 3375Q or MATH 3160; open only to students in the School of Engineering and declared Computer Science minors, others by instructor consent.

Fundamental mathematical models and computational techniques in bioinformatics. Exact and approximate string matching, suffix trees, pairwise and multiple sequence alignment, Markov chains and hidden Markov models. Applications to sequence analysis, gene finding, database search, phylogenetic tree reconstruction.

#### **3802. Numerical Methods in Scientific Computation**

(Also offered as ECE 3431.) Three credits. Prerequisite: CSE 1729 or 2050; MATH 2110Q and 2410Q; MATH 2210Q, which may be taken concurrently; open only to students in the School of Engineering, Cognitive Science majors, and declared Computer Science and Cognitive Science minors.

Introduction to the numerical algorithms fundamental to scientific computation. Equation solving, function approximation, integration, difference and differential equations, special computer techniques. Emphasis is placed on efficient use of computers to optimize speed and accuracy in numerical computations. Extensive digital computer usage for algorithm verification.

#### **3810. Computational Genomics**

(Also offered as BME 3810.) Three credits. Prerequisite: BIOL 1107; CSE 1729 or CSE 2050; STAT 3025Q or 3345Q or 3375Q or MATH 3160; open only to students in the School of Engineering and declared Computer Science minors.

Computational methods for genomic data analysis. Topics covered include statistical modeling of biological sequences, probabilistic models of DNA and protein evolution, expectation maximization and Gibbs sampling algorithms, genomic sequence variation, and applications in genomics and genetic epidemiology.

#### **4095. Special Topics in Computer Science and Engineering**

Variable (1-6) credits. Prerequisite: Prerequisites and recommended preparation vary. Open only to students in the School of Engineering and declared Computer Science minors. May be repeated for credit.

Classroom course in special topics as announced in advance for each semester.

#### **4099. Independent Study in Computer Science and Engineering**

Variable (1-4) credits. Prerequisite: Consent of instructor and department head required; open only to students in the School of Engineering and declared Computer Science minors. May be repeated for credit.

Exposes the student to management principles and practices and the knowledge and skills

necessary to develop an education project and to perform a research project.

#### **4100. Programming Language Translation**

Three credits. Prerequisite: CSE 3502; CSE 2304 or 3666; open only to students in the School of Engineering and declared Computer Science minors.

Introduction to the formal definition of programming language syntax and semantics. Design and realization of programming language processing systems such as assemblers, compilers, and interpreters.

#### **4102. Programming Languages**

Three credits. Prerequisite: CSE 3100; open only to students in the School of Engineering and declared Computer Science minors.

The study of programming language features and programming paradigms. Data types, control, run-time environments, and semantics. Examples of procedural, functional, logical, and object-oriented programming. Features used for parallel and distributed processing. Classic and current programming languages and environments.

#### **4300. Operating Systems**

Three credits. Prerequisite: CSE 3100; CSE 2304 or 3666; open only to students in the School of Engineering and declared Computer Science minors.

Introduction to the theory, design, and implementation of software systems to support the management of computing resources. Topics include the synchronization of concurrent processes, memory management, processor management, scheduling, device management, file systems, and protection.

#### **4302. Computer Organization and Architecture**

Three credits. Prerequisite: CSE 2304 or 3666; open only to students in the School of Engineering and declared Computer Science minors. Cannot be taken after passing CSE 4950/ECE 4901.

Organization and architecture of modern computer systems. Emphasis is on alternatives and advances to the basic Von Neumann architecture: topics such as pipelining, memory hierarchy and management, multiprocessor and alternative architectures, reconfigurable hardware, and other techniques for performance enhancement.

#### **4400. Computer Security**

Three credits. Prerequisite: CSE 3100; CSE 2304 or 3666; and CSE 3400, which may be taken concurrently; open only to students in the School of Engineering and declared Computer Science minors.

Computer security and the design of secure systems. Cryptographic tools. Operating system security and access control. Network, software and database security. Randomness generation. Malicious software. Anonymity and privacy. Various attacks and countermeasures. Ethical, legal and business aspects.

#### **4402. Network Security**

Three credits. Prerequisite: CSE 3300 and 3400; open only to students in the School of Engineering and declared Computer Science minors.

The principle and practices of how to provide secure communication between computer systems. Includes protection techniques at the physical, network, transport layers, and major approaches

in Internet security. This class will cover how cryptography is applied in network security. Topics include: denial-of-service, DNS, BGP, IPsec, SSL/TLS, Authentication/Kerberos, VPNs, PKI, firewalls, intrusion detection/prevention systems, blockchains, and wireless security.

#### **4412. Introduction to Quantum Computing, Cryptography, and Networking**

Three credits. Prerequisite: CSE 3500 or 5050; MATH 2210Q.

Fundamentals of quantum computing (qubits, superposition, measurements, quantum circuits) including basic quantum algorithms and quantum complexity. Quantum cryptography and networking, including quantum key distribution protocols and their security proofs, and the design and use of large-scale quantum networks (e.g., quantum repeaters). Hands-on programming of the IBM quantum computer.

#### **4500. Parallel Systems**

Three credits. Prerequisite: CSE 2304 or 3666; CSE 3500; open only to students in the School of Engineering and declared Computer Science minors.

Introduction to parallel systems. Fundamentals of the theory of parallel systems. Models of parallel machines. Limitations of parallel systems. Paradigmatic algorithms. Vectorization. Arithmetic structures. Classical parallel architectures.

#### **4502. Big Data Analytics**

Three credits. Prerequisite: CSE 3500; MATH 2210Q; open only to students in the School of Engineering and declared Computer Science and Analytics minors.

Focuses on basic concepts of data science and big data analytics. Different algorithmic techniques employed to process data will be discussed. Specific topics include: Parallel and out-of-core algorithms and data structures, rules mining, clustering algorithms, text mining, string algorithms, data reduction techniques, and learning algorithms. Applications such as motif search, k-locus association, k-mer counting, error correction, sequence assembly, genotype-phenotype correlations, etc. will be investigated.

#### **4701. Principles of Databases**

Three credits. Prerequisite: CSE 3500; open only to students in the School of Engineering and declared Computer Science minors.

Fundamentals of data base design and data indexing techniques. Hierarchical, network, and relational data models. Data base design theory. Query languages, their implementation and optimization. Data base security and concurrent data base operations.

#### **4702. Introduction to Modern Cryptography**

Three credits. Prerequisite: CSE 3400 and 3500; and STAT 3025Q or 3345Q or 3375Q or MATH 3160; open only to students in the School of Engineering and declared Computer Science minors.

Covers the foundations of modern cryptography introducing basic topics such as one-way functions, pseudorandom generators, and computational hardness assumptions based on number theory. The course will cover fundamental cryptographic constructions such as hard-core predicates, secure symmetric encryption and message-authentication codes, and public-key cryptography.

**4703. Principles of Computer Graphics**

Three credits. Prerequisite: CSE 3500; MATH 2110Q; MATH 2210Q or 3210; open only to students in the School of Engineering and declared Computer Science minors.

Representation of two- and three-dimensional data, internal representation of data structures, transformations, mapping of data to graphics screen, graphics hardware. Programming projects are assigned.

**4704. Computational Geometry**

Three credits. Prerequisite: CSE 3500; open only to students in the School of Engineering and declared Computer Science minors.

An extension of sorting, searching, selection, and graph algorithms to geometric problems. This includes algorithms and data structures for constructing geometric objects, computing geometric properties, and answering geometric queries as well as techniques for the analysis of their correctness and complexity.

**4705. Artificial Intelligence**

Three credits. Prerequisite: CSE 3500; open only to students in the School of Engineering, Cognitive Science majors, and declared Computer Science and Cognitive Science minors.

Design and implementation of intelligent systems, in areas such as natural language processing, expert reasoning, planning, robotics, problem solving and learning. Students will design their own versions of "classic" AI problems, and complete one substantial design project.

**4709. Networked Embedded Systems**

Three credits. Prerequisite: CSE 2304 or 3666; CSE 3300, or equivalent with instructor permission; open only to students in the School of Engineering and declared Computer Science minors.

Introduction to the basic concepts, challenges, and methods for designing networked embedded systems. Examines related hardware, software, and system-level design. Hardware topics include various design alternatives (such as microcontrollers, digital signal processors (DSP), and field-programmable gate array (FPGA)) in resource-constrained environments. Software issues include operating systems, programming languages, program verification and analysis. System-level topics include autonomous wireless sensor network design, power and resource management, security and privacy.

**4820. Introduction to Machine Learning**

Three credits. Prerequisite: MATH 2210Q; STAT 3025Q or 3345Q or 3375Q or MATH 3160; open only to students in the School of Engineering and declared Computer Science minors; juniors or higher. Recommended preparation: CSE 3500.

An introduction to the basic tools and techniques of machine learning, including models for both supervised and unsupervised learning, related optimization techniques, and methods for model validation. Topics include linear and logistic regression, SVM classification and regression, kernels, regularization, clustering, and on-line algorithms for regret minimization.

**4900. Independent Design Laboratory**

Three credits. Prerequisite: CSE 2102; open only to students in the School of Engineering and declared

Computer Science minors. May be repeated for credit.

Experimental design project undertaken by the student by special arrangement with a faculty member of the Department of Computer Science and Engineering.

**4904. Computer Science Design Laboratory**

Three credits. Prerequisite: Prerequisites and recommended preparation vary. Open only to students in the School of Engineering and declared Computer Science minors. May be repeated for credit.

Design and implementation of complex software and/or hardware systems to solve problems posed by either student groups or the instructor.

**4905. Networking and Distributed Systems Laboratory**

Three credits. Prerequisite: CSE 3300; CSE 2304 or 3666; open only to students in the School of Engineering and declared Computer Science minors.

Software laboratory that explores selected issues in networking and distributed systems. Topics include: Berkeley sockets; TCP and IP; atm apis; latency and bandwidth; performance models; performance evaluation of different network fabrics; MPI; simple CORBA; performance characteristics of MPI, Java, RMI, and CORBA; implementation and evaluation of a client-server system.

**4939W. Computer Science and Engineering Design Project I**

Three credits. Prerequisite: CSE 3100, 3500; open to seniors; ENGL 1007 or 1010 or 1011 or 2011.

The first semester of the required two-semester major design experience. Working on a team, students will propose, design, produce, and evaluate a software and/or hardware system. Will culminate in the delivery of the design, analysis, and initial working system, to be used as a basis for CSE 4940, formal public presentation, and written documentation. Oral and written progress reports are required.

**4940. Computer Science and Engineering Design Project II**

Three credits. Prerequisite: CSE 4939W. Open only to CSE and Computer Science majors.

The second semester of the required year long major design experience. The semester will be spent developing, testing, and evaluating the software and/or hardware system begun in CSE4939W. The project will culminate in the delivery of a working system and will include a formal public presentation, and written documentation. Oral and written progress reports are required.

**4950. Electrical and Computer Engineering Design I**

(Also offered as ECE 4901.) Two credits. Prerequisite: ECE 3101; ECE 3201; open only to seniors in the School of Engineering and declared Computer Science minors.

Discussion of the design process; project statement, specification, project planning, scheduling and division of responsibility, ethics in engineering design, safety, environmental considerations, economic constraints, liability, manufacturing, and marketing. Projects are carried out using a team-based approach. Selection and analysis of a design project to be undertaken in CSE

4951/ECE 4902 is carried out. Written progress reports, a proposal, an interim project report, a final report, and oral presentations are required.

**4951. Electrical and Computer Engineering Design II**

(Also offered as ECE 4902.) Three credits. Prerequisite: ECE 4901; open only to students in the School of Engineering and declared Computer Science minors.

Design of a device, circuit, system, process, or algorithm. Team solution to an engineering design problem as formulated in CSE 4950/ECE 4901, from first concepts through evaluation and documentation. Written progress reports, a final report, and oral presentations are required.

**4997. Senior Thesis in Computer Science and Engineering**

Three credits. Prerequisite: Senior standing in Computer Science, Computer Science and Engineering, or Computer Engineering.

Students are expected to choose an advisor and seek approval of a thesis topic by the time of registration. Students will author a formal thesis based on independent research conducted under the advisor supervision. Thesis proposal and final thesis must follow the guidelines developed by the department.

**Critical Languages Program (CRLP)****1101. Elementary Level I**

Three credits. Prerequisite: Open only to students with no prior contact with the language.

Some critical languages, because of area study requirements or other specific circumstances, may be offered under the regular instructional method. The method of instruction for most critical language courses follows the self-study format established by the National Association of Self-Instructional Language Programs (NASILP). This method relies on four hours of student self-instruction per week, using the approved book/tape program; two hours per week of drill sessions led by the Conversation Partner; four or five quizzes per semester; and an oral final examination conducted by the Outside Examiner, a member of the faculty of an Institution of Higher Education which offers the language. In order to be eligible to register for a course offered through the NASILP method, students must have sophomore standing, a B (3.0) cumulative Grade Point Average, and the support of their academic advisor. Students seeking to register should bring an unofficial transcript and a letter from their advisor to Room 128, J.H. Arjona Building during pre-registration for the following semester.

**1102. Elementary II**

Three credits. Prerequisite: CRLP 1101 or equivalent.

Some critical languages, because of area study requirements or other specific circumstances, may be offered under the regular instructional method. The method of instruction for most critical language courses follows the self-study format established by the National Association of Self-Instructional Language Programs (NASILP). This method relies on four hours of student self-instruction per week, using the approved book/tape program; two hours per week of drill sessions led by the Conversation Partner; four or five quizzes per semester; and an

oral final examination conducted by the Outside Examiner, a member of the faculty of an Institution of Higher Education which offers the language. In order to be eligible to register for a course offered through the NASILP method, students must have sophomore standing, a B (3.0) cumulative Grade Point Average, and the support of their academic advisor. Students seeking to register should bring an unofficial transcript and a letter from their advisor to Room 128, J.H. Arjona Building during pre-registration for the following semester.

### 1103. Intermediate Level I

Three credits. Prerequisite: CRLP 1102 or equivalent.

Some critical languages, because of area study requirements or other specific circumstances, may be offered under the regular instructional method. The method of instruction for most critical language courses follows the self-study format established by the National Association of Self-Instructional Language Programs (NASILP). This method relies on four hours of student self-instruction per week, using the approved book/tape program; two hours per week of drill sessions led by the Conversation Partner; four or five quizzes per semester; and an oral final examination conducted by the Outside Examiner, a member of the faculty of an Institution of Higher Education which offers the language. In order to be eligible to register for a course offered through the NASILP method, students must have sophomore standing, a B (3.0) cumulative Grade Point Average, and the support of their academic advisor. Students seeking to register should bring an unofficial transcript and a letter from their advisor to Room 128, J.H. Arjona Building during pre-registration for the following semester.

### 1104. Intermediate II

Three credits. Prerequisite: CRLP 1103 or equivalent.

Some critical languages, because of area study requirements or other specific circumstances, may be offered under the regular instructional method. The method of instruction for most critical language courses follows the self-study format established by the National Association of Self-Instructional Language Programs (NASILP). This method relies on four hours of student self-instruction per week, using the approved book/tape program; two hours per week of drill sessions led by the Conversation Partner; four or five quizzes per semester; and an oral final examination conducted by the Outside Examiner, a member of the faculty of an Institution of Higher Education which offers the language. In order to be eligible to register for a course offered through the NASILP method, students must have sophomore standing, a B (3.0) cumulative Grade Point Average, and the support of their academic advisor. Students seeking to register should bring an unofficial transcript and a letter from their advisor to Room 128, J.H. Arjona Building during pre-registration for the following semester.

### 1193. Foreign Study

Variable (1-6) credits. Prerequisite: Consent of Department Head required, normally to be granted prior to the student's departure. May be repeated for credit.

Special topics taken in a foreign study program.

### 3293. Foreign Study

Variable (1-6) credits. Prerequisite: Consent of Director required, normally to be granted prior to the student's departure. May be repeated for credit.

Special topics taken in a foreign study program. May count toward the major with consent of the advisor.

### 3295. Special Topics

Variable (1-6) credits. Prerequisite: Prerequisites and recommended preparation vary. May be repeated for credit.

### 3298. Variable Topics

Three credits. Prerequisite: Prerequisites and recommended preparation vary. May be repeated for credit.

Prerequisites and recommended preparation vary.

### 3299. Independent Study

Variable (1-3) credits. Prerequisite: Department consent required. May be repeated for credit.

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## Diagnostic Genetic Sciences (DGS)

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### 3100. Cytogenetic Technologies

Three credits. Prerequisite: Open to students in the Diagnostic Genetic Sciences Program and Diagnostic Genetic Sciences certificates.

Study of human chromosome morphology and identification, including chromosome variants and abnormalities. Methodologies in cytogenetic testing for multiple sample types.

### 3226. Current Genetic Research

Variable (2-3) credits. Prerequisite: DGS 3100 or MCB 2400 or MCB 2410. Open to DGS majors, others with instructor consent. May be repeated for a total of 6 credits with instructor consent. May be repeated for a total of 6 credits.

Retrieval, review, and discussion of current primary genetics literature in addition to attending and reviewing University research seminars/guest speakers.

### 3999. Independent Study for Undergraduates

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

Designed primarily for students who wish to extend their knowledge in some specialized area in the field of diagnostic genetic sciences.

### 4095. Special Topics

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

Application of the scientific method of inquiry to planning, implementation, evaluating and reporting a study of a problem in cytogenetics.

### 4234. Diagnostic Molecular Technologies

Three credits. Prerequisite: MCB 2400 or 2410; AH 3121 or MCB 4211 (which may be taken concurrently); open to students in DGS & MLS Programs, others w/ instructor consent. May not be taken out of sequence after passing DGS 4235, 4503, 4510, 4511, 4514, 4515, 4550.

DNA and RNA diagnostic technologies used in clinical settings; clinical applications in prenatal diagnosis; cancer management, transplantation, paternity testing, forensic medicine and microbiology.

### 4234W. Diagnostic Molecular Technologies

Three credits. Prerequisite: MCB 2400 or 2410; ENGL 1007 or 1010 or 1011 or 2011; AH 3121 or MCB 4211 (can be taken concurrently); open to students in DGS or MLS Prgm, others w/ inst. consent. Cannot be taken out of sequence after passing DGS 4235, 4503, 4510, 4511, 4514, 4515, 4550.

DNA and RNA diagnostic technologies used in clinical settings; clinical applications in prenatal diagnosis; cancer management, transplantation, paternity testing, forensic medicine and microbiology.

### 4235. Laboratory in Molecular Diagnostics

Two credits. Prerequisite: DGS 4234; open only to students enrolled in the DGS and MLS programs, others with instructor consent.

Nucleic acid isolation, blotting techniques, fluorescence in situ hybridization, conventional and real-time polymerase chain reaction. Adhering to clinical laboratory quality guidelines, students obtain practical experience with molecular techniques for the detection and diagnosis of disease.

### 4236. Case Studies in Molecular Pathology

One credit. Prerequisite: DGS 4235; open to Diagnostic Genetic Science students and Diagnostic Genetic Sciences certificate students in either Cytogenetics or Molecular concentrations.

Clinical cases in molecular pathology are presented and discussed.

### 4237. Introductory Bioinformatics for Genomics Analysis

Three credits. Prerequisite: DGS 3100 or MCB 2410 or 2413; open to students in the Diagnostic Genetic Sciences program, others with instructor consent.

An introductory bioinformatics course working with genetic and genomic data for clinical and research applications.

### 4246. Contemporary Issues in Human Genetics

Three credits. Prerequisite: Open to junior and senior Allied Health Sciences and Diagnostic Genetic Sciences majors and Diagnostic Genetic Sciences certificate students in either Cytogenetics or Molecular concentrations; others with consent of instructor.

Historical and contemporary issues relevant to human genetics, including the layperson's understanding of genetic testing and diagnosis; and the ethical, legal, and social issues associated with them.

### 4402. Specimen Preparation, Nucleic Acid Isolation and Assessment

Four credits. Prerequisite: Students must earn a "C" or better in DGS 4234/W and 4235; open to Diagnostic Genetic Sciences Molecular concentration majors and Diagnostic Genetic Sciences Molecular concentration certificate students.

Practicum experience in specimen preparation for molecular testing, nucleic acid isolation, and nucleic acid quality control assessment.

### 4503. Amplification Methods

Six credits. Prerequisite: student must have earned a "C" or better in DGS 4234, 4235, and 4236; open to Diagnostic Genetic Sciences Molecular concentration majors and Diagnostic Genetic

Sciences Molecular concentration certificate students.

Practicum experience in DNA and/or RNA amplification stressing polymerase chain reaction.

#### 4510. In Situ Hybridization Methods

Two credits. Prerequisite: A "C" or better in DGS 4234 and 4235; open to Diagnostic Genetic Sciences Molecular concentration majors and Diagnostic Genetic Sciences Molecular concentration certificate students.

Practicum in fluorescence in situ hybridization or other in situ hybridization techniques.

#### 4512. Cloning Techniques

Two credits. Prerequisite: A "C" or better in DGS 4234 and 4235; open to Diagnostic Genetic Sciences Molecular concentration majors and Diagnostic Genetic Sciences Molecular concentration certificate students.

Theory and techniques of cloning.

#### 4513. Blotting Applications

Two credits. Prerequisite: A "C" or better in DGS 4234 and 4235; open to Diagnostic Genetic Sciences Molecular concentration majors and Diagnostic Genetic Sciences Molecular concentration certificate students.

Theory and techniques of nucleic acid and/or protein blotting (e.g. Southern blot, reverse dot blot).

#### 4515. Microbiological Applications of Molecular Diagnostics

Two credits. Prerequisite: student must have earned a "C" or better in DGS 4234 and 4235; open only to Diagnostic Genetic Sciences Molecular concentration majors and Diagnostic Genetic Sciences Molecular concentration certificate students; others with consent of the instructor.

Practicum experience in the application of molecular technologies to microbiology.

#### 4604. Sequencing Techniques and Data Analysis

Three credits. Prerequisite: Students must earn a "C" or better in DGS 4234/W and 4235; open to Diagnostic Genetic Sciences Molecular concentration majors and Diagnostic Genetic Sciences Molecular concentration certificate students.

Practicum experience in nucleic acid sequencing and data analysis.

#### 4850. Investigative Topics in Laboratory Genetics

One credit. Prerequisite: A grade of "C" or better in DGS 4234 or 4234W, 4235, and 4236; open only to Diagnostic Genetic Sciences majors, others with instructor consent.

Exploration of an area of individual interest in laboratory or clinical genetics.

#### 4997. Honors Research

Three credits. Prerequisite: Open only to Diagnostic Genetic Sciences honors students and Diagnostic Genetic Sciences certificate students in either Cytogenetics or Molecular concentrations.

Design and implementation of an honors research project.

## Dietetics (DIET)

### 3099. Independent Study for Undergraduates

Variable (1-6) credits. Prerequisite: Open only to Dietetics majors, others by consent of the Director of Dietetics. May be repeated for credit.

Designed primarily for students who wish to extend their knowledge in some specialized area in the field of dietetics.

### 3150. Medical Nutrition Therapy I

(Also offered as NUSC 3150.) Three credits. Prerequisite: MCB 2000; PNB 2264, 2265; NUSC 1165; open only to Dietetics majors and NUSC Didactic Program students: open to juniors or higher.

Introduction to the nutrition care process, nutrition assessment, planning of special diets and applications of medical nutrition therapy to selected disease states and conditions.

### 3155. Clinical Dietetics Practicum I

One credit. Prerequisite: MCB 2000; PNB 2264 and 2265; NUSC 1165; open only to Dietetics majors, others by consent of the Program Director.

Supervised practice experience in the health care setting.

### 3215. Food Service Management Practicum I

One credit. Prerequisite: A grade of C or better in DIET 3150 and 3155; open only to Dietetics major, others by consent of Program Director.

Supervised practice experiences in food service settings.

### 3230. Community Nutrition

(Also offered as NUSC 3230.) Three credits. Prerequisite: NUSC 2200; open to Dietetic majors, NUSC majors, and AHS majors; open to juniors or higher, others by consent. Not open to students who have passed NUSC 3267. May not be taken out of sequence after passing 3180.

Role of community structure, agencies, and resources in community health relating to nutrition.

### 3231W. Writing for Community Nutrition Research

Two credits. Prerequisite: A "C" or better in DIET 3150, 3155; ENGL 1007 or 1010 or 1011 or 2011; concurrent enrollment in DIET 3230; open only to Dietetics majors.

Develops critical thinking skills through research and writing in community nutrition.

### 3235. Community Nutrition Practicum I

One credit. Prerequisite: A grade of C or better in DIET 3150 and 3155; open only to Dietetics major, others by consent of Program Director.

Supervised practice experiences in community agencies.

### 3250. Medical Nutrition Therapy II

(Also offered as NUSC 3250.) Three credits. Prerequisite: DIET 3150 or NUSC 3150; open only to Dietetics majors and NUSC Didactic Program students.

Continuation of Medical Nutrition Therapy I. Further investigation of the interrelationships of physiology and biochemistry of disease and dietary intervention.

### 3255. Clinical Dietetics Practicum II

One credit. Prerequisite: A grade of C or better in DIET 3150 and 3155; open only to Dietetics major, others by consent of Program Director.

Supervised practice experience in the health care setting.

### 3272. Food Service Systems Management I

(Also offered as NUSC 3272.) Two credits. Prerequisite: Open only to junior or higher Dietetics and Nutritional Science majors, others with instructor consent. Recommended preparation: NUSC 3233, 3234. Not open to students who have passed NUSC 3270.

Quantity food procurement, preparation and distribution; recipe standardization and menu development; sanitation and safety; portion and quality control; systems approach and delivery systems.

### 3296. Applied Research for Dietetic Professionals

Variable (1-3) credits. Prerequisite: Instructor consent. May be repeated for a total of 6 credits.

Provides Dietetic majors research experience under the guidance and supervision of a department faculty member; designed to engage a student in inquiry and investigation on a topic of interest.

### 4095. Special Topics

Variable (1-6) credits. Prerequisite: Open only to Dietetics majors, others by consent of the Director of Dietetics. May be repeated for credit.

Application of the scientific method of inquiry to planning, implementing, evaluating, and reporting a study of a problem related to dietetics. May be repeated for credit with a change of topic.

### 4272. Food Service Systems Management II

(Also offered as NUSC 4272.) Two credits. Prerequisite: DIET 3272 or NUSC 3272. Cannot be taken for credit after passing NUSC 4270.

Institutional menu development; cost and budgeting; equipment layout and design; personnel management; marketing and merchandising; purchasing and inventory control.

### 4296. Applied Honors Research for Dietetic Professionals

Variable (1-3) credits. Prerequisite: Instructor and advisor consent. May be repeated for a total of 6 credits.

Dietetic majors research experience under the guidance and supervision of a department faculty member; designed to engage a student in inquiry and investigation on a topic of interest.

### 4315. Food Service in Health Care

One credit. Prerequisite: Student must earn a "C" or better in DIET 3215, 3230, 3231W, 3235, 3250, 3272.

Supervised practice experience applying didactic learning to foodservice experiences will be in a healthcare establishment.

### 4335. Clinical Nutrition in Acute Care

One credit. Prerequisite: Student must earn a "C" or better in DIET 3215, 3230, 3231W, 3235, 3250, 3272.

Supervised practice experience applying didactic learning to clinical nutrition.

### 4350. Applied Medical Nutrition Therapy III

Three credits. Prerequisite: A grade of C or better in DIET 3215, 3230, 3231W, 3235, 3250, 3255

and 3272; open only to Dietetics majors, others by consent of the Dietetics Program Director.

Medical nutrition therapy for complex medical problems. Continuation of DIET 3250.

#### **4360. Contemporary Nutrition Practice**

Three credits. Prerequisite: A grade of C or better in DIET 3215, 3230, 3231W, 3235, 3250, 3255 and 3272; open only to Dietetics majors, others by consent of the Dietetics Program Director.

Application of knowledge, skills, and competencies affecting contemporary nutrition practice in the clinical dietetics, food service management, and community nutrition settings.

#### **4365. Applied Dietetics Practicum**

Four credits. Prerequisite: Students must earn a "C" or better in DIET 3215, 3230, 3231W, 3235, 3250, 3255, 3272; open only to Dietetics majors; others by consent of Dietetics Program Director.

Supervised practice experiences in the clinical dietetics, food service management, and community nutrition settings.

#### **4370. Advanced Nutrition for the Dietetics Practitioner**

Three credits. Prerequisite: C or better in DIET 4272, 4350, 4360, and 4365; open to Dietetics majors, others by consent of Dietetics Program Director.

Relationship of nutrients to each other and to body function.

#### **4415. Food Service Management Practicum II**

Three credits. Prerequisite: C or better in DIET 4272, 4350, 4360, and 4365; open to Dietetics majors, others by consent of Dietetics Program Director.

Application and synthesis of performance requirements in food service systems.

#### **4435. Community Nutrition Practicum II**

Three credits. Prerequisite: A grade of C or better in DIET 4272, 4350, 4360 and 4365; open to Dietetics majors, others by consent of Dietetics Program Director.

Application and synthesis of performance requirements in community nutrition.

#### **4455. Clinical Dietetics Practicum III**

Four credits. Prerequisite: C or better in DIET 4272, 4350, 4360, and 4365; open to Dietetics majors, others by consent of Dietetics Program Director.

Application and synthesis of performance requirements in clinical dietetics.

#### **4470. Seminar in Dietetics**

Two credits. Prerequisite: C or better in DIET 4272, 4350, 4360, and 4365; open to Dietetics majors, others by consent of Dietetics Program Director.

Special problems and issues in dietetics. The management role in patient care, nutrition education, and the integration of nutrition and food service units.

#### **4475. Dietetics Research Practicum**

Three credits. Prerequisite: A grade of C or better in DIET 4272, 4350, 4360 and 4365; open to Dietetics majors, others by consent of Dietetics Program Director.

Student defines objectives to extend knowledge in a specialized area of dietetics. Research project.

#### **4591. Dietetics Internship Practicum I**

Zero credits. Prerequisite: Open only to students in the Dietetic Internship Program.

Meets the performance requirements of the American Dietetic Association. Supervised practice experience in this course primarily in food service, long-term care, and community nutrition. Some lecture hours and discussion groups required.

#### **4691. Dietetics Internship Practicum II**

Zero credits. Prerequisite: Open only to students in the Dietetic Internship Program.

Meets the performance requirements of the American Dietetic Association. Supervised practice experience in this course primarily in research in dietetics, clinical dietetics, and ambulatory nutrition care. Some lecture hours and discussion groups required.

#### **4991. Dietetics Externship**

Variable (1-6) credits. Prerequisite: Students must earn a "C" or better in DIET 4370 and 4470; open only to Dietetics majors.

Culminating supervised practice experiences in application and synthesis of performance in clinical, community, food service or research; and practice experience in a specialty area of individual professional interest.

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### **Digital Media and Design (DMD)**

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#### **1000. Digital Foundation**

Three credits. Prerequisite: Interview and/or portfolio review required.

Introductory studio experience in designing for the digital arts; concepts, media and strategies for making creative digital work.

#### **1001. Foundations in Digital Media and Design I**

Three credits. Prerequisite: Open to Digital Media and Design majors only, others by instructor consent. Not open for credit to students who have passed DMD 1000.

Creative problem solving; empathy, ideation, prototyping, and testing as means to innovate discovery in diverse fields.

#### **1002. Foundations in Digital Media and Design II**

Three credits. Prerequisite: DMD 1001, open to Digital Media and Design majors, others by instructor consent.

Introduction to the fundamentals of storytelling through the use of a variety of practical digital media applications.

#### **1030. Animation Lab**

Three credits. Prerequisite: Interview and/or portfolio review and instructor consent required.

Fundamental skills required for 2D, 3D, digital and traditional animation techniques.

#### **1060. Fundamentals of Programming for Game, Web, and Interactive Media Design**

Three credits. Prerequisite: DMD 1001; open only to Digital Media and Design majors, others by instructor consent.

Introduction to programming for artists and designers through a combination of lecture and hands-on studio exercises. Students learn the basic principles of computer programming which set the foundation for future courses in game, web, and interactive media design.

#### **1070. Web Design I**

Three credits. Prerequisite: DMD 1002 and 1102; open to Digital Media and Design majors only, others with instructor consent.

Introduction to concepts, technologies and strategies for building contemporary websites.

#### **1101. Design Lab I**

Three credits. Prerequisite: Open only to Digital Media and Design majors, others by instructor consent.

Exploration of the creation, manipulation, and reception of digital images through project-based work using image-editing software. Through lecture, discussion, projects and critique, students will develop, refine, and evaluate digital images and understand their artistic, social, and ethical ramifications.

#### **1102. Design Lab II**

Three credits. Prerequisite: DMD 1000 or DMD 1001, DMD 1101. Open to Digital Media and Design majors only, others by instructor consent. Not open to students who have completed DMD 3020.

Theory, principles, and practices of digital screenbased visual communication. Through a multidisciplinary perspective involving art, design, art history, and media studies, students will address how culture visualizes screenbased communication through both image and type.

#### **2010. History of Digital Culture**

Three credits.

Key episodes in the history of digital technology and digital media; values and norms that adhere to digital culture. CA 1. CA 3.

#### **2020. Design Thinking**

Three credits.

Core values that shape creative production. Mindset that promotes diversity, inquiry, and a human-centered approach to designing and implementing real-world technological solutions. CA 1.

#### **2095. Special Topics in Digital Media**

Variable (1-6) credits. Prerequisite: Open to Digital Media and Design majors and Digital Arts minors, others by instructor consent. May be repeated for a total of 18 credits.

Seminar focusing on a special, limited topic in the digital media space.

#### **2200. Motion Design and Animation I**

Three credits. Prerequisite: DMD 1002 and 1102; open to Digital Media and Design majors; others with instructor consent.

Introduction to concepts and strategies for creating motion designs, animations, and visual effects.

#### **2210. Film and Video Editing I**

Three credits. Prerequisite: DMD 1002 and 1102; open only to Digital Media and Design majors; others by instructor consent.

Introduction to digital editing, project management, working with sound and time-based storytelling.

#### **2230. 3D Motion I**

Three credits. Prerequisite: DMD 2200, open to Digital Media and Design majors only, others by instructor consent.



Introduction to techniques of 3D motion such as modeling, lighting and texturing 3D forms; keyframes and keyframe interpolations; and motion graphics effectors and simulations.

### 2300. 3D Animation I

Three credits. Prerequisite: DMD 1001 and 1101; open only to Digital Media and Design majors; others by instructor consent. Corequisite: DMD 1002 and 1102.

Introduction to 3D Animation techniques including key framing, curve editing, timing, squash and stretch, walk cycles, and the 12 principles of animation.

### 2310. 3D Modeling I

Three credits. Prerequisite: DMD 1002 and 1102; open only to Digital Media and Design majors, others with instructor consent.

Introduction to creating polygonal 3D models using industry standard modeling tools, focusing geometry construction based on reference images, edge flow, clean topology, and polygon density.

### 2320. 3D Lighting and Rendering I

Three credits. Prerequisite: DMD 1002 and 1102; open only to Digital Media and Design majors, others with instructor consent.

Introduction to dramatic lighting, 3-point lighting, shadows, materials, procedural textures, bump maps, displacement maps, ambient occlusion, ray tracing, and global illumination.

### 2470. User Interface Design

Three credits. Prerequisite: DMD 1070; open to Digital Media and Design majors only, others with instructor consent.

Interface design fundamentals of websites, mobile applications, and interactive media installations. Students learn aesthetically engaging and usable human-computer interfaces through hands-on course projects, critiques, and discussions.

### 2500. Introduction to Digital Game Design

Three credits. Prerequisite: DMD 1002 and 1102; open to Digital Media and Design majors, others by instructor consent.

Introduction to the principles of game design and development. History of the industry, story and game mechanics.

### 2542. Introduction to Game Scripting

Three credits. Prerequisite: DMD 1060; open only to Digital Media and Design majors; others by instructor consent.

Fundamentals of gameplay scripting utilizing an off-the-shelf video game engine. Scripting concepts and constructs like vector math, classes, raycasting, deltaTime, and other available engine commands.

### 2550. Game Production

Three credits. Prerequisite: DMD 2500; Open to Digital Media and Design majors and Digital Arts and Digital Media minors, others with instructor consent.

Practical investigation into the successful management of video game projects. Budgets, asset management plans, and risk evaluation of game development options. Relationship and team management, business aspects of the video game industry, and development of a video game project.

### 2580. 2D Game Art

Three credits. Prerequisite: DMD 1002 and 1102; open to Digital Media and Design majors only, others with instructor consent.

Introduction to figure and perspective drawing, character and environmental concept art, pixel art, sprite animation, vector art, game UI design, texture painting, and 2D art for 3D games.

### 2610. Introduction to Digital Humanities

(Also offered as ENGL 2610 and HIST 2102.) Three credits.

The application of digital technology and media to such subjects as art history, classics, cultural and area studies, history, languages, literature, music, and philosophy. This course will provide a broad survey of the landscape of international and interdisciplinary digital humanities through the lens of ongoing work of faculty and staff researchers at the University of Connecticut.

### 2620. Human Development, Digital Media, and Technology

(Also offered as HDFS 2620.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011. Recommended preparation: HDFS 1070 or DMD 2010.

Social, economic, and cultural influences on youths' interactions with, and use of, technology for formal and informal learning. Examples include media literacy, digital divide, technology in education, cyberbullying, and other issues that have emerged since the rise of the World Wide Web and growth of social media. CA 2. CA 4.

### 2700. Digital Media Strategies for Business

Three credits. Prerequisite: DMD 1002 and 1102; open only to Digital Media and Design majors and minors, others by instructor consent.

Introduction to digital media concepts and platforms used in companies' marketing strategies and plans.

### 2710. Social Media Business Applications

Three credits. Prerequisite: DMD 2700, which may be taken concurrently; open only to Digital Media and Design majors, others by instructor consent. Recommended preparation: DMD 1002 and 1102.

Introduction to social media marketing and advertising, focusing on the platforms and strategies being deployed by brands.

### 2810. Digital Cinematography I

Three credits. Prerequisite: DMD 2210; open to BFA Digital Media and Design majors only, others by instructor consent.

Introduction to the fundamentals of cinematography in the digital realm, including both technical knowledge and aesthetics. Emphasis on camera angles, movements, composition, and lighting to enhance storytelling.

### 3010W. Critical Perspectives on Digital Media

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011. Open to DMD majors. Others by instructor consent.

Critical thinking and writing about digital media objects, contexts, and "texts," and how these participate in the social construction of human identities and belonging.

### 3020. Design Lab

Three credits. Prerequisite: DMD 1000; DMD 1030; open only to Digital Media and Design majors.

The theory, principles and practices of digital screen-based visual communication. Through a multi-disciplinary perspective involving art, design, art history, and media studies, students will address how culture visualizes screen-based communication through both image and type.

### 3030. Narrative Workshop

Three credits. Prerequisite: DMD 2200 and 2210; open to Digital Media and Design majors, others with instructor consent.

An open forum where students will "workshop" their own narratives and works-in-progress, using each other as collaborators, editors, and ideators to investigate emerging forms of storytelling.

### 3035. Interaction Design

Three credits. Prerequisite: DMD 1002 and 1102; open to Digital Media and Design majors only, others by instructor consent.

Provides a critical overview of interaction design (including usability, evaluation, and cultural aspects) and a practical program of website and computer software interface creation.

### 3095. Special Topics in Digital Media

Variable (1-6) credits. Prerequisite: Open only to Digital Media and Design majors; others by instructor consent. May be repeated for a total of 18 credits.

Seminar focusing in digital media. Content will vary each semester based upon instructor expertise.

### 3099. Independent Study

Variable (1-6) credits. Prerequisite: Open only to Digital Media and Design majors, others with instructor consent. May be repeated for a total of 15 credits.

Independent study in a Digital Media area of concentration.

### 3102. Brand Lab

Three credits. Prerequisite: DMD 1002 and 1102. Open to juniors or higher. Open to Digital Media and Design majors only, others with instructor consent. Recommended preparation: DMD 2700 or 3730.

An interdisciplinary lab that explores and deploys the principles of strategic branding and identity design across traditional and digital environments.

### 3200. Motion Design and Animation II

Three credits. Prerequisite: DMD 2200 and 2210; open only to Digital Media and Design majors; others by instructor consent.

An intermediate to advanced exploration of motion design, animation, and visual effects.

### 3205. History of Animation

Three credits. Prerequisite: DMD 1002 and 1102; open only to Digital Media and Design majors, others with instructor consent. Recommended preparation: DMD 3010W.

A history of animation from the late 19th-century through contemporary and emerging digital technologies.

**3210. Experimental and Alternative Techniques**

Three credits. Prerequisite: DMD 2200 and 2210; open only to Digital Media and Design majors; others by instructor consent.

An exploration of non-traditional techniques and mediums for creating motion graphics and animation.

**3215. Character Animation**

Three credits. Prerequisite: DMD 2200. Open to Digital Media and Design majors only, others by instructor consent.

An in-depth exploration of character animation using a combination of digital and traditional techniques and principles.

**3220. Broadcast Graphics and Title Sequence**

Three credits. Prerequisite: DMD 2200 and 2210; open only to Digital Media and Design majors; others by instructor consent. Recommended preparation: DMD 2230.

A survey of broadcast design and title sequences made for film, games and television.

**3230. Cinematic Storytelling**

Three credits. Prerequisite: DMD 1002 and 1102; open to Digital Media and Design majors, others with instructor consent.

A survey of film and media, in particular, the close analysis of graphic storytelling techniques in television, animation, shorts, and movies.

**3235. Scientific Visualization**

(Also offered as ART 3235.) Three credits. Prerequisite: DMD 2200; open only to Digital Media and Design students, others with instructor consent. Recommended preparation: DMD 3200.

Exploration of techniques for the development of still and animated graphics for use in science education and scientific publications and presentations. Project-based coursework with involvement from scientific experts and close collaboration between student illustrators and animators.

**3240. Animating Science**

Three credits. Prerequisite: DMD 2200 and 2210; open to Digital Media and Design majors, others with instructor consent.

A project-based exploration of animated scientific visualizations and digital artworks inspired by science.

**3250. Visual Effects**

Three credits. Prerequisite: DMD 2200 and 2210; open to Digital Media and Design majors, others with instructor consent. Recommended preparation: DMD 2230.

Exploration of compositing and visual effects through production, manipulation, and combination of live action footage with 2D and 3D animated effects.

**3300. 3D Animation II**

Three credits. Prerequisite: DMD 2300, 2310 and 2320; open to B.F.A Digital Media and Design 3D Animation concentration students, others with instructor consent.

Continuation of the core animation principles to explore advanced animation techniques including character animation, deformations, and non-linear animation.

**3305. History of Computer Graphics**

Three credits. Prerequisite: Open to Digital Media and Design majors; others with instructor consent.

The history of computer-generated imagery (CG) from its beginnings to the present.

**3310. 3D Modeling, Lighting and Rendering II**

Three credits. Prerequisite: DMD 2310 and 2320; open to B.F.A Digital Media and Design 3D Animation concentration students, others by instructor consent.

Instruction and guidance in the techniques and critical understanding of modeling, including texturing the model, lighting, and rendering in animation specific to a 3D environment.

**3350. 3D Simulations**

Three credits. Prerequisite: DMD 3310; open to B.F.A Digital Media and Design 3D Animation concentration students only; others by instructor consent. Recommended preparation: DMD 3300.

Offers students an intermediate understanding of the art and science of creating physical simulations, using particle systems and collision detection. Creation of complicated rendering and compositing setups that make animations both easier to render and more flexible within the bounds of any animation or VFX sequence.

**3420. Wearable Electronics and Interactive Objects**

(Also offered as DRAM 3420.) Three credits. Prerequisite: DMD 1060; others with instructor consent.

Provides a basic understanding of electronics, key components, function, construction, and project design for wearable electronics and interactive objects. Concepts learned will form the core for students to continue to proactively explore and experiment with wearable electronics and interactive objects beyond the classroom.

**3440. Introduction to Mobile Application Development**

Three credits. Prerequisite: DMD 1060 and 1070; open only to Digital Media and Design majors, others with instructor consent.

Through lecture and hands on exercises, students will be introduced to the processes, technologies, and environment of mobile applications.

**3470. Advanced Web Design and Development**

Three credits. Prerequisite: DMD 1070; open only to Digital Media and Design majors, others by instructor consent.

Explores intermediate and advanced web design and development techniques, covering Cascading Style Sheets, XML, dynamic HTML with Javascript, common frameworks, and the principles of site management. The course will also cover more advanced design concepts in website creation, such as efficient navigation design, designing for portability and accessibility, separating content from presentation for easy site updating and maintenance, planning interactivity, and search engine optimization.

**3475. Coding for Web and Interactive Media Design**

Three credits. Prerequisite: DMD 1060 and 1070; open to Digital Media and Design majors; others with instructor consent. Recommended prerequisite: DMD 3470.

Explores intermediate programming techniques for web and interactive media projects.

**3500. Interactive Storytelling**

Three credits. Prerequisite: DMD 2500 and 3010W; open to Digital Media and Design majors, others by instructor consent.

A project-based exploration of the relationship of story, character, and player in games. Students will develop narrative digital projects, examine a selection of popular storytelling games, and explore ways that games have historically visualized and communicated their stories. Formerly offered as DMD 3522.

**3520. 3D Virtual World and Simulations**

Three credits. Prerequisite: DMD 2310, 2320, 2500, and 2542; open only to Digital Media and Design majors, others with instructor consent.

Investigation of different virtual environments, simulations, and serious games and examine how game engines can be used to generate a three-dimensional computer-based environment. Students will create a 3D environment based on their own imagination and research.

**3530. Game Systems Design**

Three credits. Prerequisite: DMD 2500; open to Digital Media and Design majors, others with instructor consent.

Students in this course learn and apply advanced game design techniques and game theory. Students focus on the concepts of balance, design, and player psychology, synthesizing these elements into cohesive and interesting gameplay.

**3540. Multiplayer Game Development**

Three credits. Prerequisite: DMD 2500; open to Digital Media and Design majors; others with instructor consent.

Students create a multiplayer game experience based in a relevant game engine that adheres to or modifies the core mechanics to create a new multiplayer game experience.

**3570. History and Theory of Digital Art**

(Also offered as ARTH 3570 and AMST 3570.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to sophomores or higher.

Investigates forms of digital and Internet art and the mostly forgotten histories of the technologies behind them. Forms and themes to be explored include games/gaming, surveillance art, cyberfeminism, data visualization, and crowdsourced art. CA 1. CA 4.

**3581. 3D Game Art I - Modeling and Texturing**

Three credits. Prerequisite: DMD 2500; Open to Digital Media Design majors only, others with instructor consent.

Basic introduction to all parts of the 3D asset creation pipeline for games including subdivision, surface, and spline modeling for game assets, UV unwrapping, PBR material painting, asset creation for game props, characters, and environments.

**3582. 3D Game Art II - Motion and Technical Art**

Three credits. Prerequisite: DMD 3581; Open to Digital Media Design majors only, others with instructor consent.

Introduction to elements of motion and detailing with an emphasis on in-engine techniques including digital sculpting and retopology, rigging and animation for games, physics simulations,

particle effects, custom shader design, camera animation and post-processing effects.

### **3589. Historical Fiction in Games and Film**

(Also offered as HIST 3107.) Three credits. Prerequisite: Open to Digital Media and Design and History majors only, others with instructor consent; open to sophomores or higher.

Critique of historically themed films and video games; comparison to surviving primary documents and artifacts; assessment of historical accuracy and cultural impact.

### **3610. Collaborating with Cultural Organizations I: Methods**

(Also offered as HIST 3103.) Three credits. Prerequisite: Open to sophomores or higher. Recommended preparation: DMD 2010 and/or DMD 2610.

Introduction to mission-driven cultural organizations and methods for meaningful, effective collaboration with them and their communities in the digital age.

### **3620. Collaborating with Cultural Organizations II: Practice**

(Also offered as HIST 3104.) Three credits. Prerequisite: Open to sophomores or higher. Recommended preparation: DMD 3610/HIST 3103.

Project-based application of digital public history tools and methods undertaken in partnership with a cultural organization. Provides immersion in issues of contemporary practice while building collaborative competency. Includes an integrated service learning component.

### **3640. Human Rights Archives I: Documenting and Curating Community Memory**

(Also offered as HRTS 3640.) Three credits. Prerequisite: Open to Digital Media Design majors and Human Rights majors or minors only; open to juniors or higher; instructor consent required. Recommended preparation: DMD 2200, 2210, or HRTS 3149W.

The use of human rights archival materials in documentary storytelling. Students will learn methods and best practices of collecting and managing digital visual and audio-visual archival assets. This is the first part of a two-semester unit addressing a common theme. Part I is not a prerequisite for Part II.

### **3641. Human Rights Archives II: Visual Storytelling Practices**

(Also offered as HRTS 3641.) Three credits. Prerequisite: Open to Digital Media Design majors and Human Rights majors or minors only; open to juniors or higher; instructor consent required. Recommended preparation: DMD 2200, 2210, 3640, or HRTS 3149W.

The use of human rights archival materials in documentary storytelling. Students will be trained in different documentary techniques and storytelling approaches working with oral history narratives and archival materials. This is the second part of a two-semester unit addressing a common theme. Part I is not a prerequisite for Part II.

### **3720. Digital Media Analytics**

Three credits. Prerequisite: DMD 2700; open to Digital Media and Design majors only, others with instructor consent. Recommended preparation: DMD 2710, 3730 and 1000-level STAT course.

Provides a working knowledge of the array of metrics and analytics needed to understand the digital consumer and measure the effectiveness of digital media marketing.

### **3730. Digital Consumer Behavior**

Three credits. Prerequisite: DMD 2700, which may be taken concurrently; open to Digital Media and Design majors only, others by instructor consent. Recommended preparation: DMD 1002 and 1102, STAT 1000Q or higher.

Explores and analyzes the changes in consumer decision-making and behavior in today's digital world.

### **3740. Digital Sports and Entertainment Studio**

Three credits. Prerequisite: DMD 2700 and 3730; open to Digital Media and Design majors only, others with instructor consent. Recommended preparation: DMD 2710.

The digital marketing landscape in sports and entertainment, including changes in the production, marketing, distribution, and consumption of sports and entertainment media properties.

### **3820. Documentary Film Production**

Three credits. Prerequisite: DMD 2210 and 2810. Open to BFA Digital Media and Design majors in the Digital Film/Video Production concentration only, others by instructor consent.

This course introduces students to camera and sound recording for small-crew documentary filmmaking. Students learn interviewing, ethics in documentary, and basic story structure. Through analysis of short and feature length documentary films, as well as hands-on directing, filming, and editing, students will learn the art and technique of documentary filmmaking.

### **3828. Social Documentary in Theory and Practice**

(Also offered as HRTS 3828.) Three credits. Prerequisite: Open to Digital Media Design majors and Human Rights majors or minors only; open to sophomores or higher. Recommended preparation: DMD 2210, 2810, 3820, or HRTS 3149W.

The study of the evolution of the documentary genre and its potential use as a vehicle for social discourse and change. Through sustained engagement with the documentary genre, students will gain direct experience in shooting and editing short form documentary films.

### **3830. Film Writing**

(Also offered as DRAM 3145 and ENGL 3707.) Three credits. Prerequisite: Open to juniors or higher, others with instructor consent.

Theoretical and practical work in the content and form of the fiction scenario.

### **3840. Creative Producing for Independent Film**

Three credits. Prerequisite: DMD 2700 or 3230; open to Digital Media and Design majors only, others with instructor consent.

Examination of each phase of the filmmaking process, from conception to marketing and distribution, through the role of a creative producer. Students develop pitching materials and entrepreneurial business plans for their original narrative, documentary or new media film projects.

### **3850. Digital Sound Design**

Three credits. Prerequisite: DMD 2210; open only to BFA Digital Media and Design Film/Video

Production concentration students, others by instructor consent.

A practical introduction to sound recording, editing, and mixing, designed to give students both the technical and artistic skills necessary to provide sound design for a variety of different media, including stand-alone audio, live-action film, animation, games, and more.

### **3880. Immersive Media Production**

Three credits. Prerequisite: DMD 2210. Open to Digital Media and Design majors only, others by instructor consent.

Production-oriented course focused on multi-platform experiential storytelling. Students create interactive stories using 360-degree video that is experienced through virtual reality headsets, smartphones, and laptops.

### **3993. Foreign Study**

Variable (1-12) credits. May be repeated for a total of 12 credits.

Special topics taken in a foreign study program (Fall, Spring, or Summer). Departmental consent required, normally before the student's departure to study abroad.

### **3998. Variable Topics**

Variable (1-6) credits. May be repeated for credit. Prerequisites and recommended preparation vary.

### **4015. Degree Exhibition**

One credit. Prerequisite: Open to DMD majors with the consent of the instructor. May be repeated for a total of 2 credits.

Preparation of a project or portfolio for presentation in the Digital Media and Design Department's Degree Exhibition. May be taken in conjunction with the B.F.A. internship or senior project or B.A. senior thesis. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

### **4025. Portfolio and Professional Development: Putting it All Together**

Three credits. Prerequisite: Open to senior Bachelor of Fine Arts Digital Media and Design majors only, others by instructor consent.

Prepares Digital Media and Design BFA students for transition to careers through the development of a professional portfolio, resume, website, social media presence, other collateral, and associated skills, as well as BFA Degree Exhibition participation.

### **4040. Agency**

Three credits. Prerequisite: Open to Digital Media and Design majors and Digital Arts minors, others by instructor consent. May be repeated for a total of 6 credits.

An immersive study of the role, structure, procedures, techniques and processes employed by a Brand Agency within the digital and social media spaces.

### **4045. Digital Content Design, Creation and Distribution Studio**

Three credits. Prerequisite: DMD 1102 and 4040; open only to senior and graduate Digital Media and Design majors, instructor consent required. Recommended preparation: DMD 2710, 3035, 3200 and 3300. May be repeated for a total of 6 credits.

Develop marketing communications strategies, design, produce and distribute digital content for the Digital Media and Design Department and outside projects with corporate partners.

#### 4075. Senior Project

Three credits. Prerequisite: Open to senior B.F.A Digital Media and Design majors only. May be repeated for a total of 6 credits.

Development of a project in the student's area of concentration that demonstrates vigorous and consistent thematic engagement and articulates both technical and conceptual sophistication. To be taken twice in two consecutive semesters in the student's senior year. To fulfill the graduation requirement for B.F.A., students must pass with a grade of C or better.

#### 4081. Digital Media Internship

Variable (3-12) credits. Prerequisite: Open to Digital Media and Design majors and Digital Arts minors, others by instructor consent. May be repeated for a total of 12 credits.

Supervised professional experience in the student's field of study. A minimum GPA of 2.0 is required. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

#### 4086. Senior Thesis

Three credits. Prerequisite: Open to Digital Media and Design majors only, others with instructor consent. May be repeated for a total of 6 credits.

Preparation and presentation of a thesis that demonstrates vigorous and consistent intellectual engagement and articulates technical, conceptual, and scholarly sophistication. To be taken twice in two consecutive semesters in the student's senior year.

#### 4200. Advanced Motion Media

Three credits. Prerequisite: DMD 3200; open only to Digital Media and Design majors, others with instructor consent. May be repeated for a total of 6 credits.

Advanced exploration of motion media topics, including large-scale, collaborative, and interdisciplinary projects, and investigations in emerging motion media technologies.

#### 4310. 3D Rigging

Three credits. Prerequisite: DMD 3350; open to B.F.A Digital Media and Design 3D Animation concentration students, others with instructor consent. Recommended preparation: DMD 3300.

Concepts of rigging, with emphasis on animated props and characters. Techniques for using and creating bones, constraints, skeletons, skinning and weight painting.

#### 4340. Advanced Compositing for Visual Effects

Three credits. Prerequisite: DMD 3350; open to B.F.A Digital Media and Design 3D Animation concentration students only, others by instructor consent. Recommended preparation: DMD 3300 and 4310.

Takes the students further into the art of visual effects, combining computer generated animation together and with live action footage.

#### 4350. Advanced 3D Research and Production

Three credits. Prerequisite: DMD 3310; open to B.F.A Digital Media and Design 3D Animation concentration students only, others by instructor

consent. Recommended preparation: DMD 3300, 3350, 4310 and 4340. May be repeated for a total of 9 credits.

Explores, develops and evaluates the research and skills in 3D animation production, focusing on each student's own path of study.

#### 4470. Web 3: Expert Topics in Web Development

Three credits. Prerequisite: DMD 3470 and 3475; open to Digital Media and Design majors only, others with instructor consent.

Expert topics in web design and development, including intensive instruction and hands-on development with databases and server-side programming to build web applications.

#### 4475. Web and Interactive Media Design Practicum

Three credits. Prerequisite: DMD 3470 and 3475; open to Digital Media and Design majors only, others with instructor consent. Recommended preparation: DMD 4470. May be repeated for a total of 6 credits.

Digital technology is ever-changing and so too are techniques and workflows required in the production of web and interactive media projects. Through the completion of real-world projects, this course examines emerging technologies and techniques in the world of web and interactive media design.

#### 4500. Advanced Digital Game Design and Development

Three credits. Prerequisite: DMD 2542 and 3522; open only to Digital Media and Design seniors and graduate students, others with instructor consent.

Advanced study and application of digital game design and development, programming, 3D game environments, game testing, human computer interaction, quality assurance, and publishing.

#### 4536. Disruptive Technologies

Three credits. Prerequisite: DMD 3522 and 2542; must be taken senior year; open only to Digital Media and Design majors, others with instructor consent.

Exploration of emerging interactive technologies through the creation of rapid-fire prototypes utilizing experimental hardware and software. These skills enable students to develop interactive installations and unique gameplay scenarios.

#### 4545. Advanced Game Scripting

Three credits. Prerequisite: DMD 2542; open to Digital Media and Design majors only, others with instructor consent.

Master gameplay scripting within a commercial game engine. Emphasis is on foundational knowledge required for developing artificial intelligence models, rendering, and networking for games.

#### 4640. Digital Public History Project

(Also offered as HIST 4640.) Three credits. Prerequisite: HIST 3102; DMD 3610/HIST 3103; DMD 3620/HIST 3104; three credits of HIST 3890 or 3991; open to DMD majors or Digital Public History minors only, others with instructor consent.

Students work collaboratively, with instructor guidance and feedback, to design and complete a digital public history project or prototype.

#### 4725. Advanced Digital Analytics

Three credits. Prerequisite: DMD 3720; open to juniors or higher; open only to Digital Media and Design majors; others by instructor consent. Recommended preparation: 1000 level statistics course. May be repeated for a total of 6 credits.

A project-based study of advanced digital analytics and social media listening tools and techniques. Students will utilize social listening and media intelligence platforms to conduct market research, analyze campaigns and digital initiatives, develop marketing strategy, and execute ongoing brand listening, crisis management, competitive intelligence, content analysis and reputation management initiatives.

#### 4810. Advanced Digital Cinematography

Three credits. Prerequisite: DMD 2810. Open to Digital Media and Design majors only, others by instructor consent.

Advanced course focused on the technical craft and aesthetics of cinematography / videography in the digital realm. Emphasis on advanced camera techniques (angles, movements, composition and blacking) and complex lighting and shot designs to enhance storytelling. Students will be required to buy/own a DSLR or mirrorless camera, a lens, data storage tools and basic cinematographer grip kit needed for class.

#### 4835. Narrative Short Film Production

Three credits. Prerequisite: DMD 2810 and 3830; open only to Digital Media and Design majors, others with instructor consent.

Production of narrative short films, delineating the role of the director, from script breakdown through post-production, with emphasis on directing actors and other methodologies necessary to realize the dramatic possibilities of a cinematic story. Students create several shorts and analyze the works of master directors.

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## Dramatic Arts (DRAM)

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#### 1101. Introduction to the Theatre

Three credits.

Analysis of the functions of the theatre artists and their contributions to the modern theatre. CA 1.

#### 1110. Introduction to Film

Three credits. Prerequisite: May not be taken out of sequence after passing DRAM 4151 or 4152.

A basic study of film as both a means of communication and as an art form. CA 1.

#### 1201. Drafting for the Theatre

Three credits. Prerequisite: Instructor consent required.

The basics of hand drafting techniques and the drafting conventions for scenic designers, lighting designers and technical directors.

#### 1202. Computer Drafting for the Theatre

Three credits. Prerequisite: Requires one or more of the Adobe Creative Cloud software programs; students are responsible for purchasing the latest version of Adobe's Creative Cloud for education apps and installing it on their personal computer.

Computer Aided Drafting techniques for theatrical applications. Use of design software for creating various 2-D plans, including light plots, set designs and technical shop drawings. Assumes

a good working knowledge of theatrical drafting conventions and techniques.

#### **1206. Theatre Production I**

Three credits. Prerequisite: May not be taken out of sequence after passing DRAM 1208.

Information and skills in costuming, stage make-up, and basic lighting with application through crew work on departmental or CRT (Connecticut Repertory Theatre) productions.

#### **1207. Design Fundamentals**

Three credits. Prerequisite: Open to Design and Technical Theatre B.F.A and Puppetry B.F.A majors; others with instructor consent.

An introduction to the basic principles of design, its major components, and the application of design principles in performance as it relates to scenic, costume, lighting, sound, projection design, and puppetry.

#### **1208. Theatre Production II**

Three credits. Prerequisite: DRAM 1206.

An introduction to costume, lighting, management and stagecraft with application to departmental productions.

#### **1209. Drawing and Painting Techniques for the Theatre**

Three credits. Prerequisite: Instructor consent required.

An introduction to theatrical sketching and rendering emphasizing color composition in various media.

#### **1210. Computer Rendering for the Theatre**

Three credits. Prerequisite: Requires one or more of the Adobe Creative Cloud software programs; students are responsible for purchasing the latest version of Adobe's Creative Cloud for education apps and installing it on their personal computer.

Computer rendering for theatre design in 2-D and 3-D format.

#### **1215. Theatre Production: Makeup And Wardrobe For The Actor**

Three credits. Prerequisite: Instructor consent required.

An introduction to the technology, tools, and materials used in makeup and wardrobe for actors.

#### **1216. Theatre Production: Lighting And Sound**

Three credits. Prerequisite: Requires one or more of the Adobe Creative Cloud software programs; students are responsible for purchasing the latest version of Adobe's Creative Cloud for education apps and installing it on their personal computer.

An introduction to the technology, tools, and materials used in lighting and sound for the theatre.

#### **1217. Theatre Production: Costumes And Makeup**

Three credits. Prerequisite: Instructor consent required.

Introduction to the technology, tools, and materials used in costumes and makeup for the theatre.

#### **1218. Theatre Production: Stagecraft**

Three credits. Prerequisite: Instructor consent required.

Introduction to the technology, tools, and materials used in constructing and rigging theatrical scenery.

#### **1282. Practicum in Dramatic Arts**

Variable (1-6) credits. Prerequisite: Open only to Dramatic Arts majors. May be repeated for a total of 6 credits.

Practical work in all areas of dramatic arts, with emphasis on running crew assignments. May be repeated for credit with a change in course content to a maximum of 6 credits. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

#### **1501. Introduction to World Puppetry**

Three credits.

Introduction to the global culture of puppetry, from Punch and Judy and Javanese shadow theater to robots, sports mascots, and Burning Man. Puppet performances in terms of their combination of visual art, performance, text, and music; social, political, and religious contexts of puppet performances. CA 1.CA 4-INT.

#### **1701. Acting I**

Two credits. Prerequisite: Open to BFA Acting majors only. May not be taken out of sequence after passing DRAM 1702.

Basic acting techniques.

#### **1702. Acting II**

Three credits. Prerequisite: DRAM 1701. May not be taken out of sequence after passing DRAM 2701.

Additional basic acting techniques with emphasis on the presentation of scenes from contemporary plays.

#### **1710. Exploration of Acting**

Three credits. Prerequisite: Not open to Acting majors or students who have passed DRAM 1701. May not be taken out of sequence after passing DRAM 3710. May be repeated for a total of 6 credits.

The basic elements of the acting process and related skills for those not intending to pursue professional acting careers. May be repeated for credit to a total of six credits with change of instructor, or with instructor consent.

#### **1801. Stage Movement I**

Two credits. Prerequisite: Open to BFA Acting majors only. May not be taken out of sequence after passing DRAM 1802.

Conditioning the body to increase strength, flexibility, and sensitivity. Exploration of movement concepts in space, time and energy values, and mind body and environment relationships.

#### **1802. Stage Movement II**

Three credits. Prerequisite: DRAM 1801. May not be taken out of sequence after passing DRAM 2810.

Developing physical awareness and continuing body conditioning for the stage. Analyzing the natural world and how it moves. Work may include beginning mask, mime and tumbling skills.

#### **1811. Dance Appreciation**

Three credits.

Overview of dance history, technique, and choreography based on lecture, discussion, films and practicum. No previous dance experience required. CA 1.

#### **1901. Voice and Speech I**

Two credits. Prerequisite: Open to BFA Acting majors only. May not be taken out of sequence after passing DRAM 1902.

Study of the skills required to develop an expressive, injury-free voice and improved speech on and off the stage.

#### **1902. Voice and Speech II**

Three credits. Prerequisite: DRAM 1901.

Additional vocal and articulation/phonetics skills applied to the performance of both realistic and elevated language in dramatic literature.

#### **2120. Entrepreneurship in the Arts**

Three credits. Prerequisite: Open to sophomores, juniors and seniors.

Unique entrepreneurial skills needed to navigate careers in the performing arts. Students will learn how to take on a leadership role, schedule, budget, fundraise, and market themselves and their projects.

#### **2130. Histories of Drama and Performance I**

Three credits. Prerequisite: Open to Dramatic Arts majors only. May not be taken out of sequence after passing DRAM 4711W.

Dramatic literature and performance histories from various cultural traditions from the 5th century BCE through the 17th century.

#### **2131. Histories of Drama and Performance II**

Three credits. Prerequisite: Open to Dramatic Arts majors only. Recommended preparation: DRAM 2130. May not be taken out of sequence after passing DRAM 4711W.

Dramatic literature and performance histories from various cultural traditions from the 17th century to contemporary examples.

#### **2134. Honors Core: Sports as Performance**

Three credits. Prerequisite: Open to students in the Honors Program; others by consent of instructor.

Rigorous critical investigation of parallels between sports and performance. Includes writing, critical readings, experiential activities, viewing sporting events/performances, multimodal research. Critical and theoretical perspectives on athletics, spectacle, performance, national identity, community, race, gender, sexuality, and more. CA 1.

#### **2135. History of Popular Theatre and Live Entertainment**

Three credits.

Global survey of popular forms such as circus, stage magic, melodrama, vaudeville, musicals, and clowning in relation to themes such as expressing identity, speaking back to power, questioning gender norms, and making money. CA 1. CA 4 INT.

#### **2136. Asian Theatre and Performance**

(Also offered as AAAS 2136.) Three credits.

Asian theatre, opera, dance, and other performance forms and their elaboration, reworking, and dissolution in modern and contemporary times, examined in relation to changes in society, politics, religion, and culture. CA 1. CA 4-INT.

#### **2136W. Asian Theatre and Performance**

(Also offered as AAAS 2136W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Asian theatre, opera, dance, and other performance forms and their elaboration,

reworking, and dissolution in modern and contemporary times, examined in relation to changes in society, politics, religion, and culture. CA 1. CA 4-INT.

#### **2141. Script Analysis**

Three credits. Prerequisite: Instructor consent required.

Introducing the basic script-analysis skills necessary for theatre practitioners; exploring texts from a production, rather than a literary, viewpoint. Through reading, discussion, exercises, and group projects students examine the ways that playwrights convey information.

#### **2203. The Holocaust in Print, Theater, and Film**

(Also offered as HEJS 2203 and HRTS 2203.) Three credits.

Representations of the Holocaust, including first-hand accounts and documentaries; artistic choices in genre, structure, imagery, point of view, and the limits of representation. CA 1. CA 4-INT.

#### **2701. Acting III**

Three credits. Prerequisite: DRAM 1702.

The study and practice of techniques for realism and naturalism typically used in performing works by the modern realists.

#### **2702. Acting IV**

Three credits. Prerequisite: DRAM 2701.

A continuation of the study and practice of techniques utilized in the performance of modern realists.

#### **2711. Introduction to Directing**

Three credits. Prerequisite: DRAM 1701. May not be taken out of sequence after passing DRAM 2712.

Emphasis on theory and play analysis from the director's point of view.

#### **2712. Introduction to Directing**

Three credits. Prerequisite: DRAM 2711.

Emphasis on practical staging experience, including casting techniques and rehearsal and performance methods.

#### **2800. Exploration of Movement**

Three credits.

Use of the human body as a tool for creativity, problem solving, communication, collaboration, and storytelling.

#### **2810. Stage Movement III**

Three credits. Prerequisite: DRAM 1802. May not be taken out of sequence after passing DRAM 2812.

Beginning the process of applying the actor's movement skills to the unique requirements of different theatrical forms and structures. Applied skills may include tumbling, gymnastics, clowning, mask work, ethnic arts, hand-to-hand combat, armed combat and many theatrical forms and styles of dance.

#### **2812. Stage Movement IV**

Three credits. Prerequisite: DRAM 2810.

Developing and applying additional movement skills to different types and styles of dramatic expression.

#### **2901. Voice and Speech III**

Three credits. Prerequisite: DRAM 1902. May not be taken out of sequence after passing DRAM 4911.

In-depth study of applied voice and speech skills, particularly flexibility of the voice and application of vocal variety to understanding and expressing the structure and meaning of language and text.

#### **2902. Vocal Performance Techniques**

Three credits. Prerequisite: Not open to Acting majors.

Basic skills in voice production, vocal variety, articulation, and voice characterization for those in the dramatic arts pursuing careers other than stage acting.

#### **3103. Stage Management for the Theatre**

Three credits. Prerequisite: Instructor consent required.

Studies of the vocation and profession of stage management as defined by modern theatre practice. Also examines inter-relationships between the stage manager and the other members of the theatrical production staff.

#### **3121. Advertising, Publicity, and Promotion in the Dramatic Arts**

Three credits. Prerequisite: Instructor consent required.

An introduction to the basic techniques of advertising copy, news releases, and feature stories.

#### **3130. Women in Theatre: Gender Identity and Expression on the Stage**

Three credits. Prerequisite: Open to sophomores or higher.

A critical study of women's participation in the art of theatre, with particular attention to theatre as a tool for exploring gender identity and expression. Focus on plays and performances, primarily from the 20th- and 21st-century United States, analyzing how evolving feminist concerns are reflected in women's theatrical work and how changing concepts of gender and other intersectional identities are embodied on the stage. CA 4.

#### **3131. African-American Theatre**

(Also offered as AFRA 3131.) Three credits.

The significant developments in African American theatre and its antecedents and an examination of selected play scripts that exemplify those developments. CA 4.

#### **3132. African-American Women Playwrights, 1900 to the present**

(Also offered as AFRA 3132.) Three credits. Recommended preparation: AFRA/DRAM 3131.

African American women's playwriting in relationship to social, historical, and political contexts. CA 1. CA 4.

#### **3133. Latina/o Theatre**

Three credits.

A study of Latina/o theatre and performance in the U.S. CA 4.

#### **3137. Documentary Theatre**

Three credits.

Provides a critical overview of the history and techniques of documentary theatre. Students will read and analyze documentary plays as well as compose their own works of documentary drama.

#### **3138. Trends in Contemporary Theatre**

Three credits. Prerequisite: Open to Dramatic Arts Majors Only.

A study of the major trends in drama and theatrical production of the western world today.

#### **3139. Theatre and Human Rights**

(Also offered as HRTS 3139.) Three credits.

Provides a critical study of theatre production as political discourse in global areas of conflict and how that discourse defines, or is defined by, human rights issues.

#### **3141. Playwriting**

(Also offered as ENGL 3705.) Three credits. Prerequisite: Open to juniors or higher, others with instructor consent. May be repeated for a total of 9 credits.

The analysis of the basic techniques in playwriting, and the reading and criticism of the students' works in progress. Scripts of outstanding merit may be produced in the Studio or Mobius Theatres.

#### **3142. Dramaturgy I**

Three credits. Recommended preparation: DRAM 2130, 2131, and 2141.

Offers students a broad overview of the historical, critical and theoretical background of dramaturgy and introduces them to dramatic criticism, literary office dramaturgy, and the fundamentals of production dramaturgy.

#### **3145. Film Writing**

(Also offered as ENGL 3707 and DMD 3830.) Three credits. Prerequisite: Open to juniors or higher, others with instructor consent.

Theoretical and practical work in the content and form of the fiction scenario.

#### **3182. Practicum in Dramatic Arts**

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

Practical work in all areas of dramatic arts. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory.)

#### **3194. Dramaturgy Seminar**

Variable (1-3) credits. Prerequisite: Instructor consent required. Recommended preparation: DRAM 2141 and 3142. May be repeated for a total of 15 credits.

Practical work in dramaturgy. Students enrolled in the course have been assigned as dramaturgs for Connecticut Repertory Theatre productions or are undertaking alternative dramaturgical assignments such as performance curation or audience outreach projects.

#### **3199. Independent Study**

Variable (1-6) credits. Prerequisite: Open to sophomores or higher; open only with consent of instructor. May be repeated for credit.

A reading or project course under the direction of an appropriate staff member.

#### **3201. Scene Construction**

Three credits. Prerequisite: DRAM 1218 or equivalent preparation through independent studies and other shop time; open to sophomores or higher; open only to Dramatic Arts Majors, instructor consent required.

Basic techniques of constructing two dimensional and three dimensional scenery.

**3202. Rigging**

Three credits. Prerequisite: DRAM 1218 or equivalent preparation through independent studies and other shop time; open to sophomores or higher; open only to Dramatic Arts Majors, instructor consent required.

Rigging systems and the basic techniques for flying scenery, with an emphasis on rigging safety.

**3219. Sound Technology and Production Audio**

Three credits. Prerequisite: DRAM 1216; open to soph or higher; open only to Dramatic Arts majors, others with instructor consent. Students are responsible for purchasing the latest version of Adobe's Creative Cloud for education apps and installing it on their PC.

Introduction to the characteristics and properties of sound, as well as the design, assembly, and operation of audio systems for the theatre and live entertainment.

**3220. Sound for the Theatre**

Three credits. Prerequisite: DRAM 1216; open to sophomores or higher; open only to Dramatic Arts majors, others with instructor consent.

Art of sound design for the theatre and live performance. Using collaborative techniques and creative methods to develop original sound compositions.

**3301. Scene Design**

Three credits. Prerequisite: DRAM 1216 and 1218; open to junior or higher Dramatic Arts majors; instructor consent required. Adobe Creative Cloud for education apps is required. May not be taken out of sequence after passing DRAM 3302.

Introduction to scene design fundamentals, analysis, and techniques.

**3302. Scene Design**

Three credits. Prerequisite: DRAM 3301; open to juniors or higher in a Dramatic Arts major. Students are responsible for purchasing the latest version of Adobe's Creative Cloud for education apps and installing it on their personal computer.

Introduction to scene design fundamentals, analysis, and techniques.

**3320. Scenic Painting Techniques**

Three credits. Prerequisite: DRAM 1209. Open to sophomores and above.

Students will learn drawing and painting techniques used by scenic artists in the theatre. Students will be required to purchase scenic brushes and other basic tools needed for class.

**3401. Costume History**

Three credits. Prerequisite: Open only to juniors or higher in a Dramatic Arts major.

A slide survey class covering the origins and development of dress to the present day. Specifically African, Middle Eastern, and Euro-Centric dress, along with the societies and manners which created fashion.

**3402. Costume Design**

Three credits. Prerequisite: Open to sophomores or higher; open only to Dramatic Arts Majors, others with instructor consent. Recommended preparation: DRAM 1209 or an equivalent introductory art course.

An introductory class centering on the designer's approach to the text, the creation of the designed

look for the characters in the play, and the process of how to realize the costumes.

**3420. Wearable Electronics and Interactive Objects**

(Also offered as DMD 3420.) Three credits. Prerequisite: DMD 1060; others with instructor consent.

Provides a basic understanding of electronics, key components, function, construction, and project design for wearable electronics and interactive objects. Concepts learned will form the core for students to continue to proactively explore and experiment with wearable electronics and interactive objects beyond the classroom.

**3501. Lighting for the Theatre**

Three credits. Prerequisite: DRAM 1216 and 1218; open only to Dramatic Arts majors. Students are responsible for purchasing the latest version of Adobe's Creative Cloud for education apps and installing it on their PC. May not be taken out of sequence after passing DRAM 3502.

Introduction to lighting design fundamentals, analysis, and techniques.

**3502. Lighting for the Theatre**

Three credits. Prerequisite: DRAM 3501; open to dramatic arts majors only.

Introduction to lighting design fundamentals, analysis, and techniques. Requires one or more of the Adobe Creative Cloud software programs; students are responsible for purchasing the latest version of Adobe's Creative Cloud for education apps and installing it on their personal computer.

**3601. Mask Theatre**

Three credits. Prerequisite: Instructor consent, open to sophomores or higher.

Masking as a theatrical and sculptural practice is studied through the design, fabrication and performance of historical and contemporary forms.

**3602. Paper Sculpture**

Three credits. Prerequisite: Instructor consent, open to sophomores or higher.

Sculpture and design techniques are practiced using the Roser Papier Methode for puppet fabrication. Full realization and performance of the sculptures as puppets completes the design exploration.

**3603. Rod Puppetry**

Three credits. Prerequisite: Instructor consent, open to sophomores or higher.

A practical exploration of Rod Puppet Theatre through the design, fabrication and performance of several forms of Rod Puppet.

**3604. Puppetry in Television**

Three credits. Prerequisite: Instructor consent, open to sophomores or higher.

Analysis and practical experience with television techniques for the Puppet Arts. Projects include design, fabrication and performance of Moving-mouth Puppets and other forms suited for the televisual medium.

**3605. Shadow Theatre**

Three credits. Prerequisite: Instructor consent, open to sophomores or higher.

The worldwide phenomena of Shadow Theatre are explored through cultural studies; figure design, fabrication and performance; storyboarding; and

production development for both direct screen and projected presentations.

**3607. Materials Techniques**

Three credits. Prerequisite: Instructor consent, open to sophomores or higher.

Techniques such as character design, clay sculpture, mold making, casting, painting, foam carving, over-casting and wood carving are explored through practice as foundations for puppet fabrication.

**3608. Hand Puppetry**

Three credits. Prerequisite: Instructor consent, open to sophomores or higher.

Hand puppet animation techniques are developed via forms such as Hand Pantomime, Glove Puppet and Moving-mouth Puppet performance. Design and fabrication methods complement the performance study.

**3609. UV/Czech Black Theatre**

Three credits. Prerequisite: Instructor consent, open to sophomores or higher.

Practical exploration of UV ("Black Light") and Czech Black Theatre ("Curtain of Light") techniques as applied in the Puppet Theatre.

**3610. Movement-Based Performance for the Puppet Theatre I**

Three credits. May be repeated for a total of 6 credits.

Awaken and develop imaginative and skilled theatrical performers through devising work and exploration of movement-based theatre techniques.

**3611. Trends in the Contemporary Puppet Theatre**

Three credits. Prerequisite: Open to juniors or higher.

A study of the major trends in drama, design styles and production of the puppet theatre in the western world today. Additional project required for graduate credit.

**3612. Plays for Puppet Theatre**

Three credits. Prerequisite: Instructor consent.

Surveying the dramatic repertoire of plays written or devised for puppets, this course considers translation from page to stage, develops skills in textual analysis and dramaturgy, and mines these playtexts as models for composing new plays for puppets.

**3615. Object Theatre**

Three credits. Prerequisite: Instructor consent.

A practical exploration of object theatre, also known as thing theatre or found object performance, a modern form of stage animation in which ordinary household objects and materials take on the appearance of life. Emphasis is placed on creating original performances in established and emerging styles of performance.

**3710. Advanced Explorations of Acting**

Three credits. Prerequisite: DRAM 1710; not open to BFA Acting majors; instructor consent *required*

A continuation of DRAM 1710, with a focus on the psychological, physical, vocal, intellectual and emotional processes of the actor.

**3721. Performance Techniques**

Variable (1-6) credits. Prerequisite: Open to juniors or higher. May be repeated for credit.

Performance study and practice in selected areas of dramatic arts.

#### **3995. Special Topics in Dramatic Arts**

Three credits. Prerequisite: Open to Dramatic Arts majors and minors. May be repeated for a total of 9 credits.

Course content may vary each semester based on instructor expertise.

#### **3998. Variable Topics in Dramatic Arts**

Three credits. Prerequisite: Open to Dramatic Arts majors and minors. May be repeated for a total of 9 credits.

#### **4122. Theatre Management**

Three credits. Prerequisite: DRAM 2120; open to juniors or higher.

An exploration of the critical questions and challenges facing theatre managers today. Students will broaden their knowledge of leadership, fundraising, board relations, community development, equity, diversity, and inclusion, among other competencies necessary to run a theatre. The course culminates in the creation of a comprehensive business plan.

#### **4135. Advanced Topics in Theatre and Performance**

Three credits. Prerequisite: DRAM 2130 and 2131; open to juniors or higher. May be repeated for a total of 12 credits.

An in-depth exploration of theatre and performance studies. Topics will vary by semester, and may include performance trends or styles, periods in theatre history, or theoretical approaches to analyzing theatre and performance.

#### **4135W. Advanced Topics in Theatre and Performance**

Three credits. Prerequisite: DRAM 2130 and 2131; ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher. May be repeated for a total of 12 credits.

An in-depth exploration of theatre and performance studies. Topics will vary by semester, and may include performance trends or styles, periods in theatre history, or theoretical approaches to analyzing theatre and performance.

#### **4151. The American Film**

Three credits. Prerequisite: DRAM 1110; open to juniors or higher. May be repeated for credit.

A critical analysis of the American fiction film.

#### **4152. World Film**

Three credits. Prerequisite: DRAM 1110; open to juniors or higher. May be repeated for credit.

A critical analysis of representative world films.

#### **4193. Foreign Study**

Variable (1-6) credits. Prerequisite: Open to juniors or higher. May be repeated for credit.

Coursework undertaken within approved Study Abroad programs, with a focus on the theatre history, dramatic literature and production in a particular country or region. May count towards the major with consent of the advisor. Consent of Department head required, normally to be granted prior to the student's departure.

#### **4194. Seminar**

Variable (1-6) credits. Prerequisite: Open to juniors or higher. May be repeated for credit.

Studies in selected areas of dramatic arts. Topics to be alternated.

#### **4701. Acting V**

Three credits. Prerequisite: DRAM 2702; open only to Dramatic Arts/Acting majors; cannot be taken for credit after passing DRAM 4702.

The study and practice of techniques associated with acting classical/poetic theatrical works, including, but not limited to Greek and Elizabethan comedies and dramas.

#### **4702. Acting VI**

Three credits. Prerequisite: DRAM 4701; open only to Dramatic Arts/Acting majors. May not be taken out of sequence after passing DRAM 4703 or 4705.

Additional study and practice of acting techniques required for classical and/or poetic theatre.

#### **4703. Acting VII**

Three credits. Prerequisite: DRAM 4702; open to Dramatic Arts/Acting majors only.

The study and practice of acting techniques used in a range of styles including, but not limited to, comic, absurdist and epic theatre.

#### **4704. Acting VIII**

Three credits. Prerequisite: DRAM 4703; open only to Dramatic Arts/Acting majors.

Continued work in acting techniques required for realistic, classical, comic, absurdist and/or epic theatre.

#### **4705. Acting for the Camera**

Variable (1-6) credits. Prerequisite: DRAM 4702; open to Dramatic Arts/Acting majors only.

Study and practice in the principles and techniques required for acting in television and/or film productions.

#### **4711W. The Director in the Theatre**

Three credits. Prerequisite: DRAM 2130 and 2131; ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

An analysis of the role and function of the director in the theatre from historical, aesthetic, and practical points of view.

#### **4811. Stage Movement V**

Three credits. Prerequisite: DRAM 2812; open only to Dramatic Arts/Acting majors.

Special applications of applied movement and/or dance skills.

#### **4812. Stage Movement VI**

Three credits. Prerequisite: DRAM 4811; open only to Dramatic Arts/Acting majors.

Advanced application of special movement skills to additional forms of dramatic expression.

#### **4901. Senior Project**

Variable (1-3) credits. Prerequisite: Open only to senior Bachelor of Arts Theatre Studies majors, instructor consent required.

A capstone project designed to integrate skills and knowledge learned throughout the completion of the degree.

#### **4911. Voice and Speech IV**

Three credits. Prerequisite: DRAM 2901; open only to Dramatic Arts/Acting majors. May not be taken out of sequence after passing DRAM 4912 or 4931.

Study and practice to continue development of breathing, phonation and resonance skills, with added attention being paid to the analysis, expression and pronunciation of elevated and/or poetic drama.

#### **4912. Voice and Speech V**

Three credits. Prerequisite: DRAM 4911; open only to Dramatic Arts/Acting majors. May not be taken out of sequence after passing DRAM 4913.

Continued exploration of voice production and elevated diction skills required for comic, absurdist and/or epic theatre productions.

#### **4913. Voice and Speech VI**

Three credits. Prerequisite: DRAM 4912; open only to Dramatic Arts/Acting majors.

Exploration and application of advanced voice and diction skills, including but not limited to accents and dialects, to various dramatic forms.

#### **4931. Stage Dialects**

Three credits. Prerequisite: DRAM 4911; open only to Dramatic Arts/Acting majors.

The study and practice of those dialects and accents most frequently required by American actors. Contents include, but are not limited to, Standard British and a range of New York City and American Southern patterns.

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## **Earth Sciences (ERTH)**

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#### **1000E. The Human Epoch: Living in the Anthropocene**

Three credits.

Introduction to geoscience focusing on human activities as agents of geologic change. Examines human planetary processes in our current epoch, the Anthropocene. Provides a novel frame for contemporary environmental issues such as climate change, sustainability, mass extinctions, land use, and waste disposal. Interaction between earthly processes and human affairs. CA 3. Formerly offered as GSCI 1000E.

#### **1010. Dinosaurs, Extinctions, and Environmental Catastrophes**

Three credits. Prerequisite: Not open for credit to students who have passed EARTH 1050, 1051, 1055, or 1070.

A reconstruction of the Mesozoic world of the dinosaurs based on paleontological and geological evidence. Past and present environmental catastrophes leading to mass extinctions and changes in biodiversity. Fundamental concepts of geology, stratigraphy, historical geology, and paleoclimatology. CA 3. Formerly offered as GSCI 1010.

#### **1050. Earth's Dynamic Environment**

Four credits. Prerequisite: Not open for credit to students who have passed EARTH 1010, 1051, 1055, or 1070.

Origin and history of planet Earth, emphasizing how rock, air, water, and life interact at different scales to produce the earth's crust, landforms, life systems, natural resources, catastrophes, and climatic regimes. Provides a scientific context for human-induced global change. CA 3-LAB. Formerly offered as GSCI 1050.



**1051. Earth's Dynamic Environment (Lecture)**

Three credits. Prerequisite: Not open for credit to students who have passed EARTH 1010, 1050, 1055, or 1070.

Origin and history of planet Earth, emphasizing how rock, air, water, and life interact at different scales to produce the earth's crust, landforms, life systems, natural resources, catastrophes, and climatic regimes. Provides a scientific context for human-induced global change. Students who complete both EARTH 1051 and 1052 may request that EARTH 1051 be converted to a CA 3 Laboratory course. CA 3. Formerly offered as GSCI 1051.

**1052. Earth's Dynamic Environment (Laboratory)**

One credit. Prerequisite: EARTH 1010 or 1051 or 1055 or 1070, any of which may be taken concurrently. Not open to students who have passed EARTH 1050.

Laboratory complement to EARTH 1010, 1051, 1055, and 1070. Provides an opportunity to work with specimens (minerals, fossils, rocks), terrain images, maps, physical models, and simulation experiments. Includes local field trips. Students who complete both EARTH 1052 and one of EARTH 1010, 1051, 1055 or 1070 may request that the prerequisite be converted to a CA 3 Laboratory course. Formerly offered as GSCI 1052.

**1053. Discussion Earth and Life Through Time**

One credit. Prerequisite: EARTH 1050 or 1051 or 1052 (must be taken concurrently) or instructor consent. May be repeated for credit.

Faculty-taught weekly discussions to enhance EARTH 1050 and 1051. Emphasis and approach will vary, but all sections will track the lecture syllabus. Formerly offered as GSCI 1053.

**1054. Field Trips Earth and Life Through Time**

One credit. Prerequisite: EARTH 1050 or 1051 or 1052 (must be taken concurrently) or instructor consent. May be repeated for credit.

Two or more faculty-led weekend field trips to nearby sites of interest, designed to enhance EARTH 1050 and 1051. Formerly offered as GSCI 1054.

**1055. Geoscience and the American Landscape**

Three credits. Prerequisite: Open only to Honors students. Not open for credit to students who have passed EARTH 1010, 1050, 1051, 1070.

An Honors Core course. Foundation course in geology linked to the American Landscape through readings from American history and literature. Students who complete both EARTH 1055 and EARTH 1052 may request that EARTH 1055 be converted to a CA 3 Laboratory course. CA 3. Formerly offered as GSCI 1055.

**1070. Natural Disasters and Environmental Change**

(Also offered as GEOG 1070.) Three credits. Prerequisite: Not open for credit to students who have passed EARTH 1010, 1050, 1051, 1055.

Climate change, global warming, natural hazards, earth surface processes, and the impact these have on human populations now and in the past. Students who complete both EARTH 1070 and EARTH 1052 may request that EARTH 1070 be converted to a CA 3 Laboratory course. CA 3. Formerly offered as GSCI 1070.

**2050W. Communicating Earth and Environmental Science**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

An exploration of different aspects of Earth and environmental science involving human planetary impacts that hones the writing skills used for different modes of communication. Geoscience topics will involve climate change, natural hazards, natural resources, earth history, geo-education, and landscape interpretation. Modes of communication will include some combination of field notes, oral presentations, interviews, videos, podcasts, websites, essays, opinions, reviews, and technical articles. Formerly offered as GSCI 2050W.

**2310E. Creating and Sustaining National Parks**

(Also offered as GEOG 2310E.) Three credits.

Geologic processes that create the Earth's iconic landscapes through the study of National Parks, Monuments, and Seashores. Plate tectonics, climate and biotic change, natural hazards, Earth materials and resources, environmental conservation, and the interactions between human society and the natural world. Formerly offered as GSCI 2310E.

**2500. Earth System Science**

Three credits. Prerequisite: EARTH 1050 or both EARTH 1052 and one of EARTH 1010 or 1051 or 1055 or GEOG/ERTH 1070.

Introduction to earth system science, geoscience research methods, and professional practice through lab work, field work in UConn Forest, visits to faculty labs, and culminating project. Formerly offered as GSCI 2500.

**2800. Our Evolving Atmosphere**

Three credits. Prerequisite: Not open for credit to students who have passed NRE 3145 or 3146.

An introduction to atmospheric science, including a history of the field, features of the atmosphere, weather forecasting, and a geologic history of climate change. CA 3. Formerly offered as GSCI 2800.

**3010. Earth History and Global Change**

Three credits. Prerequisite: EARTH 1050 or both EARTH 1052 and one of EARTH 1010 or 1051 or 1055 or 1070 or GEOG 1070.

Reconstruction of earth history from geological data. Processes and events responsible for the stratigraphic record, and techniques used to decipher it. An integrated survey of earth history. One or more weekend field trips may be required. Formerly offered as GSCI 3010.

**3020. Earth Surface Processes**

Three credits. Prerequisite: EARTH 1050 or both EARTH 1052 and one of EARTH 1010 or 1051 or 1055 or 1070 or GEOG 1070.

Processes responsible for the formation of the unconsolidated materials, landforms, and soils which constitute the Earth's surface. Introduction to surface-water and groundwater hydrology, geological hazards and the effects of climatic change. One or more weekend field trips may be required. Formerly offered as GSCI 3020.

**3030. Earth Structure**

Three credits. Prerequisite: EARTH 1050 or both EARTH 1052 and one of EARTH 1010 or 1051 or 1055 or 1070 or GEOG 1070.

Description and interpretation of geological structures; stress and strain; contractional, extensional, and strike-slip tectonics; survey of New England geology; and application of principles of structural geology to environmental issues. One full-day field trip on a weekend may be required. Formerly offered as GSCI 3030.

**3040. Earth Materials**

Three credits. Prerequisite: EARTH 1050 or both EARTH 1052 and one of EARTH 1010 or 1051 or 1055 or 1070 or GEOG 1070. Recommended preparation: CHEM 1124-1126 or 1127 and 1128.

Principles of symmetry and crystal chemistry and the identification of minerals by hand sample, petrographic and x-ray methods. Description of the mineralogy and texture of igneous, sedimentary and metamorphic rocks and the application of contemporary petrogenetic models to the interpretation of the geologic environments they record. One or more weekend field trips may be required. Formerly offered as GSCI 3040.

**3230. Beaches and Coasts**

(Also offered as MARN 3230.) Three credits. Prerequisite: MARN 1002 or MARN 1003 or EARTH 1050 or EARTH 1051, or consent of instructor.

Introduction to the processes that form and modify coasts and beaches, including tectonic setting, sediment supply, coastal composition, energy regimes and sea level change; tools and techniques utilized in marine geologic mapping and reconstruction of submerged coastal features; field trips to selected coastal features. Formerly offered as GSCI 3230.

**3710. Engineering and Environmental Geology**

(Also offered as CE 3530 and ENVE 3530.) Three credits. Recommended preparation: EARTH 1050 or 1051.

Application of geological principles to engineering and environmental problems. Topics include site investigation, geologic hazards, slope processes, earthquakes, subsidence, and the engineering properties of geologic materials. Course intended for both geoscience and engineering majors. Formerly offered as GSCI 3710.

**3990. Spring Field Trip**

Three credits. Prerequisite: EARTH 1050 or both EARTH 1052 and one of EARTH 1010 or 1051 or 1055 or 1070 or GEOG 1070. May be repeated for credit.

A field-based introduction to the integration of geological and biological observations and processes. Field trip during and weekly meetings before and after spring break. May be repeated for credit with change in field venue or permission of the instructor. Formerly offered as GSCI 3990.

**4050W. Geoscience and Society**

Three credits. Prerequisite: EARTH 1050 or 1051; at least two 2000-level or above EARTH courses one of which may be taken concurrently; ENGL 1007 or 1010 or 1011 or 2011; or instructor consent; open to juniors or higher.

Application of fundamental geological principles to issues of concern to society such as global climate change; wildfires; drought and water resources; earthquake, volcano, and tsunami hazards; medical geology; energy resources;

sustainability; and coastal processes. Formerly offered as GSCI 4050W.

#### 4110. Sedimentology and Stratigraphy

Three credits. Prerequisite: EARTH 1050 or both EARTH 1052 and one of EARTH 1010 or 1051 or 1055 or 1070 or GEOG 1070. Recommended preparation: EARTH 3020.

Principles of sedimentology and stratigraphy. Physical processes of sediment transport and deposition. Characteristics of sediments and sedimentary rocks. Facies models for terrigenous clastic, chemical, and biochemical sediments. Stratigraphic frameworks and methodologies. One or more weekend field trips may be required. Formerly offered as GSCI 4110.

#### 4120. Paleobiology

(Also offered as EEB 4120.) Four credits. Prerequisite: EARTH 1050; or both EARTH 1052 and one of EARTH 1010 or 1051 or 1055 or 1070 or GEOG 1070; or BIOL 1108.

Ancient life, including the preservation of organisms as fossils, evolution, ecology, geobiology, biostratigraphy, and major events in the history of life. Includes microorganisms, animals, and plants. Formerly offered as GSCI 4120.

#### 4130. Geomicrobiology

(Also offered as MARN 4130.) Three credits. Prerequisite: CHEM 1124Q, 1125Q and 1126Q; or CHEM 1127Q and 1128Q; or EARTH 2500; or permission of instructor.

Microbial diversity and biogeochemistry in aquatic ecosystems, microbe-mineral interactions, fossil record, atmospheric record, microbialites, and research methodology in geomicrobiology. A weekend field trip may be required. Formerly offered as GSCI 4130.

#### 4140. Sedimentary Basin Analysis

Three credits. Prerequisite: EARTH 1010 and 1052, or EARTH 1070 and 1052, or EARTH 1051 and 1052, or EARTH 1050.

Tectonic and environmental controls on the development and evolution of sedimentary basins. Emphasis on mechanisms of formation, characteristic depositional patterns, and sediment composition in modern and ancient tectonic settings. Basin analysis methods include sedimentology, stratigraphy, geochemistry, provenance and paleocurrent analysis, subsidence modeling, and interpretation of geophysical data. Formerly offered as GSCI 4140.

#### 4150. Applied Data Analysis in Earth Science

(Also offered as GEOG 4150.) Three credits. Recommended preparation: STAT 1000Q or 1100Q, GEOG 3500Q; open to juniors or higher.

Multivariate spatial analysis methods and statistical inference in earth science, emphasizing how to translate conceptual understanding into computer code. Formerly offered as GSCI 4150.

#### 4160. Carbonate Platforms and Reefs

Three credits. Prerequisite: EARTH 1050 or both EARTH 1052 and one of EARTH 1010 or 1051 or 1055 or 1070 or GEOG 1070. Recommended preparation: EARTH 3020.

Carbonate platforms and reefs. Physical, chemical, and biological controls on the nature of carbonate depositional environments and their distribution in time and space. Characteristics and classification of carbonate sediments, limestones,

and dolostones. Petrographic and geochemical techniques. Facies models for depositional systems. Stratigraphic frameworks and methodologies. One or more weekend field trips may be required.

#### 4210. Glacial Processes and Materials

Three credits. Recommended preparation: EARTH 3020.

The climates and dynamics of glaciers, the geologic processes responsible for the materials and landforms of glaciated regions, and the applications of glacial geology to paleoclimatology, paleoecology, land use history, hydrology, engineering, and natural resources. Includes two weekend days of field trips to be scheduled. Formerly offered as GSCI 4210.

#### 4230. GIS and Remote Sensing for Geoscience Applications

(Also offered as GEOG 4230.) Three credits. Prerequisite: GEOG 2300E; or EARTH 1050 or both EARTH 1052 and one of EARTH 1010 or 1051 or 1055 or 1070 or GEOG 1070.

Application of Geographic Information Systems, remote sensing, and image interpretation to problems in geoscience. Data acquisition, processing and analysis of Digital Elevation Models and satellite imagery. Geologic materials, processes, landforms and landscapes. Formerly offered as GSCI 4230.

#### 4240. Watersheds and Environmental Change

Three credits. Recommended preparation: EARTH 3020.

Introduction to watershed processes, lake systems, late Pleistocene to present environmental change, the environmental impacts of dams, and the application of sediment coring. Includes field trips to lakes and reservoirs in eastern Connecticut. Formerly offered as GSCI 4240.

#### 4330. Active Tectonics

Three credits. Prerequisite: EARTH 1050; or both EARTH 1052 and one of EARTH 1010 or 1051 or 1055 or 1070 or GEOG 1070; or GEOG 2300E; or consent of instructor. Recommended preparation: EARTH 3020 and 3030.

Tectonic processes that shape the Earth's surface, particularly its landforms. Emphasis on short-term processes that produce disasters and catastrophes and affect human society. Formerly offered as GSCI 4330.

#### 4390. Field Problems in Earth Structure

Two credits. Prerequisite: EARTH 3030, which may be taken concurrently.

Mapping techniques and map interpretation using concepts developed in GEOL 3030. Emphasis on mapping moderately deformed rocks in which sedimentary features can be differentiated. Formerly offered as GSCI 4390.

#### 4430. Stable Isotope Biogeochemistry

Three credits. Prerequisite: CHEM 1127Q. Recommended Preparation: MATH 1110Q or 1131Q or 1151Q.

Fundamentals of stable isotope biogeochemistry. Origin of elements and stable isotopes; equilibrium and kinetic fractionation; isotope systematics of carbon, nitrogen, hydrogen, oxygen, and sulfur; biogeochemical systems; isotopes as a forensic tracer; and isotopes in paleoclimate and paleoenvironmental research. Formerly offered as GSCI 4430.

#### 4440. Dates and Rates in Earth and Environmental Science

Three credits. Prerequisite: ANTH 2501; or CHEM 1127Q and 1128Q; or EEB 2245; or EARTH 1050; or EARTH 1052 and one of EARTH 1010 or 1051 or 1055 or 1070 or GEOG 1070; or permission of instructor.

Introduction to the principles, materials, and diverse applications of commonly used geochronologic methods in geologic, environmental, archeological, and planetary studies. Topics may include the timing and tempo of planetary formation, Earth processes, natural hazards, formation of natural resources, biotic evolution, and environmental change. Formerly offered as GSCI 4440.

#### 4510. Applied and Environmental Geophysics

Three credits. Prerequisite: PHYS 1230 or 1402Q or 1502Q or 1602Q, which may be taken concurrently; MATH 1122Q or 1132Q or 1152Q, which may be taken concurrently.

Principles of imaging the Earth's interior using observations of electric, magnetic, and gravity fields, with applications to environmental problems. Formerly offered as GSCI 4510.

#### 4520. Exploration Seismology

Three credits. Prerequisite: PHYS 1230 or 1402Q or 1502Q or 1602Q, which may be taken concurrently; MATH 1121Q or 1131Q or 1151Q, which may be taken concurrently.

Principles of seismic methods for imaging the interior of the earth, with applications to resource exploration and environmental problems. Formerly offered as GSCI 4520.

#### 4550. Physics of the Earth's Interior

(Also offered as PHYS 4100.) Three credits. Prerequisite: PHYS 1230 or 1402Q or 1502Q or 1530 or 1602Q, any of which may be taken concurrently; MATH 1122Q or 1126Q or 1131Q any of which may be taken concurrently. Recommended preparation: MATH 1132Q.

The composition, structure, and dynamics of the Earth's core, mantle, and crust inferred from observations of seismology, geomagnetism, and heat flow. Formerly offered as GSCI 4550.

#### 4560. Fundamentals of Planetary Science

(Also offered as PHYS 4130.) Three credits. Prerequisite: PHYS 1230 or 1402Q or 1502Q or 1530 or 1602Q, any of which may be taken concurrently; MATH 1122 or 1126Q or 1131Q, any of which may be taken concurrently.

Evolution of the solar system, celestial mechanics, tidal friction, internal composition of planets, black-body radiation, planetary atmospheres. Formerly offered as GSCI 4560.

#### 4710. Environmental Site Assessment

Three credits. Prerequisite: Not open for credit to students who have passed EARTH 4998 when offered as "Environmental Site Assessment."

Introduction to hydrogeological environmental site assessments (ESAs), emphasizing southern New England. Identification of areas of concern; determination of sources of groundwater pollution; and characterization of contamination extent, sampling, modeling, and interpretation. Formerly offered as GSCI 4710.

**4720. Environmental Geochemistry**

Three credits. Prerequisite: CHEM 1127Q. Prerequisite or Corequisite: MATH 1110Q or 1131Q or 1151Q. Recommended Preparation: one semester of BIOL or PHYS.

Introduction to geochemistry of terrestrial and aqueous environmental systems. Chemical weathering and water-rock interactions; geochemistry of natural waters; chemical systems of the geosphere, biosphere and atmosphere; and geochemistry and climate. Formerly offered as GSCI 4720.

**4735. Introduction to Ground Water Hydrology**

(Also offered as NRE 4135.) Four credits. Prerequisite: Open to juniors or higher. Recommended preparation: EARTH 1050, or both EARTH 1052 and one of EARTH 1010, 1051, 1055, or 1070.

Basic hydrologic principles with emphasis on ground water flow and quality, geologic relationships, quantitative analysis and field methods. Occasional field trips. Formerly offered as GSCI 4735.

**4740. Energy Resources: Past, Present, and Future**

Three credits. Prerequisite: EARTH 1050 or both EARTH 1052 and one of EARTH 1010 or 1051 or 1055 or EARTH/GEOG 1070. Recommended preparation: 12 credits of EARTH at the 3000 level or higher.

Overview of energy resources, both fossil fuel and renewable, underground fluid storage, and greenhouse gas sequestration. Subsurface geoscientific exploration and extraction methods.

**4810. Modeling the Changing Atmosphere and Ocean**

Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: MATH 1060 or MATH 1131, or PHYS 1201 or PHYS 1202.

Modeling past and future climate, with an emphasis on conceptual understanding of the earth system and simulation results from climate models of different complexities. Formerly offered as GSCI 4810.

**4850. Paleoclimatology**

Three credits. Recommended preparation: EARTH 1010, 1050, 1055, or 1070.

Introduction to the geological evidence, research methods, and hypotheses associated with major climatic events in Earth's history through a combination of lectures, discussions of scientific papers, and a climate modeling project. Formerly offered as GSCI 4850.

**4989. Undergraduate Research in Geoscience**

Three credits. Prerequisite: Open to juniors or higher.

Independent research for the advanced undergraduate student interested in investigating a special problem involving field and/or laboratory observations in geoscience. The student is required to give an oral presentation in a departmental seminar at the end of the semester. Formerly offered as GSCI 4989.

**4990. Internship in Geoscience Field Study**

Variable (1-3) credits. Prerequisite: EARTH 3010 and 3020 and 3030 and 3040, all of which may be taken concurrently. Must be taken concurrently with EARTH 4991.

An internship program under the direction of Geoscience faculty. Students will be placed with government agencies or businesses where academic training will be applied in a program of activities to be planned and agreed upon in advance by the job site supervisor, the faculty coordinator, and the intern. One credit may be earned for each 42 hours of pre-approved activities up to a maximum of three credits. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory.) Formerly offered as GSCI 4990.

**4991. Internship in Geoscience Research Paper**

One credit. Prerequisite: EARTH 3010 and 3020 and 3030 and 3040, all of which may be taken concurrently. EARTH 4990 must be taken concurrently.

Preparation of written report and oral presentation to Department summarizing internship experience and evaluating the applicability of academic experience to job situations and the impact of the internship experience on academic and career plans. Formerly offered as GSCI 4991.

**4995. Special Topics**

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

Investigation of special topics related to, but not ordinarily covered in the undergraduate offerings; emphasis on laboratory projects. Formerly offered as GSCI 4995.

**4996W. Undergraduate Research Thesis in Geoscience**

Three credits. Prerequisite: EARTH 4989; ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

Writing of a formal thesis based on independent research conducted by the student. Formerly offered as GSCI 4996W.

**4998. Variable Topics**

Three credits. Prerequisite: Prerequisites and recommended preparation vary. May be repeated for credit.

Formerly offered as GSCI 4998.

**4999. Independent Study**

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

Formerly offered as GSCI 4999.

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**Ecology and Evolutionary Biology  
(EEB)**

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**1893. Foreign Study**

Variable (1-6) credits. Prerequisite: Department consent required. May be repeated for a total of 6 credits.

Special topics taken in a foreign study program.

**2100E. Global Change Ecology**

Three credits.

Causes and ecological consequences of anthropogenic environmental change. Topics include: ecological consequences of human modification of the earth, sea and air; biotic responses to environmental change; and sustaining future ecosystems functions. CA 3.

**2202. Evolution and Human Diversity**

Three credits.

The biological bases of human diversity from genetic and evolutionary perspectives. Topics

include the genetic basis for human variation and race; adaptations of human populations; the role of genes and environments in producing human variability; cultural evolution; origin and spread of "modern" humans. CA 3. CA 4-INT

**2208E. Introduction to Conservation Biology**

Three credits. Recommended preparation: BIOL 1102 or 1108.

Patterns of biodiversity and extinction; causes of extinction and population declines; ecological restoration; conservation planning; protection of ecosystem services; implementing conservation actions; conservation economics; conservation law; effects of global change. CA 3.

**2214. Biology of the Vertebrates**

Three credits. Prerequisite: Three credits of introductory Biology.

Evolutionary history and diversity of vertebrates with emphasis on classification, fossil history, feeding, locomotion, physiological ecology, reproduction, defense, and social behavior.

**2222E. Plants in a Changing World**

Three credits.

The central role that plants play in human life and how they influence, shape, and control both our lives and the rapidly changing world. The role of plants in environmental, social, and political issues such as climate change; biodiversity; food quantity, quality, and security; human health and disease; and environmental quality and sustainability. CA 3.

**2244E. General Ecology**

Four credits. Prerequisite: BIOL 1108.

Fundamental ecological dynamics of communities, populations, and ecosystems, including how humans impact the health and well-being of the natural world, the concept of ecosystem services, and the synergy between conservation of the biota and sustainability. Emphasis in discussion sections is on reading primary literature, problem-solving, scientific method, and sampling techniques.

**2244WE. General Ecology**

Four credits. Prerequisite: BIOL 1108; ENGL 1007 or 1010 or 1011 or 2011.

Fundamental ecological dynamics of communities, populations, and ecosystems, including how humans impact the health and well-being of the natural world, the concept of ecosystem services, and the synergy between conservation of the biota and sustainability. Emphasis in discussion sections is on reading primary literature, problem-solving, scientific method, and sampling techniques.

**2245. Evolutionary Biology**

Three credits. Prerequisite: Six credits of college biology.

Introduction to evolutionary mechanisms, biogeography, and the history of major groups of plants and animals.

**2245W. Evolutionary Biology**

Four credits. Prerequisite: Six credits of college biology; ENGL 1007 or 1010 or 1011 or 2011.

Introduction to evolutionary mechanisms, biogeography, and the history of major groups of plants and animals. Requires major writing assignment.

**2250. Introduction to Plant Physiology**

Three credits. Prerequisite: BIOL 1107 or 1108 or 1110 or instructor consent.

Exploration of the distinct physiological processes of plants that underlie their capacity to grow, develop, and sense and respond to the environment. Topics include photosynthesis, water and nutrient uptake, long distance transport, signals and signal transduction, growth and development, and environmental interactions (biotic and abiotic), including climate change. CA 3.

**2254W. Current Research Topics in Ecology and Evolutionary Biology**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; three credits of coursework in BIOL, EEB, MCB, or PNB.

Engagement with primary research literature in ecology and evolutionary biology, and development of written communication skills through writing, editing, revising, and peer feedback.

**2256W. Current Topics in Evolutionary Medicine and Disease Ecology**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011. Three credits of coursework in BIOL, EEB, MCB, or PNB.

Engagement with primary research literature in evolutionary medicine and disease ecology, and development of written communication skills through writing, editing, revising, and peer feedback.

**2258W. Current Topics in Conservation and Climate Change Biology**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011. Three credits of coursework in BIOL, EEB, MCB, or PNB.

Engagement with primary research literature in conservation and climate change biology, and development of written communication skills through writing, editing, revising, and peer feedback.

**2893. Foreign Study**

Variable (1-6) credits. Prerequisite: Department consent required. May be repeated for a total of 6 credits.

Special topics taken in a foreign study program.

**3200W. Writing in Evolutionary Biology**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; EEB 2245/W or instructor consent.

Critical engagement with primary research literature in evolutionary biology through written communication; skills in editing, revising, and peer feedback.

**3201. Animal Behavior**

(Also offered as PSYC 3201.) Three credits. Prerequisite: BIOL 1102 or 1107; PSYC 1100.

Principles of animal behavior derived from a review of descriptive and analytic studies in laboratory and field. Sometimes offered in multimedia format.

**3203. Developmental Plant Morphology**

Four credits. Prerequisite: BIOL 1108 or instructor consent; open to juniors or higher.

Analysis of diversity in plant form; principles of plant construction and development.

**3204. Aquatic Plant Biology**

Four credits. Prerequisite: BIOL 1108 or 1110 or instructor consent.

Field and laboratory-oriented study of the anatomy, morphology, ecology, physiology, systematics and evolution of vascular aquatic and wetland plants.

**3205E. Current Issues in Environmental Science**

Four credits. Prerequisite: Open to honors students, others with instructor consent. Recommended preparation: eight credits of college level science. May not be taken concurrently with EEB 3894.

Readings and discussions of current issues in environmental science, emphasizing linkages between earth, oceans, atmosphere, and biosphere. Topics include climate change; watershed changes; alternative energy; population growth; endangered biodiversity; genetically-engineered organisms; deforestation/restoration; risk assessment; tradeoffs; problem-solving; alternative futures. Includes attendance at departmental seminar and field trips. CA 3.

**3220. Evolution of Green Plants**

Four credits. Prerequisite: BIOL 1108 or 1110 or instructor consent.

Evolution of morphological and genomic traits marking the conquest of land, the diversification of land plants, and the significance of plants in the evolution of life on earth, global climates and human civilizations. Laboratory session includes study of morphological and anatomical characters of extant and fossil plants, phylogenetic inference from morphological and molecular characters, and discussion of primary literature.

**3220W. Evolution of Green Plants**

Four credits. Prerequisite: BIOL 1108 or 1110; ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

Introduction to morphological, ultrastructural, and molecular characters used for inferring evolutionary relationships of green plants, from green algae to flowering plants, with emphasis on evolutionary changes involved in the transition from aquatic to terrestrial habitats. Major writing assignment required.

**3230. Marine Biology**

(Also offered as MARN 3014.) Three credits. Prerequisite: One year of laboratory biology.

The study of the kinds and distributions of marine organisms. Particular attention is paid to biotic features of the oceans, organism-habitat and relationships and general ecological concepts influencing marine populations and communities. Field trips are required.

**3240. Biology of Bryophytes and Lichens**

Four credits. Prerequisite: Six credits of 2000-level or above biology or instructor consent.

Diversity, evolution, ecology, development and taxonomy of the bryophytes (mosses, liverworts and hornworts) and lichen-forming fungi.

**3244W. Writing in Ecology**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; EEB 2244E or permission of the instructor.

Critical engagement with primary research literature in ecology through written communication; skills in editing, revising and peer feedback.

**3245. Evolutionary Medicine**

Three credits. Prerequisite: BIOL 1107 or 1108.

Introduction to evolutionary concepts and hypotheses related to disease and human health, and applications of evolutionary thinking in drug discovery, vaccine design, and development of treatment plans for various diseases.

**3247. Freshwater Ecology**

Four credits. Prerequisite: MATH 1120 or 1131Q; CHEM 1122 or 1124Q or 1127Q or 1137Q or 1147Q; BIOL 1108 or instructor consent.

Linkages among physical, chemical, and biological processes in freshwater habitats.

**3250. Biology of the Algae**

Four credits. Prerequisite: BIOL 1108 or 1110 or instructor consent; open to juniors or higher.

Laboratory and field-oriented study of major groups of algae, emphasizing structure, function, evolution, systematics, and ecology.

**3254. Mammalogy**

Four credits. Prerequisite: Six credits of 2000 or above level biology. Recommended preparation: EEB 2214.

Diversity, behavior, reproduction, ecology, and evolution of mammals. Laboratories cover anatomy, systematics, and distribution of major groups of mammals. Field trips required.

**3256. Plants and Civilization**

Three credits. Prerequisite: Three credits of introductory biology.

Plants and animals used by people; origin, history, biology, distribution, and role in development of civilizations.

**3260. Medical Botany**

Three credits. Prerequisite: BIOL 1108; CHEM 1122 or 1124Q or 1127Q or instructor consent.

Plants used for medicine: their origin, history, biology, distribution, chemistry, pharmacology, toxicology, and role in the development of civilizations.

**3264. Field Parasitology**

Three credits. Prerequisite: BIOL 1107 or 1108.

Introduction to local parasites, their evolution, identification, and common methods used for collection and preservation. Adaptations and evolutionary trends seen in various parasitic groups and how they affect their hosts. Laboratories, collection outings, and field trips required.

**3265. Herpetology**

Four credits. Prerequisite: Six credits of 2000 or above level biology. Recommended preparation: EEB 2214.

Physiological ecology, reproductive biology, behavior, and community ecology of amphibians and reptiles. Laboratories cover evolution, systematics, and distribution of amphibians and reptiles of the world. Field trips required.

**3266. Field Herpetology**

Three credits. Prerequisite: BIOL 1108.

Field-intensive study of diversity, ecology, physiology, behavior, adaptation and identification of the amphibians and reptiles of the region; herpetofaunal research methods. Field trips required.

**3267. Field Study of Animal Behavior**

Three credits. Prerequisite: BIOL 1108 or consent of instructor.

Introduction to animal behavior, focusing on observational methods, collecting techniques, and analysis of behavioral data. Topics include foraging theory, territoriality, navigation, social behavior, communication, mating systems and sexual selection. Field trips required.

**3269. Social Insects**

Three credits. Prerequisite: Six credits of introductory biology.

Behavior, ecology, evolution of social insects: ants, wasps, bees, and termites.

**3271. Systematic Botany**

Four credits. Prerequisite: BIOL 1108 or 1110 or instructor consent.

Classification, identification, economic importance, evolution and nomenclature of flowering plants. Laboratory compares vegetative and reproductive characters of major families.

**3273. Comparative Vertebrate Anatomy**

Four credits. Prerequisite: BIOL 1108.

Anatomy, development, functional morphology, and evolution of living vertebrate animals.

**3360. Physiological Ecology of Plants**

Three credits. Prerequisite: BIOL 1108 or 1110 or instructor consent.

The complex relationships between plants and their environment, with a focus on the unique physiological processes of plants that underlie their ecology. The impact of human-driven global change is a cross-cutting theme.

**3390. South African Ecosystems and Diversity**

(Also offered as NRE 3390.) Four credits. Prerequisite: Instructor consent required.

Taught in South Africa. Understanding South Africa's diverse ecosystems with an emphasis on savannas. Classroom instruction and fieldwork in Kruger National Park, South Africa. Form and function of individual organisms and ecosystems. This course is offered in partnership with the Organization for Tropical Studies.

**3490. Conservation, Biodiversity, Management, and Protected Area Design in South Africa**

(Also offered as NRE 3490.) Four credits. Prerequisite: Instructor consent required.

Study abroad in South Africa. History of conservation biology as a science and practice. Emphasis on the links between pattern and process, strategies and tools available to conservationists to maintain biodiversity; the relationship between biodiversity and ecosystem functioning and debates on the maintenance of biodiversity in human-dominated landscapes. This course is offered in partnership with the Organization for Tropical Studies.

**3881. Summer Internship Experience**

Zero credits. Prerequisite: Instructor consent required. May be repeated.

Internship with a non-profit organization, a governmental agency, or a business under the supervision of Ecology and Evolutionary Biology faculty. Activities relevant to the practice of ecology, biodiversity, evolutionary biology, or conservation biology will be planned and agreed

upon in advance by the job site supervisor, the faculty coordinator, and the intern. Combines with EEB 3891 in subsequent semester. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

**3891. Internship in Ecology, Conservation, or Evolutionary Biology**

Variable (1-9) credits. Prerequisite: Instructor consent required. May be repeated for a total of 15 credits.

Internship with a non-profit organization, a governmental agency, or a business under the supervision of Ecology and Evolutionary Biology faculty. Activities relevant to the practice of ecology, biodiversity, evolutionary biology, or conservation biology will be planned and agreed upon in advance by the job site supervisor, the faculty coordinator, and the intern. One credit may be earned for each 42 hours of pre-approved activities up to a maximum of nine credits. Students taking this course will assigned a final grade of S (satisfactory) or U (unsatisfactory). May be repeated for a total of up to 15 credits using either EEB 3891 and/or EEB 5891.

**3893. Foreign Study**

Variable (1-6) credits. Prerequisite: Department consent required. May be repeated for credit.

Special topics taken in a foreign study program.

**3894. Undergraduate Seminar**

Variable (1-6) credits. May be repeated for credit.

Content varies with instructor.

**3895. Special Topics**

Variable (1-6) credits. Prerequisite: Prerequisites and recommended preparation vary. May be repeated for credit.

**3898. Variable Topics**

Three credits. Prerequisite: Prerequisites and recommended preparation vary. May be repeated for credit.

**3899. Independent Study**

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

Independent investigation of special problems in ecology and evolutionary biology.

**4100. Big Data Science for Biologists**

Four credits. Prerequisite: MCB 2400 or 2410 or EEB 2245.

Introduction to basic concepts and approaches associated with big datasets in the biological sciences. Online laboratories include examples from molecular biology, ecology, evolutionary biology, and systems biology. Topics include data creation, integration, curation, manipulation, and visualization.

**4120. Paleobiology**

(Also offered as EARTH 4120.) Four credits. Prerequisite: EARTH 1050; or both EARTH 1052 and one of EARTH 1010 or 1051 or 1055 or 1070 or GEOG 1070; or BIOL 1108.

Ancient life, including the preservation of organisms as fossils, evolution, ecology, geobiology, biostratigraphy, and major events in the history of life. Includes microorganisms, animals, and plants. Formerly offered as GSCI 4120.

**4200. Biology of Fishes**

Four credits. Prerequisite: BIOL 1108.

An introduction to the biology of fishes, with an emphasis on adaptation and evolutionary diversification. Topics include the evolution of major groups, morphology, physiology, behavior, and population and community ecology. Lectures, critical discussions of current journal articles, student presentations, and exercises in the field and laboratory. Field trips required.

**4215. Physiological Ecology of Animals**

Three credits. Prerequisite: BIOL 1107 and 1108.

Physiology of animals in an evolutionary context: how individuals cope and how species adapt to natural environments. Lectures, student-led presentations, and critical discussions of current journal articles.

**4230W. Methods of Ecology**

Four credits. Prerequisite: EEB 2244E or instructor consent; ENGL 1007 or 1010 or 1011 or 2011. Recommended preparation: One course in statistics and one course in calculus.

An intensive introduction to field and laboratory methods in ecology. Emphasis will be placed on the use of quantitative and analytical techniques in physiological, population, community and ecosystem ecology. An introduction to sampling procedures, data collection and statistical analysis. Computers will be used to model population and community dynamics and to analyze ecological data sets. Laboratory periods will consist of field and laboratory problems; field trips required, including occasional weekend trips.

**4250. General Entomology**

Four credits. Prerequisite: BIOL 1108 or instructor consent.

The biology of insects: anatomy, physiology, ecology, behavior, development, evolution, and diversity.

**4252. Field Entomology**

Three credits. Recommended preparation: BIOL 1108.

Collection, identification, and ecology of insects. Includes extensive field trips.

**4260. Ornithology**

Two credits.

Adaptations, habits, and importance of birds.

**4261. Ornithology Laboratory**

Two credits. Prerequisite: Open only to students who are currently taking or have completed EEB 4260.

Methods of field study and identification of birds; functional morphology, preparation of study skins and specimens. Field trips, including at least one required day-long weekend trip.

**4262. Field Methods in Ornithology**

Three credits. Prerequisite: Six credits of college biology, including BIOL 1108.

Design of bird population surveys, census methods, behavioral studies of wild birds, data collection and reporting, bird identification skills. Field trips required.

**4272. The Summer Flora**

Three credits. Prerequisite: Three credits of college botany.

Identification of Connecticut's native and exotic plants; lecture, laboratory and field study.

**4274. Introduction to Animal Parasitology**

Four credits. Prerequisite: BIOL 1108 or instructor consent.

Protozoan and metazoan parasites of humans and other animals.

**4275. Invertebrate Zoology**

Four credits. Prerequisite: Six credits of introductory biology.

Body organization, functional morphology and evolution compared among major invertebrate phyla. Field trips required.

**4276. Plant Structural Diversity**

Four credits. Prerequisite: BIOL 1108 or 1110 or instructor consent.

Evolution, development, and functional consequences of structural variation in plants.

**4390. Fundamentals of Tropical Biology**

(Also offered as NRE 4390.) Four credits. Prerequisite: Instructor consent required.

Taught in Costa Rica. Fundamental principles of tropical biology, the natural history of local ecosystems, and field methods for biological studies. Natural, tropical ecosystems are used as the platform to develop hypotheses and methods, analyze data, and present the results of scientific projects. This course is offered in partnership with the Organization for Tropical Studies.

**4490. Tropical Biology on a Changing Planet**

(Also offered as NRE 4490.) Four credits. Prerequisite: Instructor consent required.

Taught in Costa Rica or South Africa. Fundamental principles of tropical biology and natural history of local plants and animals. Coursework highlights ecological complexity of the tropics, patterns of species diversity, and species interactions. Field visits to a variety of ecosystems including tropical wet forest, dry forest/wetland, premontane wet forest, cloud forest, páramo, oak forest, mangrove forest, or coastal marine. This course is offered in partnership with the Organization for Tropical Studies.

**4896W. Senior Research Thesis in Ecology and Evolutionary Biology**

Three credits. Prerequisite: Three credits of EEB 3899, which may be taken concurrently; ENGL 1007 or 1010 or 1011 or 2011 or 2100; open to juniors or higher.

A W course for students writing a senior thesis on their independent research. Not limited to honors students.

**4990. Directed Field Experience**

(Also offered as NRE 4990.) Four credits. Prerequisite: Instructor consent required.

Taught in Costa Rica or South Africa. An introduction to research design, field methods, and basic data analysis in a tropical context. Hypothesis testing and statistical analysis, including orientation to basic software packages. Students design, implement, and analyze data for their own field projects. This course is offered in partnership with the Organization for Tropical Studies.

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## Economics (ECON)

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**1000. Essentials of Economics**

Three credits. Prerequisite: Not open for credit to students who are currently enrolled in or who have

passed ECON 1107, 1179, 1200, 1201, 1202 or ARE 1150.

A one-semester general introduction to micro- and macroeconomics. Economic concepts include: opportunity costs, demand and supply, incentives, comparative advantage, inflation and employment policies, balance of international payments, and economic growth. CA 2.

**1101. Economics Through Film**

Three credits. Prerequisite: Not open for credit to students who have passed ECON 1000, 1200, 1201, 1202 or ARE 1150.

Introduction to basic economic concepts and contemporary economic issues through their portrayal in motion pictures. CA 2.

**1107E. Honors Core: Economics, Nature, and the Environment**

Three credits. Prerequisite: Open to honors students, others with instructor consent.

Impact of nature on societies; effects of geography and climate on economic development and income inequality. Impact of humans on their environment; environmental problems; collapse of societies; sustainable development. CA 2.

**1108. Game Theory in the Natural and Social Sciences**

Three credits. Prerequisite: Not open to students who have passed ECON 2201 or 2202.

Introduction to game theory. Applications in the natural and social sciences and technology may include electric power auctions, evolutionary biology, and elections. CA 2.

**1179. Economic Growth and the Environment**

Three credits. Prerequisite: Not open for credit to students who are currently enrolled in or who have passed ECON 1000, 1107E, 1200, 1201, 1202 or ARE 1150.

Simple economic concepts and tools and their application to the interactions between growing economies and the environment. Concepts include: supply and demand; models of economic growth; theory of externalities; valuation of natural capital and environmental services; trade theory. CA 2.

**1200. Principles of Economics (Intensive)**

Four credits. Recommended preparation: ECON 1000. Not open for credit to students who have passed ECON 1201, 1202, or ARE 1150. May not be taken concurrently with ECON 1201, 1202, or ARE 1150.

Same core of principles as ECON 1201 or 1202. One-half macroeconomics and one-half microeconomics. More demanding than ECON 1201 or 1202. Substitutes for ECON 1201 or 1202 as a prerequisite for all junior/senior level courses. May or may not substitute for ECON 1201 or 1202 outside economics; check Catalog. CA 2.

**1201. Principles of Microeconomics**

Three credits. Prerequisite: Not open for credit to students who have passed or are taking ECON 1200. May be taken before or after ECON 1202. May not be taken out of sequence after passing ECON 2198, 2201, 2211Q, or 2327. Students may not earn credit for both ARE 1150 and ECON 1201.

How the invisible hand of the market functions through the economic decisions of firms and individuals. How prices, wages and profits are determined, resources are allocated and income is

distributed. Topical subjects (e.g., energy policy and health care). CA 2.

**1202. Principles of Macroeconomics**

Three credits. Prerequisite: Not open for credit to students who have passed ECON 1200. May not be taken concurrently with ECON 1200. May be taken before or after ECON 1201 (or ARE 1150). May not be taken out of sequence after passing ECON 2198, 2202, 2212Q, or 2327.

The organization and function of the economic system as a total unit. Economic decisions, institutions, and policies that determine levels and rates of growth of production, employment, and prices. Topical subjects (e.g., government budget deficits and current interest-rate policy). CA 2.

**1493. Foreign Study**

Variable (1-6) credits. Prerequisite: Department consent required. May be repeated for credit.

Special topics taken in a foreign study program.

**1495. Special Topics**

Variable (1-3) credits. May be repeated for credit.

**1498. Variable Topics**

Three credits. May be repeated for credit.

**2101. Economic History of Europe**

Three credits. Prerequisite: ECON 1200 or both ECON 1201 (or ARE 1150) and ECON 1202; ECON 1201 (or ARE 1150) may be taken concurrently.

Economic evolution of Europe from feudal times to the present, emphasizing the modern period: the rise of commerce, industry, and banking; the growth of population and the labor force; the changing position of agriculture; business fluctuations; and forms of economic organization. CA 1.

**2101W. Economic History of Europe**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; ECON 1200 or both ECON 1201 (or ARE 1150) and ECON 1202; ECON 1201 (or ARE 1150) may be taken concurrently.

Economic evolution of Europe from feudal times to the present, emphasizing the modern period: the rise of commerce, industry, and banking; the growth of population and the labor force; the changing position of agriculture; business fluctuations; and forms of economic organization. CA 1.

**2102. Economic History of the United States**

Three credits. Prerequisite: ECON 1200 or both ECON 1201 (or ARE 1150) and ECON 1202; ECON 1201 (or ARE 1150) may be taken concurrently.

Issues in American economic development, including the political economy of the Constitution, the economics of slavery, the rise of modern corporations and the causes of the Great Depression. CA 1.

**2102W. Economic History of the United States**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; ECON 1200 or both ECON 1201 (or ARE 1150) and ECON 1202; ECON 1201 (or ARE 1150) may be taken concurrently.

Issues in American economic development, including the political economy of the Constitution, the economics of slavery, the rise of modern corporations and the causes of the Great Depression. CA 1.

**2103. Honors Core: Deep Roots of Modern Societies**

Three credits. Prerequisite: ECON 1200 or both ECON 1201 and 1202. Not open for credit to students who have passed ECON 3103.

Historical and comparative analysis of deep-rooted issues affecting modern societies. The evolution of societies and the origins of poverty, discrimination, conflict and war, income inequality, gender roles, and other challenging issues. CA 1.

**2110. History of Economic Thought**

Three credits. Prerequisite: ECON 1200 or both ECON 1201 (or ARE 1150) and ECON 1202 or instructor consent.

The evolution of economic ideas significant to their own times and to the state of current theory. Mainly nineteenth and twentieth century thinkers.

**2110W. History of Economic Thought**

Three credits. Prerequisite: ECON 1200 or both ECON 1201 (or ARE 1150) and ECON 1202; ENGL 1007 or 1010 or 1011 or 2011.

The evolution of economic ideas significant to their own times and to the state of current theory. Mainly nineteenth and twentieth century thinkers.

**2120. Honors Core: Rights and Harms**

Three credits.

Basic concepts in the economics and philosophy of law as a framework for discussing controversial social issues. Topics may include intellectual property rights, eminent domain, freedom of speech, and "repugnant" transactions like the sale of human organs. CA 1.

**2126. Philosophy and Economics**

Three credits. Prerequisite: ECON 1200 or 1201 or ARE 1150.

An examination of the normative assumptions and implications of modern economics (for example, the connections between Classical Utilitarianism and Welfare Economics). Attention to methodological controversies in contemporary economic theory.

**2127. Beyond Self Interest**

Three credits. Prerequisite: ECON 1200 or 1201 or ARE 1150.

A contrast to the assumptions, values, methodology, and philosophical underpinnings of mainstream economic analysis. Altruism, role of social norms and culture, importance of work, moral assessment of economic systems, feminist and ecological economics.

**2198. Topics in Economic History and Thought**

Three credits. Prerequisite: ECON 1200 or both ECON 1201 (or ARE 1150) and ECON 1202 or instructor consent. May be repeated for credit.

Special topics in economic history, the history of economic thought, the philosophy and methodology of economics, or alternative economic theories.

**2198W. Topics in Economic History and Thought**

Three credits. Prerequisite: ECON 1200 or both ECON 1201 (or ARE 1150) and ECON 1202; ENGL 1007 or 1010 or 1011 or 2011.

Special topics in economic history, the history of economic thought, the philosophy and methodology of economics, or alternative economic theories.

**2201. Intermediate Microeconomic Theory**

Three credits. Prerequisite: ECON 1200 or 1201 or ARE 1150; MATH 1071Q or 1110Q or 1120Q or 1125Q or 1131Q or 1151Q or 2141Q. Recommended preparation: ECON 1202. Not open for credit to students who have passed ECON 2211 or 3441.

Intermediate microeconomic theory, covering demand and supply, exchange and production, pricing, and welfare economics.

**2202. Intermediate Macroeconomic Theory**

Three credits. Prerequisite: ECON 1200 or 1202; one of MATH 1071Q, 1110Q, 1121Q, 1131Q, 1151Q, or 2141Q. Recommended preparation: ECON 1201. Not open for credit to students who have passed ECON 2212Q.

Intermediate macroeconomic theory, covering national income accounting; the determination of aggregate output, employment and price levels; elements of business cycles and economic growth.

**2211Q. Quantitative Intermediate Microeconomics**

Three credits. Prerequisite: ECON 1200 or both ECON 1201 and 1202; MATH 1071Q or 1110Q or 1125Q or 1131Q or 1151Q or 2141Q. Not open to students who have taken ECON 2201.

Intermediate microeconomic theory presented with calculus and other quantitative techniques. Demand and supply, exchange and production, pricing, and welfare economics.

**2212Q. Quantitative Intermediate Macroeconomics**

Three credits. Prerequisite: ECON 1200 or both ECON 1201 and 1202; MATH 1071Q or 1110Q or 1125Q or 1131Q or 1151Q or 2141Q. Not open for credit to students who have taken ECON 2202.

Intermediate macroeconomic theory using quantitative techniques. Definition and measurement of major economic variables; business cycles; economic growth; labor supply; savings and production decision; the effect of government policies; and general equilibrium.

**2301Q. Mathematical Economics**

Three credits. Prerequisite: ECON 1200 or both ECON 1201 (or ARE 1150) and ECON 1202; MATH 1071Q or MATH 1131Q or equivalent.

Application of mathematical techniques to economic problems. Methods studied: set theory, linear algebra, equilibrium analysis, unconstrained and constrained optimization, comparative statics, and linear programming.

**2311Q. Econometrics I**

Three credits. Prerequisite: ECON 1200 or both ECON 1201 (or ARE 1150) and ECON 1202; MATH 1071Q or 1110Q or 1125Q or 1131Q or 1151Q or 2141Q; and STAT 1000Q or 1100Q.

Recommended for all students majoring in Economics. Introduction to the application of statistical methods for the estimation, testing, and prediction of economic relationships. Emphasizes ordinary least squares regression.

**2312Q. Econometrics II**

Three credits. Prerequisite: ECON 2311Q.

Topics may include endogeneity problems and instrumental variables, panel-data models, binary-choice models including probit and logit, and time-series econometrics.

**2326. Operations Research**

Three credits. Recommended preparation: ECON 1200 or both ECON 1201 and 1202. Not open for credit to students who have passed ECON 4326.

Extensive use of computer spreadsheets to find efficient solutions to problems faced by managers in both the public and private sectors. Optimization of input and output mixes, of delivery routes, and communication networks.

**2327. Information Technology for Economics**

Three credits. Prerequisite: ECON 1200 or both ECON 1201 (or ARE 1150) and 1202; STAT 1000Q or 1100Q.

The presentation of economic data and testing of economic theory through the use of appropriate computer based tools. Analysis of macroeconomics concepts such as the consumption function, influence of the money supply, budget deficits, and interest rates on macroeconomic equilibrium, and the tradeoff between unemployment and inflation. Analysis of microeconomic concepts such as demand, supply, elasticity, the achievement of equilibrium price and quantity, and analysis of several industries and the stock market. Analysis of historical data such as aggregate and specific price levels, sectoral shifts in the economy, and changes in income distribution.

**2327W. Information Technology for Economics**

Three credits. Prerequisite: ECON 1200 or both ECON 1201 (or ARE 1150) and 1202; STAT 1000Q or 1100Q; ENGL 1007 or 1010 or 1011 or 2011.

The presentation of economic data and testing of economic theory through the use of appropriate computer based tools. Analysis of macroeconomics concepts such as the consumption function, influence of the money supply, budget deficits, and interest rates on macroeconomic equilibrium, and the tradeoff between unemployment and inflation. Analysis of microeconomic concepts such as demand, supply, elasticity, the achievement of equilibrium price and quantity, and analysis of several industries and the stock market. Analysis of historical data such as aggregate and specific price levels, sectoral shifts in the economy, and changes in income distribution.

**2328. Applied Regional Analysis: The Connecticut Economy**

Three credits. Prerequisite: ECON 1200 or both ECON 1201 (or ARE 1150) and 1202; STAT 1000Q or 1100Q. Recommended preparation: MATH 1070.

Methods of regional economic analysis applied to Connecticut. Descriptive statistics, input-output models, economic indexes, linear regression, forecasting and related tools are used to explore labor markets, housing, public policy and other topics.

**2328W. Applied Regional Analysis: The Connecticut Economy**

Three credits. Prerequisite: ECON 1200 or both ECON 1201 (or ARE 1150) and 1202; STAT 1000 or 1100; ENGL 1007 or 1010 or 1011 or 2011. Recommended preparation: MATH 1070.

Methods of regional economic analysis applied to Connecticut. Descriptive statistics, input-output models, economic indexes, linear regression, forecasting and related tools are used to explore

labor markets, housing, public policy and other topics.

#### **2411. Money and Banking**

Three credits. Prerequisite: ECON 1200 or both ECON 1201 (or ARE 1150) and ECON 1202; ECON 1201 (or ARE 1150) may be taken concurrently.

The nature of money, the origins of monetary standards and systems, the development and operation of commercial banking, the Federal Reserve System, and international monetary agencies.

#### **2413. Economics of Financial Markets and Institutions**

Three credits. Prerequisite: ECON 1200 or both ECON 1201 (or ARE 1150) and 1202.

Interactions between the financial system and the real economy. The form and function of various financial markets and financial institutions. Theories of interest rates. Theories of asymmetric information and transaction cost. The evolving role of the financial system in understanding key macroeconomic phenomena.

#### **2431. Economics of Taxation and Government Spending**

Three credits. Prerequisite: ECON 1200 or 1201 or ARE 1150. Recommended preparation for students who have passed ECON 1201 (or ARE 1150) is ECON 1202.

Critical issues in taxation and government expenditures. Emphasis on institutions and public policy. Topics include: rationale for and effects of progressive taxation, reform of the tax system, Social Security and Medicare, welfare reform, defense, and fiscal federalism.

#### **2439. Urban Development and Policy**

Three credits. Prerequisite: ECON 1200 or 1201 or ARE 1150.

Education, housing, anti-poverty, economic development, and transportation policies for American cities and metropolitan areas. Emphasis on different roles of policies that act upon people versus places. Analysis tools for regional economic development such as input-output matrices and cost-benefit analysis.

#### **2440. Economics of the Global Economy**

Three credits. Prerequisite: ECON 1200 or both ECON 1201 (or ARE 1150) and 1202.

Analysis of economic integration in the global economy with emphasis on the position of the USA. Several specialist areas of economic thought brought to bear-economic history, economics of the multinational enterprise, international trade, international finance, labor economics, environmental economics, and economics of the internet. Institutional historical, and political economy approaches are emphasized.

#### **2441. Labor Economics**

Three credits. Prerequisite: ECON 1200 or 1201 or ARE 1150. Recommended preparation: ECON 2201.

Economics of labor: human capital theory, discrimination, unemployment, manpower policy, and trade unions.

#### **2441W. Labor Economics**

Three credits. Prerequisite: ECON 1200 or 1201 or ARE 1150; ENGL 1007 or 1010 or 2011. Recommended preparation: ECON 2201.

Economics of labor: human capital theory, discrimination, unemployment, manpower policy, and trade unions.

#### **2444. Women and Minorities in the Labor Market**

Three credits. Prerequisite: ECON 1200 or both ECON 1201 (or ARE 1150) and 1202.

Issues and problems confronting women and minorities in the workplace, using economic theory, institutional analysis, and empirical investigation. Historical background, allocation of time, discrimination, earnings determination, occupational structure, labor unions, and public policy.

#### **2445. Economic Foundations of Gender Inequality**

Three credits. Prerequisite: Not open to students who have passed or are taking HRTS or WGSS 3445

Economic approaches to gender inequality in political representation, economic opportunities, access to education, and health.

#### **2446. Labor Legislation**

Three credits. Prerequisite: ECON 1200 or 1201 or ARE 1150.

Legal status of labor, unorganized and organized, in legislation and court decisions. Emphasis on the labor contract, bargaining procedures, and union and employer tactics. Also, legislation dealing with wages, hours, child labor, old-age benefits, and accident and unemployment compensation.

#### **2447. Economics of Sports**

Three credits. Prerequisite: ECON 1200 or 1201 or ARE 1150.

Microeconomic principles applied to the business of sports. Player salaries; antitrust issues and collective bargaining; discrimination; economics of franchising; ticket pricing, revenue sharing, and competitive balance; impact of franchises on local economies.

#### **2447W. Economics of Sports**

Three credits. Prerequisite: ECON 1200 or 1201 or ARE 1150; ENGL 1007 or 1010 or 2011.

Microeconomic principles applied to the business of sports. Player salaries; anti-trust issues and collective bargaining; discrimination; economics of franchising; ticket pricing, revenue sharing, and competitive balance; impact of franchises on local economies.

#### **2451. Economic Behavior and Health Policy**

Three credits. Prerequisite: ECON 1200 or both ECON 1201 (or ARE 1150) and 1202. Not open for credit to students who have passed ECON 3451.

Basic principles of health economics, including the demand for health, health behaviors, public-health economics, and behavioral health economics, applied to five topics: smoking, obesity, opioid and other drug addictions, depression, and infectious diseases.

#### **2451W. Economic Behavior and Health Policy**

Three credits. Prerequisite: ENGL 1007 or 1010 or 2011; ECON 1200 or both ECON 1201 (or ARE 1150) and ECON 1202. Not open for credit to students who have passed ECON 3451.

Basic principles of health economics, including the demand for health, health behaviors, public-health economics, and behavioral health

economics, applied to five topics: smoking, obesity, opioid and other drug addictions, depression, and infectious diseases.

#### **2456. Economics of Poverty**

Three credits. Prerequisite: ECON 1200 or both ECON 1201 (or ARE 1150) and 1202.

Analysis of poverty and income maintenance programs: theories of income distribution and comparison of public policies in the U.S. and other countries.

#### **2462. Government and Industry**

Three credits. Prerequisite: ECON 1200 or 1201 or ARE 1150.

Relations between government and business. Public policies enforcing, supplementing, or replacing competition in particular markets, studies of selected industries and legal cases.

#### **2467E. Economics of the Oceans**

(Also offered as MAST 2467E.) Three credits. Prerequisite: ECON 1200 or 1201.

Economics of industries that use and manage ocean resources. Applications of industrial organization, law and economics, natural resource theory, and environmental economics.

#### **2474. Economic Development in Latin America and the Caribbean**

(Also offered as LLAS 2474.) Three credits. Prerequisite: ECON 1200 or both ECON 1201 and 1202.

Survey of the economic history of Latin America and the Caribbean. Analysis of present-day development issues in the region, including economic growth, poverty, education, and health.

#### **2477. Transitional Economies of Russia and Eastern Europe**

Three credits. Prerequisite: ECON 1200 or both ECON 1201 (or ARE 1150) and 1202.

Economic transition of these formerly socialist economies into capitalist, market economies. Comparison of centrally planned and market economies. Problems of macroeconomic imbalance, economic distortions, shortages and repressed inflation. Means and timing of price liberalization, privatization, restructuring, currency convertibility, and building legal and financial institutions.

#### **2481. Internship Field Study**

Variable (1-6) credits. Prerequisite: Nine credits of 2000 level or above ECON (6 of which may be taken concurrently). Must be 6th semester and have a min CGPA of 2.25 or a min of 2.5 in 2000-level or above ECON. Must secure satisfactory intern position before end of 2nd week of semester. May be repeated for a total of 15 credits.

Supervised fieldwork relevant to some area of economics, with a business firm, government agency or non-profit organization. Evaluation by the field supervisor and by the instructor (based on a detailed written report submitted by the student). Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory.) Does not count toward the economics major. Students must secure a satisfactory intern position before the end of the second week of the semester of enrollment in this course; they should begin consultation with the instructor several months in advance.



**2491. Internship Research Paper**

One credit. Prerequisite: Nine credits of 2000 level or above ECON (six of which may be taken concurrently). Students must be 6th semester and have a min CGPA of 2.25 or a min of 2.5 in 2000 level or above economics courses.

Research paper of 3,000-4,000 words on approved topic related to the internship field study.

**2491W. Internship Research Paper**

One credit. Prerequisite: Nine credits of 2000 level or above ECON (six may be concurrent). At least 6th semester with a min CGPA of 2.25 or a min of 2.5 in 2000 level or above ECON courses; ENGL 1007 or 1010 or 1011 or 2011.

Research paper of 3,000-4,000 words on approved topic related to the internship field study.

**2493. Foreign Study**

Variable (1-6) credits. May be repeated for credit.

Special topics taken in a foreign study program. Consent of Department Head required, prior to the student's departure. May count toward the major with consent of the advisor.

**2495. Special Topics**

Variable (1-6) credits. Prerequisite: Prerequisites and recommended preparation vary. May be repeated for credit.

**2498. Variable Topics**

Three credits. Prerequisite: Prerequisites and recommended preparation vary. May be repeated for credit.

**2499. Independent Study**

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

Tutorial course to enable qualified students to round out their training in economics. Independent reading conferences and short research papers. No more than six credits of ECON 2499/3499 may be counted toward major requirements.

**2500W. Writing in Economics**

One credit. Prerequisite: ECON 1200 or both ECON 1201 (or ARE 1150) and ECON 1202; ENGL 1007 or 1010 or 1011 or 2011.

Techniques for, and practice in, research, writing, citation, and data presentation in economics.

**3103. Global Economic History: Deep Roots of Modern Societies**

Three credits. Prerequisite: ECON 2201, ECON 2202, ECON 2211Q, or ECON 2212Q. Not open for credit to students who are currently enrolled in or who have passed ECON 2103.

Historical and comparative analysis of deep-rooted issues affecting modern societies. The evolution of societies and the origins of poverty, discrimination, conflict and war, income inequality, gender roles, and other challenging issues.

**3128. Economic and Social Human Rights**

Three credits. Prerequisite: ECON 2201, 2202, 2211Q, or 2212Q.

Conceptual bases, types, measurement, and policy applications of economic and social human rights.

**3198. Variable Topics in Economic History**

Three credits. Prerequisite: ECON 2201, 2202, 2211Q, or 2212Q. May be repeated for credit.

**3208. Game Theory**

Three credits. Prerequisite: ECON 2201 or 2211; open to juniors or higher. Not open for credit to students who have taken ECON 3210.

Analysis of economic situations as games. Nash equilibrium, backward induction, auctions, commitment, credibility, and asymmetric information.

**3209. Behavioral Economics**

Three credits. Prerequisite: ECON 2201 or 2211Q; STAT 1000Q or 1100Q.

Overview of the field of behavioral economics, the intersection between economics and psychology. Behavioral models of individual decision-making, with particular focus on intertemporal choice, decisions under uncertainty, and probabilistic judgments and learning. Applications to fields such as development economics and health economics.

**3210. Game Theory for Blockchains**

Three credits. Prerequisite: ECON 2201 or 2211Q. Not open for credit to students who have passed ECON 3208.

Analysis and modeling of strategic interaction, with a focus on the strategic challenges of blockchains. Topics include identification of strategic issues in using blockchains, choice of correct tools of analysis, formal modeling of interaction, and design of governance algorithms.

**3213. Elementary Economic Forecasting**

Three credits. Prerequisite: ECON 2202 or 2212Q; STAT 1000Q or 1100Q; open to juniors or higher. Recommended preparation: ECON 2311.

Economic forecasting for macroeconomics and financial economics. Econometric analysis of time-series data.

**3215. Financial Econometrics**

Three credits. Prerequisite: ECON 2201 or 2211Q; ECON 2202 or 2212Q; STAT 1000Q or STAT 1100Q

Introduction to the mathematics of finance. Theoretical reasoning (proofs), modeling, useful simplifying approximations, and computing. Students will write basic programs in R.

**3217. Machine Learning for Economists**

Three credits. Prerequisite: ECON 2311Q, 2312Q, and 3321. Not open for credit to students who have passed ECON 5317.

Machine learning techniques and causal inference. Applications to economic data.

**3218. Panel Data Econometrics**

Three credits. Prerequisite: ECON 2311Q, 2312Q and 3321. Not open for credit to students who have passed ECON 5318.

Standard panel data models with an emphasis on determining when causal relationships can be inferred from panel data.

**3321. Programming and Computation with R for Economists**

Three credits. Prerequisite: ECON 2201 or 2211Q; ECON 2202 or 2212Q. Not open for credit to students who have passed ECON 5321.

Basics of R programming. Objects, data structures, logical design, functions. Applications to matrix algebra, optimization, data visualization, and econometric analysis.

**3322. Open Source Programming with Python for Economists**

Three credits. Prerequisite: ECON 2201 or 2211Q; ECON 2202 or ECON 2212Q. Not open for credit to students who have passed ECON 5322.

Introduction to Python. Code structure; control flow; data input/output in various formats; testing and debugging.

**3413. Financial Economics**

Three credits. Prerequisite: ECON 2201 or 2211Q; ECON 2202 or 2212Q; STAT 1000Q or 1100Q.

Basic principles used in investment decisions and their applications to pricing financial assets and to portfolio management. Asset pricing models including the Capital Asset Pricing Model and Arbitrage Pricing Theory. Fixed-income securities. Options and futures.

**3416. Special Problems in Money and Banking**

Three credits. Prerequisite: ECON 2202 or 2212; ECON 2411.

Emphasis on public policy: commercial bank regulations; the relation of liquidity to economic fluctuations; government lending agencies; and central bank policies and credit control.

**3421. International Trade**

Three credits. Prerequisite: ECON 2201 or 2211Q. Recommended preparation: ECON 1200 or 1202; MATH 1071 or 1110 or 1121 or 1131 or 1151.

Economic basis of international trade, trade policies, and international economic organizations.

**3421W. International Trade**

Three credits. Prerequisite: ECON 2201 or 2211Q; ENGL 1007 or 1010 or 1011 or 2011. Recommended preparation: ECON 1200 or 1202; MATH 1071, 1110, 1121, 1131 or 1151.

Economic basis of international trade, trade policies, and international economic organizations.

**3422. International Finance**

Three credits. Prerequisite: ECON 2202 or 2212Q. Recommended preparation: ECON 1200 or 1201.

Payments and financing of international trade: foreign exchange markets, the balance of payments, capital flows, and international monetary arrangements.

**3431. Public Economics**

Three credits. Prerequisite: ECON 2201 or 2211Q. Recommended preparation: ECON 1200 or 1202.

The role of the government in the economy. Topics may include: government policies relating to environmental protection, healthcare, social security, and education; public choice theory; fiscal policy, finance, and taxation.

**3431W. Public Economics**

Three credits. Prerequisite: ECON 2201 or 2211Q; ENGL 1007 or 1010 or 1011 or 2011. Recommended preparation: ECON 1200 or 1202.

The role of the government in the economy. Topics may include: government policies relating to environmental protection, healthcare, social security, and education; public choice theory; fiscal policy, finance, and taxation.

**3438. Contemporary Problems in Economics**

Three credits. Prerequisite: ECON 2201, 2202, 2211Q, or 2212Q.

Current issues of government economic policy, primarily microeconomic: energy, income maintenance, labor markets for minorities and

women, government regulation, health care, and others.

### **3438W. Contemporary Problems in Economics**

Three credits. Prerequisite: ECON 2201 or 2211Q; ECON 2202 or 2212Q; ENGL 1007 or 1010 or 1011 or 2011.

Current issues of government economic policy, primarily microeconomic: energy, income maintenance, labor markets for minorities and women, government regulation, health care, and others.

### **3439. Urban and Regional Economics**

(Also offered as URBN 3439.) Three credits. Prerequisite: ECON 2201 or 2211Q. Recommended preparation: ECON 1200 or 1202; MATH 1071 or 1110 or 1121 or 1131 or 1151.

Economic problems of cities and regions: urban markets for land, labor, and housing; location decisions of businesses and households; metropolitan transportation problems; urban/suburban fiscal relations; urban and regional environmental quality; and the economics of crime.

### **3439W. Urban and Regional Economics**

Three credits. Prerequisite: ECON 2201 or 2211Q; ENGL 1007 or 1010 or 1011 or 2011. Recommended preparation: ECON 1200 or 1202; MATH 1071, 1110, 1121, 1131 or 1151.

Economic problems of cities and regions: urban markets for land, labor, and housing; location decisions of businesses and households; metropolitan transportation problems; urban/suburban fiscal relations; urban and regional environmental quality; and the economics of crime.

### **3441. Theory of Labor Markets**

Three credits. Prerequisite: ECON 2201 or 2211Q.

Theoretical analysis of labor markets: labor supply and demand; wage differentials; human capital; and the inflation-unemployment tradeoff.

### **3451. Health Economics**

Three credits. Prerequisite: ECON 2201 or 2211Q. Not open for credit to students who have passed ECON 2498 when taught as Health/Labor Economics

Economic analysis of the health sector: organization and performance of health care delivery systems; economic behavior of patients and providers; markets for health services; health-care finance and insurance; health-care policy; and cost-benefit analysis of health-care programs.

### **3453. Economics of Global Health**

Three credits. Prerequisite: ECON 2201 or 2211Q.

Examination of health issues in developing countries from the standpoint of applied microeconomic research. Emphasis on the analysis of real-world data.

### **3461. Organization of Industry**

Three credits. Prerequisite: ECON 2201 or 2211Q.

The nature of competition and economic organization. Competitive effects of business practices, and their influence on price, production, and technological change.

### **3466E. Environmental Economics**

Three credits. Prerequisite: ECON 2201 or 2211Q.

Application of economic reasoning to environmental issues. Topics include air and water pollution and the management of natural resources;

market failure and environmental regulation; market-based mechanisms; cost-benefit analysis, environmental valuation, and program evaluation; environmental justice from an economic perspective.

### **3468. Economics of the Law**

Three credits. Prerequisite: ECON 2201 or 2211Q.

The law as an economic institution. Primary focus on the Common Law, property, tort, and contract. Applications to pollution control, land-use, hazardous wastes, product liability, and worker safety. Ethical as well as economic approaches to the law.

### **3473. Economic Development**

Three credits. Prerequisite: ECON 1200 or 1202; ECON 2201 or 2211Q. Recommended preparation: MATH 1071, 1110, 1121, 1131 or 1151.

Economics of problems facing developing nations: theories of development, and strategies and policies to promote economic development.

### **3473W. Economic Development**

Three credits. Prerequisite: ECON 1200 or 1202; ECON 2201 or 2211Q; ENGL 1007 or 1010 or 1011 or 2011. Recommended preparation: MATH 1071, 1110, 1121, 1131, or 1151.

Economics of problems facing developing nations: theories of development, and strategies and policies to promote economic development.

### **3479. Economic Growth**

Three credits. Prerequisite: ECON 2202 or 2212Q.

Causes and consequences of economic growth examined through theory, data, and economic history. Interactions between economic growth and population growth, technology, education, health and life expectancy, and social institutions. Public policies to promote growth.

### **3479W. Economic Growth**

Three credits. Prerequisite: ECON 2202 or 2212Q; ENGL 1007 or 1010 or 1011 or 2011.

Causes and consequences of economic growth examined through theory, data, and economic history. Interactions between economic growth and population growth, technology, education, health and life expectancy, and social institutions. Public policies to promote growth.

### **3492. Practicum**

Variable (1-6) credits. Prerequisite: ECON 2201 or ECON 2211Q; ECON 2202 or ECON 2212Q; instructor consent required. May be repeated for credit.

A maximum of six credits may be counted toward the major.

### **3493. Foreign Study**

Variable (1-6) credits. Prerequisite: ECON 2201, 2202, 2211Q, or 2212Q. May be repeated for credit.

Special topics taken in a foreign study program. Consent of Department Head required, prior to the student's departure. May count toward the major with consent of the advisor.

### **3495. Special Topics**

Variable (1-6) credits. Prerequisite: ECON 2201, 2202, 2211Q, or 2212Q. May be repeated for credit.

### **3498. Variable Topics**

Three credits. Prerequisite: ECON 2201, 2202, 2211Q, or 2212Q. May be repeated for credit.

### **3499. Independent Study**

Variable (1-6) credits. Prerequisite: ECON 2201, 2202, 2211Q, or 2212Q. May be repeated for credit.

Tutorial course to enable qualified students to round out their training in economics. Independent reading conferences and short research papers. No more than six credits in ECON 2499/3499 may be counted toward major requirements.

### **4206. Mechanism Design**

Three credits. Prerequisite: ECON 2201 or 2211Q.

Designing incentives to encourage an intended result. Applications may include public goods provision; two-sided matching, as in labor and marriage markets; and peer evaluation of performance.

### **4323. Convex Optimization with Python**

Three credits. Prerequisite: ECON 2201 or ECON 2211Q; MATH 1131Q or MATH 1151Q or MATH 2141Q.

Methods of convex optimization, including linear, quadratic, and general constrained and unconstrained problems. Applications, using Python, in economics and finance.

### **4326. Operations Research for Benchmarking**

Three credits. Prerequisite: ECON 2301, and ECON 2201 or 2211Q. Recommended preparation: ECON 2326.

Resource allocation decisions in complex organizations formulated as standard mathematical optimization problems that can be solved using Excel. Focus on the interface between Neoclassical Production Economics and Operations Research for performance evaluation by benchmarking.

### **4494W. Seminar in Economics**

Three credits. Prerequisite: ECON 2201 or 2211Q; ECON 2202 or 2212Q; ENGL 1007 or 1010 or 1011 or 2011.

Special topics in micro - and macroeconomic theory, applications, and testing. Recommended for capable students who are motivated to develop and extend their knowledge of economics in creative ways. Required for Honors Scholars in Economics and Economics Scholars.

### **4497W. Senior Thesis in Economics**

Three credits. Prerequisite: ECON 4494W or consent of the Department Honors Advisor; ENGL 1007 or 1010 or 1011 or 2011.

The student should define a general subject area for the thesis before choosing a thesis advisor and seeking consent at the time of registration. The student should then submit a written proposal for the senior thesis to the advisor by the end of the semester preceding enrollment for thesis credit.

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## **Education (EGEN)**

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### **3092. Peer Facilitation Practicum**

Three credits. Prerequisite: EGEN 3200; open to Honors students and other qualified students with consent of instructor. Not open for credit to students who have passed INTD 3995 if taught as topic "Honors Facilitator's Seminar."

Integration of the topics of mentoring, leadership and pedagogy with classroom experiences for students serving as facilitators for the Honors First Year Experience course.

#### **3100. Seminar/Clinic: Teaching and Learning**

Three credits. Prerequisite: Open only to students in the Integrated Bachelor's/Master's Teacher Preparation Program. May not be taken out of sequence after passing EGEN 3110 or 3120.

Integration of the concepts of learning, special needs, and technology with clinical experiences.

#### **3110. Seminar/Clinic: The Student in the School Context**

Three credits. Prerequisite: EGEN 3100; open only to students in the Integrated Bachelor's/Master's Teacher Preparation Program. Not open to students who have passed EGEN 3120.

Integration of concepts of social and community issues, and exceptionality with clinical experiences.

#### **3110W. Seminar/Clinic: The Student in the School Context**

Three credits. Prerequisite: EGEN 3100; ENGL 1007 or 1010 or 1011 or 2011. open only to students in the Integrated Bachelor's/Master's Teacher Preparation Program. Not open for credit to students who have passed EGEN 3120.

Integration of concepts of social and community issues, and exceptionality with clinical experiences.

#### **3120. Teaching and Learning in School Contexts**

One credit. Prerequisite: EGEN 3100; open only to students in the Integrated Bachelor's/Master's Elementary Teacher Preparation Program. Not open for credit to students who have passed EGEN 3110. May not be taken out of sequence after passing EGEN 4200.

Integration of concepts of designing and planning instructional activities to support diverse student learning with clinical experiences.

#### **3200. Peer Mentoring and Leadership**

Three credits. Prerequisite: Open to Honors students and other qualified students with consent of instructor. May not be taken out of sequence after passing EGEN 3092.

Review of literature on college student development, gifted student development, leadership, mentoring, and pedagogy with the goal of preparing students to become Honors First Year Experience Seminar Facilitators.

#### **4100. Seminar/Clinic: Methods of Teaching**

Three credits. Prerequisite: Open only to students in the Integrated Bachelor's/Master's Teacher Preparation Program.

Integration of concepts of learning assessment and exceptionality with area specific methods.

#### **4110. Seminar/Clinic: Analysis of Teaching**

Three credits. Prerequisite: Open only to students in the Integrated Bachelor's/Master's Teacher Preparation Program.

Analysis of instructional concepts and implementation in the clinical setting. Relationship of instruction to theory and implications for instructional evaluation are stressed.

#### **4194. Honors Seminar**

Three credits. Prerequisite: Students must be accepted by the School of Education Honors

Committee as candidates for Honors Scholars or University Scholars. May be repeated for credit.

Students must be accepted by the School of Education Honors Committee as candidates for Degrees with Distinction, Honors Scholars, or University Scholars.

#### **4197. Independent Study: Honors Thesis Preparation**

Three credits. Prerequisite: Students must be accepted by the School of Education Honors Committee as candidates for Honors Scholars or University Scholars. May be repeated for credit.

#### **4200. Seminar/Clinic: Methods of Teaching**

Four credits. Prerequisite: EGEN 3120; open only to students in the Integrated Bachelor's/Master's Teacher Preparation Program; open only to seniors.

Integration of concepts of teaching, learning, and assessment with area specific methods.

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## **Education Curriculum and Instruction (EDCI)**

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#### **1100. If You Love It, Teach It**

Three credits.

Studies of K-12 teaching, learning, and schooling in the United States; historical, philosophical, and social foundations of education as well as self-study to reimagine educational futures. CA 2.

#### **2100. Power, Privilege, and Public Education**

Three credits.

Service learning course. Interdisciplinary analysis of the development and structure of schooling, teaching, and learning in American society; impact of public education on its many and diverse stakeholders. Includes topics such as: equity and excellence, historical, socio-cultural, philosophical, political, and legal frameworks of education, and current educational reform efforts. Recommended for students considering applying to the Neag School of Education their sophomore year. CA 2. CA 4.

#### **3000. Introduction to Teaching**

One credit. Prerequisite: Open only to students in the Integrated Bachelor's/Master's Teacher Preparation Program.

Introduction to the University of Connecticut's Integrated Bachelor's/Master's Teacher Preparation Program. Includes the philosophical and theoretical foundations of the program, its structure and components, the nature and purposes of schooling, the relationship of the school and society, and recent educational reform movements, including the work of the Holmes Group and John Goodlad's National Network for Educational Renewal, and the nature and purposes of reflective practice for the educational professional.

#### **3010. Elementary Curriculum Standards and Integration**

One credit. Prerequisite: Open only to Elementary Education majors.

We will utilize national curriculum standard documents to critically analyze curricular materials and elementary-level teaching. We will focus on language arts, mathematics, science, and social studies curriculum standards.

#### **3020. Choral Music Methods**

Two credits. Prerequisite: Open to music education students in the Integrated Bachelor's/Master's Teacher Preparation Program.

Pedagogical techniques in choral settings, evaluation of vocal and choral literature and texts, and guidelines for choral performance at elementary and secondary levels.

#### **3100. Multicultural Education, Equity and Social Justice**

Three credits. Prerequisite: Open only to students in the Integrated Bachelor's/Master's Teacher Preparation Program.

Introduction to multicultural education. Includes the nature and purposes of schooling, the relationship between diversity, schooling and society, and the concepts and practices of multicultural education and equity pedagogy.

#### **3100W. Multicultural Education, Equity and Social Justice**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011. Open only to students in the Integrated Bachelor's/Master's Teacher Prep Program.

Introduction to multicultural education. Includes the nature and purposes of schooling, the relationship between diversity, schooling and society, and the concepts and practices of multicultural education and equity pedagogy.

#### **3210. Introduction to Secondary Methods and Clinic: Agricultural Teaching**

Three credits. Prerequisite: Open only to secondary agriculture education students in the Integrated Bachelor's/Master's Teacher Preparation Program.

Pedagogical techniques in middle and high school agriculture classroom settings, including setting student learning goals, planning and engaging students in activity that is authentic to the discipline of agriculture, with an increased focus on facilitating productive small group and whole class task-based discourse in agriculture classrooms.

#### **3211. Introduction to Secondary Methods and Clinic: English**

Three credits. Prerequisite: Open only to secondary English Education students in the Integrated Bachelor's/Master's Teacher Preparation Program.

Drawing upon current research related to the teaching of writing, this course invites students to examine and participate in a workshop approach that fosters skill development and engagement with writing.

#### **3212. Introduction to Secondary Methods and Clinic: Mathematics**

Three credits. Prerequisite: Open only to secondary mathematics education students in the Integrated Bachelor's/Master's Teacher Preparation Program.

Focuses on developing a deep understanding of mathematics content and goals for secondary mathematics education, and developing pedagogical techniques and competencies necessary for effective teaching in middle and high school math classroom settings. Focal areas include: setting student learning goals, planning and engaging students in activity that is authentic to the discipline of math, and facilitating meaningful, task-relevant discourse in math classrooms.

**3213. Introduction to Secondary Methods and Clinic: Science**

Three credits. Prerequisite: Open only to secondary science education students in the Integrated Bachelor's/Master's Teacher Preparation Program.

Pedagogical techniques in middle and high school science classroom settings, including setting student learning goals, planning and engaging students in activity that is authentic to the discipline of science, with an increased focus on facilitating productive small group and whole class task-based discourse in science classrooms.

**3214. Introduction to Secondary Methods and Clinic: Social Studies**

Three credits. Prerequisite: Open only to secondary History/Social Studies Education students in the Integrated Bachelor's/Master's Teacher Preparation Program.

Introduction to the teaching and learning of social studies. The social studies include many disciplines such as history, political science/government/civics, geography, economics, and others. The focus will be on the discipline of history - the heart of the social studies curriculum - but time is also spent on civics, geography, and economics, and on an inquiry approach to teaching.

**3215. Introduction to Secondary Methods and Clinic: World Languages**

Three credits. Prerequisite: Open only to secondary world language education students in the Integrated Bachelor's/Master's Teacher Preparation Program.

Introduction to the theoretical and methodological issues in the teaching of world languages in U.S. schools. Examines current issues in the professional literature of the field and explores approaches to world language teaching and theories about language learning. Explores setting student learning goals, planning and engaging students in authentic, culturally relevant activities for language learning, with a focus on facilitating productive small group and whole class task-based discourse in the target language.

**3305. Methods and Clinic in Elementary School Music**

Variable (3-4) credits. Prerequisite: Satisfactory progress in applied music; open only to students in the Integrated Bachelor's/Master's Teacher Preparation Program.

Development of pre-service music teachers' skills in elementary learning (grades Pre-K-5; 6-8) and teaching through hands-on experience and observation. Students will explore the fundamental standard terms, concepts, musical skills, and understandings, and dispositions to be effective elementary music teachers through the lenses of curriculum, instruction, and assessment. Music activities, materials, and teaching methods for elementary music classes, based on research and theories in music education, will be discussed.

**4010. Teaching Reading and Writing in the Content Areas**

Two credits. Prerequisite: Open only to students in the Integrated Bachelor's/Master's Teacher Preparation Program.

A study of the role of reading and writing in the learning of the content areas taught in secondary schools.

**4088. Variable Topics**

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

**4099. Independent Study for Undergraduates**

Variable (1-6) credits. Prerequisite: Open to juniors or higher. May be repeated for credit.

Designed primarily for qualified students who wish to extend their knowledge in some specialized area. Students must present the instructor with a problem well laid out for investigation.

**4110W. Teaching Reading and Writing in the Elementary School**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011. Open only to Elementary Education and Special Education majors.

An introduction to the teaching of reading and writing in the elementary school. Field experiences may be included.

**4115. Teaching Mathematics in the Elementary School**

Three credits. Prerequisite: Open only to Elementary Education and Special Education majors.

An introduction to current approaches and methods for teaching mathematics in the elementary school. Opportunities will be provided for participants to develop awareness of the Common Core State Standards for Mathematics to inform instruction and enhance student learning.

**4120. Teaching Science in the Elementary School**

Two credits. Prerequisite: Open only to Elementary Education and Special Education majors.

A study of curriculum materials, laboratory experiences and teaching techniques in science.

**4125. Teaching Social Studies in the Elementary School**

Two credits. Prerequisite: Open only to Elementary Education and Special Education majors.

A study of the organization of learning experiences and teaching methods emphasizing the social sciences as the foundation of the social studies.

**4130. Teaching the Language Arts in the Elementary School**

Three credits. Prerequisite: Open only to Elementary Education and Special Education majors.

A study of current theory and approaches to teaching the language arts effectively by connecting the teaching of speaking, listening, reading, and writing and by integrating this instruction with children's literature and content learning. Field experiences may be included.

**4150. Directed Student Teaching**

Variable (1-9) credits. Prerequisite: Open only to students in the Integrated Bachelor's/Master's Teacher Preparation Program.

Student teaching in selected elementary schools. Provides opportunity for students to observe teaching, to develop teaching skills through practice, and to engage in other school activities for which elementary teachers are responsible. Application, signed by the advisor, must be made to the Coordinator of Student Teaching for the fall semester prior to March 1; for the spring semester prior to October 1.

**4205W. Methods of Foreign Language Instruction, Pre K through 12**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011. Open only to students in the Integrated Bachelor's/Master's Teacher Prep Program.

Selection and organization of learning experiences, instructional activities and materials, and methods of teaching foreign language in pre K-12 settings. Course activities include a combination of lecture, seminar and clinical experiences in local schools.

**4210W. Instruction and Curriculum in the Secondary School**

Variable (1-6) credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011. Open only to students in the Integrated Bachelor's/Master's Teacher Prep Program.

A study of the selection and organization of learning experiences, instructional materials and teaching methods. Course activities will include a combination of lecture, seminar, and clinical experiences in local schools.

**4215. The Teaching of Reading in Middle and High Schools**

Variable (1-6) credits. Prerequisite: Open only to students in the Integrated Bachelor's/Master's Teacher Preparation Program.

Methods of teaching reading to middle and high school students.

**4250. Directed Student Teaching**

Variable (1-9) credits. Prerequisite: Open only to students in the Integrated Bachelor's/Master's Teacher Preparation Program.

Class meetings providing orientation to student teaching followed by teaching in schools supervised by a member of the staff of the Curriculum and Instruction Department. It is the policy of the department to extend its practice-teaching opportunity to a point sufficient to indicate adequately a student's teaching ability and aptitude. Application, signed by the advisor, must be made to the Coordinator of Student Teaching for the fall semester prior to March 1; for the spring semester prior to October 1.

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**Educational Leadership (EDLR)**

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**1110. Introduction to Sport Management**

Three credits.

Introduction to the sport industry and the field of sport management.

**1161. Husky Reads: Introducing Food and Nutrition to Children through Reading**

(Also offered as NUSC 1161.) Two credits. Prerequisite: Instructor consent.

Supervised field work and experiential learning in nutritional literacy for preschoolers and young children, geared to individual, dual, and team activities. Readings and reflections.

**1162. Health and Education in Urban Communities**

One credit.

Historical and social forces that shape health and education in Connecticut's urban communities. Poverty, culture, and identity; their impacts on children's health, nutrition, schooling, and opportunities for success. Analysis of social

policies, norms, and beliefs; their impact on issues of justice. Includes service learning.

### **2001. Contemporary Social Issues in Sport**

Three credits.

Socio-cultural, economic, political, and other related issues in sport. Sport as a social institution, the impact of sport in American culture, and the impact of American culture on sport. Sport at the youth, intercollegiate, professional, and international levels; how sport at these levels is experienced differently by individuals, communities, organizations, and society. Issues in sport relative to gender, race (ethnicity), differing physical and intellectual ability, sexual identity, and gender identity. CA 4.

### **2005. Introduction to Service Learning**

Three credits. Prerequisite: Instructor consent.

Societal values and beliefs connected to community engagement; the role of community engagement as civic responsibility and the connection with a healthy democracy. Includes participation in an established UConn service learning program.

### **2010. Leadership Theory and Practice in Sport Management**

Three credits.

Examines multiple perspectives of leadership studied and utilized within the sport industry. Covers individual, interpersonal, and team-based skills required in leadership roles; differentiating leadership from management; strategic and innovative leadership; and communicating as a leader.

### **3090. Directed Observation and Participation in Sport Organizations**

Variable (1-3) credits. Prerequisite: Open only to students in EDLR programs or select students in the Individualized Majors program. Not open to students who have passed KINS 3090. May be repeated for a total of 3 credits.

Prior to registration, students must apply for Directed Observation, complete a learning agreement, and provide for their own transportation. Mentors include educators and sport professionals.

### **3091. Internship in Sport Organizations**

Variable (1-6) credits. Prerequisite: Open only to students in EDLR programs or select students in the Individualized Majors program. Students must complete at least four Sport Management required courses (including EDLR 3310) and obtain advisor's consent prior to enrolling in the course. May be repeated for credit.

Field service or experiences in cooperating agencies.

### **3250. Experiential Learning and Education**

Three credits.

Experiential learning, individual values, personality characteristics. Learning as a life-long process, adult transition research.

### **3262. College Freshmen: Their Characteristics and Their Adjustment to College Life**

Three credits. Prerequisite: Instructor consent required.

Personal and social characteristics of college freshmen; adjustment to college life. Techniques for successful transitions.

### **3263. Student Leadership**

Three credits. Prerequisite: Instructor consent required.

Examination of leadership issues and development of skills in leading organizations and peers. Experiential application to student's current co-curricular involvement at UConn.

### **3298. Variable Topics**

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

### **3299. Independent Study for Undergraduates**

Variable (1-6) credits. Prerequisite: Open to juniors or higher. May be repeated for credit.

Designed primarily for qualified students who wish to extend their knowledge in some specialized area. Students must present the instructor with a problem for investigation.

### **3300. Sport in Society**

Three credits. Prerequisite: SOCI 1001 or 1251; open only to Sports Management majors.

Sport as an institution. Sociological issues involving gender, race, and intercollegiate, professional, and children's sports.

### **3300W. Sport in Society**

Three credits. Prerequisite: SOCI 1001 or 1251; ENGL 1007 or 1010 or 1011 or 2011; open to Sports Management majors only.

Sport as an institution. Sociological issues involving gender, race, and intercollegiate, professional, and children's sports.

### **3310. Management of Sport Organizations**

Three credits. Prerequisite: Open only to students in Educational Leadership programs. May not be taken out of sequence after passing EDLR 3325.

Management practices, legal issues, budgeting, and supervision.

### **3315. Issues in Sport**

Three credits. Prerequisite: Open only to Sports Management majors.

The study of socio-cultural, economic, political and other related issues in sport.

### **3325. Sport Venue and Event Management**

Three credits. Prerequisite: EDLR 3310; open only to students in the Sports Management Program.

Examines all aspects of the management of sport facilities and events, including development, planning, staffing, operations, and evaluation. Students will be provided experiences in different aspects of sport event management. In addition, students will examine management principles as applied to a variety of sport and event facilities.

### **3335. Sport Law**

Three credits.

An introductory course in the law as it pertains to sport and recreational experiences. Students are exposed to fundamentals concerning the derivation of legal concepts and their application to sport and related activities.

### **3340. Introduction to Sport Marketing**

Three credits. Prerequisite: ECON 1201 and 1202; open only to students in Educational Leadership Programs.

Introduces the basic concepts, principles, and tools for sport marketing.

### **3345. Financial Management in the Sport Industry**

Three credits. Prerequisite: Open to Sport Management majors *only*

Provides an understanding of the financial principles relevant to the sport industry. Examines basic financial concepts and issues related to the sport industry, and will provide an overview of ownership, taxation, financial analysis, feasibility studies, and economic impact studies within the sport industry.

### **3350. Introduction to Sport Communication**

Three credits. Prerequisite: EDLR 3310; open to Sport Management majors only.

Provides an exploration of the role of communication within the domain of sport. Topics will include organizational communication in sport, sport media, and publishing, sport public relations, and the socioculture importance of sport communication.

### **3400. Service Learning in a Global Society**

Three credits. Prerequisite: Department consent.

International service learning course that explores issues relating to intercultural understanding and global citizenship. Students will be engaged in volunteer work in international agencies and build upon experiences in a seminar.

### **3547. Introduction to Sport Based Youth Development**

Four credits. Prerequisite: Open only by instructor consent; open to Sport Management majors only. May not be taken out of sequence after passing KINS 4300.

Requires reading, written journals, class discussion, and significant time out of class for community involvement in Hartford. Transportation is available.

### **3547W. Introduction to Sport Based Youth Development**

Four credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to Sport Management majors only. Cannot be taken for credit after passing EKIN 4300.

Requires reading, written journals, class discussion, and significant time out of class for community involvement in Hartford. Transportation is available.

### **3550. Career Development in Sport Management**

Three credits.

Career development and preparation, the transition from student to professional, and the development and maintenance of networks in the sport industry.

### **3600. Education Policy and Reform**

Three credits.

Survey of educational policy and reform movements from the last century with applications in contemporary policy. Emphasis on critically evaluating existing policies and proposals.

### **4001. Legal Issues for Educators**

Three credits.

Provides an overview of the legal issues pertaining to teachers, psychologists, and counselors. Topics include student and teacher due process, student records, special education, sexual

harassment, search and seizure, tenure and social media.

#### **4300. Advanced Sport-Based Youth Development**

Three credits. Prerequisite: EDLR 3547.

Involves all class members in direct-action service and organizing activities in Hartford's North End. Students, having met the prerequisite course requirement, will continue their involvement in off-campus travel to engage with community partners and neighborhood residents to provide sport based youth development programming to youth ages 5-18. Transportation is provided and it is suggested that students have at least one four hour block free per week to facilitate travel to Hartford and back.

### **Educational Psychology (EPSY)**

#### **1100. Introduction to Special Education**

Three credits.

Special education services in American education, including various exceptionalities and the roles of professionals. CA 4

#### **1450W. Mind, Body, Health**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

The role of the mind and its effects on subjective well-being (e.g., happiness, stress, depression, anxiety) and the physical body. The past history and current literature supporting the mind-body connection, assessment, and intervention. Implications for understanding mind body health relative to quality of life. CA 2.

#### **1830. Critical and Creative Thinking in the Movies**

Three credits.

Topics such as logical fallacies, influence, metacognition, problem solving, creative genius, personality, and motivation will be explored. Students will use readings and films to investigate the role and application of these topics on critical thinking and creativity. CA 2.

#### **2450. Whole Child, School, and Community: Linking Health and Education**

Three credits.

Examination of interrelated contributors in health and education on child well-being using the Whole School, Whole Community, Whole Child model. Discussion of theory and evidence behind initiatives to integrate policy, process, and practice across learning and health sectors, providing broad perspective on interconnections across critical systems of care for children. CA 2.

#### **2450W. Whole Child, School, and Community: Linking Health and Education**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Examination of interrelated contributors in health and education on child well-being using the Whole School, Whole Community, Whole Child model. Discussion of theory and evidence behind initiatives to integrate policy, process, and practice across learning and health sectors, providing broad perspective on interconnections across critical systems of care for children. CA 2.

#### **2810. Creativity: Debunking Myths and Enhancing Innovation**

Three credits.

Introduction to the science of creativity and to strategies for enhancing creativity in self and others. CA 2.

#### **3010. Educational Psychology**

Three credits. Prerequisite: PSYC 1100.

The psychology of learning and teaching, and the study of the nature and development of children and adolescents.

#### **3020. Peer Counseling**

Three credits. Prerequisite: Instructor consent required.

Focuses on the development of those communication skills which are necessary for effective peer and paraprofessional counseling. Several theories of interpersonal communication, experiential learning and self-psychology will also be covered.

#### **3030. UConn Connects Mentoring**

Three credits. Prerequisite: Instructor consent.

The UConn Connects Mentoring Program pairs 4-5 student participants with an undergraduate student mentor. Mentors coordinate weekly meetings with the student participants throughout the semester. Mentors provide process coaching on techniques, strategies, and attitudes related to performing academically at a consistently high level. Course topics include, but are not limited to time management, stress management, information management, self-regulation, and exam preparation.

#### **3040. Learning Community Peer Mentoring, the Floor Mentor Experience**

Three credits. Prerequisite: Open only to students who are active Floor Mentors in their Learning Community.

Practical knowledge and skills needed for LC Floor Mentor Role at UConn. Student and community development, leadership, communication, and diversity. Through exposure to theories, experiential learning situations and the use of critical thinking and reflective analysis, participants will develop background and knowledge that will allow them to be successful in collaborating to build a cohesive community and supporting first-year LC students in their transition to UConn.

#### **3090. Field Study in Education**

Variable (1-6) credits. Prerequisite: Instructor consent required.

Active study through visitation and participation in educational and/or rehabilitation environments. Participation in appropriate lectures and seminars is required. Students must be prepared to provide own transportation.

#### **3098. Variable Topics**

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

#### **3099. Independent Study for Undergraduates**

Variable (1-6) credits. Prerequisite: Open to juniors or higher. May be repeated for credit.

Designed primarily for qualified students who wish to extend their knowledge in some specialized area. Students must present the instructor with a problem well laid out for investigation.

#### **3110. Exceptionality**

Two credits. Prerequisite: Open only to students in the Integrated Bachelor's/Master's Teacher Preparation Program.

Overview of characteristics of students with exceptionalities and of educational programming for exceptional learners.

#### **3115. Collaborative Program Planning in Special Education**

Three credits. Prerequisite: Open only to Elementary and Special Education majors.

Covers basic knowledge and skills related to collaboration with families, paraprofessionals, other teachers, and professionals from other disciplines, including specialized services for children with disabilities (EG, Health, Assistive Technology, Related Services). Introduction to library and computer resources for school leaders.

#### **3125. Classroom and Behavior Management**

Three credits. Prerequisite: Open only to students in the Integrated Bachelor's/Master's Teacher Preparation Program.

Overview of preferred practices for providing positive behavior supports for students with disabilities across a variety of classroom and other educational environments.

#### **3130. Methods for Teaching Students with Disabilities**

Four credits. Prerequisite: Must be enrolled in Special Education Teacher Preparation Program.

Informs students of research-based methods and instructional formats for teaching students with disabilities. Integration of methods with clinical experiences.

#### **3190. Directed Observation and Participation**

Variable (1-3) credits. Prerequisite: Instructor consent required. May be repeated for credit.

Gives prospective professionals the opportunity to observe Special Education Teachers and/or Rehabilitation Specialists working with the handicapped. Students must be prepared to provide own transportation. Prior to registration, students must apply for Directed Observation. May be taken more than one semester.

#### **3230. Technology in Education**

One credit. Prerequisite: Open only to students in the Integrated Bachelor's/Master's Teacher Preparation Program.

The use of educational technology in the education profession. Emphasis is placed on computer technology, software evaluation and instructional devices.

#### **3235. The Resident Assistant**

Three credits. Prerequisite: Open to Community Assistants only.

Focuses on the development of college students as it relates to college residence hall life and the Resident Assistant position. Topics include leadership, community development, select (human) student development theories, and issues of social justice. Students will develop a working knowledge of human development theory for college students and associated practical applications.

#### **3333. Introduction to Counseling and Psychoeducation**

Three credits.

Principles of professional counseling including therapeutic processes, roles and skills. How counselors help people solve problems is explored and students psychological growth and development is facilitated through psychological education.

### 3830. Individual Differences in Creativity

Three credits. Prerequisite: EPSY 2810.

Overview of how individual differences in a variety of psychological, educational, and demographic factors impact creativity. Special attention will be given to how these factors are measured and how they may interrelate.

### 3850. Creativity in K-12 Schools and Classrooms

Three credits. Prerequisite: EPSY 2810.

Overview of creativity as applied to educational settings. The course will provide a brief historical overview of efforts aimed at promoting creativity in K-12 settings, introduce students to contemporary insights from the creativity studies literature, and highlight various factors related to supporting creativity in educational contexts.

### 3870. Creativity Assessment and Research

Three credits. Prerequisite: EPSY 2810.

Provides an overview of how creativity is measured, from divergent thinking to problem solving to ratings of creative work to self-assessments.

### 4010. Assessment of Learning

Two credits. Prerequisite: Open only to students in the Integrated Bachelor's/Master's Teacher Preparation Program.

Theory and practices of the assessment of learning.

### 4110. Advanced Foundations of Disability

Three credits. Prerequisite: Open only to students enrolled in Special Education Teacher Preparation Program.

Provides students with knowledge and understanding of both the unique and common cognitive, academic, physical, cultural, social, and emotional needs and characteristics of individuals with various disabilities.

### 4115. Directed Student Teaching: Special Education

Variable (1-9) credits. Prerequisite: Open only to Elementary and Special Education majors.

Practicum experience with students with disabilities. Application must be made to the Coordinator of Student Teaching for the fall semester prior to March 1; for the spring semester prior to October 1.

### 4120W. Fundamentals of Assessment in Special Education

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; Open only to students enrolled in the Integrated Bachelors/Masters program in Comprehensive Special Education.

Introduction to assessment in special education focusing on current purposes, policies, and practices in schools.

### 4870. Capstone in Creativity and Innovation Sciences

Three credits. Prerequisite: EPSY 2810.

Discusses advanced topics in creativity and innovation. Students will revisit topics discussed

in earlier courses and reflect on the application of this information to their primary academic and professional interests.

## Electrical and Computer Engineering (ECE)

### 1101. Electrical and Computer Engineering Tools

One credit.

An introduction to the modern computer tools used for circuit analysis, signal and system analysis, control, and data acquisition.

### 1401. Programming for Electrical Engineers

Three credits. Prerequisite: CSE 1010 or 1729.

An introduction to programming tools and languages for electrical engineers. Applications to various mathematical and engineering problems including data acquisition, data analysis, and simulation.

### 2000. Electrical and Computer Engineering Principles

Three credits. Prerequisite: PHYS 1402Q or 1502Q or 1230 or 1530, which may be taken concurrently. Recommended preparation: MATH 2410Q. This course and ECE 2608 or ECE 2001W may not both be taken for credit.

Basic concepts of circuit analysis as applied to electronic circuits and electromechanical devices, including measuring instruments. Intended for non-ECE majors.

### 2001. Electrical Circuits

Four credits. Prerequisite: MATH 2410Q or 2143Q and either PHYS 1402Q or 1502Q or 1602Q or 1230 or 1530, both of which may be taken concurrently. Not open for credit to students who have passed ECE 2000.

Analysis of electrical networks incorporating passive and active elements. Basic laws and techniques of analysis. Transient and forced response of linear circuits. AC steady state power and three-phase circuits. Periodic excitation and frequency response. Computer analysis tools. Design projects are implemented and tested in the laboratory. Laboratory reports are required for each project.

### 2001W. Electrical Circuits

Four credits. Prerequisite: MATH 2410Q and either PHYS 1402Q or 1502Q or 1230 or 1530, both of which may be taken concurrently; ENGL 1007 or 1010 or 1011 or 2011. This course and ECE 2608 or ECE 2609 may not both be taken for credit.

Analysis of electrical networks incorporating passive and active elements. Basic laws and techniques of analysis. Transient and forced response of linear circuits. AC steady state power and three-phase circuits. Periodic excitation and frequency response. Computer analysis tools. Design projects are implemented and tested in the laboratory. Laboratory reports with revisions are required for each project.

### 2193. International Study

Variable (1-6) credits. May be repeated for a total of 6 credits.

Special engineering topics taken in an international study program. May count toward the major with consent of the advisor and approved plan of study.

### 3001. Electromagnetic Fields and Waves

Three credits. Prerequisite: PHYS 1402Q or 1502Q or 1230 or 1530; MATH 2110Q and 2410Q; open only to students in the School of Engineering. May not be taken out of sequence after passing ECE 4141.

Application of electric and magnetic field theory to engineering problems involving conductors, dielectrics, semiconductors, magnetic materials, the motion of charged particles, and wave propagation. Relationship between fields and circuit parameters in the context of transmission lines and radiation.

### 3096. Directed Research in Electrical and Computer Engineering

Variable (1-3) credits. Prerequisite: Instructor consent required. Open only to students in the School of Engineering. May be repeated for credit.

Individualized or group research conducted under the supervision of the instructor.

### 3101. Signals and Systems

(Also offered as ENGR 3101.) Three credits. Prerequisite: ECE 2000 or 2001W; open only to students in the School of Engineering. Recommended preparation: ECE 1401.

Representation of signals in the time and frequency domains. Fourier series. Fourier and Laplace transform methods for analysis of linear systems. Introduction to state space models. Introduction to sampling and discrete systems analysis via z transforms.

### 3111. Systems Analysis and Design

Four credits. Prerequisite: ECE 3101 or BME 3400; MATH 2210Q, which may be taken concurrently. Open only to students in the School of Engineering.

Modeling, analysis and design of control systems using frequency and time-domain methods. Differential equation. Transfer function, signal flow graph and state variable representations of continuous and discrete-time systems. Linearization of nonlinear systems. Transient and frequency response of second order systems. Stability of linear systems with feedback; Routh Hurwitz, Root locus, Bode and Nyquist methods. Controllability and observability. Computational methods for analysis of linear systems. Team-based design projects involving modeling, classical compensator design and state variable feedback design.

### 3161. Introduction to Robotics

(Also offered as ME 3161.) Three credits. Prerequisite: Corequisite: MATH 2210; Recommended preparation: ECE 1401 and either ECE 3101 or ME 3253 or ME 3254 or BME 3400.

Fundamentals of mathematical modeling of robots commonly found in industrial and household domains. History of robots with multidisciplinary applications, robot classifications, coordinate frame transformations, modeling rigid body motions, forward and inverse kinematics, velocity kinematics. Course includes project work.

### 3162. Robot Motion Planning

(Also offered as ME 3162.) Three credits. Prerequisite: ECE/ME 3161; Corequisite: ECE 3411; Recommended preparation: CSE 2050 and 3500.

This course covers the fundamentals of motion planning of robots. Topics include sensing systems

for obstacle avoidance and environment mapping, robot localization, shortest path planning using potential field-based, grid-based and sampling-based methods, coverage path planning using cellular decomposition, spanning trees and potential fields, deep neural networks and their application to path planning, motion planning under constraints, adaptive planning in changing environments. Course includes project work.

### 3163. Robot Control and Dynamics

(Also offered as ME 3163.) Three credits. Prerequisite: ECE/ME 3161; ECE 3111 or ME 3253 or ME 3254; open only to students in the School of Engineering.

Basic concepts of robot manipulator modeling and control including joint space and task space control, Euler-Lagrange dynamics, independent joint control, whole robot manipulator control, robot control using visual feedback, robot control with trajectory planner. The course will include robot controller implementation via a course project and practical examples throughout the course.

### 3193. International Study

Variable (1-6) credits. May be repeated for a total of 6 credits.

Credits and hours by arrangement. Special engineering topics taken in an international study program. May count toward the major with consent of the advisor and approved plan of study.

### 3201. Electronic Circuit Design and Analysis

Four credits. Prerequisite: ECE 2001; open only to students in the School of Engineering. This course and ECE 3608 or ECE 3609 may not both be taken for credit.

Physical electronics underlying the operation of electronic devices. Diodes, diode models, and diode circuits. Transistors, transistor models, and transistor circuits. DC, small signal, and frequency analysis of transistor amplifiers. Compound transistor configurations. Computer analysis tools. Diode and transistor circuits are constructed and tested in the laboratory. A laboratory report is required for each experiment.

### 3211. Power Electronics

Four credits. Prerequisite: ECE 3201; open only to students in the School of Engineering. This course and ECE 3610 may not both be taken for credit.

Power converters for power processing, regulation, and control as applied to computer and telecommunication systems, transportation systems, industrial drives, and renewable power conversion systems. Power semiconductor device characteristics, transformers, and dc/dc converters including design projects.

### 3212. Electric Machines and Drives

Four credits. Prerequisite: ECE 3201

Fundamental operation, equivalent circuit models, physical structure, and control of electric machinery; basic power electronic drives, three-phase systems, magnetic circuit equivalents, basic electro-mechanics, transformers, basic rotating machines; different electric machines including switched reluctance machines, stepper motors, three-phase synchronous machines, induction or asynchronous machines, and DC machines; Basic electronic drives for each machine type along with open-loop control strategies. Weekly

laboratory experiments accompany the lectures to demonstrate most of these concepts.

### 3221. Digital Integrated Circuits

Three credits. Prerequisite: ECE 3201; CSE 2300W or 2301; open only to students in the School of Engineering. This course and ECE 3222 may not both be taken for credit.

Switching, timing, wave shaping, and logic circuits to generate waveforms and functions used in pulse systems, instrumentation and computers. Emphasis is on integrated circuits.

### 3222. Digital Integrated Circuit Design and Analysis

Four credits. Prerequisite: ECE 3201; open only to students in the School of Engineering. This course and ECE 3221 may not both be taken for credit.

Fabrication, testing, and yield of digital integrated circuits. Design and analysis of bipolar and MOS digital integrated circuits. Bistable circuits and digital memories. System implementation with digital integrated circuits. Layout of digital integrated circuits. Integrated circuit packages. Computer analysis tools. Design and laboratory evaluation of digital electronic circuits.

### 3223. Optical Engineering

Three credits. Prerequisite: ECE 3001 or PHYS 3201; open only to students in the School of Engineering. Not open to students who have passed ECE 4231.

Principles and techniques of optical engineering, including geometrical optics, optical fibers and systems, sources and detectors, measurements, imaging, lenses, wave optics, polarization, interference, diffraction, optical Fourier transforms, holography, interferometry, integrated optics, frequency conversion, interaction of light and matter.

### 3225. Optical Engineering Laboratory

Three credits. Prerequisite: ECE 3223, which may be taken concurrently; open only to students in the School of Engineering.

Hands-on design and measurement of optical systems and components. Lens systems and imaging, fiber-optic communications and fiber-optic sensors, diffraction and Fourier Optics, interferometry, etc. Structured experiments and design projects centered on available equipment.

### 3231. Introduction to Modern Power Systems

Three credits. Prerequisite: ECE 2000 or 2001/W; open only to students in the School of Engineering.

Fundamentals of power system planning, operation, and management. Power generation, transmission and distribution. Sustainable energy sources such as photovoltaics, solar-thermal power, wind farms, and their grid integration. Modern power system monitoring/control, fault analysis, and transient stability analysis using computer tools. Use of power system simulation tool e.g. PSS/E for power system planning.

### 3243. Introduction to Nanotechnology

Three credits. Prerequisite: Open only to students in the School of Engineering.

Basic concepts of nanoscience; new physical properties at these scales (~1-100 nm); different approaches to fabricate, image, characterize and manipulate nanostructures and nanodevices; current and potential applications in areas as

diverse as electronics, health and energy; societal impacts of nanotechnology.

### 3401. Digital Systems Design

(Also offered as CSE 3302.) Three credits. Prerequisite: CSE 2300W or 2301; open only to students in the School of Engineering and declared Computer Science minors.

Design and evaluation of control and data structures for digital systems. Hardware design languages are used to describe and design alternative register transfer level architectures and control units with a micro-programming emphasis. Consideration of computer architecture, memories, digital interfacing timing and synchronization, and microprocessor systems.

### 3411. Microprocessor Applications Laboratory

Three credits. Prerequisite: CSE 3100 or ECE 1401; open only to students in the School of Engineering.

Design of software and interface hardware to use a microcomputer as an on-line, real-time element in data acquisition, filtering and control systems. Use of clocks, DAC's, ADC's, speech synthesis modules, and movement generators. Design project. Written and oral presentations of laboratory results.

### 3421. Very Large Scale Integrated (VLSI) Design and Simulation

Four credits. Prerequisite: CSE 2300W or 2301; ECE 3201; open only to students in the School of Engineering.

Design of MOS transistors, including short channel effects in sub-micron devices; scaling laws; design rules. Layout of NMOS and CMOS logic gates; power-delay calculations. Design of static and/or dynamic memories. Laboratory emphasizes schematic capture, simulation, timing analysis and testing; layout of custom IC's; use of VHDL.

### 3431. Numerical Methods in Scientific Computation

(Also offered as CSE 3802.) Three credits. Prerequisite: CSE 1729 or 2050; MATH 2110Q and 2410Q; MATH 2210Q, which may be taken concurrently; open only to students in the School of Engineering, Cognitive Science majors, and declared Computer Science and Cognitive Science minors.

Introduction to the numerical algorithms fundamental to scientific computation. Equation solving, function approximation, integration, difference and differential equations, special computer techniques. Emphasis is placed on efficient use of computers to optimize speed and accuracy in numerical computations. Extensive digital computer usage for algorithm verification.

### 4079. Independent Design Laboratory

Variable (1-3) credits. Prerequisite: Instructor consent; open only to students in the School of Engineering. May be repeated for a total of 6 credits.

Experimental design project undertaken by the student by special arrangement with a faculty member of the Department of Electrical and Computer Engineering.



**4095. Special Topics in Electrical and Computer Engineering**

Variable (1-6) credits. Prerequisite: Open only to students in the School of Engineering. May be repeated for credit.

Classroom and/or laboratory course in special topics as announced in advance for each semester.

**4096. Independent Research in Electrical and Computer Engineering**

Variable (1-3) credits. Prerequisite: Instructor consent required. Open only to students in the School of Engineering. May be repeated for credit.

Independent student-initiated research conducted under the supervision of the instructor.

**4097. Thesis in Electrical and Computer Engineering**

Variable (1-3) credits. Prerequisite: Instructor consent required. Open only to students in the School of Engineering. May be repeated for credit.

Introduction to research through literature review and preparation of a research thesis, execution of the research proposed, and completion of written report and oral defense.

**4099. Independent Study in Electrical and Computer Engineering**

Variable (1-4) credits. Prerequisite: Instructor consent required. May be repeated for credit.

Individual exploration of special topics as arranged by the student with course instructor.

**4099W. Independent Study in Electrical and Computer Engineering**

Variable (1-4) credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open only to students in the School of Engineering. May be repeated for credit.

Individual exploration of special topics as arranged by the student with course instructor.

**4111. Communication Systems**

Three credits. Prerequisite: ECE 3101 or BME 3400; STAT 3345Q or MATH 3160; open only to students in the School of Engineering.

Communication of information over noisy channels. Fourier transform review, spectral analysis, and sampling. Amplitude, phase, and frequency modulation of a sinusoidal carrier. Time and frequency division multiplexing. Random processes and analysis of communication of systems in noise. Elements of digital communication systems.

**4112. Digital Communications and Networks**

Three credits. Prerequisite: ECE 3101 or BME 3400; STAT 3345Q or MATH 3160; open only to students in the School of Engineering.

Fundamentals of communication systems. Encoding of analog signals for digital transmission. Basic information theory. Source encoding techniques. Baseband data transmission. Digital carrier modulation schemes. Multiplexing techniques. Basic error control coding. Random processes and analysis of communication of systems in noise.

**4113. Communications Systems Design Laboratory**

Three credits. Prerequisite: ECE 3001; open only to students in the School of Engineering.

Design and experimental evaluation of circuits and systems useful in communication, control, and other applications. Typical subject areas are, transmission lines, microwaves, antennas, AM/

FM transmitters and receivers, TV cameras and receivers, communication between computers, laser communication, fiber-optics, pulse-code modulation, acoustics, hearing, rotating machines, servomechanisms, and microprocessors.

**4114. Software-Defined Radio Design Laboratory**

Three credits. Prerequisite: ECE 3101, and ECE 4111 or 4112 either of which may be taken concurrently; open only to students in the School of Engineering.

Design and experimental evaluation of analog and digital communication systems based on software defined radio platforms. Typical subject areas are amplitude modulation (AM), frequency modulation (FM), amplitude shift keying (ASK), frequency shift keying (FSK), and phase shift keying (PSK), orthogonal frequency division multiplexing (OFDM), channel equalization, wireless local area networks, and ad hoc networks.

**4121. Digital Control Systems**

Three credits. Prerequisite: ECE 3111; open only to students in the School of Engineering.

Analysis and design of control systems incorporating a digital computer as the controlling element. Building blocks of digital control. Measures of control system performance. Frequency domain and state variable methods of control design. Optimal control methods. State variable estimation. Implementation issues. Use of computer-aided software tools for simulation and design.

**4122. Systems Laboratory**

Three credits. Prerequisite: ECE 3111; open only to students in the School of Engineering.

Real-time digital control and signal processing of cyber-physical systems. Typical topics include control of inverted pendulum and magnetic levitation systems, velocity and position control of motors, robot path planning and control. Written and oral presentations of laboratory results.

**4131. Introduction to Digital Signal Processing**

Three credits. Prerequisite: ECE 3101 or BME 3400; open only to students in the School of Engineering.

Discrete-time signals and systems. The z-transform. Digital filters; stability, frequency response, canonic realizations and state equations. Fourier methods for discrete signal representation; Fourier transform of sequences, the discrete Fourier transform, and the FFT. Design of linear digital filters in time and frequency domains. Spectrum analysis and filtering via the FFT.

**4132. Image Processing Systems Laboratory**

Three credits. Prerequisite: ECE 4131, which may be taken concurrently (or instructor consent); open only to students in the School of Engineering.

Laboratory experiments in image processing, imaging systems, data acquisition using detectors, pattern recognition, image restoration, image enhancement, signal processing, frequency plane filters, system performance evaluation, and metrics. Emphasis is on hands-on experiments with image processing systems with interface between image sensors and computer/processors. Applications, implementation and testing of image processing systems.

**4141. Introduction to RF/Microwave Wireless Systems**

Three credits. Prerequisite: ECE 3001; open only to students in the School of Engineering.

An introduction to the general hardware components, system parameters, and architectures of radio-frequency (RF) and microwave wireless systems. Practical examples will be drawn from communication as well as radar/sensor systems.

**4161. Robotics Systems Laboratory**

(Also offered as ME 4161.) Three credits. Prerequisite: ECE/ME 3163; open only to students in the School of Engineering.

Hands on introduction to autonomous robotics emphasizing the synergy between hardware (microprocessors, sensors, actuators), technology (optimization, control system, machine learning) and systems (integration, programming) to achieve perception, action, and behavior in real world environment. Students will be able to apply principles of robot modeling, planning and control to the real-world platforms.

**4201. Electronic Circuits and Applications**

Three credits. Prerequisite: ECE 3201; ECE 4211 or ECE 4225 which may be taken concurrently. Recommended preparation: ECE 3111.

Analysis and design of linear amplifiers. The effects of feedback in tuned, video, and operational amplifiers. Noise, stability, and frequency compensation. Applications encompass active filters, oscillators, phase lock loops and nonlinear operations such as multiplication, modulation, sampling, and analog-to-digital conversion.

**4211. Semiconductor Devices and Nanostructures**

Three credits. Prerequisite: ECE 3201; open only to students in the School of Engineering.

Principles and applications of contemporary solid state devices such as light-emitting diodes, injection lasers, solar cells, p-n-p-n diodes, SCRs and Triacs, transistors, MESFETs and MODFETs, and fundamentals of integrated circuits. Impact of nanostructures on devices.

**4223. Nanophotonics**

Three credits. Prerequisite: ECE 3223; open only to students in the School of Engineering.

Principles and applications of nanophotonics with focus on optical metamaterials, plasmonics, and photonic bandgap crystals. Topics covered include electric plasma, magnetic plasma, optical magnetism, negative index metamaterials, localized and non-localized surface plasmon polaritons, photonic bandgap structures, superlens, optical cloaking.

**4225. Fundamentals of Electron Device Design and Characterization**

Three credits. Prerequisite: ECE 3201; open only to students in the School of Engineering.

Design of micro/nano electronic devices using state-of-the-art computer simulation tools, experimental electrical characterization of semiconductor devices and introduction to modern electronic devices such as high-performance MOSFETs, TFTs, solar cells, non-volatile memories, CCDs, and thermoelectric power generators.

**4242. Micro/Opto-electronic Devices and Circuits Fabrication Laboratory**

Three credits. Prerequisite: ECE 4211 or 4225; open only to students in the School of Engineering.

Semiconductor wafer preparation and characterization including: determination of carrier concentration, mobility, and lifetime; oxidation, diffusion, metallization, mask layouts, and photolithographic techniques as employed in the realization of discrete devices (e.g., bipolar and MOS transistors, solar cells) and integrated circuits; design of basic IC components such as transistors, resistors, and capacitors; monolithic fabrication of simple digital/analog circuits. Design project. Written and oral presentations of laboratory results.

**4243. Nanoscience and Nanotechnology I**

(Also offered as ENGR 4243.) Three credits. Prerequisite: ECE 4211 or 4225 or PHYS 2300 or 3401 or MSE 4001; CHEM 1127Q or equivalent; open only to students in the School of Engineering.

Fundamentals of electron and hole confinement in quantum well, wire and dot heterostructures, confinement of photons in photonic band gap structures, density of states in quantum wires; transport in quantum wires and dots, and single wells (SWNT) and multi-wall carbon nanotubes; operation of nano field-effect transistors; absorption and emission in quantum wires and dot structures; fabrication methodology to grow and assemble quantum wires and dots including self-assembly techniques for light-emitting diodes, transistors, lasers, and nanoelectromechanical (NEM) structures.

**4244. Nanotechnology II**

(Also offered as ENGR 4244.) Three credits. Prerequisite: ECE 4211 or 4225 or ECE/ENGR 4243; open only to Seniors in the School of Engineering.

Growth and characterization of carbon nanotube using vapor phase nucleation; growth of CdSe quantum dots using liquid phase precipitation and vapor phase MOCVD reactor; characterization using AFM and TEM and dynamic scattering techniques; device processing highlighting nanolithography (E-Beam), and self assembly techniques; project work involving fabrication of devices such as LEDs, carbon nanotube based FETs, and sensors using self-assembled quantum dots hosted in inorganic or organic/polymer layers.

**4261. Introduction to Memory Device Technologies**

Three credits. Prerequisite: ECE 3201 or ECE 3421 or ECE 4225. This course and ECE5261 may not both be taken for credit.

Introduction to current and future digital solid-state memory device technologies including DRAM, SRAM, flash memory, ferroelectric memory, magnetoresistive memory, phase-change memory and resistive memories, with an emphasis on the underlying physical mechanisms.

**4401. Digital Design Laboratory**

(Also offered as CSE 3350.) Three credits. Prerequisite: CSE 3302 or ECE 3401, which may be taken concurrently; open only to students in the School of Engineering and declared Computer Science minors.

Digital designing with PLA and FPGA, A/D and D/A conversion, floating point processing, ALU design, synchronous and asynchronous controllers,

control path; bus master; bus slave; memory interface; I/O interface; logic circuits analysis, testing, and trouble shooting; PCB; design and manufacturing.

**4402. Digital Hardware Laboratory**

Three credits. Prerequisite: CSE 4302; ECE 3401 or CSE 3302; open only to students in the School of Engineering.

Advanced combinational and sequential circuit design and implementation using random logic and microprocessor based system. Hardware and software interface to the basic system. Serial communication, user program loading and execution. Microcontrollers - familiarization and inclusion in design.

**4451. Introduction to Hardware Security and Trust**

Three credits. Prerequisite: Open only to students in the School of Engineering.

Fundamentals of hardware security and trust for integrated circuits. Cryptographic hardware, invasive and non-invasive attacks, side-channel attacks, physically unclonable functions, watermarking of Intellectual Property (IP) blocks, FPGA security, counterfeit detection, hardware Trojan detection and prevention in IP cores and integrated circuits.

**4450. Microgrids**

Three credits. Prerequisite: ECE 3231.

Techniques useful for the grid modernization from a unique angle of microgrid design, analysis and operation. Smart inverters, microgrid architectures, distributed energy resources modeling, microgrid hierarchical control, microgrid stability, fault management, resilient microgrids through programmable networks, reliable networked microgrids, and cyber security.

**4900W. Communicating Engineering Solutions in a Societal Context**

One credit. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to junior or higher Electrical Engineering, Computer Engineering, and Robotics Engineering majors.

Analysis of engineering design solutions in a broader context. Written and oral technical communication. There are two writing assignments and one oral presentation. Class time will be divided between lectures, group discussions/exercises, and student oral presentations.

**4901. Electrical and Computer Engineering Design I**

(Also offered as CSE 4950.) Two credits. Prerequisite: ECE 3101; ECE 3201; open only to seniors in the School of Engineering and declared Computer Science minors.

Discussion of the design process; project statement, specification, project planning, scheduling and division of responsibility, ethics in engineering design, safety, environmental considerations, economic constraints, liability, manufacturing, and marketing. Projects are carried out using a team-based approach. Selection and analysis of a design project to be undertaken in CSE 4951/ECE 4902 is carried out. Written progress reports, a proposal, an interim project report, a final report, and oral presentations are required.

**4902. Electrical and Computer Engineering Design II**

(Also offered as CSE 4951.) Three credits. Prerequisite: ECE 4901; open only to students in the School of Engineering and declared Computer Science minors.

Design of a device, circuit, system, process, or algorithm. Team solution to an engineering design problem as formulated in CSE 4950/ECE 4901, from first concepts through evaluation and documentation. Written progress reports, a final report, and oral presentations are required.

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**Engineering (ENGR)**

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**1000. Orientation to Engineering**

One credit. Prerequisite: Not open to juniors or seniors in the School of Engineering.

A series of orientation lectures on the many fields of engineering, followed by a series of seminars and discussions in engineering discipline-specific sections on engineering topics.

**1166. Foundations of Engineering**

Three credits. Prerequisite: Not open for credit to juniors or seniors in the School of Engineering. Not open for credit for students who have passed ENGR 151.

Introductory topics in a specific engineering major. Topics selected by Department or Program, or Regional Campus faculty. Students to select section based on their selected or intended major. In the context of the discipline, students would develop skills transferable to other engineering disciplines.

**2215. Principles of Manufacturing Engineering**

Three credits.

Introduction to engineering aspects of modern manufacturing processes and systems with a focus on commercial-scale conversion of materials into components and components into products. Casting; forming and shaping; cutting and machining; joining; surface engineering; optical materials engineering; additive manufacturing; computer-integrated manufacturing; automation; and special manufacturing processes such as chemical and biological systems. Includes case studies.

**2300. Engineering for Human Rights**

(Also offered as HRTS 2300.) Three credits.

Foundational concepts of human rights and engineering ethics from a global perspective. Discussions of the role of engineering in society from human rights and different ethical perspectives. Principles of "Engineering for human rights" on distributive justice, participation, consideration of duty bearers, accountability, and indivisibility of rights. Case study analysis of engineering projects for human rights impacts. CA2.

**3020. EDOC: Confidence, Communication and Presentation**

One credit. Prerequisite: Not open to students who have passed ENGR 3021.

Builds confidence, communication and presentation skills for engineering students that are imperative for building a successful self, and thus a successful engineer. A deep understanding of cognitive, emotional, and the integration of the

two states will be explored. Innovative presentation techniques, communication strategies (written and oral) for varied audiences, and utilization of varied presentation styles, demonstrations, and visual aids will be studied and practiced. Some attention will be given to communication and presentation strategies for effective leadership and networking.

### **3021. Engineering Ambassadors: Technical Communication and Presentation**

One credit. Prerequisite: Instructor consent required.

Teaches communication and presentation skills for engineering students through service-learning experiences with the Engineering Ambassador organization. Innovative presentation techniques, communication strategies (written and oral) for varied audiences, and utilization of varied presentation styles, demonstrations, and visual aids will be studied and practiced. Engineering Ambassador projects and events provide the context and practice forum for concepts and skills learned in the course. Some attention will be given to communication and presentation strategies for effective leadership and networking.

### **3022. Boss Ladi - An Introductory Course for Black and Latinx Women in STEM**

Two credits. Prerequisite: Instructor consent.

This course is intended to build the confidence, communication, and leadership skills specifically of Black and Latinx women in STEM so that they have the agency and ability to step into leadership roles (especially in higher levels of management) in varying environments (academia, government, industry, etc.) and know they can affect change. This course will also assist students in preparation for academic success through exposure to resources, guest speakers, and discussions in and outside of class.

### **3024. Boss Ladi - Advanced Course for Black and Latinx Women in STEM**

Three credits. Prerequisite: ENGR 3022; instructor consent required. May be repeated for a total of 9 credits.

The course is intended to continue to build upon the confidence, communication, and leadership skills of underrepresented undergraduate women (specifically Black and Latinx) in STEM so that they have the agency and ability to step into leadership roles (especially in higher levels of management) in varying environments (academia, government, industry, etc.) and know they can affect change. This course will also assist students in preparation for academic success through exposure to resources, guest speakers, and discussions in and outside of class.

### **3025. EDOC: Engineering for Impact**

One credit. Prerequisite: Instructor consent required. May be repeated for a total of 6 credits.

Leadership development; this course is for the present and future leaders of engineering student organizations. These organizations include, but are not limited to, Engineering Ambassadors (EA), Engineers Without Borders (EWB), Society of Women Engineers (SWE), National Society of Black Engineers (NSBE), Society of Hispanic Professional Engineers (SHPE), Engineering Ambassadors Tour Guides (EATG), and Engineering Student Leadership Council (ESLC).

### **3101. Signals and Systems**

(Also offered as ECE 3101.) Three credits. Prerequisite: ECE 2000 or 2001W; open only to students in the School of Engineering. Recommended preparation: ECE 1401.

Representation of signals in the time and frequency domains. Fourier series. Fourier and Laplace transform methods for analysis of linear systems. Introduction to state space models. Introduction to sampling and discrete systems analysis via z transforms.

### **3109. Navy STEM Professional Development Seminar**

One credit. May be repeated for a total of 3 credits.

Seminar series focusing on science, engineering and technology concepts in the design, construction, operation and maintenance of surface ships and submarines. Provides industry-specific knowledge for engineering students interested in pursuing Navy-related careers in the public or private sectors. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

### **3120. LabVIEW Basics for Engineers**

One credit. Prerequisite: CSE 1010 or 1100; open only to School of Engineering majors. Not open for credit to students who have passed BME 3120.

Introduces LabVIEW programming environment. The fundamentals of using graphical programming to collect, analyze, display and store data are covered. Learn techniques for designing stand alone applications, creating interactive user interfaces and optimizing data flow.

### **3181. EUROTECH Internship Abroad**

Zero credits. Prerequisite: Instructor consent required.

A six-month internship in Germany, Austria, or Switzerland for the EUROTECH Program. The student must arrange with the instructor for this internship at least one year before the intended departure date and participate in the orientation program. To successfully complete this course the student must submit periodic reports in German on the assigned work during the work period and a final report upon return. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

### **3184. Engineering Transition Seminar**

One credit. Prerequisite: Instructor consent required.

For transfer students and campus change students in Engineering and exploring Engineering. Topics covered will address the transition to the Storrs campus as an Engineering student.

### **3193. Foreign Study**

Variable (1-6) credits. May be repeated for credit.

Special engineering topics taken in a foreign study program. May count toward major with consent of advisor and approved plan of study.

### **3195. Special Topics in Engineering**

Variable (1-6) credits. Prerequisite: Prerequisites and recommended preparation vary. May be repeated for credit.

Classroom and/or laboratory course in special topics as announced in advance for each semester.

### **3201. Undergraduate Teaching, Mentoring, and Leadership Seminar**

Three credits. Prerequisite: Open only to junior or higher School of Engineering students.

Discussion of learning styles, time management, goal setting, ethical behavior, mentoring, and qualities of effective leadership. Students enrolled in this course act as a mentors for students in lower-level engineering coursework, further enhancing their own understanding of the material. Significant student contact with mentees is expected as part of the course. This course is only open to students participating in the Undergraduate Teaching Assistant Program.

### **3209. Sustainable Energy in the 21st Century**

(Also offered as POLS 3209 and HRTS 3209.) Three credits. Prerequisite: Open to juniors or higher.

Political, socioeconomic, environmental, science and engineering challenges of energy sources; comparison of feasibility and sustainability of energy policies around the world.

### **3215. Statistical Quality Control and Reliability for Manufacturing**

Three credits. Prerequisite: MATH 2110Q; open to juniors or higher.

Foundation of quality control and reliability in manufacturing systems. Probability and statistics, principles and methods of modern quality control in manufacturing, Six Sigma, control charts for measurement and attribute data, development and utilization of control charts, manufacturing process capability studies, ANOVA and linear regression of measurement data, experimental design, response surface and Taguchi methodology, acceptance sampling, reliability prediction and modeling in manufacturing systems.

### **3257. Assessment for Human Rights and Sustainability**

Three credits. Prerequisite: Not open for credit to students who have passed or are taking HRTS 3257.

Foundational concepts of human rights and environmental impacts pertaining to global supply chains. Regulations and voluntary standards in engineering-intensive sectors, including infrastructure, biofuels, electronics. Case study analysis of corporate assessment practices for labor rights protection and environmental impacts.

### **3281. Engineering Internship**

Zero credits. Prerequisite: Department consent required. May be repeated.

Provides an opportunity for students to participate in a work environment to gain practical experience and to exercise problem solving skills. Students taking this course will be assigned a grade of S (satisfactory) or U (unsatisfactory).

### **3283. International Engineering Internship**

Variable (1-6) credits. May be repeated for credit.

With change of employer, may be repeated for credit. May not count toward engineering major requirements. Counts towards related courses in additional language major, i.e. Spanish, Chinese, French, etc. Special engineering internship taken in an approved Education Abroad program.

### **3400. Engineering Data Analysis Techniques**

Three credits. Prerequisite: MATH 1132Q.

Introduction to statistics in an engineering context. Core concepts regarding mean, standard deviation, probability density, histograms, cumulative distribution, percentile rank, interquartile range, continuous and discrete distributions (e.g. normal, log normal, exponential, etc.), linear regression, and Bayesian Statistics. Additional topics may be covered based on the engineering discipline of the enrolled students.

#### **3500. Technology Innovation and Entrepreneurship**

Three credits. Prerequisite: Open to juniors and higher. Not open to students who have passed MENT 3500.

An integration of the best engineering and business principles and practices. Identification of customer need, development of technical solution and financial viability. Collaboration between School of Engineering and School of Business, teaching product design process combined with business principals required for any viable startup and enterprise. Experiential nature of course will enable students to go through process of conceiving of a new product, building an MVP, developing a business model and business plan, and testing the market. Students will learn the art of successful pitching and presenting business models to successful entrepreneurs. Taught with MENT 3500.

#### **3501. Technology Innovation and Entrepreneurship II**

Three credits. Prerequisite: ENGR 3500 or MENT 3500; open to juniors or higher. Not open for credit to students who have passed or are taking MENT 3501.

The product design process combined with business principles required for a viable technology-based startup and enterprise. Students will take proof-of-concept designs from ENGR or MENT 3500 to the point of further iterating a minimum viable product for field testing, with a heavy focus on physical prototyping. Development of a testable business model, successful business pitch strategies. Students will present their business model to entrepreneurs and potential customers.

#### **3735. SolidWorks for Industrial Design**

(Also offered as ART 3735.) Three credits.

Introduction to basic computer aided design, including isometric, orthogonal views, sections and parametric modeling strategies, including advanced modeling techniques. First and third angle projections. Notions of measuring, tolerances and manufacturing techniques associated by hand and CAD modeling. General manufacturing processes and their relation to modeling individual parts and assemblies. CNC principles, GCODE.

#### **4001. Multidisciplinary Engineering Design I**

Three credits. Prerequisite: Open to Engineering seniors in the Multidisciplinary Engineering (MDE) major, or with academic advisor and department permission. Recommended preparation: Complete junior year MDE major coursework before attempting this course.

A capstone design experience in Multidisciplinary Engineering (MDE) based on the knowledge and skills acquired in earlier coursework. Students will work on open-ended design projects and consider the public health, safety, and welfare, as well as global, cultural,

social, environmental, and economic impacts of their work. Students will propose solutions, consider relevant constraints and engineering standards, and present their findings in both oral and written formats. Students pursuing a specialization within MDE may choose to incorporate relevant elements of their specialization into their project.

#### **4002W. Multidisciplinary Engineering Design II**

Three credits. Prerequisite: ENGR 4001. ENGL 1007 or 1010 or 1011 or 2011. Open to Sr. MDE majors, other Engineering majors with permission from their academic advisor and dept. Rec Prep: Students should be in the final semester of their engineering program when taking this course.

Continues the capstone design experience from Multidisciplinary Engineering Design I (ENGR 4001). Students continue work on open-ended design projects and consider the public health, safety, and welfare, as well as global, cultural, social, environmental, and economic impacts of their work. Students will propose solutions, consider relevant constraints and engineering standards, and present their findings in both oral and written formats to a range of audiences. Students pursuing a specialization within MDE may choose to incorporate relevant elements of their specialization into their project.

#### **4243. Nanoscience and Nanotechnology I**

(Also offered as ECE 4243.) Three credits. Prerequisite: ECE 4211 or 4225 or PHYS 2300 or 3401 or MSE 4001; CHEM 1127Q or equivalent; open only to students in the School of Engineering.

Fundamentals of electron and hole confinement in quantum well, wire and dot heterostructures, confinement of photons in photonic band gap structures, density of states in quantum wires; transport in quantum wires and dots, and single wells (SWNT) and multi-wall carbon nanotubes; operation of nano field-effect transistors; absorption and emission in quantum wires and dot structures; fabrication methodology to grow and assemble quantum wires and dots including self-assembly techniques for light-emitting diodes, transistors, lasers, and nanoelectromechanical (NEM) structures.

#### **4244. Nanotechnology II**

(Also offered as ECE 4244.) Three credits. Prerequisite: ECE 4211 or 4225 or ECE/ENGR 4243; open only to Seniors in the School of Engineering.

Growth and characterization of carbon nanotube using vapor phase nucleation; growth of CdSe quantum dots using liquid phase precipitation and vapor phase MOCVD reactor; characterization using AFM and TEM and dynamic scattering techniques; device processing highlighting nanolithography (E-Beam), and self assembly techniques; project work involving fabrication of devices such as LEDs, carbon nanotube based FETs, and sensors using self-assembled quantum dots hosted in inorganic or organic/polymer layers.

#### **4299. Independent Study**

Variable (1-4) credits. Prerequisite: Open to seniors in the School of Engineering. May be repeated for credit.

Designed for students who wish to pursue an interdisciplinary engineering project where the subject matter/content spans more than one field

of interest. The program of study is to be approved by the Associate Dean of Undergraduate Education and the instructor before registration is completed.

#### **4582. Shop Safety Practicum**

Zero credits. Prerequisite: To enroll in the course students must be engaged in their capstone senior desing project or in research.

Safety, operating procedures and normal practices of the equipment in the School of Engineering Machine Shop so that students can make and assemble their capstone senior design project and to fabricate equipment to support research. Students taking this course will be assigned a grade of S (satisfactory) or U (unsatisfactory).

### **English (ENGL)**

#### **1003. Academic Literacies for Multilingual Students**

Three credits. May be repeated for a total of 6 credits.

Instruction in rhetorical, reading, and writing skills essential to university work. Intended primarily for international students.

#### **1004. Introduction to Academic Writing**

Four credits. Prerequisite: Students placed in ENGL 1004 must pass the course before electing ENGL 1007 or 1010 or 1011. Not open to students who have passed ENGL 1010 or 1011.

Development of the reading and writing skills essential to university work. Students placed in ENGL 1004 must pass the course before electing ENGL 1007 or 1010 or 1011.

#### **1007. Seminar and Studio in Writing and Multimodal Composition**

Four credits. Prerequisite: Students placed in ENGL 1004 must pass that class before enrolling in ENGL 1007.

College composition through multiple forms of literacy, including rhetorical, digital, and information literacies necessary for twenty-first-century contexts. The development of creatively intellectual inquiries through sustained engagement with texts, ideas, and problems. Emphasis on transfer of writing and rhetorical skills to academic and daily life. Students design a digital portfolio that curates creations and skills-based micro-credentials they earn in coursework.

#### **1010. Seminar in Academic Writing**

Four credits. Prerequisite: Students placed in ENGL 1004 must pass that class before enrolling in ENGL 1010.

Instruction in academic writing through interdisciplinary reading. Assignments emphasize interpretation, argumentation, and reflection. Revision of formal assignments and instruction on grammar, mechanics and style.

#### **1011. Seminar in Writing through Literature**

Four credits. Prerequisite: Students placed in ENGL 1004 must pass that course before enrolling in ENGL 1011.

Instruction in academic writing through literary reading. Assignments emphasize interpretation, argumentation, and reflection. Revision of formal assignments and instruction on grammar, mechanics and style.

**1012W. Business Writing I**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Introduction to the rhetorical and generic conventions of business writing.

**1095. Special Topics**

Variable (1-4) credits. Prerequisite: Prerequisites and recommended preparation vary. May be repeated for a total of 4 credits.

Credits and hours by arrangement.

**1101. Classical and Medieval Western Literature**

Three credits.

European ancient and medieval literature through Dante. CA 1.

**1101W. Classical and Medieval Western Literature**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

This and ENGL 1103 offer a study of European literature from ancient times to the present. ENGL 1101 considers ancient and medieval literature through Dante. CA 1.

**1103. Renaissance and Modern Western Literature**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Literature in the European tradition from the Renaissance through the modern periods. CA 1.

**1103W. Renaissance and Modern Western Literature**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Literature in the European tradition from the Renaissance through the modern periods. CA 1.

**1201. Introduction to American Studies**

(Also offered as HIST 1503 and AMST 1201.) Three credits.

What is an American? A multi-disciplinary inquiry into the diversity of American societies and cultures. CA 4.

**1301. Major Works of Eastern Literature**

Three credits.

Important works of poetry, drama, and literary prose from the Middle East, South Asia, China, Japan, and Southeast Asia. All works are read in translation. CA 4-INT.

**1503. Introduction to Shakespeare**

Three credits.

Introductory survey of representative Shakespeare plays and poetry. CA 1.

**1601W. Race, Gender, and the Culture Industry**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Cultural construction of race and gender in English-language literature, film, and music. CA 4.

**1616. Major Works of English and American Literature**

Three credits.

Important works from the major genres and historical periods since Beowulf. CA 1.

**1616W. Major Works of English and American Literature**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Includes important works from the major genres and historical periods since Beowulf. CA 1.

**1693. Foreign Study**

Variable (1-6) credits. May be repeated for credit.

Special topics taken in a foreign study program. Consent of Department Head or advisor may be required prior to the student's departure.

**2001. Introduction to Grant Proposal Writing**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

An introduction to the basics of grants and grant proposal writing, including the purpose of writing grant proposals, grant opportunities available to undergraduates, and features of successful grant proposals. Requires submission of a grant proposal.

**2011. Honors I: Literary Study through Reading and Research**

Four credits. Prerequisite: Cannot be taken for credit after passing ENGL 3800.

Approaches to reading and researching literature through questions related to the assumptions, contexts, and uses of literary texts in culture. Extensive practice in academic writing. May be used to satisfy the ENGL 1007 or 1010 or 1011 requirement. May not be used to satisfy the English major requirement.

**2013W. Introduction to Writing Studies**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

An introduction to writing as a field of inquiry that includes rhetorical analysis as well as the study of writing's social and ethical implications across diverse traditions, contexts, and technologies.

**2020W. Technical Writing and Design**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Fundamentals of writing, design, and editing in professional settings. A focus on written genres.

**2049W. Writing through Research**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Instruction in academic writing and the procedures of library and Internet research leading to a large-scale research paper.

**2055WE. Writing, Rhetoric, and Environment**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Critical analysis of and community-based practice in writing for nonspecialist audiences about complex environmental phenomena and issues such as climate. Attention to questions of rhetoric, representation, and ethics.

**2100. British Literature I**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

British literature, medieval through 18th century. Intended to provide preparation for more advanced courses in British literature. Strongly recommended for English majors. CA 1.

**2101. British Literature II**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

British literature, 19th to 20th centuries. Intended to provide preparation for more advanced courses in British literature. Strongly recommended for English majors. CA 1.

**2107. The British Empire, Slavery, and Resistance**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Literature and culture of the British empire from 1600-1830. Focus on conquest, colonization, the institution of slavery, and resistance to empire. CA 1.

**2200. Literature and Culture of North America before 1800**

(Also offered as AMST 2200.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

An examination of the early written and oral culture of the area that eventually became the United States. CA 1.

**2201. American Literature to 1880**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

American literature from the beginnings: May include such writers as Poe, Emerson, Thoreau, Hawthorne, Melville, Whitman, Douglass, Stowe, Dickinson, Twain, and others. This course is strongly recommended for English majors. CA 1.

**2201W. American Literature to 1880**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

American literature from the beginnings: May include such writers as Poe, Emerson, Thoreau, Hawthorne, Melville, Whitman, Douglass, Stowe, Dickinson, Twain, and others. This course is strongly recommended for English majors. CA 1.

**2203. American Literature Since 1880**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Modern and contemporary American literature: May include such writers as James, Wharton, Dreiser, Cather, Frost, Hemingway, Fitzgerald, Faulkner, Morrison, and others. This course is strongly recommended for English majors. CA 1.

**2203W. American Literature Since 1880**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Modern and contemporary American literature: May include such writers as James, Wharton, Dreiser, Cather, Frost, Hemingway, Fitzgerald, Faulkner, Morrison, and others. This course is strongly recommended for English majors. CA 1.

**2207. Empire and U.S. Culture**

(Also offered as AMST 2207 and HIST 2207.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

How the frontier and overseas ambitions have shaped U.S. institutions and culture. The impact of U.S. expansion on people outside its borders. These topics are explored through literary narratives and historical documents. CA 1. CA 4.

**2214. African American Literature**

(Also offered as AFRA 2214.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Critical and historical examination of the literature of African American writers from Phyllis Wheatley to the present. CA 4.

**2214W. African American Literature**

(Also offered as AFRA 2214W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Critical and historical examination of the literature of African American writers from Phyllis Wheatley to the present. CA 4.

**2274W. Disability in American Literature and Culture**

(Also offered as AMST 2274W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

An interdisciplinary examination of the symbolic roles of disability and the social implications of those roles. CA 1. CA 4.

**2276. American Utopias and Dystopias**

(Also offered as AMST 2276.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Interdisciplinary approaches to American utopian and dystopian literature of the 19th, 20th, and 21st centuries. CA 1.

**2276W. American Utopias and Dystopias**

(Also offered as AMST 2276W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Interdisciplinary approaches to American utopian and dystopian literature of the 19th, 20th, and 21st centuries. CA 1.

**2301. Anglophone Literatures**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

English language literature from Africa, Asia, Canada, Australia, the Caribbean, and other areas outside of the United States and the British Isles. Writers may include Soyinka, Gordimer, Walcott, Achebe, Markandaya, Atwood, White, Emecheta, Rushdie, Naipaul, Kincaid, and others. CA 4-INT.

**2301W. Anglophone Literatures**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

English language literature from Africa, Asia, Canada, Australia, the Caribbean, and other areas outside of the United States and the British Isles. Writers may include Soyinka, Gordimer, Walcott, Achebe, Markandaya, Atwood, White, Emecheta, Rushdie, Naipaul, Kincaid, and others. CA 4-INT.

**2305. Modern Japanese Literature**

(Also offered as AAAS 2305 and JAPN 2305.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Japanese literature across genres from 1868 to the present, studied in English translation. CA 1. CA 4-INT.

**2401. Poetry**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

A study of the techniques and conventions of the chief forms and traditions of poetry in English. CA 1.

**2405. Drama**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

An introduction to the chief forms and traditions of dramatic literature through the study of a broad range of major works. CA 1.

**2407. The Short Story**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

The short story as a literary form with study of significant Continental, British, and American writers. CA 1.

**2408. Modern Drama**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Modern British, American, and Continental drama, with the reading and discussion of some 15-20 representative plays. CA 1.

**2408W. Modern Drama**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Modern British, American, and Continental drama, with the reading and discussion of some 15-20 representative plays. CA 1.

**2409. The Modern Novel**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Major novels since 1900. CA 1.

**2411. Popular Literature**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Examination of popular literature through the application of literary theory. CA 1.

**2411W. Popular Literature**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Examination of popular literature through the application of literary theory. CA 1.

**2413. The Graphic Novel**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011 Not open to students who have passed ENGL 3621 when taught as "The Graphic Novel."

The graphic novel as a literary form. CA 1.

**2413W. The Graphic Novel**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011 Not open to students who have passed ENGL 3621 when taught as "The Graphic Novel."

The graphic novel as a literary form. CA 1.

**2600. Introduction to Literary Studies**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Skills essential for the successful pursuit of a degree in English: textual analysis (close reading of poetry and prose), literary criticism and theory, research and citation methods, and critical writing about literature.

**2603. Literary Approaches to the Bible**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Critical approaches to, and literary and cultural influences of, the Bible in English translation.

**2605. Capitalism, Literature, and Culture**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

How capitalism and its alternatives have been critiqued and defended through literature and other cultural forms. CA 1.

**2605W. Capitalism, Literature, and Culture**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

How capitalism and its alternatives have been critiqued and defended through literature and other cultural forms. CA 1.

**2607. Literature and Science**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Introduction to literary writings about the sciences, including literary and scientific approaches to language and knowledge. May focus on a specific literary genre and/or scientific field. CA 1.

**2609. Fascism and its Opponents**

(Also offered as CLCS 2609.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011. Not open for credit to students who have passed AMST/ENGL 3265W when offered as "Fascism and Antifascism in the US."

A comparative study of fascist and antifascist movements, ideologies, aesthetics, and states across a number of national contexts, before and after the Second World War. Readings may consist of literary works, films and visual culture, autobiographies, political rhetoric, histories, and other cultural artifacts. CA 1.

**2610. Introduction to Digital Humanities**

(Also offered as DMD 2610 and HIST 2102.) Three credits.

The application of digital technology and media to such subjects as art history, classics, cultural and area studies, history, languages, literature, music, and philosophy. This course will provide a broad survey of the landscape of international and interdisciplinary digital humanities through the lens of ongoing work of faculty and staff researchers at the University of Connecticut.

**2612. Digital Literary Studies**

Three credits.

Introduction to the shaping of literature and literary studies by digital technologies, critical engagement with digital media, and historical and theoretical approaches to media and technology.

**2614. Writing with Algorithms**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

An introduction to the field of computer-generated literature. Students learn basic programming in order to create their own computer-generated works. No prior programming experience expected. CA 3.

**2627. Topics in Literary Studies**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011. May be repeated for credit.

Exploration of various focused topics, such as a particular literary theme, form, or movement, to be announced from semester to semester.

**2635E. Literature and the Environment**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Ecocritical approaches to literary treatment of global environmental issues. CA 1.

**2640. Studies in Film**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011. May be repeated for a total of 6 credits.

Exploration of focused topics in film. Course content varies by section. CA 1.

**2640W. Studies in Film**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011. May be repeated for a total of 6 credits.

Exploration of focused topics in film. Course content varies by section. CA 1.

**2701. Creative Writing I**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011. May not be taken out of sequence after passing ENGL 3701, 3703, or 3713.

First course in creative expression. Covers two or more genres (fiction, poetry, creative nonfiction, and drama). Genres vary by section.

**2730W. Travel Writing**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Introduction to the craft of travel writing, with attention to the history, variety, and ethics of the genre. CA 1.

**3003W. Topics in Writing Studies**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher. May be repeated for a total of 6 credits.

Exploration of a genre, method, concept, or subject area in writing.

**3010W. Advanced Composition for Prospective Teachers**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Advanced training in composition, with consideration of the problem of teaching writing. Designed primarily for English education majors.

**3012. Books and Book Publishing**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011 or 3800; open to juniors or higher. Cannot be taken for credit after passing ENGL 3011.

Intensive focus on trade book and e-book publishing, geared to writers and students preparing for entry level publishing jobs.

**3013. Media Publishing**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher. Cannot be taken for credit after passing ENGL 3011.

Publishing and writing for publication in the Information Age. Topics include desktop publishing, web-page design, and the presentation of materials on the Internet. No previous experience with computers is required.

**3013W. Media Publishing**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher. Cannot be taken for credit after passing ENGL 3011.

Publishing and writing for publication in the Information Age. Topics include desktop publishing, web-page design, and the presentation of materials on the Internet. No previous experience with computers is required.

**3015W. Writing Across Cultures**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Investigation of linguistic diversity; how persuasion is used in conversations related to diverse linguistic issues. CA 4.

**3082. Writing Center Practicum**

One credit. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Introduction to Writing Center pedagogy, theory and research methods. Intended primarily for Writing Center staff. Students taking this course will be assigned a grade of S (satisfactory) or U (unsatisfactory).

**3091. Writing Internship**

Variable (1-8) credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher. May be repeated for credit.

Training in writing in a supervised field placement. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory.) May be repeated for credit. No more than eight credits may be earned in a single placement, and no more than three credits may be counted towards completion of requirements for the English major.

**3111. Medieval English Literature**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Readings in the literature of the English Middle Ages - lyrics, narratives, dramas, and didactic forms.

**3111W. Medieval English Literature**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Readings in the literature of the English Middle Ages - lyrics, narratives, dramas, and didactic forms.

**3113. Renaissance English Literature**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Writers studied include More, Spenser, Shakespeare, Donne, Jonson, and Milton.

**3113W. Renaissance English Literature**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Writers studied include More, Spenser, Shakespeare, Donne, Jonson, and Milton.

**3115. Restoration and 18th-Century English Literature**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Includes such writers as Dryden, Pope, Swift, Johnson, Burney, and Austen.

**3115W. Restoration and 18th-Century English Literature**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Includes such writers as Dryden, Pope, Swift, Johnson, Burney, and Austen.

**3117. Romantic British Literature**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

British literature from 1790 to 1832.

**3117W. Romantic British Literature**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

British literature from 1790 to 1832.

**3118. Victorian British Literature**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

British literature from 1832 to 1900.

**3118W. Victorian British Literature**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

British literature from 1832 to 1900.

**3120. Irish Literature in English to 1939**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

Fiction, drama, and poetry, including early Irish legends and sagas (in translation); such writers as Swift, Shaw, Wilde, Yeats, Gregory, Synge, Joyce, and Bowen. CA 4-INT.

**3122. Irish Literature in English since 1939**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

Fiction, drama, and poetry by such writers as Beckett, O'Brien, Friel, Heaney, Doyle, Carr, McCabe, Toibin, and McDonagh. CA 4-INT.

**3122W. Irish Literature in English since 1939**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

Fiction, drama, and poetry by such writers as Beckett, O'Brien, Friel, Heaney, Doyle, Carr, McCabe, Toibin, and McDonagh. CA 4-INT.

**3123. British Literature from 1890 to the Mid-Twentieth Century**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011. Not open to students who have completed ENGL 3119.

British literature from the late Victorian to the immediate post-World War II period. Works by writers such as Conrad, Lawrence, Mansfield, Forster, Woolf, and Eliot.

**3123W. British Literature from 1890 to the Mid-Twentieth Century**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011. Not open to students who have completed 3119/W.

British literature from the late Victorian to the immediate post-World War II period. Works by writers such as Conrad, Lawrence, Mansfield, Forster, Woolf, and Eliot.

**3124. British Literature since the Mid-Twentieth Century**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011. Not open to students who have completed ENGL 3119.

British literature from the immediate post-World War II period through the present. Works by writers such as Hughes, Lessing, Murdoch, Pinter, Rushdie, and Winterson.

**3124W. British Literature since the Mid-Twentieth Century**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011. Not open to students who have completed 3119/W.

British literature from the immediate post-World War II period through the present. Works by writers such as Hughes, Lessing, Murdoch, Pinter, Rushdie, and Winterson.

**3193. Studies in Britain**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Studies in the British Isles during the intersession, supplemented by weekly seminars in

Storrs. Direct experience with aspects of English literature in its social and artistic milieu.

**3207. American Literature since the Mid-Twentieth Century**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to sophomores or higher.

Formal and thematic developments in American literature since the mid-twentieth century and its engagement with cultural shifts in this period.

**3207W. American Literature since the Mid-Twentieth Century**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to sophomores or higher.

Formal and thematic developments in American literature since the mid-twentieth century and its engagement with cultural shifts in this period.

**3210. Native American Literature**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Examination of the literatures of pre-contact, post-contact, and contemporary indigenous American cultures. CA 4.

**3212. Asian American Literature**

(Also offered as AAAS 3212.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

Literature, theatre, film about Asian American communities and culture in the United States from the mid-nineteenth century to the present. CA 4.

**3213. Eighteenth- and Nineteenth-Century African American Literature**

(Also offered as AFRA 3213.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

Broad historical survey of African American literature from its origins through the turn of the twentieth century. CA 4.

**3213W. Eighteenth- and Nineteenth-Century African American Literature**

(Also offered as AFRA 3213W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

Broad historical survey of African American literature from its origins through the turn of the twentieth century. CA 4.

**3215. Twentieth- and Twenty-First Century African American Literature**

(Also offered as AFRA 3215.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

Broad historical survey of African American literature from the twentieth and twenty-first century. CA 4.

**3215W. Twentieth- and Twenty-First Century African American Literature**

(Also offered as AFRA 3215W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

Broad historical survey of African American literature from the twentieth and twenty-first century. CA 4.

**3217. Studies in African American Literature and Culture**

(Also offered as AFRA 3217.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher. May be repeated for credit.

Focused study of a theme, form, author, or movement in African American literature or culture. CA 4.

**3217W. Studies in African American Literature and Culture**

(Also offered as AFRA 3217W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher. May be repeated for credit.

Focused study of a theme, form, author, or movement in African American literature or culture. CA 4.

**3218. Ethnic Literature of United States**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

The literatures of ethnic American authors. Writers may include Natachee Scott Momaday, Maxine Hong Kingston, Zora Neale Hurston, Rolando Hinojosa, Bernard Malamud, Nicholasa Mohr, John Fante, among others. CA 4.

**3218W. Ethnic Literatures of the United States**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

The literatures of ethnic American authors. Writers may include Natachee Scott Momaday, Maxine Hong Kingston, Zora Neale Hurston, Rolando Hinojosa, Bernard Malamud, Nicholasa Mohr, John Fante, among others. CA 4.

**3220. Jewish American Literature and Culture**

(Also offered as HEJS 3401.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Interdisciplinary study of literary and artistic productions by and about Jews in the United States. CA 1. CA 4.

**3220W. Jewish American Literature and Culture**

(Also offered as HEJS 3401W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Interdisciplinary study of literary and artistic productions by and about Jews in the United States. CA 1. CA 4.

**3235W. Reading the American City**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

The role of urban environments in American literature. Topics may include the literary representation of cities over time along with their impact on the psychological formation of characters and on family, romantic, and social relationships in urban settings.

**3240E. American Nature Writing**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

Study of writings, from the colonial era to the modern, reflecting diverse ways of imagining humanity's relation to the natural environment.

**3265W. American Studies Methods**

(Also offered as AMST 3265W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher. May be repeated for credit.

Interdisciplinary research and writing centered on a specific topic in U.S. culture. An introduction and overview of research methods in American Studies.

**3267W. Race and the Scientific Imagination**

(Also offered as AMST 3267W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

How racism has been both reproduced and contradicted in the scientific imagination. Scientific texts and imaginative literature that explore the reparation of past harms and imagine new futures. CA 1. CA 4.

**3301. Celtic and Norse Myth and Legend**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011 or 3800; open to sophomores or higher.

An examination of the early Celtic and Norse cultures through their medieval literature. Close analysis of works such as *The Tain*, *The Mabinogian*, *The Eddas*, selected sagas, runic and historical texts in association with later English texts that show their influence.

**3303. Studies in Early Literature in English**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher. May be repeated for credit.

Studies in literature written in English before 1800. Repeatable with a change of topic.

**3318. Literature and Culture of the Third World**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011. May be repeated for credit.

The literature of regions outside North America and Europe. Contents of the course will vary according to regional focus. CA 4-INT.

**3319. Topics in Postcolonial Studies**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Intensive studies in particular topics pertaining to colonialism, empire, and the postcolonial. CA 4-INT.

**3320. Literature and Culture of India**

Three credits. Prerequisite: Not open to students who have passed ENGL 3318 with a topic of "India."

Important texts, practices, and ideas drawn from the diverse traditions of Indian literature, arts, philosophy, and religion. CA 1. CA 4-INT.

**3403. Modern and Contemporary Poetry in English**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

Poetry since 1900, from major modernist innovators to significant contemporaries.

**3420. Children's Literature**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

The best literature available to children, including works by major writers and forms such as fable, folk tale, fairy tale, nursery rhyme, and short story.

**3422. Young Adult Literature**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011 or 3800; open to juniors or higher.

Critical analysis of texts for and about young adults.

**3501. Chaucer**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.



The Canterbury Tales and other selected works, and such attention to the Middle English language as is necessary to an understanding of the text.

### 3503. Shakespeare I

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011. May not be taken out of sequence after passing ENGL 3505.

Romantic comedies and principal tragedies.

### 3503W. Shakespeare I

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Romantic comedies and principal tragedies.

### 3505. Shakespeare II

Three credits. Prerequisite: ENGL 3503 or instructor consent; open to juniors or higher.

The early plays, problem plays, and late plays.

### 3507. Milton

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

The lyric, epic and dramatic poetry of Milton, with some consideration of his prose writing.

### 3509. Studies in Individual Writers

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher. May be repeated for credit.

Concentrated study in one or two authors writing in English.

### 3509W. Studies in Individual Writers

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher. May be repeated for a total of 6 credits.

Concentrated study in one or two authors writing in English.

### 3601. The English Language

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

A descriptive study of modern American English: constituent sound (phonology), structure of words (morphology), and syntax, with some attention to lexicography and usage.

### 3603. The History of the English Language

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

Readings in Old English, Middle English, and Early Modern with a survey of the main developments in the language since Anglo-Saxon times.

### 3605. Latina/o Literature

(Also offered as LLAS 3232.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011 or 3800 or instructor consent; open to juniors or higher.

Extensive readings in Latina/o literature from the late nineteenth century to the present. CA 4.

### 3607. Studies in Latina/o Literature

(Also offered as LLAS 3233.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011 or 3800 or instructor consent; open to juniors or higher. May be repeated for credit.

Advanced study of a theme, form, author, or movement in contemporary Latina/o literature.

### 3609. Women's Literature

(Also offered as WGSS 3609.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Works written by women from different countries and centuries. CA 4.

### 3611. Women's Literature 1900 to the Present

(Also offered as WGSS 3611.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Modern and contemporary works written by women from different countries. CA 4.

### 3613. LGBTQ+ Literature

(Also offered as WGSS 3613.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Literature focusing on gender and sexual diversity across cultural contexts. Experiences of, for example, lesbian, gay, bisexual, transgender, intersex, queer, hijra, and two-spirit people. CA 4.

### 3617. Literature and Religion

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

Study of diverse imaginative writings concerned with the human search for God, transcendence, and ultimate meaning.

### 3619. Topics in Literature and Human Rights

(Also offered as HRTS 3619.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher. May be repeated for credit.

Study of literature from various historical periods and nationalities concerned with defining, exploring, and critiquing the idea of universal human rights.

### 3621. Literature and Other Disciplines

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher. May be repeated for credit.

The relationship of literature to other fields of study. Course content will vary by section. May be repeatable for credit with a change in topic.

### 3623. Studies in Literature and Culture

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011. May be repeated for credit.

An examination of social and culture aspects of printed literature and of its relationship to other media. Contents will vary by section.

### 3625. Literary Theory

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

History of and recent developments in literary theory.

### 3627. Studies in Literature

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher. May be repeated for credit.

Advanced exploration of various limited topics, such as a particular literary theme, form, or movement, to be announced from semester to semester.

### 3629. Holocaust Memoir

(Also offered as HEJS 3629.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to sophomores or higher. Not open to students who have passed ENGL 3623 or 3619 taught as Holocaust literature.

Literature of the Holocaust focusing on memoir in various genres and forms. CA 1. CA 4-INT.

### 3631. Literature, Culture, and Humanitarianism

(Also offered as HRTS 3631.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to sophomores or higher.

Relationships between literature and culture and humanitarian movements, from the eighteenth century to the present.

### 3633W. The Rhetoric of Political Discourse in Literature and Society

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to sophomores or higher. May not be taken for credit after passing ENGL 3623 offered as Rhetoric of Political Discourse.

Rhetorical analysis of literary polemics and of past and current political speeches, writing, and debate. CA 1.

### 3640. British Film

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

British film from 1895 to the present. CA 1.

### 3640W. British Film

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

British film from 1895 to the present. CA 1.

### 3652. Maritime Literature to 1800

(Also offered as MAST 3652.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011, sophomores or higher.

Maritime fiction and non-fiction from the beginnings to 1800: Shakespeare, Falconer, Defoe, and others.

### 3652W. Maritime Literature to 1800

(Also offered as MAST 3652W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011, sophomores or higher.

Maritime fiction and non-fiction from the beginnings to 1800: Shakespeare, Falconer, Defoe, and others.

### 3653. Maritime Literature Since 1800

(Also offered as MAST 3653.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to sophomores or higher. Not open for credit to students who have passed ENGL 3650.

Maritime fiction and non-fiction since 1800: Melville, Conrad, Douglass, and others.

### 3653W. Maritime Literature Since 1800

(Also offered as MAST 3653W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to sophomores or higher. Not open for credit to students who have passed ENGL 3650.

Maritime fiction and non-fiction since 1800: Melville, Conrad, Douglass, and others.

### 3692. Writing Practicum

Variable (1-6) credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher. May be repeated for credit.

A concentrated introduction to (or review of) a particular aspect of composition. Focus on such topics as writing and publishing on the Internet, legal writing, grammar review, grammar by computer, business writing, and web-page design. May be repeated for credit with a change in topic.

### 3693. Foreign Study

Variable (1-6) credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher. May be repeated for credit.

Special topics taken in a foreign study program. Consent of department head required, normally to be granted prior to the student's departure. May count toward the major with consent of the advisor.

### 3695. Special Topics

Variable (1-6) credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher. May be repeated for credit.

Prerequisites and recommended preparation vary.

### 3698. Variable Topics

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher. May be repeated for credit.

Prerequisites and recommended preparation vary.

### 3699. Independent Study

Variable (1-6) credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher. May be repeated for credit.

Supervised reading and writing on a subject of special interest to the student.

### 3701. Creative Writing II

Three credits. Prerequisite: ENGL 2701; instructor consent required. May be repeated for a total of 6 credits.

For student writers of proven ability who wish further training in two creative genres (fiction, poetry, or creative nonfiction). Genres vary by semester.

### 3703. Writing Workshop

Three credits. Prerequisite: ENGL 2701; instructor consent required. May be repeated for a total of 6 credits.

For advanced student writers who wish intensive training in a single creative genre (fiction, poetry, or creative nonfiction). Genres vary by semester.

### 3705. Playwriting

(Also offered as DRAM 3141.) Three credits. Prerequisite: Open to juniors or higher, others with instructor consent. May be repeated for a total of 9 credits.

The analysis of the basic techniques in playwriting, and the reading and criticism of the students' works in progress. Scripts of outstanding merit may be produced in the Studio or Mobius Theatres.

### 3707. Film Writing

(Also offered as DRAM 3145 and DMD 3830.) Three credits. Prerequisite: Open to juniors or higher, others with instructor consent.

Theoretical and practical work in the content and form of the fiction scenario.

### 3711. Creative Writing for Child and Young Adult Readers

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher; instructor consent required. Recommended preparation: ENGL 2701.

Creative writing for an audience of children and young adults.

### 3713. Literary Magazine Editing

Three credits. Prerequisite: ENGL 2701; open to sophomores or higher; instructor consent required. Recommended preparation: one 3000-level

creative writing workshop. May be repeated for credit.

Practicum in literary magazine editing, culminating in production of Long River Review.

### 3715E. Nature Writing Workshop

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to sophomores or higher; instructor consent required. Recommended preparation: ENGL 2701.

For student writers of proven ability who desire training in techniques of nature writing. May include poetry, fiction, nonfiction, drama, or hybrid genres.

### 4101W. Advanced Study: British Literature

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; at least 12 credits of 2000-level or above English courses or consent of instructor; open to juniors or higher. May be repeated for credit.

Intensive study of particular topics in the literature of the British Isles.

### 4201W. Advanced Study: American Literature

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; at least 12 credits of 2000-level or above English courses or consent of instructor; open to juniors or higher. May be repeated for credit.

Intensive study of particular topics in the literature of the United States.

### 4203W. Advanced Study: Ethnic Literature

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; at least 12 credits of 2000-level or above English courses or consent of instructor; open to juniors or higher. May be repeated for credit.

Intensive study of particular topics in British or American literature written by ethnic writers.

### 4301W. Advanced Study: Anglophone Literature

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; at least 12 credits of 2000-level or above English courses or consent of instructor; open to juniors or higher. May be repeated for credit.

Intensive study of particular topics in the English literature of one or more regions, such as South Asia, Africa or the Caribbean.

### 4302W. Advanced Study: Literature of Ireland

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; at least 12 credits of 2000-level or above English courses or consent of instructor; open to juniors or higher. May be repeated for credit.

Intensive study of particular topics in the literature of Ireland.

### 4401W. Advanced Study: Poetry

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; at least 12 credits of 2000-level or above English courses or consent of instructor; open to juniors or higher. May be repeated for credit.

Intensive study of particular topics in poetry.

### 4405W. Advanced Study: Drama

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; at least 12 credits of 2000-level or above English courses or consent of instructor;

open to juniors or higher. May be repeated for credit.

Intensive study of particular topics in dramatic literature.

### 4407W. Advanced Study: Prose

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; at least 12 credits of 2000-level or above English courses or consent of instructor; open to juniors or higher. May be repeated for credit.

Intensive study of particular topics in literary prose.

### 4600W. Advanced Study: Seminars in Literature

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; at least 12 credits of 2000-level or above English courses or consent of instructor; open to juniors or higher. May be repeated for credit.

Intensive study of various limited topics, such as a particular literary theme, form, or movement, to be announced from semester to semester. Small classes with an emphasis on writing.

### 4601W. Advanced Study: Literary Criticism and Theory

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; at least 12 credits of 2000-level or above English courses or consent of instructor; open to juniors or higher. May be repeated for credit.

Intensive study of particular topics in literary criticism and theory.

### 4613W. Advanced Study: LGBTQ+ Literature

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; at least 12 credits of 2000-level or above English courses or consent of instructor; open to juniors or higher. May be repeated for a total of 6 credits.

Intensive study of particular topics in the literary expression of sexual and gender diversity across cultural contexts. Experiences of, for example, lesbian, gay, bisexual, transgender, intersex, queer, hijra, and two-spirit people.

### 4897. Honors VIII: Honors Thesis

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011 or 3800 ; open to juniors or higher; open only to Honors students.

All Honors students writing an Honors Thesis must register for this course in their last semester after consultation with the director of their thesis and the English department advisor to Honors Students, who is the instructor of record.

### 4965W. Advanced Studies in Early Literature

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; at least 12 credits of 2000-level or above English courses or consent of instructor; open to juniors or higher.

Advanced studies in literature written in English before 1800.

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## Environmental Engineering (ENVE)

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### 1000E. Environmental Sustainability

Three credits.

Detailed examination of anthropogenic impacts on the environment, resulting from the need for energy, food and shelter. Subtopics in the broad

areas of energy, food, shelter, waste, water, sustainable development will be grounded with case studies of UConn activities/programs in sustainability. Overarching and linking each topic is the impact of population and water resources with a focus on environmental literacy. Resolution of scientific/technological, public policy and economic aspects of environmental sustainability issues will be explored, including strategies for success, and possible pitfalls, in achieving environmental sustainability in the subtopic areas. CA 2.

### 2193. International Study

Variable (1-6) credits. Prerequisite: Department consent required.

Special environmental engineering topics taken in a foreign study program.

### 2310E. Environmental Engineering Fundamentals

(Also offered as CE 2310E.) Three credits. Prerequisite: CHEM 1128Q or 1148Q.

Concepts from aqueous chemistry, biology, and physics applied in a quantitative manner to environmental problems and solutions. Mass and energy balances, chemical reaction engineering. Quantitative and fundamental description of water and air pollution problems. Environmental regulations and policy, pollution prevention, risk assessment. Written and oral reports.

### 2320. The Environmental Debate II

One credit. May be repeated for credit.

Structured review of environmental issues and active debate during class time. Presentation of current environmental issues by environmental professionals and experts.

### 2411. Introduction to Computer Aided Design

(Also offered as CE 2411.) One credit. Prerequisite: Enrollment in the School of Engineering; this course and CE 2410 may not both be taken for credit.

Introduction to computer-aided design and drawing, emphasizing applications in civil and environmental engineering and landscape design. Introduction to fundamental CAD concepts and techniques, such as drawing commands, dimensioning, layers, editing techniques, and plotting, and additional software packages to create planimetric and topographic maps. Related topics include scale, coordinate geometry, and terrain representation.

### 3100. Climate Resilience and Adaptation: Municipal Policy and Planning

(Also offered as ENVS 3100 and EVST 3100.) Three credits. Prerequisite: Open to juniors or higher; instructor consent required. Recommended preparation: ENVE 1000, EVST 1000, or NRE 1000.

An interdisciplinary study of climate change focusing on the local, municipal scale: impacts, policy, vulnerability and adaptation with emphasis on tools such as vulnerability assessments that help local communities determine priorities for adaptation efforts.

### 3110E. Brownfield Redevelopment

(Also offered as ENVS 3110E and EVST 3110E.) Three credits. Prerequisite: Not open for credit to students who have passed ENVE 3995 when offered as Brownfield Redevelopment.

Interdisciplinary study of the process of investigating, cleaning up and putting back into use abandoned sites with suspected contamination, also known as brownfields. Legal, environmental, financial and social aspects are discussed. Service learning component working with communities on local brownfield sites.

### 3111. Brownfield Practicum

Three credits. Prerequisite: ENVE 3110E or ENVS 3110E or EVST 3110E.

This is a service learning course in which students will work with Connecticut communities to assist them with the process of investigating, cleaning up and putting back into use abandoned sites with suspected contamination, also known as brownfields.

### 3120. Fluid Mechanics

(Also offered as CE 3120.) Four credits. Prerequisite: CE 2110; MATH 2110Q and 2410Q; open only to students in the School of Engineering. Recommended preparation: CE 2120. Not open for credit to students who have passed ME 3250.

Statics of fluids, analysis of fluid flow using principles of mass, momentum and energy conservation from a differential and control volume approach. Dimensional analysis. Application to pipe flow and open channel flow. Laboratory activities and written lab reports.

### 3193. Foreign Study

Variable (1-6) credits. Prerequisite: Department consent required.

Special advanced environmental engineering topics taken in a foreign study program.

### 3200. Environmental Engineering Laboratory

Three credits. Prerequisite: CE 2251, CE/ENVE 2310E; enrollment in the School of Engineering.

Aqueous analytical chemical techniques, absorption, coagulation/flocculation, fluidization, gas stripping, biokinetics, interpretation of analytical results, bench-scale design projects, written and oral reports.

### 3201. Environmental Engineering Laboratory I

One credit. Prerequisite: Corequisite: ENVE 3220 and 4210; enrollment in the School of Engineering.

Analytical chemistry techniques, adsorption, coagulation/flocculation, chemical and biological oxidation and kinetics. Interpretation of analytical results through written reports.

### 3202. Environmental Engineering Laboratory II

One credit. Prerequisite: Corequisite: ENVE 3230 and 4320; enrollment in the School of Engineering.

Dispersion modeling, air pollution control sampling and design, air quality modeling, stormwater sampling, soil processes, environmental health assessment, BMP design and modeling. Interpretation of analytical results through written reports.

### 3220. Water Quality Engineering

Three credits. Prerequisite: ENVE 2310E; enrollment in the School of Engineering.

Biological unit processes in wastewater treatment systems, disinfection, and bioremediation scenarios. Applications to design of wastewater treatment systems.

### 3230. Air Pollution Control

Three credits. Prerequisite: ENVE 2310E or CHEG 2103; enrollment in the School of Engineering.

Recommended preparation: CHEG 2111 or ME 2233.

Gaseous pollutants and their properties; basic analytical techniques for air pollutants; particulate pollutants and their properties; equipment design for removal of gaseous and particulate materials; economic and environmental impact of air pollutants; federal and state regulations.

### 3270. Environmental Microbiology

Three credits. Prerequisite: Enrollment in the School of Engineering.

Content includes general microbiology, cell structure, cell growth kinetics, and genetics. In addition to the fundamental microbiological mechanisms, the application of microbial knowledge in natural environment and engineering systems (including water and wastewater treatment, soil and solid waste treatment) is also included. Will broaden the students' views of microbiological fundamentals and the applications to environmental systems.

### 3300W. Environmental Engineering Technical Communication

One credit. Prerequisite: ENVE 2310E; ENGL 1007 or 1010 or 1011 or 2011; concurrent enrollment with ENVE 3200; enrollment in the School of Engineering.

Basic technical writing for the environmental engineering field. Students will step through the various sections of technical reporting, obtaining feedback on each section before compiling complete formal reports. Students will also gain an appreciation for teamwork and effective oral communication. Written assignments will mirror those in ENVE 3200.

### 3530. Engineering and Environmental Geology

(Also offered as EARTH 3710 and CE 3530.) Three credits. Recommended preparation: EARTH 1050 or 1051.

Application of geological principles to engineering and environmental problems. Topics include site investigation, geologic hazards, slope processes, earthquakes, subsidence, and the engineering properties of geologic materials. Course intended for both geoscience and engineering majors. Formerly offered as GSCI 3710.

### 3995. Special Topics in Environmental Engineering

Variable (1-6) credits. Prerequisite: Prerequisites and recommended preparation vary. May be repeated for credit.

Classroom or laboratory course on specific topics as announced.

### 3996. Directed Research in Environmental Engineering

Variable (1-3) credits. Prerequisite: Open only with consent of supervising instructor; enrollment in the School of Engineering. May be repeated for a total of 6 credits.

Individualized or group research conducted under the supervision of the instructor.

### 4210. Environmental Engineering Chemistry

Three credits. Prerequisite: CHEM 1128Q or 1148Q and ENVE 2310E or CHEG 2103 and MATH 2410Q; enrollment in the School of Engineering.

Quantitative analysis of chemical behavior in environmental systems. Thermodynamics and kinetics of acid/base, coordination, precipitation/dissolution, sorption, and redox reactions. Structures and reactions of organic pollutants. Applications to design of water treatment systems.

#### 4310. Environmental Modeling

Three credits. Prerequisite: CE 2310E; CE 3120 or CHEG 3123; enrollment in School of Engineering.

Systematic approach for analyzing contamination problems. Systems theory and modeling will be used to assess the predominant processes that control the fate and mobility of pollutants in the environment. Assessments of lake eutrophication, conventional pollutants in rivers and estuaries and toxic chemicals in groundwater.

#### 4320. Ecological Principles and Engineering

Three credits. Prerequisite: ENVE 4210, which may be taken concurrently; enrollment in the School of Engineering.

An introduction to ecology and natural treatment systems for managing waste and pollutants with a focus on aqueous contaminants. Topics will include stormwater management, treatment wetlands, restoration ecology, composting, and bioremediation.

#### 4530. Geoenvironmental Engineering

(Also offered as CE 4530.) Three credits. Prerequisite: ENVE 2310E; open to juniors or higher in the School of Engineering. Recommended preparation: CE 3510.

Subsurface contaminant fate and transport, site characterization, overview of soil remediation techniques.

#### 4540. Design of Groundwater Systems

Three credits. Prerequisite: ENVE 3120. Recommended preparation: CE 3510.

Design of groundwater engineering systems used for water supply and/or preservation/improvement of water quality. Steady and transient flow, pumping tests, well hydraulics, and well-field design. Unsaturated zone hydrology, design and evaluation of landfills. Heterogeneity in natural systems, parameter estimation and inverse methods. Application of basic geostatistics in the design of groundwater systems.

#### 4810. Engineering Hydrology

(Also offered as CE 4810.) Three credits. Prerequisite: CE 3120 or ENVE 3120 or CHEG 3123; enrollment in the School of Engineering.

Hydrologic cycle: precipitation, interception, depression storage, infiltration, evapotranspiration, overland flow, snow hydrology, groundwater and streamflow processes. Stream hydrographs and flood routing. Hydrologic modeling and design. Computer applications. Design project.

#### 4820. Hydraulic Engineering

Three credits. Prerequisite: CE 3120 or ENVE 3120 or CHEG 3123; enrollment in the School of Engineering.

Design and analysis of water and wastewater transport systems, including pipelines, pumps, pipe networks, and open channel flow. Introduction to hydraulic structures and porous media hydraulics. Computer applications.

#### 4850. Sustainable and Resilient Water Governance and Management

Three credits. Prerequisite: Open to juniors or higher. This course and ENVE 5850 may not both be taken for credit.

Overview and assessment of water institutions and management approaches that contribute (or not) to sustainable and resilient water resources under changing climate conditions, demographic and economic shifts. Course requirements include translating scientific information for water managers.

#### 4886. Thesis I

One credit. Prerequisite: Enrollment in the School of Engineering.

Introduction to research through literature review and preparation of a research proposal.

#### 4897. Thesis in Environmental Engineering

Variable (1-3) credits. Prerequisite: Open only with consent of supervising instructor; enrollment in the School of Engineering. May be repeated for a total of 3 credits.

Introduction to research through literature review and preparation of a research proposal, execution of the research proposal, preparation of written report and oral defense.

#### 4910W. Environmental Engineering Design I

Two credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; ENVE 3120; ENVE 3220, which may be taken concurrently; open to seniors.

Students working individually or in groups produce solution to environmental engineering design projects from data acquisition through preliminary design, cost estimating and final specifications, oral presentation and written reports.

#### 4920W. Environmental Engineering Design II

Two credits. Prerequisite: ENVE 4910W; ENGL 1007 or 1010 or 1011 or 2011; open to seniors.

Students working individually or in groups complete the implementations of protocols and techniques covered in ENVE 4910W, final cost of entire project, feasibility, oral presentation and written reports. Instructors will supply initial conditions and performance expectations.

#### 4996. Independent Research in Environmental Engineering

Variable (1-3) credits. Prerequisite: Open only with consent of supervising instructor; enrollment in the School of Engineering. May be repeated for a total of 6 credits.

Independent research conducted under the supervision of the instructor.

#### 4999. Independent Study in Environmental Engineering

Variable (1-6) credits. Prerequisite: Enrollment in the School of Engineering. May be repeated for a total of 12 credits.

Individual study in specialized area of environmental engineering as mutually arranged between student and instructor.

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### Environmental Sciences (ENVS)

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#### 2000. Integrating Humans and the Environment

Three credits. Prerequisite: Open to Environmental Sciences majors only, sophomores or higher. Recommended preparation: NRE 1000 or similar.

Designed for students who have had a foundation in the basic concepts of environmental sciences. Exploration of critical environmental issues from a science-based perspective, including climate change, energy resilience, ecosystem services, and sustainability. The challenges, tradeoffs, and potential solutions to problems related to human modification of the environment, and do so from an interdisciplinary perspective.

#### 3100. Climate Resilience and Adaptation: Municipal Policy and Planning

(Also offered as ENVE 3100 and EVST 3100.) Three credits. Prerequisite: Open to juniors or higher; instructor consent required. Recommended preparation: ENVE 1000, EVST 1000, or NRE 1000.

An interdisciplinary study of climate change focusing on the local, municipal scale: impacts, policy, vulnerability and adaptation with emphasis on tools such as vulnerability assessments that help local communities determine priorities for adaptation efforts.

#### 3110E. Brownfield Redevelopment

(Also offered as ENVE 3110E and EVST 3110E.) Three credits. Prerequisite: Not open for credit to students who have passed ENVE 3995 when offered as Brownfield Redevelopment.

Interdisciplinary study of the process of investigating, cleaning up and putting back into use abandoned sites with suspected contamination, also known as brownfields. Legal, environmental, financial and social aspects are discussed. Service learning component working with communities on local brownfield sites.

#### 3255. Environmental Science and Policy in the Tropics

(Also offered as NRE 3255.) Four credits. Prerequisite: Instructor consent required.

Taught in Costa Rica. Evaluation of the conservation and management of natural resources using tools and perspectives relevant to both the natural and social sciences. Students are introduced to issues and problems in environmental science and conservation biology under three main themes: social and political history of Costa Rica as a case study of the neotropics, tropical ecosystem management, and the global environment. This course is offered in partnership with the Organization for Tropical Studies.

#### 3991. Internship

Variable (1-12) credits. Prerequisite: Department consent required. May be repeated for a total of 12 credits.

Experience in settings not generally available on campus with professionals in the environmental field. Grade will be based upon the recommendation of the field supervisor. Requires contract agreed to in advance by student, internship field supervisor, and program director, detailing expectations for the credits earned. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory). A total of six credits may be counted toward the major.

#### 3993. Foreign Study

Variable (1-15) credits. May be repeated for credit. Special topics taken in a foreign study program. May count toward the major with consent of the advisor.

**3999. Independent Study**

Variable (1-6) credits. Prerequisite: Department consent required. May be repeated for credit.

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**Environmental Studies (EVST)**


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**1000E. Introduction to Environmental Studies**

Three credits.

Interdisciplinary survey of relationships between humans and nature; investigation of specific environmental themes and contemporary issues. CA 2.

**2998. Variable Topics in Environmental Studies**

Three credits. May be repeated for credit.

Explorations of environmental studies from various perspectives and methodologies.

**3100. Climate Resilience and Adaptation: Municipal Policy and Planning**

(Also offered as ENVE 3100 and ENVS 3100.)

Three credits. Prerequisite: Open to juniors or higher; instructor consent required. Recommended preparation: ENVE 1000, EVST 1000, or NRE 1000.

An interdisciplinary study of climate change focusing on the local, municipal scale: impacts, policy, vulnerability and adaptation with emphasis on tools such as vulnerability assessments that help local communities determine priorities for adaptation efforts.

**3110E. Brownfield Redevelopment**

(Also offered as ENVE 3110E and ENVS 3110E.) Three credits. Prerequisite: Not open for credit to students who have passed ENVE 3995 when offered as Brownfield Redevelopment.

Interdisciplinary study of the process of investigating, cleaning up and putting back into use abandoned sites with suspected contamination, also known as brownfields. Legal, environmental, financial and social aspects are discussed. Service learning component working with communities on local brownfield sites.

**3200. Sustainable Community Food Systems Seminar**

Three credits. Prerequisite: Instructor consent. Recommended preparation: Participation in the Sustainable Community Food System summer internship program.

Interdisciplinary study of the sustainable, community food system. Seminar-style discussion of sustainable food production, the food economy, food justice, and community solutions to food insecurity with the aim of training students to have the critical thinking skills to be future food system leaders.

**3340E. Culture and Conservation**

(Also offered as ANTH 3340E.) Three credits. Recommended preparation: ANTH 1000 or 1006; EVST 1000.

Interdisciplinary analysis of conservation and the human-environment relationship from a cross-cultural perspective. Major topics include sustainability, environmental ethics, climate change, natural disasters, health, and environmental justice. CA2. CA4-INT.

**3412. Global Environmental Politics**

(Also offered as POLS 3412.) Three credits.

Politics of how humans and natural systems interact. Managing the global environment, regulating resource commons, and coordinating to solve environmental problems.

**3991. Supervised Field Work**

Variable (1-12) credits. Prerequisite: Department consent required. May be repeated for a total of 12 credits.

Experience in research, policy and activism settings not generally available on campus. Students will work with professionals in the environmental field who will provide evaluations to the program director. Student evaluation will be based upon the recommendation of the field supervisor. Students will be required to sign a Supervised Field Work contract detailing expectations for the credits earned. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory). A total of six credits may be counted toward the major.

**3993. Foreign Study**

Variable (1-15) credits. Prerequisite: Open to juniors or higher. May be repeated for a total of 15 credits.

Special topics taken in a foreign study program. May count toward the major with consent of the advisor up to a maximum of six credits.

**3999. Independent Study**

Variable (1-6) credits. May be repeated for credit.

Open only with consent of instructor and Program Director.

**4000W. Environmental Studies Capstone Research Project**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

Individual student research projects integrate knowledge and perspectives on environmental issues. Extensive reading, research, written work and presentation/oral communication required.

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**European Studies (ES)**


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**3293. Foreign Study**

Variable (1-6) credits. May be repeated for credit.

Consent of Director required, normally to be granted prior to the student's departure.

**3398. Variable Topics**

Variable (1-3) credits. May be repeated for credit.

Intensive study of specialized topics relating to Europe not ordinarily covered in the curriculum.

**3995. Special Topics in European Studies**

Three credits. May be repeated for credit.

Intensive study of specialized topics related to Europe, not ordinarily covered in the undergraduate curriculum; normally one-time offerings taught by distinguished visiting scholars and/or jointly appointed faculty.

**3999. Independent Study**

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

For thesis preparation or other intensive research project relating to Europe. Requires independent study authorization form.

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**Finance (FNCE)**


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**1000. Contemporary Issues in Finance**

One credit. Prerequisite: Open to freshmen and sophomores, others with consent of instructor. May be repeated for a total of 3 credits.

The world of business has changed. No longer can we refer to the cliché "business as usual." Today's business world is a complex, challenging and exciting place. Each section of the course will capture some aspect of this challenge and excitement. Students will be exposed to undercurrents that challenge and perplex today's managers and executives around the world. May be repeated for credit in different section in combination with BADM 1801 or MENT 1801 up to a maximum of three credits.

**3101. Financial Management**

Three credits. Prerequisite: ACCT 2001; ECON 1200 or both ECON 1201 and ECON 1202; MATH 1070Q and MATH 1071Q, or MATH 1131Q and MATH 1070Q or MATH 1132Q, or MATH 1125Q, MATH 1126Q and MATH 1132Q or MATH 1070Q; STAT 1000Q or 1100Q; open to Business majors with 40 or more credits. May not be taken out of sequence after passing FNCE 3302, 3303, 4209, 4302, FNCE 4304, 4305, 4306, 4307, 4308, 4309, 4410, 4420, 4430, 4450.

An introductory examination of how a business plans its needs for funds, raises the necessary funds, and invests them to attain its goals.

**3230. Real Estate Principles**

Three credits. Prerequisite: Open only to business majors of junior or higher status.

Overview of the personal, social and business aspects of real estate. Emphasis on home purchase decisions, location analysis, market characteristics and investment decision-making.

**3240. Foundations of FinTech**

Three credits. Prerequisite: Open only to business majors of junior or higher status. Corequisite: FNCE 3101.

This course provides an overview of Fintech. It consists of three modules. Module A: Fintech's four thematic areas: Paying for goods and services, Savings and investment products, Credit and loan products, and Managing risk. Module B: Fintech's four enabling technologies: Distributed computing, AI and big data, Cryptography and Blockchain. Module C: Fintech's four perspectives: The disruptive companies, The incumbent financial institution, Societal effects and regulatory responses, and The private equity investor.

**3302. Investments and Security Analysis**

Three credits. Prerequisite: FNCE 3101 for Business majors, or MATH 3650 for Math-Actuarial Science-Finance majors; open to junior or higher Business and Math-Actuarial Science-Finance majors. Not open for credit to students who have passed or currently taking FNCE 3303. May not be taken out of sequence after passing FNCE 4308 or 4309.

A study of the nature of securities, the mechanics and costs of trading, and the way in which the securities markets operate. Risk-return analysis will be applied in making decisions to buy or sell stocks, bonds and options. The semester-long project requires the student to follow and analyze

the performance of individual stocks and a portfolio of investments including stocks, bond, options, and futures. Written analysis is required.

### **3303. Principles of Investments and Derivatives**

Three credits. Prerequisite: FNCE 3101; open only to business majors of junior or higher status. Not open for credit to students who have passed or are currently taking FNCE 3302.

Application of the general principles of investing to a wide range of assets including bonds, stocks, and derivatives. Various models are used to price fundamental assets such as bonds and stocks as well as derivative securities such as options and future contracts. Written analysis is required. Offered only at the Hartford, Waterbury, and Stamford Regional Campus locations for students admitted to business major programs offered only at those locations.

### **3332. Real Estate Investments**

Three credits. Prerequisite: FNCE 3101 or 3230 or BADM 3730; open only to business majors of junior or higher status. May not be taken out of sequence after passing FNCE 3336.

Risk-return analysis for alternate types of real estate investments. Techniques and applications of investment decision-making and value estimation. Lease analysis, cash flow, forecasting, appraisal techniques, discounted cash flow modeling, portfolio management, and equity securitization including real estate investment trusts.

### **3333. Real Estate Finance**

Three credits. Prerequisite: FNCE 3101 or FNCE 3230 or BADM 3730; open only to business majors of junior or higher status.

Investment characteristics of mortgages and the structure and operation of mortgage markets -- both primary and secondary, including the role of securitization. Risk and return characteristics of various mortgage instruments, both residential and commercial, are analyzed from the perspective of both the borrower and lender. Tools for measuring and managing the risks of portfolios of mortgages and mortgage-backed securities are introduced.

### **3334. Real Estate Markets and Valuation**

Three credits. Prerequisite: FNCE 3101 or FNCE 3230 or BADM 3730; open only to Business majors of junior or higher status.

The economic drivers of real estate activity and how those drivers are evaluated and valued within the established real estate markets. The primary emphasis is on residential real estate but the course will consider aspects of commercial real estate. The valuation of single-family houses and small income properties will be considered. Factors such as location, demographic (including economic) factors, political (including zoning and land use regulations), ownership rights, and capitalization rates are considered relative to valuation.

### **3335. Commercial Real Estate Appraisal**

Three credits. Prerequisite: FNCE 3302, 3332 or 3334; open only to Business majors of junior or higher status.

Commercial real estate appraisal and an overview of the three traditional approaches to real property valuation - the cost approach, the sales comparison approach and the income capitalization approach. Provides an overview of practices emphasized by the Appraisal Institute and how valuation work is completed in accordance with

the Uniform Standards of Professional Appraisal Practice. A case appraisal of a small commercial property is an essential part of this course.

### **3336. Real Estate: A Practical Approach**

Three credits. Prerequisite: FNCE 3332; open only to Business majors of junior or higher status.

Provides students with practical, high-level, tactical and strategic real estate concepts. Students must decide whether to invest in real property, analyze the income from various real estate developments, learn the art of negotiation, explore the costs of maintaining a building, and devise strategies to protect their interests in a complex business partnership.

### **3715. Personal Finance**

Three credits. Prerequisite: Open to juniors or higher. Recommended Preparation: completion of a college level math course is strongly recommended.

Designed to provide students with practical financial management skills that will enable them to identify their personal financial goals, and to plan and make financial decisions that will help them reach those goals. Topics include budgeting, investing, effective use of cash and credit, taxes, insurance, housing and automobile purchases, and retirement planning.

### **4209. Applications in Financial Management**

Three credits. Prerequisite: FNCE 3101 (BUSN majors) or MATH 3650 (Mathematics Actuarial Science Finance majors); open only to Business and Mathematics Actuarial Science Finance majors of junior or higher status. Recommended preparation: OPIM 3103.

An intermediate level course using cases i.e., problems faced by actual firms, to teach students how to apply financial management concepts and techniques to real-world situations.

### **4230. FinTech Economics and Business Models**

Three credits. Prerequisite: FNCE 3101; open only to business majors of senior status.

This course addresses the economics within the Fintech ecosystem, its various business models, and value creation with emphasis on the competitive landscape in Payments, Wealth management, Crowdfunding, and Lending. Topics include economic theories behind fintech business models (game theory, contract theory, etc.), strengths and weaknesses of fintech business models (BaaS, API, POS, etc.), comparisons between fintech business models and traditional business models, issues and regulations in the application of fintech models.

### **4301. Advanced Issues in Security Valuation**

Three credits. Prerequisite: FNCE 3101; FNCE 3302 or 3303; open only to Business majors of junior or higher status.

Valuation of an investment through assessing a company's ability to produce free cash flow, maintain a consistent return on capital and reinvest capital effectively over time; interpretation of financial and management practices; evaluation of the psychological framework and investment thought process that is useful in the analysis of the physical, intellectual and emotional factors related to valuing an investment.

### **4302. Fixed Income Securities**

Three credits. Prerequisite: FNCE 3101 (BUSN majors) or MATH 3650 (Math-Act Sci-Finance majors); open only to Business and Mathematics-Actuarial Science-Finance majors of junior or higher status.

Provides an understanding of the common types of fixed income securities and their valuation, the major risks associated with investing in fixed income securities, the standard measures of those risks and approaches to managing those risks. In addition the basics of modeling interest rate processes and valuing securities with embedded options will be introduced.

### **4303. Advanced Issues in Asset Allocation and Portfolio Management**

Three credits. Prerequisite: FNCE 3101; FNCE 3302 or 3303; open only to Business majors of junior or higher status.

Valuation of a business including models such as discounted cash flows, relative metrics, contingent claim valuation and liquidation value; evaluation of specific business models that companies pursue to create competitive advantage including toll gate positioning, segregation vs. integration, and organic vs. mechanistic strategies.

### **4304. Financial Derivatives and Risk Management**

Three credits. Prerequisite: FNCE 3101 for Business majors or MATH 3650 for Mathematics Actuarial Science Finance majors; open only to Business majors or Mathematics Actuarial Science Finance majors of junior or higher status.

Applications of financial structuring and engineering with particular attention to uses of derivatives.

### **4305. Global Financial Management**

Three credits. Prerequisite: FNCE 3101 (BUSN majors) or MATH 3650 (Mathematics Actuarial Science Finance majors); open only to Business and Mathematics Actuarial Science Finance majors of junior or higher status.

Focuses on the detailed study of: exchange rate determination, operation of the foreign currency and global capital markets, and hedging both transaction and economic exposure to exchange rate changes.

### **4306. Financial Services**

Three credits. Prerequisite: FNCE 3101 (BUSN majors) or MATH 3650 (Math-Act Sci-Finance majors); open only to Business and Mathematics-Actuarial Science-Finance majors of sophomore or higher status.

Study of the role of financial services companies in the money and capital markets, funds acquisitions, investment and credit extension.

### **4307. Financial Modeling**

Three credits. Prerequisite: FNCE 3101 for Business majors or MATH 3650 for Mathematics Actuarial Science Finance majors; open only to Business majors or Mathematics Actuarial Science Finance majors of junior or higher status.

Students will learn to use Excel to solve financial problems and build sophisticated models for financial decision making. Applications will be drawn from financial statement analysis, corporate financial planning, capital budgeting, modern portfolio theory, fixed income investments, options pricing, and others.

**4308. Introduction to Algorithmic Trading**

Three credits. Prerequisite: FNCE 3101 for Business majors or MATH 3650 for Mathematics Actuarial Science Finance majors; FNCE 3302 or 3303 for Business majors or MATH 3660 for Mathematics Actuarial Science Finance majors; open only to Business majors or Mathematics Actuarial Science Finance majors of junior or higher status. Not open to students who have passed FNCE 4895 when taught as Introduction to Algorithmic Trading.

Quantitative trading models implemented on computer systems for automatic execution. Examines popular trading strategies. Emphasizes hands-on experience; students will use the Matlab platform to write, backtest, and refine strategies.

**4309. High Frequency Trading Management**

Three credits. Prerequisite: FNCE 3101 for Business majors or MATH 3650 Math-Act Sci-Finance majors; FNCE 3302 or 3303 for Business majors or MATH 3660 Math-Act Sci-Finance majors; open only to Business majors or Mathematics-Actuarial Science-Finance majors of junior or higher status. Not open to students who have passed FNCE 4895 when taught as High Frequency Trading Management.

Focus on finance machines and automatic bots as essentials part of the current trading infrastructure in the U.S. market. Exposes students to the world of high frequency trading and market making. Intent is to be less theoretical but more practical so that students will experience firsthand some of the issues that high frequency trading system operators have.

**4319. Entrepreneurial Finance**

Three credits. Prerequisite: FNCE 3101; open only to business majors of junior or higher status.

An overview of the entrepreneurial finance process, both from the perspective of entrepreneurs and also of private equity investors. It focuses on integrating basic knowledge of finance principles with the complexities of new ventures.

**4410. Security Valuation and Portfolio Management**

Three credits. Prerequisite: FNCE 3101; open to juniors or higher; open only to Financial Management majors at the regional campus.

Determining asset allocation strategies and equity valuation methods, along with the study and interpretation of business models, and the value drivers that create shareholder wealth. Evaluation of the investment thought process that is useful in the analysis of the physical, intellectual, social, and emotional factors related to valuing a business and/or an investment.

**4420. Alternative Investments and Risk Management**

Three credits. Prerequisite: FNCE 3101; open only to business majors of junior or higher status.

Provides knowledge of investment characteristics of alternative investments such as hedge funds, private equity, and commodities. Students learn how to form portfolios and evaluate their performance.

**4430. Mergers and Acquisitions**

Three credits. Prerequisite: FNCE 3101 for Business majors or MATH 3650 Math-Act Sci-Finance majors; open only to Business majors or

Mathematics-Actuarial Science-Finance majors of junior or higher status.

Provides the theoretical background as well as the analytical and technological tools necessary to analyze corporate combinations, restructurings, and bankruptcies. Specific topics include relevant laws, takeover defenses, corporate control issues, leveraged buyouts, valuation, restructuring and bankruptcy.

**4440. Financial Ethics**

One credit. Prerequisite: BLAW 3175 or BADM 3720; open only to business majors of junior or higher status.

Provides an understanding of the importance of ethics in the finance profession. The focus is on the concept that capital markets operate on trust; topic coverage includes professionalism and integrity of the capital markets, duties to clients and employers, investment analysis and recommendations, and conflicts of interest.

**4450. Financial Reporting and Analysis**

Three credits. Prerequisite: FNCE 3101; open only to business majors of junior or higher status.

Provides a more thorough understanding of the general principles of the financial reporting system, underscoring the critical role of the analysis of financial reports in investment decision.

**4881. Internship in Finance**

Variable (1-3) credits. Prerequisite: "C" or better in FNCE 3230 if in Real Estate Intern program, all others must complete FNCE 3101 and one other relevant FNCE course with a "C" or better; open to juniors or higher; consent of instructor and Department Head required. Students enrolled in the Real Estate Intern program must have earned a "C" or better in FNCE 3230; for all others, completion of FNCE 3101 and at least one other finance course related to the internship area, with a grade of "C" or better in each course; open only to Business majors of junior or higher status; consent of instructor and Department Head required prior to beginning the internship. May be repeated for credit.

Designed to provide students with an opportunity for a supervised internship in relevant major areas within the Department. Students will work with one or more professionals in their major academic area. Student performance will be evaluated on the basis of an appraisal by the field supervisor and a detailed written report submitted by the student. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

**4893. Foreign Study**

Variable (1-6) credits. Prerequisite: Open to juniors or higher. May be repeated for credit.

Special topics taken in a foreign study program. Consent of Department Head required, prior to the student's departure.

**4895. Special Topics**

Variable (1-6) credits. Prerequisite: Prerequisites and recommended preparation vary by section; open only to Business and Mathematics-Actuarial Science majors of sophomore or higher status. May be repeated for credit.

Classroom course in special topics in finance, insurance or real estate as announced in advance for each semester.

**4899. Independent Study**

Variable (1-6) credits. Prerequisite: Open only to business majors of junior or higher status. May be repeated for credit.

Individual study of special topics in finance, insurance or real estate as mutually arranged between a student and an instructor.

**4997W. Senior Thesis in Finance**

Three credits. Prerequisite: Open to Juniors or higher; open only to Finance Department Honors Students with consent of instructor and Department Head; ENGL 1007 or 1010 or 1011 or 2011.

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**Fine Arts (FINA)**


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**1001. Earthtones: Vocal Ensemble**

(Also offered as MUSI 1006.) One credit. May be repeated for a total of 8 credits.

A world music vocal ensemble that brings to life the songs of specific cultures as a means to gain knowledge and understanding of communities, culture, spirituality and social justice. CA 1.

**1100. Afrocentric Perspectives in the Arts**

(Also offered as AFRA 1100.) Three credits.

Lectures and discussions about assigned readings focus on historical and aesthetic perspectives of African American Arts and their African sources, with emphasis on how social and aesthetic context impacts on creative expression by African American artists. Presentations by guest lecturers and University of Connecticut faculty plus small group discussions. CA 1. CA 4.

**2001. Global and Transcultural Forms**

Two credits. Prerequisite: Instructor consent required.

Immersion in world arts practices that cross national and cultural boundaries.

**3391. Global Arts and Culture Internship**

Three credits. Prerequisite: FINA/AFRA 1100; CLCS 2201; three credits of FINA1001/MUSI 1006, FINA 2001, MUSI 1114 or MUSI 1107 and three credits of electives for the Global Arts and Culture minor; open to juniors or higher in the Global Arts and Culture minor with a minimum 2.8 GPA and consent of the department head.

Offers a practical educational base for many culture-related areas in the arts such as arts agencies, corporations, schools or artist studios. Provides faculty supervised professional experience in a private or public organization.

**3510. Foundation: Exploring Digital Arts**

Three credits. Prerequisite: Instructor consent required.

Initial explorations and concepts in ideation for digital arts. Portfolio review required.

**3710. Protecting the Creative Spirit: The Law and the Arts**

Three credits. Prerequisite: Open only to juniors or higher, others with consent of instructor. Not open for credit to students who have passed FINA 3995 when taught as Law and the Arts.

The law and business practices that affect and protect careers in the arts. Topics include national and international copyright law, trademarks, licensing, and contract negotiations in addition to rights of privacy and publicity.

**3710W. Protecting the Creative Spirit: The Law and the Arts**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open only to juniors or higher. Not open for credit to students who have passed FINA 3995 when taught as Law and the Arts.

The law and business practices that affect and protect careers in the arts. Topics include national and international copyright law, trademarks, licensing, and contract negotiations in addition to rights of privacy and publicity.

**3995. Investigation of Special Topics**

Variable (1-6) credits. May be repeated for a total of 6 credits.

Special topics, taking an interdisciplinary approach to the arts. Credits and hours by arrangement. Instructor consent required.

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## French (FREN)

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**1101. Elementary French I**

Four credits. Prerequisite: Not open to students who have had three or more years of high school French. May not be taken out of sequence after passing FREN 1102, 1103, 1104, 1174, 1175, or any 2000 level or higher course taught in French.

Elementary French grammar. Emphasis on speaking, listening, reading, and writing skills. Cultural and social content reinforces the linguistic skills taught in every class.

**1102. Elementary French II**

Four credits. Prerequisite: FREN 1101 or permission of the Language Coordinator. Not open for credit to students who have had three or more years of high school French.

Elementary French grammar. Emphasis on speaking, listening, reading, and writing skills. Cultural and social content reinforces the linguistic skills taught in every class.

**1103. Intermediate French I**

Four credits. Prerequisite: FREN 1102 or two years of high school French or permission of Language Coordinator. May not be taken out of sequence after passing FREN 1164, 1175, or any 2000-level or above course taught in French. Not open for credit to students who have passed FREN 1174.

Continuation of FREN 1102. Review and extension of French grammar. Graded composition. Intensive and extensive reading. Intensive oral practice. Cultural and social content reinforce the linguistic skills taught in every class.

**1104. Intermediate French II**

Four credits. Prerequisite: FREN 1103 or two years of high school French or permission of Language Coordinator. Cannot be taken after any 2000 level or above course taught in French. This course and FREN 1175 cannot both be taken for credit.

Continuation of FREN 1103. Review and extension of French grammar. Graded composition. Intensive and extensive reading. Intensive oral practice. Cultural and social content reinforce the linguistic skills taught in every class.

**1169. Modernity in Crisis: France and the Francophone World From 1850 to Today**

Three credits.

A cultural history of France and its colonial empire through political, social, artistic and literary revolutions and scandals. Topics include:

Impressionism and the shock of the new, the Eiffel Tower scandal, Nazi occupation and the resistance, U.S. cultural imperialism, feminism, immigration and the crisis of national identity. Taught in English. CA 1. CA 4-INT.

**1171. French Cinema**

Three credits.

Weekly screenings of French films from the first comedies and surrealism to the New Wave and the young filmmakers of the 1990's. Introduction to film history, analysis, and interpretation of films. Readings, viewings and lectures in English. May not be used to meet the foreign language requirement. CA 1. CA 4-INT.

**1176. Literature and Cultures of the Postcolonial Francophone World**

Three credits.

Evolution of literatures and cultures formerly under French colonial rule. Language, identity, religion, art and politics as they shape these societies' passage to cultural autonomy. Taught in English. CA 1. CA 4-INT.

**1177. Magicians, Witches, Wizards: Parallel Beliefs and Popular Culture in France**

Three credits.

The search for traces of a counter culture which grew out of pagan beliefs and remained latent despite the domination of Christianity from the Middle Ages to modern times. Tales of magic and witchcraft, as presented by texts and films. The evolution of exemplary figures like Merlin or Nostradamus. Taught in English. CA 1. CA 4-INT.

**1193. Foreign Study**

Variable (1-6) credits. Prerequisite: Department consent required. May be repeated for credit.

Special topics taken in a foreign study program.

**3101. French for Engineering I**

One credit. Prerequisite: Open only to dual-degree French and Engineering students; instructor consent required. Recommended preparation: FREN 1103 or equivalent.

Provides dual-degree French and Engineering students with the technical and scientific vocabulary needed to discuss a wide variety of topics in engineering.

**3102. French for Engineering II**

One credit. Prerequisite: Open only to dual-degree French and Engineering students; instructor consent required. Recommended preparation: FREN 1103 or equivalent.

Provides dual-degree Engineering and French students more advanced vocabulary, methods, and field-specific knowledge. Students will learn to describe scientific processes, to follow scientific presentations in French, and to create preparation and evaluation materials for these presentations.

**3103. French for Engineering III**

One credit. Prerequisite: Open only to dual-degree French and Engineering students; instructor consent required. Recommended preparation: FREN 1103 or equivalent.

Provides dual-degree Engineering and French students more advanced vocabulary, methods, and field-specific knowledge. Students will learn to describe scientific processes, to follow presentations in French, to do research to create preparation materials for their interviews with engineers. Students will also learn practical job-

seeking skills, including practice with French-style CVs, job letters and interviews.

**3210. French Art and Civilization**

Three credits. Recommended preparation: FREN 1164 or 1175 or 3 years high school French or instructor consent.

Studies of the arts in the cultural context of French and Francophone civilization, from the Middle Ages to the late nineteenth century. Considerations of social systems, passions, sexuality, relations of power in their manifestations in architecture, painting and sculpture. Some lectures by and discussions with experts from Anthropology, Music, Political Science, History, and Art History. CA 1.

**3211W. Contemporary France**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011. Recommended preparation: FREN 1104 or 1175 or three years of high school French or instructor consent.

An historical and cultural overview of France in the 20th and 21st centuries: from D-Day to the European Union, from Communism to the Green Party, from ballad crooners to rap, from love stories to action films; the changing French nation through authentic documents, literary texts, and films. CA 1. CA 4-INT.

**3215. Practical Translation**

Three credits. Recommended preparation: FREN 3267 or 3268 or instructor consent.

Acquaints students with the practical aspect of translating by working on a variety of articles on politics, science, business, and the arts.

**3216. Advanced Translation**

Three credits. Prerequisite: FREN 3215 or instructor consent.

Translation of texts from the press, contemporary literature, film, and media. This level of translation requires the completion of an individual project.

**3217. Business French**

Three credits. Recommended preparation: FREN 1104 or 1175 or three years high school French or instructor consent.

French and international business, from day-to-day entrepreneurial operations to the new European economy and globalization. Preparation for the Diplôme de Français des Affaires given by the Paris Chamber of Commerce and Industry. Recommended for those interested in working in international business and institutions.

**3218. Francophone Studies**

Three credits. Recommended preparation: FREN 3210 or 3211 or 3261 or 3262 or instructor consent.

The literatures, societies, and cultures of French-speaking countries in North Africa, West Africa, the Caribbean, the Pacific and of Francophone communities of Europe and North America. CA 1. CA 4-INT.

**3220. Theater Studies**

Three credits. Recommended preparation: FREN 3261 or 3262 or instructor consent.

A study of French dramatic texts and genres (tragedy, comedy, etc.). Popular theatre. The theory and practice of performance in contemporary France. The semiotics of stage production. Use of audio-visual material.



**3221. Forms and Topics in French Fiction**

Three credits. Recommended preparation: FREN 3261 or 3262 or instructor consent.

A study of literary forms in prose in their social and cultural contexts. Forms include: classic psychological novel, classic and contemporary science-fiction, the realist novel, the fantastic short story, the new novel, detective fiction, electronic fiction.

**3222. Poetry**

Three credits. Recommended preparation: FREN 1104 or 1175 or three years high school French or instructor consent.

Examples of poetry of different epochs ranging from the epic to the lyric to the limerick.

**3223. French Film and Theory**

Three credits. Recommended preparation: FREN 3210 or 3211 or 3261 or 3262 or instructor consent.

French and Francophone film and its aesthetic and social function. Evolution of film language and the relation of film to literature and to other cultural expressions. May be offered in English or in French.

**3224. Issues in Cultural Studies, the Media, and the Social Sciences**

Three credits. Recommended preparation: FREN 3211 or instructor consent. May be repeated for credit.

The economics of the media industry, mass audiences and new technologies, the marketing of culture, French nationalism and the global market, electronic democracy, the politics of food and addictions, ethics and new forms of human reproduction. CA 1. CA 4-INT.

**3226. French and Francophone Cinema**

Three credits. Prerequisite: FREN 3210 or 3211 or 3261 or 3262 or instructor consent.

Moments and themes in the history of French and Francophone cinema, studied chronologically.

**3231. Renaissance and Reformation**

Three credits. Recommended preparation: FREN 3261 or 3262 or instructor consent.

Literary works from the sixteenth century in their cultural context: the secularization of daily life, passions, religious violence, the changing roles of women and reconceptualizations of sexuality, representations of the body, the relationship to Greco-Roman Antiquity; the relationship to the "Other," the "New World."

**3234. Romanticism, Realism, Fin de Siecle: 19th-Century Literature**

Three credits. Recommended preparation: FREN 3261 or 3262 or instructor consent.

The literary and artistic innovations that made France the center of 19th-century culture. The Fantastic, Realism, Naturalism, and Decadence. CA 1.

**3235. French Modernity**

Three credits. Recommended preparation: FREN 3261 or 3262 or instructor consent.

A portrait of France in the 20th Century through contemporary French literature: exoticism, sexuality, war, colonialism, feminism, end of the century, related films and works of art. CA 1.

**3250. Global Culture in French I**

Three credits. Recommended preparation: FREN 1104 or 1175 or three years high school French or instructor consent.

Intense study of oral French. Learning of oral techniques of communication in conjunction with weekly topics of conversation associated with various francophone cultures. Rigorous and active oral practice through dialogues, interviews, roundtables, and oral reports.

**3251. Global Culture in French II**

Three credits. Recommended preparation: Four years high school French or FREN 3250 or instructor consent.

Extensive practice in oral French based mainly on authentic cultural materials. Emphasis on perfecting language skills for self expression and communication, on developing new vocabulary, and on recognizing and working with linguistic differences associated with various francophone cultures.

**3257. French Phonetics**

Three credits. Recommended preparation: FREN 1104 or 1175 or three years high school French or instructor consent.

A comprehensive study of the French phonetic system. Practice pronouncing French as the French do in a wide array of contexts.

**3261. From the Holy Grail to the Revolution: Introduction to Literature**

Three credits. Recommended preparation: FREN 1004 or three years of high school French or instructor consent.

Texts from the Middle Ages to the 18th Century, including the Arthurian legend, Renaissance poetry, Classical theater, and the philosophy of the Enlightenment in the cultural context in which they were produced. CA 1.

**3262. From the Romantics to the Moderns: Introduction to Literature**

Three credits. Recommended preparation: FREN 1004 or three years of high school French or instructor consent.

Study of poetry, theater and prose fiction that marks the evolution from the psychology of the romantic hero and heroine to Existentialist philosophy and the New Novel, and contemporary fiction and poetry. CA 1.

**3267. Grammar and Culture**

Three credits. Recommended preparation: FREN 1104 or 1175 or three years high school French or instructor consent.

The study of French and Francophone culture through fiction, non-fiction, journalism and film. Emphasis on perfecting both oral and written expression through discussion, presentations, and composition on assigned topics. CA 1.

**3268. Grammar and Composition**

Three credits. Recommended preparation: FREN 1104 or 1175 or three years high school French or instructor consent.

Advanced study of French texts and extensive written practice in a variety of forms ranging from compositions, essays, summaries and film reviews. CA 1.

**3268W. Grammar and Composition**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011. Recommended preparation: FREN 1104 or 1175 or three years of high school French or instructor consent.

Advanced study of French texts and extensive written practice in a variety of forms ranging from compositions, essays, summaries and film reviews. CA 1.

**3269. Advanced French Grammar**

Three credits. Recommended preparation: FREN 3268 or equivalent.

Intensive course in French grammar through a variety of fictional and non-fictional texts.

**3270W. French Literature and Civilization in English**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Representative works of French literature, on a particular theme. How literary forms articulate the ideas and values of different periods. CA 1.

**3272. French Literary Theory**

Three credits. Recommended preparation: FREN 3268 or instructor consent.

Introduction to French literary theory, as informed by linguistics, semiotics, historical materialism, psychoanalysis, philosophy, feminist studies, postmodernism and postcolonialism. Critical practice applied to French and Francophone literatures, popular culture, advertising, the media, electronic writing.

**3274. French Cultural Studies**

Three credits. Recommended preparation: FREN 3261 or 3262

French and Francophone cultures and societies. Themes and topics include: sexuality and politics, education and violence, France and the USA, France and Africa, French multiculturalism, French music (including rap), cities and "banlieues," social and cultural effects of globalization.

**3280. Fiction and Nonfiction by French and Francophone Women**

Three credits. Recommended preparation: FREN 3261 or 3262 or instructor consent. May be repeated for credit.

**3293. Foreign Study**

Variable (1-6) credits. May be repeated for credit. Special topics taken in a foreign study program. Consent of Department Head required, normally to be granted prior to the student's departure. May count toward the major with consent of the advisor.

**3295. Special Topics**

Variable (1-3) credits. Prerequisite: Prerequisites and recommended preparation vary. May be repeated for credit.

**3298. Variable Topics**

Three credits. Prerequisite: Prerequisites and recommended preparation vary. May be repeated for credit.

**3299. Independent Study**

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

**3381. French Internship**

Variable (1-6) credits. May be repeated for credit.

Use of linguistic and cultural skills in French in a professional training context such as an internship or in industry in a French-speaking country. Requires contract agreed to in advance by student, internship field supervisor, and program director, detailing expectations for the credits earned. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

## General and Professional Studies (GPS)

### 3081. BGS Internship

Variable (1-6) credits. Prerequisite: BGS students only. May be repeated for credit.

Open only with consent of instructor and BGS mentor/advisor.

### 3099. Independent Study

Variable (1-6) credits. Prerequisite: BGS students only. May be repeated for credit.

Open only with consent of instructor and BGS mentor/advisor.

### 4278. Integrating General Studies

Three credits. May be repeated for credit.

Integrates the fields of general and interdisciplinary studies. Traces emergence of interdisciplinary studies and compares different academic disciplines. Future of interdisciplinary studies is assessed.

### 4278W. Integrating General Studies

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011. May be repeated for credit.

Integrates the fields of general and interdisciplinary studies. Traces emergence of interdisciplinary studies and compares different academic disciplines. Future of interdisciplinary studies is assessed.

## Geography (GEOG)

### 1000. Introduction to Geography

Three credits.

Principles, concepts and methods of modern geography are developed both in general form and specific case studies. Examples pertaining to both the human and physical environment will be discussed. CA 2.

### 1010. New Digital Worlds of Geographic Information Science

Three credits.

An overview of geospatial data and emerging technologies that are common in our everyday lives and how they are shaping society. Topics include the use of geospatial technologies like GPS, Google Earth, Satellite Imagery, and GIS, and how these technologies address environmental, societal, and political issues. Discussion of career opportunities in GIScience. Formerly offered as GEOG 2410. CA 3.

### 1070. Natural Disasters and Environmental Change

(Also offered as EARTH 1070.) Three credits. Prerequisite: Not open for credit to students who have passed EARTH 1010, 1050, 1051, 1055.

Climate change, global warming, natural hazards, earth surface processes, and the impact these have on human populations now and in the

past. Students who complete both EARTH 1070 and EARTH 1052 may request that EARTH 1070 be converted to a CA 3 Laboratory course. CA 3. Formerly offered as GSCI 1070.

### 1093. International Study

Variable (1-6) credits. Prerequisite: Consent of Department Head or advisor may be required prior to the student's departure. May be repeated for credit.

Special topics are taken in an international study program. Consent of Department Head or advisor may be required prior to the student's departure.

### 1200. Global Urbanization

(Also offered as URBN 1200.) Three credits.

A broad discussion of the role and structure of cities around the world from the first cities to contemporary times. Special emphasis will be placed on the mechanisms by which cities and ideas about them have been diffused from one place to another and on the changing forces that have shaped cities over time and across space. CA 1. CA 4-INT.

### 1300E. Climate, Weather, and the Environment

Three credits.

Interactions between weather and climate and the human and natural environment. Emphasis on understanding the linkages between natural processes and societal/environmental issues. CA 3.

### 1302. GIS Modeling of Environmental Change

Four credits.

An introduction to environmental processes and patterns, especially assessing change in environmental systems using spatial analysis techniques. Students will map field sites using Global Positioning System technology and aerial photographs, collect field data on various environmental systems, and build and test a Geographical Information System-based environmental model. CA 3-LAB.

### 1700. World Regional Geography

Three credits.

Study of geographic relationships among natural and cultural environments that help to distinguish one part of the world from another. Analysis of selected countries as well as larger regions, with specific reference to the non-western world. CA 2. CA 4-INT.

### 2000. Globalization

Three credits.

Globalization as a complex-multidimensional process. Linkages and interconnectedness between spatial processes and social, cultural, economic, political, and environmental change around the world today. Theory and impacts of economic, social, political, and cultural globalization through case studies at the local, regional, national, and international scales. CA 2. CA 4-INT.

### 2100. Economic Geography

Three credits.

Examination of the relationship among economic, cultural, and geographic processes which affect the patterns, structure, and growth or decline of economic activities. The global extent of the agricultural, manufacturing, and service sectors is presented with particular emphasis on

the interdependency of non-western and western economies. CA 2.

### 2200. Introduction to Human Geography

Three credits.

Geographic perspectives on the relationships between human behavior/activities, and the physical, economic, and cultural environments. CA 2. CA 4-INT.

### 2300E. Introduction to Physical Geography

Three credits. Prerequisite: May not be taken out of sequence after passing GEOG 4300.

The physical elements and processes of the lithosphere, hydrosphere, atmosphere, and biosphere in relation to one another and to the distribution of the world's environments. Emphasis on the basic concepts and theories of physical geography and relationships between humans and the physical environment they interact with every day. CA 3.

### 2310E. Creating and Sustaining National Parks

(Also offered as EARTH 2310E.) Three credits.

Geologic processes that create the Earth's iconic landscapes through the study of National Parks, Monuments, and Seashores. Plate tectonics, climate and biotic change, natural hazards, Earth materials and resources, environmental conservation, and the interactions between human society and the natural world. Formerly offered as GSCI 2310E.

### 2320E. Climate Change: Current Geographic Issues

Three credits.

The science, impacts, and politics of climate change from a geographic perspective. Examination of physical mechanisms, extreme weather events, impacts on water, food and energy systems, impacts on polar regions, energy strategies and solutions, policy and negotiations, and mitigation and adaptation strategies. CA 2.

### 2350E. Geography of Energy for Sustainability

Three credits.

Introduction to energy solutions for global sustainability. Topics may include the geographic context of global and local energy use, energy transition, renewable energy, solar, offshore wind, and energy justice. CA 2. CA 4-INT.

### 2400E. Introduction to Sustainable Cities

Three credits.

Pathways to make cities more sustainable from social, economic, and environmental perspectives. Topics include sustainable transportation, renewable energy, recycling of waste, and green infrastructure in contemporary metropolitan areas in developed and developing nations. CA 2. CA 4-INT.

### 2500. Introduction to Geographic Information Systems

(Also offered as CE 2500.) Four credits.

Fundamental principles of geographic information systems (GIS). Topics include history of the field, components of a GIS, the nature and characteristics of spatial data, methods of data capture and sources of data, database models, review of typical GIS operations and applications. Laboratory exercises provide experience with common computer-based systems.

**2505. Applications of Geographic Information Systems**

Three credits. Prerequisite: GEOG 2500.

Applications of geographic information systems. Particular attention to land use planning and resource management.

**2996. Research**

Variable (1-6) credits. Prerequisite: Instructor consent. May be repeated for a total of 6 credits.

Primary research under faculty supervision.

**3000. Race, Sex, Space, and Place**

Three credits.

Focuses on cities, sexualities, and race relations through a study of racial segregation in American cities; emergence of gay neighborhoods; globalization; migration; and human rights.

**3200. Urban Geography**

(Also offered as URBN 3200.) Three credits.

Analysis of the growth, distribution, and functional patterns within and among Western cities. Application of urban geographical concepts to city planning problems.

**3200W. Urban Geography**

(Also offered as URBN 3200W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Analysis of the growth, distribution, and functional patterns within and among Western cities. Application of urban geographical concepts to city planning problems.

**3240. Health Geography: Connecting People, Place, and Health**

Three credits.

An exploration and understanding of the connection and interplay of physical and social geographies of places and their impact on physical and mental health. What we eat, the air we breathe, where we live, where we work, people we interact with, and the health services we have access to all play a part in our health.

**3310. Fluvial Geomorphology**

Three credits. Prerequisite: GEOG 2300E or EARTH 1050 or both EARTH 1051 and 1052; open to juniors or higher.

Physical forms and processes associated with rivers. Factors controlling open-channel flow, sediment transport, channel morphology, adjustments of rivers to environmental change, and human impacts.

**3320W. Environmental Evaluation and Assessment**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher. Recommended preparation: GEOG 2300 or 3410.

Concepts and methods of environmental analysis in contemporary geography. Emphasis on the ecological impact of human activities and on the evaluation and assessment of existing and future environments.

**3340. Environmental Planning and Management**

Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: GEOG 3410.

The basic elements of the conflict between human environments and natural systems are considered, along with the methods of analysis and resolution of problems caused by that conflict.

Emphasis on public policy related to environmental issues.

**3350E. Global Change, Local Action: A Geography of Environmentalism**

Three credits.

How global-local linkages of geographic scope and scale impact human-environment interactions.

**3400. Climate and Weather**

Three credits. Recommended preparation: GEOG 1300 or 2300E.

Analysis of atmospheric processes giving rise to weather systems and climatic patterns. The dynamic integration of atmospheric systems is emphasized.

**3410E. Human Modifications of Natural Environments**

Three credits.

A geographical and historical interpretation of the changing relationships between culture and environment. Emphasis on the modifications of the natural environment by preagricultural, agricultural, and urban societies.

**3420. Field Methods in Geography**

Four credits. Recommended preparation: GEOG 2300 and 2500.

Overview of field methods for collecting data relevant to physical, human, and technical areas of Geography. Methods include identification of existing data to support field studies, assessment of field sources for commonly used datasets, surveys, geospatial technologies, and integration of these data for further analysis.

**3500Q. Geographic Data Analysis**

Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: 1000 level STAT course.

An introduction to the use of quantitative methods in conducting research, with particular emphasis on the processing and analysis of geographic data.

**3505. Remote Sensing of Marine Geography**

(Also offered as MARN 3505.) Three credits. Recommended preparation: GEOG 2300 or MARN 1002.

Introduction to remote sensing applications in oceans and seas. Applications include image analysis of sea surface temperature, winds, altimetry, sea ice, chlorophyll, primary productivity, and bathymetry.

**3510. Cartographic Techniques**

Three credits. Recommended Preparation: GEOG 2500 and 2505.

A laboratory-oriented introduction to computer-based map design and compilation. Concepts of scale, symbolization, map balance, and layout are emphasized for both general and thematic mapping.

**3512. Introduction to Spatial Data Science**

Three credits. Prerequisite: GEOG 2500 and GEOG 3500Q, or instructor consent.

An introduction to the fundamentals of spatial data science. Application of a high-level programming language (R) for spatial data analysis, visualization, and modeling.

**3530. Introduction to GeoComputing**

Three credits. Prerequisite: GEOG 2500. Recommended preparation: GEOG 2505.

Introduction to GIS programming and scripting to automate GIS and spatial analyses. Students will develop geospatial models using geoprocessing tools within ArcGIS, gain fundamental programming skills in the Python programming language, and employ Python scripting to solve geospatial problems.

**3600. Global Dynamics of the Shipping Industry**

(Also offered as MAST 3600.) Three credits.

Introduction to the global shipping industry and the essential role it plays in the conduct of world trade and the growth of the global economy.

**4000W. Capstone Seminar in Geography**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to junior or higher Geography or Geographic Information Science majors, others by instructor consent. Prerequisite or corequisite: One Geography course at the 3000 level or higher.

Techniques for, and practice in, research, writing, citation, and data presentation in geography.

**4001W. Writing in Geography**

One credit. Prerequisite: One Geography course at the 2000 level or higher; ENGL 1007 or 1010 or 1011 or 2011; open to junior or higher Geography and GIS majors. Corequisite: One Geography course at the 3000 level or higher.

Techniques for, and practice in, research, writing, citation, and data presentation in geography.

**4090. Internship in Geography: Field Study**

Variable (1-3) credits. Prerequisite: Instructor consent; open to sophomores or higher; must be taken with at least one credit of GEOG 4091 if more than one internship credit is requested in a semester. May be repeated for a total of 15 credits.

A fieldwork internship program under the direction and supervision of the geography staff. Students will be placed in agencies or industries where their academic training will be applied. One eight-hour work day per week (or its equivalent) for the host agency during the course of the semester will be necessary for three academic credits. Hours by arrangement with hosting agency, not to exceed 16 hours per week. Only six credits of internship (between GEOG 4090 and 4091) may count towards the GEOG or GIS major. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

**4091. Internship in Geography: Seminar**

Variable (1-3) credits. Prerequisite: Must be taken with GEOG 4090; open to juniors or higher.

Description, analysis, and evaluation of the fieldwork portion (GEOG 4090) of the internship. Written reports are required.

**4093. International Study**

Variable (1-6) credits. Prerequisite: Open to juniors or higher. May be repeated for a total of 6 credits.

Special topics are taken in an international study program. Consent of Department Head or advisor may be required prior to the student's departure.

**4095. Special Topics**

Variable (1-6) credits. Prerequisite: Open to juniors or higher. May be repeated for credit.

**4096. Senior Thesis**

Three credits. Prerequisite: One advanced seminar in geography and/or three units of independent study in geography. Open to juniors or higher.

**4096W. Senior Thesis**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; one 3000-level or above course in GEOG and/or 3 credits of independent study in geography; open to juniors or higher.

**4098. Variable Topics**

Three credits. Prerequisite: Open only to juniors or higher. Prerequisites and recommended preparation vary by section. May be repeated for credit.

**4099. Independent Study**

Variable (1-6) credits. Prerequisite: Open to juniors or higher. May be repeated for credit.

**4110W. Regional Development and Policy**

Three credits. Prerequisite: GEOG 2100 or instructor consent; ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

A study of theory and practice in regional development and planning. Emphasis on evaluation of regional problems and public policies designed to resolve them, with a primary focus on the United States.

**4130. Geographical Analysis of Transportation**

Three credits. Recommended preparation: GEOG 2100.

Investigation of the role of transportation in global trade, spatial organization, economic development, and the natural and built environment. Application of GIS to the study of transport systems and modeling.

**4150. Applied Data Analysis in Earth Science**

(Also offered as EARTH 4150.) Three credits. Recommended preparation: STAT 1000Q or 1100Q, GEOG 3500Q; open to juniors or higher.

Multivariate spatial analysis methods and statistical inference in earth science, emphasizing how to translate conceptual understanding into computer code. Formerly offered as GSCI 4150.

**4200W. Geographical Analysis of Urban Social Issues**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher. Recommended preparation: GEOG 3200.

Analysis of socioeconomic patterns and issues within urban areas, with emphasis on applied geographical research. Policy implications are stressed.

**4210. Urban and Regional Planning**

Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: GEOG 2100 or instructor consent.

Urban and regional planning, with emphasis on duties of local planners, especially land use planning, and the political context for planners' work. Legal and political issues in communities and organizations.

**4230. GIS and Remote Sensing for Geoscience Applications**

(Also offered as EARTH 4230.) Three credits. Prerequisite: GEOG 2300E; or EARTH 1050 or both EARTH 1052 and one of EARTH 1010 or 1051 or 1055 or 1070 or GEOG 1070.

Application of Geographic Information Systems, remote sensing, and image interpretation to problems in geoscience. Data acquisition, processing and analysis of Digital Elevation Models and satellite imagery. Geologic materials, processes, landforms and landscapes. Formerly offered as GSCI 4230.

**4240. Disaster Risk, Vulnerability, and Resilience**

Three credits. Recommended preparation: Introductory course on natural hazards and disasters.

Overview of geographical perspectives on disaster risk, vulnerability, and resilience using an integrated environmental, social, and infrastructural approach. The theory, methods, metrics, and tools necessary to measure and understand risk, vulnerability, and the resilience of societies worldwide.

**4300. Classic Papers in Climate Science**

Three credits. Prerequisite: GEOG 2300E or instructor consent; open to juniors or higher. May be repeated for a total of 6 credits.

An examination of the defining primary literature in the evolution of climate science to the present state of knowledge. Topics may include the Greenhouse Theory of Climate, El Niño, Climate Prediction, and regional processes of interest (e.g., monsoons, storm tracks, desert dynamics).

**4415. Web GIS**

Three credits. Prerequisite: GEOG 2500, 2505 and consent of instructor.

Introduction to Internet GIS. The basics of system architecture, geospatial web services, mashups, key elements of mobile GIS solutions, the functionality of geoportals and web technologies, web mapping interoperability using universal data standards such as OGC (Open Geospatial Consortium) web services, and the current state of e-business and e-government web mapping interests.

**4416. Fundamentals of Spatial Database Systems**

Three credits. Prerequisite: GEOG 2500, or instructor consent.

The theories and principles behind the Spatial Database Systems. Students will learn how to design and implement spatial databases.

**4418. Mobile GIS**

Three credits. Prerequisite: GEOG 2500 or instructor consent. Recommended preparation: GEOG 4515.

This course covers how to develop, test, and publish mobile GIS web and native apps across multiple mobile platforms (Android, iOS, etc.).

**4419. Spatial Big Data Analytics**

Three credits. Prerequisite: GEOG 2500 or instructor consent. Recommended Preparation: GEOG 4515.

Covers the collection, analysis, and visualization of spatial big data to support better decision-making in geographic contexts.

**4710. Geography of Latin America**

Three credits. Prerequisite: Open to juniors or higher.

An integrative study of the physical, historical, social, political and economic geography of Latin America. Particular emphasis on patterns,

processes and problems of spatial economic change in the region.

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**German (GERM)**


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**1001. Elementary German I**

Four credits. Prerequisite: May not be taken out of sequence after passing GERM 1002, 1003, or 1004; may not be taken for credit after passing any 2000-level or above course taught in German, or three or more years of high school German.

Using project-based learning and authentic materials, students will learn to communicate in the German language about familiar topics and gain intercultural competence.

**1002. Elementary German II**

Four credits. Prerequisite: GERM 1001; may not be taken out of sequence after passing GERM 1003 or 1004; may not be taken for credit after passing any 2000-level or above course taught in German, or three or more years of high school German.

Further development of interpersonal, interpretive and presentational communicative skills on a variety of topics. Applying linguistic skills as well as intercultural competence in projects.

**1003. Intermediate German I**

Four credits. Prerequisite: GERM 1002 or two years of high school German. May not be taken out of sequence after passing GERM 1004. May not be taken for credit after passing any 2000-level or above course taught in German.

Further development of communicative abilities and intercultural competence by investigating topics such as contemporary politics, the environment, history, film, music, fine arts, literature, and technology.

**1004. Intermediate German II**

Four credits. Prerequisite: GERM 1003. May not be taken out of sequence after passing any 2000-level or above course taught in German.

Solidifying communicative abilities and intercultural competence by investigating topics such as contemporary politics, the environment, history, film, music, fine art, literature, and technology.

**1140W. German Literature in English**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Representative works of German literature in English, especially from the 20th and the 21st centuries. Development of close reading and critical thinking skills, improvement of student composition, and the development of a conceptual framework for understanding another culture. CA 1.

**1169. Contemporary Germany in Europe**

Three credits.

Familiarizes students with contemporary German society and the cultural and historical aspects that shape everyday life in Germany in the 21st century. Students will explore a range of topics, including reunification, minorities, education and youth, the arts, and gender. Taught in English. CA 1. CA 4-INT.

**1171. The German Film**

Three credits.

Weekly showings of German films from the twenties to the present. Introduction to film history, analysis and interpretation of films, outside readings, term papers. Reading and lectures in English. May not be used to meet the undergraduate language requirement. CA 1. CA 4-INT.

### 1175. Human Rights and German Culture

Three credits.

Study of philosophical discourse on human rights from the Enlightenment to the present and analysis of related ethical problems in conjunction with an examination of relevant literary texts, film, and other art forms. Study of Germany's role in the development of international human rights instruments. CA 1. CA 4-INT.

### 1193. Foreign Study

Variable (1-6) credits. May be repeated for credit.

Special topics taken in a foreign study program. Consent of Department Head required, normally to be granted prior to the student's departure.

### 1295. Special Topics

Variable (1-6) credits. May be repeated for credit.

May be repeated for a maximum of 12 credits with a change in topic.

### 1920. Cyborgs, Robots, and Androids in the German Imaginary

Three credits.

An examination of the figure of the nonhuman-human and representations of artificial beings in the German imaginary with a focus on issues of technology, art, philosophy of subjectivity, and culture. Discussion of imaginary and real robots, cyborgs, homunculi, and automata as representations of humanity's understanding of futurity and innovation. Taught in English. CA 1. CA 4-INT.

### 2400E. The Environment in German Culture

Three credits. Prerequisite: Open to sophomores or higher.

Ecological thinking in German culture from the Greeks (Plato) to the Greens (Amery). The second half of the semester consists of student projects on current environmental policies in the European Union. CA 1.

### 3200. Intensive Language Practice

Three credits. Prerequisite: GERM 1003, which may be taken concurrently, or equivalent.

Two or three weeks of concentrated study in Europe. Exclusive use of the language, with three to four daily contact hours. Practice in all active and passive language skills, combined with periodic review sessions during the rest of the semester.

### 3220. German Recitation in Applied Mechanics

One credit. Prerequisite: GERM 1003, which may be taken concurrently, or equivalent.

Technical German in engineering through the basic concepts and problem solving techniques used in applied mechanics.

### 3221. Introduction to the Sciences in German

One credit. Prerequisite: GERM 1004; CHEM 1128Q; PHYS 1502Q or equivalent, all of which may be taken concurrently. May not be taken out of sequence after passing 3222.

A series of lectures and discussion periods about basic concepts in the physical sciences presented in German. Topics will be primarily from the various

engineering disciplines, chemistry, physics, and mathematics.

### 3222. Fields of Technology

One credit. Prerequisite: GERM 3220 and 3221.

A series of lectures and discussion periods on special topics in science and engineering.

### 3231. German for Professional Use I

Three credits. Prerequisite: GERM 1004 or equivalent. Recommended preparation: GERM 3233 - 3234.

Development of oral and written skills using a content-based methodology and drawing on authentic documents in a variety of formats that convey the language and culture of professional environments in the German-speaking countries. Preparation for the Goethe Institutes's test of German for Professional Purposes (Deutsch für den Beruf).

### 3232. German for Professional Use II

Three credits. Prerequisite: GERM 3231. Recommended Preparation: GERM 3234.

Development of oral and written skills using a content-based methodology and drawing on authentic documents in a variety of formats that convey the language and culture of professional environments in the German-speaking countries. Preparation for the Goethe Institutes's test of German for Professional Purposes (Deutsch für den Beruf).

### 3233. Building Language Skills Through Culture I

Three credits. Prerequisite: GERM 1004. Not open to students who have passed GERM 2201, 2202, 2204, or 2205. May not be taken out of sequence after passing GERM 3234.

Development of oral and written skills using a content-based methodology and drawing on texts that deal with issues in contemporary culture of German-speaking countries. Emphasis on acquisition of a sophisticated understanding of cultural differences while building vocabulary, improving accuracy, and increasing facility in self-expression and communication.

### 3234. Building Language Skills Through Culture II

Three credits. Prerequisite: GERM 3233. Not open for credit to students who have passed GERM 2202 or 2205.

Development of oral and written skills using a content-based methodology and drawing on texts that deal with issues in contemporary culture of German-speaking countries. Emphasis on acquisition of a sophisticated understanding of cultural differences while building vocabulary, improving accuracy, and increasing facility in self-expression and communication.

### 3245. German Grammar and Etymology

Three credits. Prerequisite: GERM 3233, which may be taken concurrently, or consent of instructor.

German grammar and etymology for advanced students. A conceptual foundation for communicative language skills and comparison with English.

### 3251. German Culture and Civilization

Three credits.

An interdisciplinary course on the German-speaking countries, analyzing cultural life and past and present development. Period or thematic

emphasis may vary. Discussion of selected non-fictional and fictional readings, films, slides and recordings. Taught in English. CA 1. CA 4-INT.

### 3252W. Studies in Early German Literature

Three credits. Prerequisite: GERM 3233, which may be taken concurrently; ENGL 1007 or 1010 or 1011 or 2011.

Study of a cohesive group of texts that mark the periods of the Middle Ages, Humanism, Reformation, and Baroque. Emphasis may vary. Attention will be given to the relevant socio-historical context and, when possible, to the visual and performing arts. Taught in German. CA 1.

### 3254W. Studies in 19th Century German Literature

Three credits. Prerequisite: GERM 3233, which may be taken concurrently; ENGL 1007 or 1010 or 1011 or 2011.

Study of a cohesive group of texts that mark the periods of Late Romanticism, Vormärz, Realism and Naturalism. Emphasis may vary. Attention will be given to the relevant socio-historical context and to the visual and performing arts. Taught in German. CA 1.

### 3255. Studies in 20th Century German Literature

Three credits. Prerequisite: GERM 3233, which may be taken concurrently, or consent of instructor.

Study of a cohesive group of texts that mark the period. Attention will be given to the relevant socio-historical context and to the visual and performing arts. Taught in German. CA 1.

### 3255W. Studies in 20th Century German Literature

Three credits. Prerequisite: GERM 3233, which may be taken concurrently; ENGL 1007 or 1010 or 1011 or 2011.

Study of a cohesive group of texts that mark the period. Attention will be given to the relevant socio-historical context and to the visual and performing arts. Taught in German. CA 1.

### 3258. Germans in Africa, Blacks in German-Speaking Countries, Colonial and Post-Colonial Perspectives

Three credits.

Interdisciplinary study of former German colonialism in Africa and Blacks in German-speaking societies, past and present. Construction of intercultural and interracial power and dialog in historical perspective. Diversity of black and white experiences and perspectives across class, racial-ethnic groups, gender, cultures, religions, and national borders. Discussion of selected literary and non-fictional readings, films, other visual images, and recordings. Taught in English. CA 1. CA 4-INT.

### 3261W. German Film and Culture

Three credits. Prerequisite: GERM 3233, which may be taken concurrently; ENGL 1007 or 1010 or 1011 or 2011.

Critical analysis of artistic issues in writing screenplays and making movies. Dynamic interplay between German film, the other arts, their socioeconomic context and the cinematic traditions of other cultures. Taught in German. CA 1. CA 4-INT.

**3264W. German Cinema in Cross-Cultural Perspective**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Cross-cultural comparison of film genres using examples from German film history and other cinematic traditions. Taught in English. CA 1.

**3265. Topics in German Culture**

Three credits. Prerequisite: GERM 3233, which may be taken concurrently, or consent of instructor. May be repeated for credit.

An analysis of the cultural trends of a selected period or theme in a German-speaking country, taking into account the historical, political, and socioeconomic background, aspects of daily life, philosophical trends, major literary works and other artistic achievements in art, music, and architecture. Specialists from other departments will be invited as guest lecturers.

**3292. German Language Practicum**

Variable (1-6) credits. Prerequisite: Three years of college-level German or the equivalent. Open only to juniors and seniors.

Placement of students as trainees in business, industry and social or government agencies where foreign language skills can be put to use.

**3293. Foreign Study**

Variable (1-7) credits. May be repeated for credit.

Special topics taken in a foreign study program. May be repeated for credit. Consent of Department Head required, normally to be granted prior to the student's departure. May count toward the major with consent of advisor.

**3294. German Seminar**

Variable (1-6) credits. Prerequisite: Open to juniors or higher. May be repeated for credit.

Intensive investigation of selected problems in German literature and/or German studies.

**3295. Special Topics**

Variable (1-6) credits. Prerequisite: Prerequisites and recommended preparation vary. May be repeated for credit.

**3298. Variable Topics**

Three credits. Prerequisite: Prerequisites and recommended preparation vary. May be repeated for credit.

**3299. Independent Study**

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

**4246. The Finishing Touch: A Capstone in German Studies**

Three credits. Prerequisite: GERM 3234; Six additional 2000 level or above credits in GERM.

Advanced students assess and polish their German language skills, consolidate their learning in German Studies, and demonstrate that learning in a final project.

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## Healthcare Management and Insurance Studies (HCMI)

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**3221. Risk Management and Insurance**

Three credits. Prerequisite: Open only to Business and Mathematics-Actuarial Science-Finance majors of junior or higher status. Not open to students who have passed FNCE 3221.

A study of the concept of risk and its treatment by insurance. It covers why the individual or corporation purchases insurance, what constitutes an intelligent insurance plan and what products are available in the insurance marketplace.

**3240. Introduction to Health Care Management**

Three credits. Prerequisite: Open to Business students and Allied Health students in the Healthcare Administration concentration of sophomore or higher status. May not be taken out of sequence after passing HCMI 4225, 4243, or 4250.

Presents and examines various aspects of the U.S. health care delivery system as well as introduces and compares the health care systems in different countries. Attention is paid to the financing, reimbursement, and delivery of medical care, the adoption of new medical technologies, and the role of the market and government. The effect of health care system design on cost, quality, efficiency, and equity is studied.

**3243. Health Care Economics**

Three credits. Prerequisite: HCMI 3240 or ECON 1201; open only to Business majors and Allied Health majors in the Healthcare Administration concentration of junior or higher status.

This course demonstrates how basic economic concepts, principles, and theories can be used to think about and illuminate various health care issues. Rather than focus on a few current health care problems, attention is directed toward an array of health-related topics. Students are provided with a set of economic tools to evaluate a theoretical or empirical argument relating to health or medical care. The course culminates with an in-depth analysis of the structure, conduct, and performance of the markets for physician services, hospital services, pharmaceutical products, and long-term care.

**4225. Health and Social Insurance**

Three credits. Prerequisite: HCMI 3240; open only to business majors of junior or higher status.

Addresses various business practices associated with providing private health insurance such as underwriting, medical claims cost control, pricing, and marketing. In that context, managed care techniques and benefit package designs including consumer directed health plans, and value-based insurance design, are discussed. Attention is also paid to design and functioning of various social insurance programs such as Medicare, Medicaid, unemployment compensation, disability insurance, workers compensation, and social security.

**4243. Health Law and Policy**

Three credits. Prerequisite: HCMI 3240; open only to business majors of junior or higher status.

Introduction to the United States legal system as it relates to health care, public health and ethics. Sessions represent important applications of law to health including the powers of the state governments; privacy and confidentiality in health care; the right to privacy; the right to refuse treatment and end of life issues; hospital, physician and managed care liability; the Americans with Disabilities Act; and public health policy and advocacy. Structured to encourage lively and interesting in-class discussions of legal and ethical principles as they relate to the health care system.

**4250. Cost-Benefit Analysis for Healthcare Business and Policy**

Three credits. Prerequisite: HCMI 3240; open only to business majors of junior or higher status.

This course provides students with cost-benefit analysis tools to enhance healthcare business and policy decision making. The following topics will be covered: methods to estimate the monetary equivalence of costs and benefits; interpretation of research findings; simulation methods to derive the aggregate effects of firm and policy interventions; time value of money and discounting; hypothesis testing; cost-effectiveness analysis; causal inference concepts to differentiate descriptive associations from cause-and-effect studies. In addition to course lectures, the instructor will present research articles providing credible input for business- and policy-level cost-benefit analysis.

**4325. Life Insurance and Retirement Security**

Three credits. Prerequisite: HCMI 3221; open only to Business and Mathematics-Actuarial Science-Finance majors of sophomore or higher status.

Focuses on the basic principles underlying life insurance, pensions, and other methods of insuring for financial security. Emphasis is given to the following general topics - the need for life insurance and annuities, individual retirement planning, employer provided group insurance and pensions, types of life insurance and annuity contracts, deferred compensation plans, the mathematics of life insurance, company operations, regulation, settlement options and life insurance programming.

**4326. Risk Management: Property and Liability Exposures**

Three credits. Prerequisite: HCMI 3221; open to juniors or higher. Not open to students who have passed FNCE 4326.

Critically examines the risk management process introduced in HCMI 3221. Emphasis is on identification and treatment of pure loss exposures faced by commercial and institutional entities. Available risk management treatment techniques are identified and discussed. Analysis of applicable commercial property and liability insurance coverages is stressed.

**4448. Clinical and Social Issues in Health Care**

Three credits. Prerequisite: Open only to business majors of junior or higher status.

Covers clinical and social issues affecting health care provider organizations, such as the health needs of special population groups, public health concerns, epidemiological issues, and health care quality. Discussion will include how health care organizations address such issues through methods including clinical studies, disease management, partnership between private and public sectors, and legislative initiatives.

**4881. Internship in Health Care Management**

Variable (1-3) credits. Prerequisite: Open only to Business majors of junior or higher status; consent of instructor and Program Director required prior to beginning the internship. May be repeated for credit.

Supervised internship in a health care organization where students work with health care professionals to expand their expertise in solving health systems problems and increase their awareness of the issues involved in the day to day operations of a health care institution. Student

performance will be evaluated on the basis of an appraisal by the field supervisor and a detailed written report submitted by the student. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

#### 4895. Special Topics

Variable (1-6) credits. Prerequisite: Prerequisites and recommended preparation vary by section; open only to business majors of junior or higher status. May be repeated for credit.

Classroom course in special topics in health systems management as announced in advance for semester.

#### 4899. Independent Study for Undergraduates

Variable (1-6) credits. Prerequisite: Open only to business majors of junior or higher status. May be repeated for a total of 6 credits.

Individual study of special topics in health systems management as mutually arranged between a student and an instructor.

#### 4997W. Senior Thesis in Health Care Management and Insurance Studies

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open only to Health Care Management and Insurance Studies majors enrolled in the honors program; instructor consent required.

Individual study of special topics on health care management and insurance.

### Hebrew and Judaic Studies (HEJS)

#### 1001. Elementary Modern Hebrew I

Four credits. Prerequisite: Not open for credit to students who have had three or more years of Hebrew in high school. May not be taken out of sequence after passing HEJS 1002, 1003, or 1004.

Phonetic reading, cursive script, basic conjugations, simple syntax, and vocabulary. Oral and written expression through videos, songs, and exposure to Israeli culture.

#### 1002. Elementary Modern Hebrew II

Four credits. Prerequisite: HEJS 1001 or equivalent. Not open to students who have had three or more years of Hebrew in high school. May not be taken out of sequence after passing HEJS 1003 or 1004.

More complex grammatical structures including the construct state, verb patterns, and more advanced vocabulary. Oral and written expression through study of videos and popular culture.

#### 1003. Intermediate Modern Hebrew I

Four credits. Prerequisite: HEJS 1002 or the equivalent. May not be taken out of sequence after passing HEJS 1004. May not be taken for credit after passing HEJS 3251.

Building on first-year skills, more advanced grammar, vocabulary, and conversation. Examples from popular media and culture along with short readings continue to enhance students' language acquisition. Formerly offered as HEJS 1153.

#### 1004. Intermediate Modern Hebrew II

Four credits. Prerequisite: HEJS 1003. Not open for credit to students who have passed HEJS 3251.

More advanced communicative proficiency using readings and examples from media and popular culture. Focus on grammar, vocabulary, and conversation with more context from the

history, culture, and religious traditions of the Jewish people.

#### 1103. Who Are the Jews? Jewish Identity through the Ages

Three credits.

The major concepts, personalities and literary works that inform Jewish identity from the Biblical and Talmudic periods to the present. Taught in English. CA 1. CA 4.

#### 1149. Elementary Biblical Hebrew I

Four credits. Prerequisite: Not open for credit to students who have had three or more years of Hebrew in high school.

An introduction to the biblical language for the student with no previous background. Grammar and drills, using simple texts, prepare the student for independent reading of Hebrew Scripture in the original.

#### 1150. Elementary Biblical Hebrew II

Four credits. Prerequisite: HEJS 1149. Not open for credit to students who have had three or more years of Hebrew in high school.

An introduction to the biblical language for the student with no previous background. Grammar and drills, using simple texts, prepare the student for independent reading of Hebrew Scripture in the original.

#### 1193. Foreign Study

Variable (1-6) credits. May be repeated for credit.

Special topics taken in a foreign study program. Consent of Department Head required, normally before the student's departure.

#### 2104. Modern Jewish Thought

Three credits. Recommended preparation: HEJS 1103. Not open for credit for students who have passed HEJS 1104.

Nationalism, culture, ethics and philosophy in the writings of the major Jewish thinkers from Spinoza to the present. Emphasis will be placed on the work of Moses Mendelssohn, Hermann Cohen, Franz Rosenzweig, Martin Buber, Mordecai Kaplan, Judith Plaskow, and others. CA 1. CA 4-INT.

#### 2200. Israel: History and Society

Three credits.

Major themes in Zionist and Israeli history and the development of Israeli art, literature, film, popular music, dance, theater, and popular culture, with a focus on the central questions that have both unified and divided Israeli society and politics. CA 1. CA 4-INT.

#### 2203. The Holocaust in Print, Theater, and Film

(Also offered as HRTS 2203 and DRAM 2203.) Three credits.

Representations of the Holocaust, including first-hand accounts and documentaries; artistic choices in genre, structure, imagery, point of view, and the limits of representation. CA 1. CA 4-INT.

#### 2204. Jewish Culture in American Film

(Also offered as AMST 2204 and CLCS 2204.) Three credits.

Representations of the diversity of Jewish culture (historical, religious, secular) in American film. Introduction to film analysis and interpretation. CA 1. CA 4.

#### 2301. Jewish Humor

(Also offered as CLCS 2301.) Three credits. Prerequisite: Not open to students who have passed HEJS 3295 when taught as this topic.

The history of Jewish humor in modern times with attention given to its various forms, including oral traditions, fiction and humor writing, stand-up comedy, live performance, television, film, and music. CA 1. CA 4.

#### 3050. Anthropology of Jews and Jewishness

(Also offered as ANTH 3050.) Three credits. Recommended preparation: ANTH 1000 or 1006; ENGL 1007 or 1010 or 1011 or 2011.

Survey of the rich and growing ethnographic literature on Jews and Jewishness around the globe. Course materials include ethnographic texts, music, and videos/films.

#### 3201. Selected Books of the Hebrew Bible

Three credits. Prerequisite: INTD 3260 or HIST 3301 or HEJS 1103, which may be taken concurrently, or instructor consent. May be repeated for credit.

Literary structure and content of biblical book(s) using modern approaches as well as midrashic and medieval exegesis. Historical and archaeological material. With a change in content, may be repeated for credit and consent of instructor. A knowledge of Hebrew is not required. Taught in English. May not be used to meet the foreign language requirement. CA 1.

#### 3202. Sects and Movements in Judaism

Three credits.

Varieties of Jewish expression and belief from Biblical times to the present. Topics include: the Dead Sea Sect, Pharisees, Sadducees, Karaites, Marranos, Hasidism and the Reform, Conservative, Orthodox and Reconstructionist movements of the modern era. Taught in English. May not be used to meet the foreign language requirement.

#### 3203. The Holocaust

(Also offered as HIST 3418.) Three credits.

Origins, development, and legacy of the Holocaust. Topics include the history of modern European anti-Semitism, the creation of the Nazi state, the catalytic role of the Second World War, the actions and attitudes of the perpetrators, victims, and bystanders, and the diverse ways in which scholars and societies have dealt with the legacy of the Holocaust. Taught in English. May not be used to meet the foreign language requirement.

#### 3241. Jewish Magic: from Late Antiquity through the Early Modern Period

Three credits.

Jewish magical beliefs and practices from the rabbinic period through the early modern period. Texts include spells, kabbalistic lore, magical books, incantations, legends, prayers, medical texts, exempla.

#### 3251. Advanced Hebrew

Three credits. Prerequisite: HEJS 1004 or instructor consent. May be repeated for credit.

Further grammar study. Practice in composition involving the use of everyday vocabulary and idiomatic expressions. Readings and films relevant to Israeli culture and history.

**3252. Advanced Hebrew**

Three credits. Prerequisite: HEJS 3251. May be repeated for credit.

Further grammar study. Practice in composition involving the use of everyday vocabulary and idiomatic expressions. Readings and films relevant to Israeli culture and history.

**3279. Modern Israeli Literature in Translation**

Three credits.

Major themes and literary achievements of modern Israeli writing in translation. Authors range from the pre-Statehood period to the present.

**3293. Foreign Study**

Variable (1-6) credits. May be repeated for credit.

Special topics taken in a foreign study program. Consent of Department Head required, normally granted prior to the student's departure. May count toward the major with consent of the advisor.

**3295. Special Topics**

Variable (1-6) credits. Prerequisite: Prerequisites and recommended preparation vary. May be repeated for credit.

**3298. Variable Topics**

Three credits. Prerequisite: Prerequisites and recommended preparation vary. May be repeated for credit.

**3299. Independent Study**

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

**3301. The Jewish Middle Ages**

Three credits.

Survey of sacred and secular literature in a wide variety of genres produced by Jews in the medieval period from major centers of European settlement. CA 1. CA 4.

**3330. Palestine Under the Greeks and Romans**

(Also offered as HIST 3330 and CAMS 3330.) Three credits.

The political, historical and religious currents in Greco-Roman Palestine. Includes the Jewish Revolts, sectarian developments, the rise of Christianity and the Talmudic academies. May not be used to meet the foreign language requirement. Taught in English. Formerly offered as HEJS 3218.

**3330W. Palestine Under the Greeks and Romans**

(Also offered as CAMS 3330W and HIST 3330W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

The political, historical and religious currents in Greco-Roman Palestine. Includes the Jewish Revolts, sectarian developments, the rise of Christianity and the Talmudic academies. May not be used to meet the foreign language requirement. Taught in English. May not be used to meet the foreign language requirement. Formerly offered as HEJS 3218W/CAMS 3256W.

**3362. The Black Death: Medieval and Modern Responses to Catastrophe**

(Also offered as HIST 3362.) Three credits. Prerequisite: Not open to students who have passed HEJS 3295 when offered as The Black Death: Medieval Responses.

The Black Death (1346-50) from its origins in China through Europe. Institutional, medical, religious, literary, and social responses to the

plague; how modern scholars reconstruct medieval experience; and new findings by historians and scientists that shed light on the challenges of past, present and future pandemics. CA 1. CA 4-INT.

**3401. Jewish American Literature and Culture**

(Also offered as ENGL 3220.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Interdisciplinary study of literary and artistic productions by and about Jews in the United States. CA 1. CA 4.

**3401W. Jewish American Literature and Culture**

(Also offered as ENGL 3220W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Interdisciplinary study of literary and artistic productions by and about Jews in the United States. CA 1. CA 4.

**3419. Jewish Responses to the Holocaust**

(Also offered as HIST 3419.) Three credits.

Interdisciplinary exploration of Jewish responses to the Holocaust. Examines social, religious, theological, political, cultural, psychological, and literary responses both during and after the Second World War. CA 1. CA 4-INT.

**3629. Holocaust Memoir**

(Also offered as ENGL 3629.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to sophomores or higher. Not open to students who have passed ENGL 3623 or 3619 taught as Holocaust literature.

Literature of the Holocaust focusing on memoir in various genres and forms. CA 1. CA 4-INT.

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## Hindi (HIND)

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**1101. Elementary Hindi I**

Four credits. Prerequisite: May not be taken out of sequence after passing HIND 1102, 1103, or 1104.

Development of ability to communicate in Hindi, orally and in writing, to satisfy basic communicative needs within a cultural setting.

**1102. Elementary Hindi II**

Four credits. Prerequisite: HIND 1101 or equivalent. May not be taken out of sequence after passing HIND 1103 or 1104.

Development of ability to communicate in Hindi, orally and in writing, to satisfy basic survival needs within a cultural setting.

**1103. Intermediate Hindi I**

Four credits. Prerequisite: HIND 1102 or equivalent. May not be taken out of sequence after passing HIND 1104.

Further development of understanding, speaking, reading, and writing skills in Hindi within a cultural setting. Readings to enhance cultural awareness of the Hindi-speaking world.

**1104. Intermediate Hindi II**

Four credits. Prerequisite: HIND 1103 or equivalent.

Further development of understanding, speaking, reading, and writing skills in Hindi within a cultural setting. Readings to enhance cultural awareness of the Hindi-speaking world.

**1193. Foreign Study**

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

**3293. Foreign Study**

Variable (1-6) credits. Prerequisite: Department consent required. May be repeated for credit.

**3295. Special Topics**

Variable (1-6) credits. Prerequisite: Open to juniors or higher. May be repeated for credit.

**3298. Variable Topics**

Three credits. May be repeated for credit.

**3299. Independent Study**

Variable (1-6) credits. Prerequisite: Open to juniors or higher. May be repeated for credit.

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## History (HIST)

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**1100. The Historian as Detective**

Three credits.

Uses historical documents focusing on a single incident in the past to reconstruct what happened and why. Emphasizes development of historical research skills such as evaluating evidence, explaining cause and effect, and understanding events in their larger social, political, cultural, and economic contexts. CA 1.

**1100W. The Historian as Detective**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Uses historical documents focusing on a single incident in the past to reconstruct what happened and why. Emphasizes development of historical research skills such as evaluating evidence, explaining cause and effect, and understanding events in their larger social, political, cultural, and economic contexts. CA 1.

**1200. World History, 1200-1800**

Three credits.

A global approach to human history, 1200CE to 1800CE, emphasizing political, intellectual, economic, and social interactions among peoples with diverse cultures, ideas, and values. CA 1. CA 4-INT.

**1201. Modern World History**

Three credits.

A survey of the historical experiences of the world's major civilizations during recent centuries with particular attention to the modernization of the traditional cultures of Asia, Latin America, and Africa. CA 1.

**1203. Women in History**

(Also offered as WGSS 1121.) Three credits.

The historical roots of challenges faced by contemporary women as revealed in the Western and/or non-Western experience: the political, economic, legal, religious, intellectual and family life of women. CA 1. CA 4.

**1206. Living Through War in World History Since 1500**

Three credits.

Experiences and perceptions of both military and civilian participants in different kinds of wars around the world over the past 500 years. CA 1. CA 4-INT.

**1250. Sports in History**

Three credits.

The sports peoples around the globe have played and watched from ancient Greece to the present



and the meanings of athletic performance and spectacle. CA 1.

### 1300. Western Traditions Before 1500

Three credits.

An analysis of the traditions and changes which have shaped Western political institutions, economic systems, social structures and culture in ancient and medieval times. CA 1.

### 1400. Modern Western Traditions

Three credits.

History of political institutions, economic systems, social structures, and cultures in the modern Western world. CA 1.

### 1450. Global History of the Second World War

Three credits.

A study of the origins, development, and legacy of World War II from a global perspective. CA 1. CA 4-INT.

### 1501. United States History to 1877

Three credits.

Surveys political, economic, social, and cultural developments in American history through the Civil War and Reconstruction. CA 1.

### 1501W. United States History to 1877

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Surveys political, economic, social, and cultural developments in American history through the Civil War and Reconstruction. CA 1.

### 1502. U.S. History Since 1877

Three credits.

Surveys political, economic, social, and cultural developments in American history from 1877 to the present. CA 1.

### 1502W. U.S. History Since 1877

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Surveys political, economic, social, and cultural developments in American history from 1877 to the present. CA 1.

### 1503. Introduction to American Studies

(Also offered as ENGL 1201 and AMST 1201.) Three credits.

What is an American? A multi-disciplinary inquiry into the diversity of American societies and cultures. CA 4.

### 1570. Migrant Workers in Connecticut

(Also offered as LLAS 1570.) Four credits. Prerequisite: Instructor consent required.

Interdisciplinary honors course on the life and work experiences of contemporary Latin American and Caribbean migrant workers with focus on Connecticut. Integrated service learning component. Field trips required. CA 1. CA 4.

### 1600. Introduction to Latin America and the Caribbean

(Also offered as LLAS 1190.) Three credits.

Multidisciplinary exploration of the historical development of such aspects of Latin America and the Caribbean as colonization and nation formation; geography and the environment; immigration and migration; race, ethnicity, and gender in society, politics, economy, and culture. CA 1. CA 4-INT.

### 1600W. Introduction to Latin America and the Caribbean

(Also offered as LLAS 1190W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Multidisciplinary exploration of the historical development of such aspects of Latin America and the Caribbean as colonization and nation formation; geography and the environment; immigration and migration; race, ethnicity, and gender in society, politics, economy, and culture. CA 1. CA 4-INT.

### 1800. The Roots of Traditional Asia

Three credits.

A survey of the early development and staying power of the traditional cultures from which the major societies of modern Asia have evolved. CA 1. CA 4-INT.

### 1801. History of Asia in the World to 1500

Three credits.

Development and spread of the Indic and Sinitic civilizations to 1500, with attention to cross-cultural contacts and sources of historical knowledge. CA 1. CA 4-INT.

### 1805. Key Words in East Asian History and Culture

Three credits.

East Asian history taught through analysis of select "hanzi" (Chinese ideographic symbols), focusing on their changing meanings and institutional manifestations in different regions over time. CA 1. CA 4-INT.

### 1993. Foreign Study

Variable (1-6) credits. May be repeated for credit.

Credits and hours by arrangement. Open only with consent of department head, Normally granted before the student's departure.

### 1995. Special Topics Lecture

Three credits. May be repeated for credit.

Credits, prerequisites and hours as determined by the Senate Curricula and Course Committee.

### 1998. Varieties of History

Three credits. May be repeated for credit.

A major topic in history through contemporary sources and historical interpretations.

### 2020. Pyramids, Pirates, and the Polis: The Ancient Mediterranean

(Also offered as CAMS 2020.) Three credits.

Political and intellectual history of the civilizations that emerged around the ancient Mediterranean, including the Near East, Egypt, Greece, and Rome, with emphasis on their interactions and influences. CA 1. CA 4-INT.

### 2100. The Historian's Craft

Three credits. Prerequisite: Open only to history majors. Cannot be taken for credit after passing HIST 4997.

Learning critical reading, thinking and writing skills by interpreting a variety of primary sources.

### 2101. The Pacific in World History

(Also offered as AAAS 2101.) Three credits. Recommended preparation: HIST 1201 and 2100. Not open for credit to students who have passed AAAS 3998 or HIST 3098 when offered as The Pacific in World History.

The Pacific Ocean as a lens for thinking about modern history. Topics include the flow of people, ideas, goods, elements of nature (such as whales

and bird guano), and technology among the nations and peoples of the Pacific World; and the impact of colonialism, war, decolonization, and the Cold War on the history of the region and the fortunes of indigenous peoples. Sources include scholarly works, government documents, diaries, and literature. CA 1. CA 4-INT.

### 2102. Introduction to Digital Humanities

(Also offered as DMD 2610 and ENGL 2610.) Three credits.

The application of digital technology and media to such subjects as art history, classics, cultural and area studies, history, languages, literature, music, and philosophy. This course will provide a broad survey of the landscape of international and interdisciplinary digital humanities through the lens of ongoing work of faculty and staff researchers at the University of Connecticut.

### 2205. Personality and Power in History

Three credits.

Analysis of the links between personality and power in various countries and across different eras. CA 1.

### 2205W. Personality and Power in History

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Analysis of the links between personality and power in various countries and across different eras. CA 1.

### 2206. History of Science

(Also offered as SCI 2206.) Three credits.

Development of modern science and technology in relation to culture, politics, and social issues. CA 1.

### 2207. Empire and U.S. Culture

(Also offered as AMST 2207 and ENGL 2207.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

How the frontier and overseas ambitions have shaped U.S. institutions and culture. The impact of U.S. expansion on people outside its borders. These topics are explored through literary narratives and historical documents. CA 1. CA 4.

### 2210E. History of the Ocean

(Also offered as MAST 2210E.) Three credits.

Cultural, environmental, and geopolitical history of the ocean from prehistory to the present. Examines the impact of migration, industrialization, modernization, and globalization on the relationships between people and oceans. CA 1.

### 2222E. Global Environmental History

Three credits.

Transformations of the global environment since 1450: the effects of human practices and ideas, especially on energy, landscapes, and commodities. CA 1. CA 4-INT.

### 2240. History of War in the Modern World

Three credits. Recommended preparation: HIST 1400.

Selected topics analyzing the interactions of warfare, military theories and practice with social, economic and technological developments since 1815.

### 2350. Byzantium

Three credits.

A survey of the major developments from the fourth through the fifteenth centuries: religious controversies, the theme system, the Crusades, Byzantine civilization, its law, art, literature, and its impact upon European and Russian civilization. Previously offered as HIST 3350.

#### **2401. Europe in the Nineteenth Century**

Three credits. Recommended preparation: HIST 1400.

Examines the Restoration, the mid-century revolutions, and the forces of nationalism, liberalism and imperialism. New social and economic movements and currents of thought are described and explored. CA 1.

#### **2401W. Europe in the Nineteenth Century**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011. Recommended preparation: HIST 1400.

Examines the Restoration, the mid-century revolutions, and the forces of nationalism, liberalism and imperialism. New social and economic movements and currents of thought are described and explored. CA 1.

#### **2402. Europe in the Twentieth Century**

Three credits. Recommended preparation: HIST 1400.

Twentieth Century Europe and its world relationships in the era of two world wars, the great depression, and the cold war. CA 1.

#### **2402W. Europe in the Twentieth Century**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011. Recommended preparation: HIST 1400.

Twentieth Century Europe and its world relationships in the era of two world wars, the great depression, and the cold war. CA 1.

#### **2412. From Revolution to Nihilism: Ideas and Ideologies in Nineteenth-Century Europe**

Three credits.

An examination of nineteenth-century European thinkers and their ideas in their social contexts. CA 1.

#### **2412W. From Revolution to Nihilism: Ideas and Ideologies in Nineteenth-Century Europe**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

An examination of nineteenth-century European thinkers and their ideas in their social contexts. CA 1.

#### **2413W. From Nietzsche to Neo-liberalism: Ideas and Ideologies in Twentieth-Century Europe**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

An examination of twentieth-century European thinkers and their ideas in their social contexts. CA 1.

#### **2421. History of Modern England**

Three credits.

Cultural, political, economic, and intellectual development of modern Britain, with special emphasis on changing ideas of national identity.

#### **2451. Germany Since 1815**

Three credits.

German political, social, and intellectual history since the Napoleonic Wars. European and world

problems as reflected in the emergence of Germany as a pivotal force in international affairs.

#### **2456. Power and Resistance: History of Eastern Europe**

Three credits.

Political, social, and intellectual history of Eastern Europe. Main themes include imperial legacies, national identity and state-building, minority identities and politics, democracy, nationalism, fascism, communism, genocide, and war. Special attention to the politics of diversity versus nationalism, political ideologies, dissent and resistance, and contributions to the understanding of rights. CA 4-INT.

#### **2470. Medieval and Imperial Russia to 1855**

Three credits.

The development of Russia from the emergence of the Slavs to the reign of Alexander II. Russian political institutions, orthodoxy and cultural traditions, nobility, peasantry, and townsmen.

#### **2471. History of Russia Since 1855**

Three credits. Recommended preparation: HIST 3470.

Continuation of History 3470. Late imperial Russia, the former Soviet Union, and contemporary Russia.

#### **2507. New England and the Caribbean Plantation Complex, 1650-1900**

(Also offered as LLAS 2507 and MAST 2507.) Three credits.

New England's role in the creation and expansion of the Caribbean plantation complex. CA 1. CA 4.

#### **2530. Asian American Experience Since 1850**

(Also offered as AAAS 2530.) Three credits.

Survey of Asian American experiences in the United States since 1850. Responses by Asian Americans to both opportunities and discrimination.

#### **2541. The History of Urban America**

(Also offered as URBN 2541.) Three credits.

The development of Urban America with emphasis on social, political, physical, and environmental change in the industrial city. Formerly offered as URBN 3541 and HIST 3541.

#### **2541W. The History of Urban America**

(Also offered as URBN 2541W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

The development of Urban America with emphasis on social, political, physical, and environmental change in the industrial city. Formerly offered as URBN 3541W and HIST 3541W.

#### **2570. American Indian History**

Three credits.

Surveys American Indian History in what is now the United States from precolumbian times up to the present. Cultural diversity among Indian peoples the effects of European contact, tribal sovereignty, and other current issues. CA 4.

#### **2621. Cuba in Local and Global Perspective**

(Also offered as AFRA 2621 and LLAS 2621.) Three credits.

Major themes in Cuban politics and culture. Local and global perspective. Key topics include race, gender, class, cultural movements

and practices, slavery, political economy and movements, nationalism. CA 1. CA 4-INT.

#### **2622. History of Gender and Sexuality in Latin America and the Caribbean**

(Also offered as LLAS 2622, WGSS 2622, and AFRA 2622.) Three credits.

Topics may include: empire and colonialism/anti-colonialism; slavery, science, and the state; cultural practices and institutions; feminisms and masculinities; law and public policies; immigration; forms of labor and political mobilization; sex and reproduction; and human rights from historical perspective. Formerly offered as AFRA/HIST/LLAS/WGSS 3622.

#### **2650. History of Urban Latin America**

(Also offered as URBN 2650.) Three credits. Prerequisite: Not open to students who have passed HIST 3095 when taught as Latin American Urban History.

The development of Latin American cities with emphasis on social, political, physical and environmental change, from Spanish conquest to present. Formerly offered as HIST/URBN 3650. CA 1.

#### **2688. Foreign Relations of China Since 1949**

(Also offered as AAAS 2688.) Three credits.

A survey of China's foreign policy from the Cold War to the present, including its domestic politics, Communist ideology, economic reforms, and changing role in global affairs. CA 1.

#### **2688W. Foreign Relations of China Since 1949**

(Also offered as AAAS 2688W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

A survey of China's foreign policy from the Cold War to the present, including its domestic politics, Communist ideology, economic reforms, and changing role in global affairs. CA 1.

#### **2752. Africa in Global History**

(Also offered as AFRA 2752.) Three credits.

Broad historical survey of civilizations in Africa, including origins of human life in Africa, economic livelihoods, socio-economic and political structures, state formation, trade, commerce, urbanization, and indigenous systems of belief and world religions. Formerly offered as AFRA/HIST 3752. CA 1. CA 4-INT.

#### **2810. Crime, Policing, and Punishment in the United States**

(Also offered as AMST 2810.) Three credits.

A survey of political, legal, and cultural development of the American criminal justice system and its social impact from the early republic to the present. CA 1.

#### **2832. Modern Japan**

Three credits.

Examines the dawn of the modern era to the present day in a place we call Japan. In each of our readings, we will seek to understand what constitutes, as one scholar put it, "history versus the radiant myth of belonging."

#### **2841. Empire and Nation in Southeast Asia**

(Also offered as AAAS 2841.) Three credits.

Major themes in modern Southeast Asian history from the 17th century to the present: growth of global commerce; western imperialism; nationalism; emergence of independent nation-

states; challenges of the post-independence period. Emphasis on the region's largest countries: Burma, Cambodia, Indonesia, Malaysia, the Philippines, Thailand, and Vietnam.

#### **2842. History of Vietnam**

(Also offered as AAAS 2842.) Three credits.

Introduction to the history of the Vietnamese from the late Bronze Age to the present: the ancient culture of the Red River delta, the millennium of Chinese rule, the independent kingdom of Dai Viet and its successors, French colonialism, the Vietnam War, and postwar Vietnam. Formerly offered as AAAS/HIST 3842.

#### **2845. Global History of Capitalism**

Three credits.

Exploration of definitions of capitalism in existing literature, its place(s) of origin, and the initial period of the genesis of capitalism from late medieval times. Examination of how capitalism has changed throughout time and space. Explanation of why some individuals and countries are rich while others are poor, as well as the impact of capitalism on global history, notions of time, slavery, class, race, gender, law, and the contemporary world. CA 1. CA 4.

#### **2845W. Global History of Capitalism**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Exploration of definitions of capitalism in existing literature, its place(s) of origin, and the initial period of the genesis of capitalism from late medieval times. Examination of how capitalism has changed throughout time and space. Explanation of why some individuals and countries are rich while others are poor, as well as the impact of capitalism on global history, notions of time, slavery, class, race, gender, law, and the contemporary world. CA 1. CA 4.

#### **2993. Foreign Study**

Variable (1-12) credits. May be repeated for credit.

Consent of department head required, normally granted before the student's departure. May count toward the major with consent of advisor.

#### **3095. Special Topics**

Variable (1-6) credits. Prerequisite: Prerequisites and recommended preparation vary by section. May be repeated for credit.

#### **3098. Variable Topics**

Three credits. Prerequisite: Prerequisites and recommended preparation vary by section. May be repeated for credit.

#### **3100W. Biography as History**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

What the lives of significant individuals reveal about major historical periods and themes. Variable topics.

#### **3101W. History through Fiction**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher. May be repeated for credit.

What classic novels and other works of fiction reveal about major historical periods and themes in history. Variable topics. May be offered from an American or European perspective.

#### **3102. Topics in Public History**

Three credits. May be repeated for credit.

Introduction to the field of public history; in-depth study and practice of one selected topic in public history, such as exhibit design, oral history, institutional history, or archive management.

#### **3103. Collaborating with Cultural Organizations I: Methods**

(Also offered as DMD 3610.) Three credits. Prerequisite: Open to sophomores or higher. Recommended preparation: DMD 2010 and/or DMD 2610.

Introduction to mission-driven cultural organizations and methods for meaningful, effective collaboration with them and their communities in the digital age.

#### **3104. Collaborating with Cultural Organizations II: Practice**

(Also offered as DMD 3620.) Three credits. Prerequisite: Open to sophomores or higher. Recommended preparation: DMD 3610/HIST 3103.

Project-based application of digital public history tools and methods undertaken in partnership with a cultural organization. Provides immersion in issues of contemporary practice while building collaborative competency. Includes an integrated service learning component.

#### **3105. History through Film**

Three credits. May be repeated for a total of 9 credits.

An exploration of the ways in which film can communicate complex cultural, historical, and political ideas. Topics may include film's ability to translate philosophical and religious ideas, portray accurate or revisionist history, play a role in subverting or critiquing the social and political status quo, and act as a chronicler of change.

#### **3107. Historical Fiction in Games and Film**

(Also offered as DMD 3589.) Three credits. Prerequisite: Open to Digital Media and Design and History majors only, others with instructor consent; open to sophomores or higher.

Critique of historically themed films and video games; comparison to surviving primary documents and artifacts; assessment of historical accuracy and cultural impact.

#### **3201. The History of Human Rights**

(Also offered as HRTS 3201.) Three credits.

Case studies in the emergence and evolution of human rights as experience and concept.

#### **3202. International Human Rights**

(Also offered as HRTS 3202.) Three credits.

Historical and theoretical survey of the evolution of human rights since 1945.

#### **3204W. Science and Social Issues in the Modern World**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

Social context of science in the United States and Europe since 1850. Genetics and eugenics; ecology and the environment; nuclear issues; gender, race, and science. CA 4.

#### **3206. Black Experience in the Americas**

(Also offered as AFRA 3206.) Three credits. Recommended preparation: AFRA 3563/HIST

3563/HRTS 3563; AFRA 3564/HIST 3564, AFRA 3620/HIST 3620; or HIST 3609/LLAS 3609.

Major themes in recent scholarship of African-descended communities in the Americas and their interconnection beyond geopolitical boundaries; race, gender, sexuality, class, religion, cultural movements and practices, slavery, political economy, political movements, and African consciousness, from historical perspective. CA 1. CA 4-INT.

#### **3207. Genocide after the Second World War**

(Also offered as HRTS 3207.) Three credits. Recommended preparation: HIST/HRTS 3201.

Origins of the 1948 Genocide Convention. Several case studies of genocide post WWII: Cambodia, Rwanda, the former Yugoslavia, and Darfur. Causes and underlying dynamics of genocide with an emphasis on the international response. Critical evaluation of military, political, and non-governmental measures to prevent genocidal acts.

#### **3208. Making the Black Atlantic**

(Also offered as AFRA 3208 and LLAS 3208.) Three credits. Recommended preparation: AFRA/HIST/HRTS 3563 or AFRA/HIST 3564 or 3620; or HIST/LLAS 3609.

Recent scholarship on the central role played by African-descended communities in shaping the early history of the Americas and their interconnection beyond geopolitical boundaries; race, gender, sexuality, class, religion, cultural movements and practices; slavery, political economy, and political movements.

#### **3209. Maritime Archaeology of the Americas**

(Also offered as ANTH 3531 and MAST 3531.) Three credits. Recommended preparation: ANTH 1500, ANTH 2501, ANTH 2510 or HIST 3544.

Archaeological and historical sources to examine the development of seafaring practices, exploration, waterborne trade and economic systems, naval warfare and shipbuilding in the Americas from the fifteenth to the beginning of the twentieth century.

#### **3210. Archaeology of the Age of Sail**

(Also offered as ANTH 3532 and MAST 3532.) Three credits. Recommended preparation: ANTH 1500, ANTH 2501, or ANTH 2510.

Overview of archaeological and historical sources on the development of seafaring and navigation, exploration, waterborne trade and economic systems, colonialism and empire building, naval warfare and shipbuilding in Europe, Asia and Australia from the fifteenth to the beginning of the twentieth century.

#### **3232. History of Refugees, Migration, and Statelessness**

(Also offered as HRTS 3232.) Three credits.

Forced and voluntary migration and statelessness in the era of the modern state. Topics include the social and political factors influencing population movement; the experience of migration and statelessness; rights of refugees, migrants, and the stateless; immigration policy; international action; and social and political responses to migration.

#### **3300. Near Eastern Prehistory**

(Also offered as ANTH 3513.) Three credits.

From the earliest hunter-gatherers to the rise of the state: the transition from food-gathering to

food-production and the development of complex societies in the Near East.

**3301. Ancient Near East**

(Also offered as CAMS 3301.) Three credits.

The history of Near Eastern civilization from the Neolithic period to the Persian Empire. The birth of civilization in Mesopotamia and Egypt. The political, economic, social and cultural achievements of ancient Near Eastern peoples. Taught in English.

**3320. Ancient Greece: Troy to Sparta**

(Also offered as CAMS 3320.) Three credits.

The history of Greece from Minoan and Mycenaean times until the Hellenistic Period and Alexander the Great, with special emphasis on the Fifth Century and the "Golden Age" of Athens.

**3321. Hellenistic World: Alexander to Cleopatra**

(Also offered as CAMS 3321.) Three credits.

The Eastern Mediterranean (the Greek east) from Alexander to Cleopatra (336-30 BCE), including historical, cultural, social, and religious developments.

**3325. Ancient Rome: Aeneas to Augustus**

(Also offered as CAMS 3325.) Three credits.

From the beginning of Rome to the growth of the Roman Republic and the onset of Empire. Roman civilization and its influence upon later history.

**3326. Ancient Rome: Emperors and Barbarians**

(Also offered as CAMS 3326.) Three credits.

The Roman Empire, from its beginnings until its transformation (or "fall") under the "barbarian" invasions, and its influence on later history. CA 1.

**3330. Palestine Under the Greeks and Romans**

(Also offered as HEJS 3330 and CAMS 3330.) Three credits.

The political, historical and religious currents in Greco-Roman Palestine. Includes the Jewish Revolts, sectarian developments, the rise of Christianity and the Talmudic academies. May not be used to meet the foreign language requirement. Taught in English. Formerly offered as HEJS 3218.

**3330W. Palestine Under the Greeks and Romans**

(Also offered as HEJS 3330W and CAMS 3330W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

The political, historical and religious currents in Greco-Roman Palestine. Includes the Jewish Revolts, sectarian developments, the rise of Christianity and the Talmudic academies. May not be used to meet the foreign language requirement. Taught in English. May not be used to meet the foreign language requirement. Formerly offered as HEJS 3218W/CAMS 3256W.

**3335. The Early Christian Church**

(Also offered as CAMS 3335.) Three credits.

The evolution of Christian institutions, leadership and doctrines in the Roman Empire ca. 50-451 CE. Topics may include gnosticism, prophecy, martyrdom, asceticism, pilgrimage, heresy, orthodoxy. Taught in English.

**3340. World of the Later Roman Empire**

(Also offered as CAMS 3340.) Three credits.

The profound social and cultural changes that redefined the cities, frontiers, and economies of the classical Mediterranean world and led to the

Middle Ages. Developments in the eastern and western Mediterranean between the second and seventh centuries.

**3360. Early Middle Ages**

Three credits.

The history of the medieval West from late antiquity to the eleventh century.

**3361. The High and Later Middle Ages**

Three credits.

The history of the medieval West from the tenth to the fifteenth centuries.

**3362. The Black Death: Medieval and Modern Responses to Catastrophe**

(Also offered as HEJS 3362.) Three credits. Prerequisite: Not open to students who have passed HEJS 3295 when offered as The Black Death: Medieval Responses.

The Black Death (1346-50) from its origins in China through Europe. Institutional, medical, religious, literary, and social responses to the plague; how modern scholars reconstruct medieval experience; and new findings by historians and scientists that shed light on the challenges of past, present and future pandemics. CA 1. CA 4-INT.

**3370. The Renaissance**

Three credits.

Europe in the fourteenth and fifteenth centuries.

**3371. The Reformation**

Three credits.

Europe in the sixteenth century with emphasis on religious developments, rise of the modern state, birth of science, expansion of Europe, and the Commercial Revolution.

**3400. Europe in the Seventeenth Century**

Three credits.

Conflict of constitutionalism and absolutism, colonial expansion and rivalry, development of science, and the age of reason, the age of the baroque, the age of Louis XIV.

**3416. Gender and Sexuality in Modern Europe**

(Also offered as WGSS 3416.) Three credits.

The construction of gender difference and ideas about sexuality in western Europe since 1789. Masculinity and femininity; sexuality, identity and the state; European power and personhood in global context.

**3418. The Holocaust**

(Also offered as HEJS 3203.) Three credits.

Origins, development, and legacy of the Holocaust. Topics include the history of modern European anti-Semitism, the creation of the Nazi state, the catalytic role of the Second World War, the actions and attitudes of the perpetrators, victims, and bystanders, and the diverse ways in which scholars and societies have dealt with the legacy of the Holocaust. Taught in English. May not be used to meet the foreign language requirement.

**3419. Jewish Responses to the Holocaust**

(Also offered as HEJS 3419.) Three credits.

Interdisciplinary exploration of Jewish responses to the Holocaust. Examines social, religious, theological, political, cultural, psychological, and literary responses both during and after the Second World War. CA 1. CA 4-INT.

**3420. English History to 1603**

Three credits.

A survey of English history from its origin to the close of the Tudor period. Emphasis is placed on the development of the English nation and the growth of its culture. Recommended to majors in English.

**3426. Social and Economic History of Modern Britain**

Three credits.

The change from an agrarian to an industrial society.

**3430. History of Ireland**

Three credits.

History of Ireland, with emphasis on the modern period. The rise of Irish nationalism, the Irish Literary Revival, and the problems of Northern Ireland.

**3440. France Since 1715**

Three credits.

The disintegration of the monarchical synthesis prior to and during the French Revolution; the attempts to harmonize French society under subsequent regimes.

**3460. Italy 1250-1600**

Three credits.

Italy from the triumph of the city-state and the popolo grosso to the end of the Renaissance. The complex interrelationship between society and culture will be the focus of study.

**3463. The Modernization of Italy from 1815 to Present**

Three credits.

The modernization of Italy's traditional sociopolitical and economic structure; Industrialization, unification, the liberal regime, fascism, and the republic.

**3502. Colonial America: Native Americans, Slaves, and Settlers, 1492-1760**

(Also offered as AMST 3502.) Three credits.

The legacy of Columbus, creative survival of native Americans in the face of disease and warfare, religious utopianism and the profit motive in colonization. The growth of a distinctive Anglo-American political culture, gender and family relations, and the entrenchment of a racial caste system.

**3502W. Colonial America: Native Americans, Slaves, and Settlers, 1492-1760**

(Also offered as AMST 3502W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

The legacy of Columbus, creative survival of native Americans in the face of disease and warfare, religious utopianism and the profit motive in colonization. The growth of a distinctive Anglo-American political culture, gender and family relations, and the entrenchment of a racial caste system.

**3504. The American Revolution**

Three credits.

Creation of the United States of America from the beginnings of the independence movement through the adoption of the Constitution and Bill of Rights.

**3510. Civil War America**

Three credits.

The social, economic and cultural forces that shaped the Civil War and its aftermath. Sectional conflict, industrialization, reform and abolitionism, race relations, and class, gender and constitutional issues from the 1830s to the 1880s.

**3516. Rise of U.S. Global Power**

Three credits.

The people and ideas that powered the growth of America's global empire. Emphasis on the world wars, the Cold War, the Vietnam War, intervention in Latin America, and the global economy.

**3519. Contemporary America**

Three credits. Prerequisite: Not open for credit to students who have passed HIST 3095 when taught as Contemporary America, 1973-present.

American politics, society, and economy from 1973 through the present. Topics include: Conservatism, feminism, gay liberation, the end of the Cold War, Latino immigration, deindustrialization, and the New Economy.

**3520. Social and Cultural History of Connecticut and New England**

Three credits.

Race, class, gender, religion, politics, and economy in New England. Interpretations of the region's culture from the 1600's through the 1800's. Introduces accessible primary sources and interpretive issues at public history sites. Either 3520 or 3522, but not both, may be counted for credit toward the History major.

**3522. History of Connecticut**

Three credits.

A survey of Connecticut's history from 1633 to the present from a constitutional and political perspective. Either 3520 or 3522, but not both, may be counted for credit toward the History major.

**3531. Japanese Americans and World War II**

(Also offered as AAAS 3531 and AMST 3531.) Three credits.

The events leading to martial law and executive order 9066, the wartime experience of Japanese Americans, and national consequences. CA 1. CA 4.

**3540E. Environmental History of the Americas**

Three credits. May be repeated for a total of 6 credits.

Transformations of one region within the Americas, such as the United States, Caribbean, or South America since 1450: the effects of human practices and policies, varying ideas about nature across cultures and time periods; and the rise of environmental movements. CA 1. CA 4.

**3540WE. Environmental History of the Americas**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher. May be repeated for a total of 6 credits.

Transformations of one region within the Americas, such as the United States, Caribbean, or South America since 1450: the effects of human practices and policies, varying ideas about nature across cultures and time periods; and the rise of environmental movements. CA 1. CA 4.

**3542E. New England Environmental History**

(Also offered as AMST 3542E.) Three credits. Recommended preparation: ENGL 1010 or 1011 or 2011 or 3800.

Interdisciplinary history of New England's terrestrial and marine environmental change. Links among land, sea, and human natural resource use and management, including precontact patterns, colonial impacts, agricultural decline, industrial pollution, overfishing, re-forestation, and the rise of eco-tourism.

**3544. Atlantic Voyages: European Maritime Expansion, 1400-1650**

(Also offered as MAST 3544 and AMST 3544.) Three credits.

Late medieval and early modern European expansion into the Atlantic and Indian oceans, with particular attention to European, Asian, African, and American contexts within which that expansion took place. Topics include the transatlantic slave trade; technology adoption and adaptation; convergence of trade, racial ideology, imperial expansion, and imperial identity construction; piracy and settlement; historiographical legacies and later imperialism; and decolonization of contemporary understandings.

**3545. The Modern Atlantic, 1650-1950**

(Also offered as MAST 3545.) Three credits.

The development and decline of the early modern Atlantic imperial system between 1650 and 1950, focusing upon imperial structures, slavery, anti-imperialism, abolitionism, free labor, and self-determination.

**3550. Constitutional History of the United States**

Three credits.

The Constitution and the Supreme Court in relation to the political, economic, and intellectual history of the United States.

**3551. Topics in U.S. Legal History**

Three credits. Prerequisite: Open to juniors or higher. May be repeated for credit.

Introduction to legal culture and appellate case materials from the eighteenth through the twentieth centuries. Topics include: child custody and family law, the courts' role in industrial development, the law of slavery and freedom in the North, and various aspects of civil rights.

**3551W. Topics in U.S. Legal History**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher. May be repeated for credit.

Introduction to legal culture and appellate case materials from the eighteenth through the twentieth centuries. Topics include: child custody and family law, the courts' role in industrial development, the law of slavery and freedom in the North, and various aspects of civil rights.

**3554. Immigrants and the Shaping of American History**

(Also offered as AAAS 3554.) Three credits. Recommended preparation: One course in American history.

The origins of immigration to the United States and the interaction of immigrants with the social, political, and economic life of the nation after 1789, with emphasis on such topics as nativism, assimilation, and the "ethnic legacy." CA 1. CA 4.

**3555. Work and Workers in American Society**

Three credits.

Changes in work from the 17th through the 20th centuries. Workers' experiences, ideologies, and activities as shaped by gender, race/ethnicity, region, occupation, and industry.

**3555W. Work and Workers in American Society**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

Changes in work from the 17th through the 20th centuries. Workers' experiences, ideologies, and activities as shaped by gender, race/ethnicity, region, occupation, and industry.

**3556W. History Workshop: Topics in American Society and Culture**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher. May be repeated for credit.

Techniques of primary historical research based on collaborative research and writing on a topic selected by the instructor.

**3559. History of Childhood in the United States, 1620-Present**

Three credits. Recommended preparation: HIST 1501 or 1502 or 2100.

An overview of the history of childhood in America, examining both adults' perception and children's experience. Attention to changes in childhood over time and to the diversity of childhood within each historical moment.

**3560. Constructions of Race, Gender, and Sexuality in U.S. History**

(Also offered as WGSS 3560.) Three credits. Prerequisite: Not open for credit to students who have passed HIST 3095 when taught as Constructions of Race, Gender, and Sexuality in U.S. History.

Examination of historical development, interconnections, and complexities of conceptions of race, gender, and sexuality in U.S. from European conquest to the present.

**3561. History of Women and Gender in the U.S. to 1850**

(Also offered as WGSS 3561.) Three credits.

Gender ideologies of indigenous and settler cultures, changing conditions of women's and men's lives as the U.S. became a nation, while emphasizing intersections with ethnicity, race, class, religion, and region.

**3562. History of Women and Gender in the United States, 1850-Present**

(Also offered as WGSS 3562.) Three credits.

History of gender and the lives and cultural representations of women in the U.S., emphasizing intersections with race, sexuality, class, region, and nation.

**3563. African American History to 1865**

(Also offered as HRTS 3563 and AFRA 3563.) Three credits.

History of African-American people to 1865, from their West African roots, to their presence in colonial America, through enslavement and emancipation. Adaptation and resistance to their conditions in North America. Contributions by black people to the development of the United States.

**3564. African American History Since 1865**

(Also offered as AFRA 3564.) Three credits.

History of African-American people since the Civil war. Contributions by black people to American development. African-American activity in international arenas.

**3568. Hip Hop, Politics and Youth Culture in America**

(Also offered as AFRA 3568, AMST 3568, and MUSI 3568.) Three credits.

History of hip-hop, its musical antecedents and its role in popular culture. Race, class, and gender are examined as well as hip-hop's role in popular political discourse.

**3569. Slavery in Film**

(Also offered as AFRA 3569.) Three credits. Recommended preparation: AFRA/HIST 3206 or 3563 or 3564; or CLCS 1110.

Depictions of chattel slavery in cinema and popular media over time. Topics include histories of slavery, race and identity, media studies, and cultural studies.

**3575. Latinos/as and Human Rights**

(Also offered as LLAS 3221 and HRTS 3221.) Three credits.

Latino/a issues related to human, civil and cultural rights, and gender differences.

**3607. Latin America in the Colonial Period**

(Also offered as LLAS 3607.) Three credits. Prerequisite: Open to sophomores or higher.

Pre-Columbian Civilization in America, the epoch of conquest and settlement, together with a study of the Ibero-Indian cultural synthesis which forms the basis of modern Latin American civilization. CA 1. CA 4-INT.

**3608W. The Hispanic World in the Ages of Reason and Revolution**

(Also offered as LLAS 3608W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher. Recommended preparation: HIST 3607.

The transformation of Spanish America from the Bourbons in 1700, through the wars of independence and the struggle to build stable national states in the Nineteenth Century.

**3609. Latin America in the National Period**

(Also offered as LLAS 3609.) Three credits. Prerequisite: Open to sophomores or higher.

Representative countries in North, Central, and South America and the Caribbean together with the historic development of inter-American relations and contemporary Latin American problems. CA 1. CA 4-INT.

**3618. Comparative Slavery in the Americas**

(Also offered as AFRA 3618 and LLAS 3618.) Three credits.

The rise and fall of trans-Atlantic slavery. Topics include resistance, migration, antislavery mobilization, abolitionism, empire, revolution, cultural production, political economy, labor, gender, race and identity formation.

**3619. History of the Caribbean**

(Also offered as LLAS 3619 and AFRA 3619.) Three credits.

Encounter experience; slavery, antislavery mobilization, and abolitionism; colonialism; citizenship and nation building; race and gender;

political cultures and movements; migration/immigration; cultural production; and political economy; topics will be examined from a historical perspective. CA 1. CA 4-INT.

**3619W. History of the Caribbean**

(Also offered as AFRA 3619W and LLAS 3619W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Encounter experience; slavery, antislavery mobilization, and abolitionism; colonialism; citizenship and nation building; race and gender; political cultures and movements; migration/immigration; cultural production; and political economy; topics will be examined from a historical perspective. CA 1. CA 4-INT.

**3620. Cuba, Puerto Rico, and the Spanish Caribbean**

(Also offered as AFRA 3620.) Three credits.

Discovery and settlement, slavery and plantation economy, recent political and economic developments, and United States relations with the Spanish Caribbean.

**3635. History of Modern Mexico**

(Also offered as LLAS 3635.) Three credits. Recommended preparation: HIST 3607.

The emergence of modern Mexico from independence to the present with emphasis on the Revolution of 1910. CA 1. CA 4-INT.

**3640. Andean Societies**

Three credits. Recommended preparation: HIST 3607 or 3609.

History of the geographical and social region occupied by the Inca Empire: pre-Columbian cultures, the period of Spanish colonial rule, and the modern Andean republics (primarily Ecuador, Peru, and Bolivia).

**3643. Argentina and LaPlata Region**

Three credits. Recommended preparation: HIST 3607 or 3609.

Colonial heritage, social and economic transformation of Argentina, Uruguay and Paraguay, foreign relations and contemporary turmoil.

**3660W. History of Migration in Las Americas**

(Also offered as LLAS 3660W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher. Recommended preparation: LLAS 1190, ANTH 3042, HIST 3635, HIST 3609 or HIST 2674/LLAS 3220; LLAS 3210. Spanish useful but not required.

Applies broad chronological and spatial analyses of origins of migration in the Americas to the experiences of people of Latin American origin in Connecticut. Addresses a range of topics from the initial settlement of the Americas to 21st century migrations. CA 1. CA 4.

**3662. Borderlands of the Americas**

(Also offered as LLAS 3662.) Three credits.

A consideration of the importance of borderlands in the expansion and consolidation of European empires in the American continent, and later, in the shaping of newly independent republics. Contemporary issues related to Latin American borders, including migration, smuggling, violence, and the role of the state in shaping the borders of national cultures and societies.

**3674. History of Latinos/as in the United States**

(Also offered as LLAS 3220.) Three credits.

Settlement and growth of Hispanic-origin populations in the United States today, from Spanish and Mexican settlement of the western United States to the growth of Latino communities. Student oral history project. CA 1. CA 4.

**3675. Latina History and Biography**

(Also offered as LLAS 3675 and WGSS 3675.) Three credits.

Examination of the history of Latinas in the US with a focus on women, gender, and sexuality. Students will consider how historians use oral histories, life histories, memoirs, biographies, and testimonials as sources to restore Latinas to histories from which they were previously omitted. CA 1. CA 4.

**3704. Medieval Islamic Civilization to 1700**

Three credits. Recommended preparation: HIST 1300 or 1400.

The social dynamics of faith, culture, and change from the rise of Islam to the Ottoman decline and the Islamic challenge to Greek and Latin Christendom.

**3705. The Modern Middle East from 1700 to the Present**

Three credits.

Tradition, change, modernization and development in the Middle East from the Ottoman decline and rise of successor states to the Arab-Israeli and oil crises. CA 1. CA 4-INT.

**3710. Islamic Art History**

(Also offered as ARTH 3710 and ARIS 3710.) Three credits. Prerequisite: Open to juniors or higher.

A survey of the arts associated with Islam from the life of Muhammad in the seventh century through the early modern period, with an emphasis upon the Middle East, North Africa, and the Iberian Peninsula. CA 1. CA 4-INT.

**3710W. Islamic Art History**

(Also offered as ARIS 3710W and ARTH 3710W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

A survey of the arts associated with Islam from the life of Muhammad in the seventh century through the early modern period, with an emphasis upon the Middle East, North Africa, and the Iberian Peninsula. CA 1. CA 4-INT.

**3712. The Middle East Crucible**

(Also offered as AAAS 3712.) Three credits.

Twentieth-century developments in the Middle East, focusing on political Islam/Islamism, Orientalism, imperialism, the history of struggles for representative government, nationalism, the Israeli-Palestinian conflict, super-power rivalries, and the search for identity, independence, and peace with justice. CA 1. CA 4-INT.

**3753. History of Modern Africa**

(Also offered as AFRA 3753.) Three credits.

The history of African perceptions of and responses to the abolition of the slave trade, Western imperialism and colonialism, and the development of nationalism and struggle for independence.

**3760. History of Southern Africa**

Three credits. Prerequisite: Open to sophomores or higher.

Survey of Southern African societies with an emphasis on the socio-economic and political structure of indigenous societies, the imposition of colonial rule, gendered experiences of colonialism, colonial economies, the rise of nationalism and post-independence developments.

### 3770. History of Pan Africanism

(Also offered as AFRA 3224.) Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: At least one of HIST 3752, 3753, 3563 or 3564.

The development of ideas of Pan-Africanism, beginning with the proto-Pan-Africanists in the nineteenth century; examination of the linkages between those ideas in Africa and the evolution of Pan-Africanism as a movement in the African Diaspora.

### 3808. East Asia to the Mid-Nineteenth Century

(Also offered as AAAS 3808.) Three credits.

The major problems and issues of traditional Chinese and Japanese history and historiography. Special emphasis on the "Great Tradition" in ideas of both civilizations.

### 3809. East Asia Since the Mid-Nineteenth Century

(Also offered as AAAS 3809.) Three credits.

The reactions of East Asia to the Western threat, and the rise of Asian nationalism, communism, and fascism. Special attention to the tensions caused by the conflict of ideas.

### 3810. China and the West

Three credits. Prerequisite: Open to sophomores or higher. Not open to students who took HIST 3995 when offered as China and the West.

China's political, economic, and cultural encounters with Western Powers from the sixteenth century to 1949.

### 3812. Modern India

(Also offered as AAAS 3812.) Three credits.

An introduction to the history of India from the Mughal and European invasions of the 16th Century to the present. India's synthesis of Eastern and Western culture, traditional and new, will be the focus.

### 3820. History of Modern Chinese Political Thought

(Also offered as AAAS 3820.) Three credits.

Survey of Chinese political ideas and ideologies since the nineteenth century, examining the influences of Confucianism and Western conceptions on the revolutionary changes in political thought in China over the last 100 years, including Marxism, liberalism, anarchism, authoritarianism, and democracy. CA 1. CA 4-INT.

### 3822. Modern China

(Also offered as AAAS 3822.) Three credits.

Survey of patterns of modern China since 1800. Topics will include reforms and revolutions, industrialization and urbanization, and family and population growth. CA 1. CA 4-INT.

### 3845. The Vietnam War

(Also offered as AAAS 3845.) Three credits. Prerequisite: Open to sophomores or higher.

Origins, evolution, and aftermath of the Vietnamese conflict: the prewar history of colonialism, nationalism, communism, and anticommunism; the formation and development

of the three main Vietnamese belligerents; American intervention; culture and politics in wartime Vietnam; escalation and de-escalation of the war; the postwar legacy. CA 1. CA 4 INT.

### 3863. War and Diplomacy in East Asia

Three credits.

European struggle for power in Asia since 1842, in the context of the rise of Japan and the reassertion of Chinese power.

### 3875. Asian Diasporas in the Americas

(Also offered as AAAS 3875 and LLAS 3875.) Three credits. Prerequisite: Open to sophomores or higher. Recommended preparation: HIST 3607, 3609, 3610, 3635, 3660W, or 3674. Not open to students who have passed HIST 3995 Asian Diasporas in the Americas.

Transnational history of migration and settlement of Chinese, Japanese, Korean, and South Asian diasporas across South, Central, and North America and the Caribbean, colonial through national period. Emphasis on political economy, racial formations, and constructions of national identity.

### 3880. Field Experience

Variable (1-6) credits. Prerequisite: Instructor consent. May be repeated for a total of 6 credits.

Supervised field work within the historical profession such as in archives, historical societies, research libraries and/or museums. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory). Formerly offered as HIST 3890.

### 3991. Internship

Variable (1-12) credits. Prerequisite: Open to juniors or higher. May be repeated for a total of 12 credits.

Internship in applied history. No more than six credits will count toward the department's major or minor requirements.

### 3993. Foreign Study

Variable (1-9) credits. Prerequisite: Open to juniors or higher. May be repeated for credit.

Consent of department head required, normally to be granted before the student's departure. May count toward the major with consent of the advisor.

### 3994W. Junior Seminar

Three credits. Prerequisite: HIST 2100, which may be taken concurrently with consent of instructor; ENGL 1007 or 1010 or 1011.

Analytical, research, and writing skills needed for the major's capstone course, HIST 4994W.

### 4640. Digital Public History Project

(Also offered as DMD 4640.) Three credits. Prerequisite: HIST 3102; DMD 3610/HIST 3103; DMD 3620/HIST 3104; three credits of HIST 3890 or 3991; open to DMD majors or Digital Public History minors only, others with instructor consent.

Students work collaboratively, with instructor guidance and feedback, to design and complete a digital public history project or prototype.

### 4989. Directed Research

Three credits. Prerequisite: Open only to senior history majors. May be repeated for credit.

An introduction to research methods and resources in history.

### 4994W. Senior Seminar

Three credits. Prerequisite: HIST 2100; ENGL 1007 or 1010 or 1011 or 2011; open only to undergraduate history majors in their senior year. May be repeated for credit.

These seminars give students the experience of reading critically and in depth in primary and secondary sources, and of developing and defending a position as an historian does.

### 4996. Honors Thesis Preparation

Three credits. Prerequisite: HIST 2100; open only to history majors in the honors program.

Preliminary reading in both primary and secondary sources in consultation with a thesis advisor preparatory to writing the thesis in HIST 4997W.

### 4997W. Senior Thesis in History

Three credits. Prerequisite: HIST 2100; HIST 4994W or 4999; ENGL 1007 or 1010 or 1011 or 2011; open only to Honors students.

### 4999. Independent Study

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

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## Human Development and Family Sciences (HDFS)

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### 1060. Close Relationships Across the Lifespan

Three credits.

Theory and research on topics in the close relationship literature including attraction, relationship development and maintenance, friendship and social support, love, sexuality, intimacy, power, communication, conflict, dissolution and divorce, and bereavement. CA 2.

### 1070. Individual and Family Development

Three credits. Prerequisite: May not be taken out of sequence after passing HDFS 3250 or 4133.

Human development throughout the life span, with emphasis upon the family as a primary context. CA 2.

### 1083. Foreign Study

Variable (1-6) credits. May be repeated for credit.

Credits and hours by arrangement. Consent of Director of Undergraduate Studies required, preferably prior to student's departure. Special topics taken in a foreign study program.

### 1095. Special Topics Lecture

Variable (1-6) credits. Prerequisite: Prerequisites and recommended preparation vary. May be repeated for a total of 6 credits.

Credits, prerequisites and hours as determined by the Senate Curricula and Course Committee.

### 2001. Diversity Issues in Human Development and Family Sciences

Three credits. Prerequisite: Open to sophomores or higher. Recommended preparation: HDFS 1070.

Critical issues in diversity and multiculturalism in human development, family relations, and professional practice. CA 4.

### 2004W. Research Methods in Human Development and Family Sciences

Four credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; HDFS 1070, which may be taken concurrently; open only to HDFS majors,

sophomores or higher. May not be taken out of sequence after passing HDFS 3092, 4004, or 4007.

Overview of research methods with emphasis on the social context in which research occurs and is used, and strengths and limitations of social science research methods. Includes topics such as hypothesis formation, measurement of social variables, research ethics, data collection techniques, and interpreting results.

### 2083. Foreign Study

Variable (1-6) credits. May be repeated for credit.

Credits and hours by arrangement. Consent of Director of Undergraduate Studies required, preferably prior to student's departure. A maximum of six credits can be used to meet major requirements. Special topics taken in a foreign study program.

### 2095. Special Topics

Variable (1-6) credits. May be repeated for credit.

### 2100. Human Development: Infancy Through Adolescence

Three credits. Prerequisite: Open to sophomores or higher. May not be taken out of sequence after passing HDFS 3341 or 4181.

Individual development and behavior from prenatal period through adolescence; impact of peers, school, other social agencies, and especially the family.

### 2142E. Exploring Conservation and Sustainability with Preschoolers

Three credits. Prerequisite: Instructor consent. Recommended preparation: HDFS 1070.

Introduction to the broad fields of sustainability and conservation through place-based learning experiences. Explores the importance of environmental stewardship by actively engaging with preschool children in project-based learning related to conservation and sustainability throughout the semester. CA 2.

### 2200. Human Development: Adulthood and Aging

Three credits. Prerequisite: Open to sophomores or higher.

Individual development and behavior from young adulthood through later life with special attention given to family and social influences. Physical, cognitive, social and personality changes, role transitions, and interpersonal and intergenerational relationships.

### 2300. Family Interaction Processes

Three credits. Prerequisite: Open to sophomores or higher. May not be taken out of sequence after passing HDFS 3319 or 3420.

Family interaction: communication processes, bonding behaviors, management of conflict and aggression, negotiation of family crisis.

### 2620. Human Development, Digital Media, and Technology

(Also offered as DMD 2620.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011. Recommended preparation: HDFS 1070 or DMD 2010.

Social, economic, and cultural influences on youths' interactions with, and use of, technology for formal and informal learning. Examples include media literacy, digital divide, technology in education, cyberbullying, and other issues that

have emerged since the rise of the World Wide Web and growth of social media. CA 2. CA 4.

### 3042. Baseball and Society: Politics, Economics, Race and Gender

(Also offered as AFRA 3042, WGSS 3042, and AMST 3042.) Three credits. Prerequisite: Open to juniors or higher.

Baseball in historical, political, sociological, and economic contexts. Topics may include: impact on individuals and families; racial discrimination and integration; labor relations; urbanization; roles of women; treatment of gay athletes; and implications of performance-enhancing drugs.

### 3080. Supervised Field Experience

Variable (3-6) credits. Prerequisite: GPA of 2.5 in HDFS courses and at least 15 credits of 2000 level or above HDFS courses. May not be taken out of sequence after passing HDFS 3090. May be repeated for a total of 6 credits.

Supervised participation in settings where purposes and functions are related to the development and welfare of individuals and families.

### 3083. Foreign Study

Variable (1-6) credits. May be repeated for credit.

Special topics taken in a foreign study program. A maximum of six credits can be used to meet major requirements. Consent of Director of Undergraduate Studies required, preferably prior to student's departure.

### 3087. Honors Proseminar

One credit. Prerequisite: Open only with consent of instructor to students in the Honors Program. May not be taken out of sequence after passing HDFS 4097.

Overview of the Human Development and Family Studies Honors Programs and the opportunities available through University Honors. Includes presentations by HDFS faculty members and discussions with faculty regarding research. Provides direction to students planning honors theses.

### 3090. Fieldwork in Community Settings

Three credits. Prerequisite: HDFS 3080; GPA of 2.5 in HDFS courses and 15 units of 2000 level or above HDFS courses.

Supervised participation in settings where purposes and functions are related to the development and welfare of individuals and families. Cannot be repeated for credit. Cannot be used towards meeting major requirements in HDFS nor towards meeting GPA requirements in HDFS. Weekly seminar required. Practicum by arrangement.

### 3092. Research Practicum in Human Development and Family Sciences

Variable (1-6) credits. Prerequisite: HDFS 2004W; GPA of 2.5 in HDFS courses. May be repeated for a total of 9 credits.

Supervised experience conducting research in human development and family sciences.

### 3095. Special Topics

Variable (1-6) credits. Prerequisite: Prerequisites and recommended preparation vary. May be repeated for credit.

### 3098. Variable Topics in Human Development and Family Sciences

Variable (1-6) credits. May be repeated for a total of 12 credits.

### 3101. Infant and Toddler Development

Three credits. Prerequisite: HDFS 2100, or PSYC 2400; HDFS 2004, or NURS 3205, or PSYC 2100Q, or SOCI 3201, which may be taken concurrently; open to juniors or higher. May not be taken out of sequence after passing HDFS 4181.

Study of children from birth to three years from an integrated human development perspective; biological and social contextual influences.

### 3102. Early and Middle Childhood Development

Three credits. Prerequisite: HDFS 2100, or PSYC 2400; HDFS 2004, or NURS 3205, or PSYC 2100Q, or SOCI 3201, which may be taken concurrently; open to juniors or higher. May not be taken out of sequence after passing HDFS 4181.

Study of children ages 3-8 years from an integrated human development perspective that focuses on the interdependence of physical growth and cognitive, emotional, and social development.

### 3103. Adolescent Development

Three credits. Prerequisite: HDFS 2100, or PSYC 2400; HDFS 2004, or NURS 3205, or PSYC 2100Q, or SOCI 3201, which may be taken concurrently; open to juniors or higher. May not be taken out of sequence after passing HDFS 3341.

Theoretical approaches to adolescence; contextual research findings regarding adolescent development, with an emphasis on evaluating the match between these findings and the lived experience of adolescents; interventions designed to help adolescents meet the challenges of contemporary life.

### 3110. Social and Community Influence on Children in the United States

Three credits. Prerequisite: HDFS 2100 or PSYC 2400; open to juniors or higher.

Based on an ecological/contextual perspective students investigate the impact on child development of community characteristics and social groups and organizations on the development of children in the United States. Possible topics include: family, peers, schools, media, economic status, health care, social services, and the legal system. For each topic, focus is on factors related to promoting resilience.

### 3120. Introduction to Programs for Young Children

Three credits. Prerequisite: Must be taken concurrently with HDFS 3180 or 3183; open to juniors or higher. May not be taken out of sequence after passing HDFS 3126 or 4181.

Components of early care and education programs. Guided observations are integrated with lecture material. Designed for students who intend to work with infants and young children.

### 3122. Integrated Curriculum Methods and Materials for Infants and Toddlers

Three credits. Prerequisite: Open to juniors or higher.

Integration of child development theory with best teaching practices for developmentally appropriate learning for children from birth to three years in specific domains including arts,



sensory motor, social/emotional, and physical development.

**3123. Integrated Curriculum Methods and Materials for Preschool and Kindergarten**

Three credits. Prerequisite: Open to juniors or higher.

Integration of child development theory with best teaching practices for developmentally appropriate learning for children from preschool through kindergarten in specific domains including cognitive development, mathematical and scientific thinking, social studies, and personal/social development.

**3125. Emergent Literacy and Language Arts in Early Childhood Education**

Three credits. Prerequisite: HDFS 2100 or PSYC 2400; and HDFS 3122 or HDFS 3123; open to juniors or higher.

Developmentally and individually appropriate integrated curriculum methods and materials in emergent literacy and language arts for children birth to eight.

**3127. Professional Development and Advocacy in Early Childhood**

Three credits. Prerequisite: HDFS 3120. Consent of the instructor is required. Not open to students who completed HDFS 3126.

Historical, philosophical, psychological, and contemporary influences on the field. Comprehensive services, the workforce, quality, funding, and child outcomes. Focus on each student's professional development and on advocacy for change.

**3141. Developmental Approaches to Intergroup Relations and Victimization**

Three credits. Prerequisite: Open to sophomores or higher. Recommended preparation: HDFS 2001.

Developmental, social-ecological, and social psychological theories of the fundamental processes involved in intergroup relations; cognitive, affective, and social underpinnings of intergroup dynamics; critical issues of diversity and social justice in the lives of children and families; experiences of intergroup discrimination and victimization such as bullying and exclusion; theoretical approaches to improving intergroup relations and tolerance. CA 2. CA 4.

**3180. Programs for Young Children: Introductory Laboratory**

One credit. Prerequisite: Open only to students concurrently enrolled in HDFS 3120.

Guided observation and participation in a program for young children.

**3181. Observing Infant and Toddler Development**

One credit. Prerequisite: HDFS 3101, which may be taken concurrently. Not open to students who have passed HDFS 3182.

Observation of children ages eight weeks to two years in early care and education programs.

**3182. Observing Early Childhood Development**

One credit. Prerequisite: HDFS 3102, which may be taken concurrently. May not be taken out of sequence after passing HDFS 3181.

Observing young children in early care and education settings.

**3183. Early Childhood Development and Education: Supervised Fieldwork Practicum**

Four credits. Prerequisite: HDFS 3120 and 3180; and both HDFS 3101 and 3181 or both HDFS 3102 and 3182; HDFS 3122 or 3123, which may be concurrent; open to juniors or higher.

Supervised participation with typically developing and special needs children within the Child Development Lab classrooms. Topics include understanding informed observation and how relationships and play guide early learning and development.

**3245. Aging in American Society**

Three credits. Prerequisite: Open to juniors or higher.

Social gerontology: the role and status of older people in a changing society.

**3249. Gender And Aging**

Three credits. Prerequisite: Open to juniors or higher.

Aging process as it impacts on men and women; historical and cross-cultural perspectives, changing family roles, including grandparenthood and widowhood, and implications of changing gender roles for self-actualization of older persons.

**3250. Disabilities: A Lifespan Perspective**

Three credits. Prerequisite: HDFS 1070; open to juniors or higher.

Introduction to disabilities, approaching the topic from historical, developmental-lifespan, individual, and family perspectives. Topics include social constructions, models, definitions, and types of disabilities, disability rights, public policy, and philosophies and systems of education and support for individuals and families.

**3251. Biotechnology, Disability and the Family**

Three credits. Prerequisite: Open to juniors or higher.

Politics and ethics of treating and/or preventing disabilities in reproduction and across the lifespan. Family/caregiver experiences analyzed through disability studies, medical sociology, science and technology studies, and bioethics.

**3252. Death, Dying, and Bereavement**

Three credits. Prerequisite: Open to juniors or higher.

Cultural context of death, personal meaning of death at different stages in life cycle, and the effect of death upon survivors.

**3261. Men and Masculinities**

Three credits. Prerequisite: Open to juniors or higher.

Men's gender role socialization over the life span; men's developmental issues, gender role, conflicts, and interpersonal dynamics with women. Theory, research, and personal exploration are integrated. CA 4.

**3268. Latinos: Sexuality and Gender**

(Also offered as LLAS 3251.) Three credits. Prerequisite: Open to juniors or higher.

Critical discussion of issues involving gender and sexuality among Latinos, with particular attention to race, class, ethnicity, and acculturation.

**3277. Issues in Human Sexuality**

(Also offered as WGSS 3277.) Three credits. Prerequisite: Open to juniors or higher.

Contemporary issues concerning human sexuality; impact upon individuals and family units.

**3310. Parent Child Relations in Cross-Cultural Perspective**

Three credits. Prerequisite: Open to juniors or higher.

Theory and research on major dimensions of parenting in the U.S.A. and cross-culturally, parental warmth, control and punishment.

**3311. Parenthood and Parenting**

Three credits. Prerequisite: HDFS 2100 or PSYC 2400; HDFS 1070 or 2200; open to juniors or higher.

Parent behavior and the dynamics of parenthood; interpersonal, familial, and societal roles of parents and variables influencing these roles across the lifespan. CA 2.

**3319. Risk and Resilience in Individuals and Families**

Three credits. Prerequisite: HDFS 2300; open to juniors or higher.

Challenges, stresses, and crises experienced by individuals and families; protective factors and resilience; coping strategies; prevention and intervention.

**3340. Individual and Family Interventions**

Three credits. Prerequisite: Open to sophomores or higher. Recommended preparation: HDFS 2300.

An introduction to individual, couple, family, and group intervention. Topics include counseling theories, developmentally appropriate interventions, and methods for addressing diversity. Intervention strategies used in a variety of human services settings are examined.

**3342. Family Resource Management**

Three credits. Prerequisite: Open to juniors or higher.

Decision-making process of families concerning the utilization of financial, personal, environmental and social resources.

**3343. Family Life Education**

Three credits. Prerequisite: Open to juniors or higher.

Theory and practice of family life education including program development, implementation, evaluation, and professional ethics.

**3420. Abuse and Violence in Families**

Three credits. Prerequisite: HDFS 2300; open to juniors or higher.

Historical, psychological, sociological and legal issues relating to abuse and family violence across the lifespan, including child maltreatment and elder abuse. Introduction to methods for prevention and remediation.

**3421. Low Income Families**

Three credits. Prerequisite: Open to juniors or higher.

Impact of poverty and related problems on development of the child in the context of the family. Family structure, childrearing patterns, early educational and community programs.

**3423. History of the Family**

Three credits.

Pre-industrial and industrial family life in Western society since the Middle Ages, with

emphasis on the changes in demography, family size and structure, family economy, social expectations, sex roles, sexuality, and affective bonds.

#### **3425. Food and the American Family**

Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: HDFS 2004W; PSYC 2100WQ, or equivalent research methods course.

Comprehensive and critical examination of how individual characteristics, family factors, community environments, food industry actions, and government food policies work together to influence what Americans eat throughout the lifespan.

#### **3430. The Family-School Partnership**

Three credits. Prerequisite: HDFS 1070 or 2100 or PSYC 2400; open to juniors or higher.

The role of families in the education process. The effective family-school-community partnership in educating children: Communications and the implications of culture, socio-economics, family form, family dynamics, family supports, and public policy.

#### **3431. Families and Work**

Three credits. Prerequisite: Open to juniors or higher.

Interaction of the world of work with family structure; social psychological dynamics that enhance or impede working families' lives.

#### **3442. Latino Health and Health Care**

(Also offered as LLAS 3250.) Three credits. Prerequisite: Open to juniors or higher.

Overview of health and health care issues among Latinos in the United States. Particular attention is paid to cultural and social factors associated with health and well being (e.g. migration, acculturation, SES).

#### **3473. Asian-Pacific American Families**

(Also offered as AAAS 3473.) Three credits.

Overview of social, cultural, educational, demographic and economic characteristics of Asian-Pacific American families. Examination and critique of values, customs, traditions and beliefs that distinguish families of this heterogeneous ethnic population.

#### **3510. Planning and Managing Human Service Programs**

Three credits. Prerequisite: Open to juniors or higher.

Planning techniques: needs assessment, data collection and analysis, budgeting, and evaluation. Management skills: decision making, management theory and organizational behavior, personnel motivation, accountability, and financial management.

#### **3520. Legal Aspects of Family Life**

Three credits. Prerequisite: Open to juniors or higher.

Overview of historical roots and key aspects of family law. The case method is used to analyze the causes and effects of contemporary trends. Topics include: the regulation of marriage, separation, and divorce; procreation and abortion; adoption; child custody and support; and, end-of-life issues.

#### **3530. Public Policy and the Family**

Three credits. Prerequisite: Open to juniors or higher.

Analysis of government programs and policies impacting the family: child care, aging, family law, mental health, family violence, income maintenance, and family impact analysis.

#### **3540. Child Welfare, Law and Social Policy**

Three credits. Prerequisite: HDFS 2100 or PSYC 2400; HDFS 2004 or PSYC 2100Q; open to juniors or higher.

Examines the methods through which empirical social science research can affect law and public policy affecting children and families. CA 2.

#### **3550. Comparative Family Policy**

Three credits. Prerequisite: Open to juniors or higher.

Comparative analysis of government programs and policies impacting families in the United States and other countries. Health and welfare policies, family planning, child care, teen pregnancy, and care of the aged.

#### **4004. Senior Seminar in Research Methods**

Three credits. Prerequisite: HDFS 2004; 12 credits of 2000-level or above HDFS courses; open only to Human Development and Family Sciences majors.

Students will work as a research team to conduct a research project through all of its phases, from formulating a research question to final presentation of findings.

#### **4007W. Professional Communication in HDFS**

Three credits. Prerequisite: HDFS 2004; ENGL 1007 or 1010 or 1011 or 2011; 12 additional credits of 2000 level or above HDFS courses; open to HDFS majors.

Development of advanced written and oral communication skills required for professional careers and graduate studies. Emphasis is placed on appropriate presentation and writing styles for the diverse audiences and purposes encountered in research and practice.

#### **4087W. Honors Thesis**

Variable (3-6) credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to students in the Honors Program only.

Individual study with student's honors thesis supervisor for the purpose of writing the honors thesis. Student must have a thesis advisor and have an approved thesis topic.

#### **4097. Honors Thesis Preparation Seminar**

One credit. Prerequisite: HDFS 3087; open students in the Honors Program with instructor consent. May be repeated for credit.

Prepares students to tackle the honors thesis by covering the basics of the thesis process. Course content will focus on strategies to make the thesis manageable, organizational and writing skills, and discussion of seminar members' thesis projects and progress. In this seminar, students form a community of scholars to discuss and support each other's work.

#### **4099. Independent Study for Undergraduates**

Variable (1-6) credits. Prerequisite: HDFS 2004. May be repeated for credit.

Students, working with a faculty supervisor, develop plans for an independent research project

or review paper, execute the project, and complete a report. May be taken more than one semester.

#### **4181W. Early Childhood Development and Education: Supervised Teaching Practicum**

Nine credits. Prerequisite: HDFS 2100, 3101, 3102, 3120, 3122, 3123, 3183, and either 3181 or 3182; ENGL 1007 or 1010 or 1011 or 2011; GPA of 2.7 in HDFS courses.

Supervised teaching experience within the Child Development Labs or approved early education center. Development of advanced written and oral communication skills required for early childhood educators with emphasis on appropriate presentation and writing styles for diverse audiences.

#### **4182. Administration and Leadership in Early Childhood Programs: Practicum**

Variable (1-6) credits. Prerequisite: HDFS 4181 and a GPA of 2.5 in HDFS courses; open to juniors or higher.

Continuation of HDFS 4181. Experience in early childhood program implementation, administration, staff supervising, policy making, and curriculum planning.

#### **4255. Living with Chronic or Life-Threatening Illness**

Three credits. Prerequisite: Open to juniors or higher.

Chronic and/or life-threatening illness from diagnosis through long term management. Psychological, interpersonal, family, and ethical aspects of the chronic illness experience across the life span, in contexts of culture and health policy.

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### **Human Rights (HRTS)**

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#### **1007. Introduction to Human Rights**

Three credits.

Exploration of central human rights institutions, selected human rights themes and political controversies, and key political challenges of contemporary human rights advocacy. CA 2. CA 4-INT.

#### **2100. Human Rights and Social Change**

Three credits.

Interdisciplinary exploration of the dynamic intersection between human rights and struggles for social change in a variety of contexts. Emphasis on how history, theory, and practice influence the power dynamics that promote or undermine human rights through social change. CA 2. CA 4-INT.

#### **2100W. Human Rights and Social Change**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Interdisciplinary exploration of the dynamic intersection between human rights and struggles for social change in a variety of contexts. Emphasis on how history, theory, and practice influence the power dynamics that promote or undermine human rights through social change. CA 2. CA 4-INT.

#### **2170W. Bioethics and Human Rights in Cross-Cultural Perspective**

(Also offered as PHIL 2170W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to sophomores or higher.

Philosophical examination of the ethical and human rights implications of recent advances in

the life and biomedical sciences from multiple religious and cultural perspectives. CA 1.

#### **2200. Introduction to Genocide Studies**

Three credits.

Interdisciplinary introduction to the study of genocide as an historical, legal, social, political, and conceptual phenomenon, including response, prevention, and commemoration efforts. CA 2. CA 4-INT.

#### **2203. The Holocaust in Print, Theater, and Film**

(Also offered as HEJS 2203 and DRAM 2203.) Three credits.

Representations of the Holocaust, including first-hand accounts and documentaries; artistic choices in genre, structure, imagery, point of view, and the limits of representation. CA 1. CA 4-INT.

#### **2210. Art and Activism**

(Also offered as ARTH 2210.) Three credits.

A history of the relationship between art and political activism around the world from the 1960s to the present.

#### **2220. Asian Indian Women: Activism and Social Change in India and the United States**

(Also offered as SOCI 2220 and AAAS 2220.) Three credits.

How gender, class, and ethnicity/race structure everyday lives of Asian Indian women in both India and the United States. Formerly offered as AAAS/SOCI 3222/HRTS 3573.

#### **2263. Women, Gender, and Violence**

(Also offered as WGSS 2263.) Three credits. Prerequisite: Open to sophomores or higher. Recommended preparation: Any 1000 or 2000 level WGSS course.

Discussion of various forms of gendered violence in the United States and in a global context. Physical, sexual, emotional and structural violence; social, political and personal meanings of gendered violence; special emphasis on women.

#### **2300. Engineering for Human Rights**

(Also offered as ENGR 2300.) Three credits.

Foundational concepts of human rights and engineering ethics from a global perspective. Discussions of the role of engineering in society from human rights and different ethical perspectives. Principles of "Engineering for human rights" on distributive justice, participation, consideration of duty bearers, accountability, and indivisibility of rights. Case study analysis of engineering projects for human rights impacts. CA 2.

#### **2400. Ethics and Sustainability in New Financial Technologies**

Three credits.

Exploration of the ethical, sustainability, and human rights implications of the new financial technology (FinTech) sector. Topics may include cryptocurrency, blockchain technology, and the potential use of FinTech instruments to address contemporary human rights issues.

#### **2450. Human Rights in Latin America**

(Also offered as LLAS 2450.) Three credits.

Fundamental concepts and recurrent challenges of human rights in Latin America.

#### **2520. White Racism**

(Also offered as SOCI 2520 and AFRA 2520.) Three credits.

The origin, nature, and consequences of white racism as a central and enduring social principle around which the United States and other modern societies are structured and evolve. Formerly offered as AFRA/HRTS/SOCI 3505. CA 4.

#### **2530. African Americans and Social Protest**

(Also offered as SOCI 2530 and AFRA 2530.) Three credits.

Social and economic-justice movements, from the beginning of the Civil Rights movement to the present. Formerly offered as AFRA/HRTS/SOCI 3825.

#### **2800. Human Rights in the United States**

(Also offered as SOCI 2800.) Three credits.

Sociological analyses of human rights issues in the United States, including economic, racial, and gender justice; prisoners' rights and capital punishment; the role of the United States in international human rights agreements and treaties; and struggles on behalf of human rights. Formerly offered as HRTS/SOCI 3831.

#### **2830. Class, Power, and Inequality**

(Also offered as SOCI 2830.) Three credits.

Inequality and its consequences in contemporary societies. Formerly offered as HRTS/SOCI 3421.

#### **2830W. Class, Power, and Inequality**

(Also offered as SOCI 2830W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Inequality and its consequences in contemporary societies. Formerly offered as SOCI 3421W.

#### **2845. Sociology of Global Human Rights**

(Also offered as SOCI 2845.) Three credits.

Comparative approach to the study of human rights in the United States and elsewhere around the world from a sociological perspective. Formerly offered as HRTS/SOCI 3837.

#### **2845W. Sociology of Global Human Rights**

(Also offered as SOCI 2845W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Comparative approach to the study of human rights in the United States and around the world from a sociological perspective. Formerly offered as HRTS/SOCI 3837W.

#### **2898. Topics in Sociology and Human Rights**

(Also offered as SOCI 2898.) Three credits. May be repeated for a total of 6 credits.

Variable topics covering theoretical and empirical examination of social, political, economic, legal, and/or cultural issues of human rights from a sociological perspective. Formerly offered as HRTS/SOCI 3833.

#### **3028. Indigenous Rights and Aboriginal Australia**

(Also offered as ANTH 3028.) Three credits. Recommended preparation: ANTH 2000.

An introduction to the study and understanding of Aboriginal ways of life and thought. An exploration of the complexity of contemporary indigenous social orders and land rights issues. CA 4-INT.

#### **3028W. Indigenous Rights and Aboriginal Australia**

(Also offered as ANTH 3028W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011. Recommended preparation: ANTH 2000.

An introduction to the study and understanding of Aboriginal ways of life and thought. An exploration of the complexity of contemporary indigenous social orders and land rights issues. CA 4-INT.

#### **3042. Theories of Human Rights**

(Also offered as POLS 3042.) Three credits. Prerequisite: Open to juniors or higher.

Various theories of human rights, both historical and contemporary. Conceptual arguments both in favor and critical of the theory and practice of human rights will be considered, with literature taken primarily from philosophy and political theory.

#### **3050. Approaches to Human Rights Advocacy**

Three credits.

The study of international and domestic non-governmental organizations in human rights advocacy and campaigns.

#### **3055. Theory and Practice of International Criminal Justice**

Three credits.

International humanitarian and criminal law; genocide, crimes against humanity, war crimes and aggression, and theories of individual criminal responsibility.

#### **3139. Theatre and Human Rights**

(Also offered as DRAM 3139.) Three credits.

Provides a critical study of theatre production as political discourse in global areas of conflict and how that discourse defines, or is defined by, human rights issues.

#### **3149. Human Rights Through Film**

Three credits.

Human rights-related issues explored via the cinematic medium. Both the substantive content and the technical aspects of the films will be analyzed through a combination of lecture, viewing, and group discussion.

#### **3149W. Human Rights through Film**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

Human rights-related issues explored via the cinematic medium. Both the substantive content and the technical aspects of the films will be analyzed through a combination of lecture, viewing, and group discussion.

#### **3153W. Human Rights in Democratizing Countries**

(Also offered as ANTH 3153W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Human rights, political violence, political and legal anthropology, prosecutions of human rights offenders, truth and memory, reconciliation, international justice. CA 4-INT.

#### **3200. International Human Rights Law**

Three credits. Prerequisite: Open to sophomores or higher. Recommended preparation: HRTS 1007.

International and regional human rights law, institutions, and regimes; specialized topics include corporate social responsibility, women's human rights, truth commissions, humanitarian

intervention, international criminal law, monitoring, and compliance. CA 1. CA 4-INT.

### **3200W. International Human Rights Law**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to sophomores or higher. Recommended preparation: HRTS 1007.

International and regional human rights law, institutions, and regimes; specialized topics include corporate social responsibility, women's human rights, truth commissions, humanitarian intervention, international criminal law, monitoring, and compliance. CA 1. CA 4-INT.

### **3201. The History of Human Rights**

(Also offered as HIST 3201.) Three credits.

Case studies in the emergence and evolution of human rights as experience and concept.

### **3202. International Human Rights**

(Also offered as HIST 3202.) Three credits.

Historical and theoretical survey of the evolution of human rights since 1945.

### **3207. Genocide after the Second World War**

(Also offered as HIST 3207.) Three credits. Recommended preparation: HIST/HRTS 3201.

Origins of the 1948 Genocide Convention. Several case studies of genocide post WWII: Cambodia, Rwanda, the former Yugoslavia, and Darfur. Causes and underlying dynamics of genocide with an emphasis on the international response. Critical evaluation of military, political, and non-governmental measures to prevent genocidal acts.

### **3209. Sustainable Energy in the 21st Century**

(Also offered as ENGR 3209 and POLS 3209.) Three credits. Prerequisite: Open to juniors or higher.

Political, socioeconomic, environmental, science and engineering challenges of energy sources; comparison of feasibility and sustainability of energy policies around the world.

### **3212. Comparative Perspectives on Human Rights**

(Also offered as POLS 3212.) Three credits. Prerequisite: Open to juniors or higher.

Cultural difference and human rights in areas of legal equality, women's rights, political violence, criminal justice, religious pluralism, global security, and race relations.

### **3219. Topics in Philosophy and Human Rights**

(Also offered as PHIL 3219.) Three credits. Prerequisite: One three credit course in Philosophy or instructor consent; open to juniors or higher. May be repeated for credit.

What are human rights? Why are they important? Topics may include the philosophical precursors of human rights, the nature and justification of human rights, or contemporary issues bearing on human rights.

### **3219W. Topics in Philosophy and Human Rights**

(Also offered as PHIL 3219W.) Three credits. Prerequisite: One three-credit course in Philosophy or instructor consent; ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher. May be repeated for credit.

What are human rights? Why are they important? Topics may include the philosophical precursors of human rights, the nature and justification of human

rights, or contemporary issues bearing on human rights.

### **3220. Philosophical Foundations of Human Rights**

(Also offered as PHIL 3220.) Three credits. Prerequisite: One from PHIL 1101, 1102, 1103, 1104, 1105, 1106 or 1107.

Ontology and epistemology of human rights investigated through contemporary and/or historical texts. CA 1.

### **3220W. Philosophical Foundations of Human Rights**

(Also offered as PHIL 3220W.) Three credits. Prerequisite: One three-credit course in Philosophy at the 1100 level; ENGL 1007 or 1010 or 1011 or 2011.

Ontology and epistemology of human rights investigated through contemporary and/or historical texts. CA 1.

### **3221. Latinos/as and Human Rights**

(Also offered as LLAS 3221 and HIST 3575.) Three credits.

Latino/a issues related to human, civil and cultural rights, and gender differences.

### **3230. Propaganda, Disinformation, and Hate Speech**

(Also offered as ANTH 3230.) Three credits. Prerequisite: Not open for credit to students who have passed ANTH 3098 when offered as Propaganda, Fake News and Hate Speech.

Draws on current social science research to understand the effects of false information and hate speech on our politics and culture and to evaluate various private and public initiatives to regulate speech. CA 2.

### **3230W. Propaganda, Disinformation, and Hate Speech**

(Also offered as ANTH 3230W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011. Not open for credit to students who have passed ANTH 3098 when offered as "Propaganda, Fake News and Hate Speech."

Drawing on recent social science research, this course will seek to understand the effects of false information and hate speech on our politics and culture, and evaluate various private and public initiatives to regulate speech. CA 2.

### **3232. History of Refugees, Migration, and Statelessness**

(Also offered as HIST 3232.) Three credits.

Forced and voluntary migration and statelessness in the era of the modern state. Topics include the social and political factors influencing population movement; the experience of migration and statelessness; rights of refugees, migrants, and the stateless; immigration policy; international action; and social and political responses to migration.

### **3250. Human Rights and New Technologies**

Three credits. Prerequisite: Open to sophomores or higher. Recommended preparation: HRTS 1007.

The role of new technologies in the fulfillment, protection and enforcement of human rights; technology-related human rights benefits and risks, including privacy, security, and equality; technical and legal innovations for balancing benefits and risks. CA 1.

### **3250W. Human Rights and New Technologies**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to sophomores or higher. Recommended preparation: HRTS 1007.

The role of new technologies in the fulfillment, protection and enforcement of human rights; technology-related human rights benefits and risks, including privacy, security, and equality; technical and legal innovations for balancing benefits and risks. CA 1.

### **3252. Corporate Social Responsibility and Accountability**

(Also offered as BLAW 3252, BADM 3252, and MKTG 3252.) Three credits. Prerequisite: Open only to non-business students of junior or higher status. Not open to students who have passed or are taking BADM 3252 or BLAW 3252.

This course provides an introduction to the human rights implications of multinational enterprises' global operations. Students learn how to assess corporate social impact through a human rights framework, consider the challenges of regulating the human rights impacts of global business, analyze international policy responses, and evaluate the effectiveness of different approaches to enforcing human rights standards for corporations.

### **3254. Business Solutions for Societal Challenges**

(Also offered as BLAW 3254, BADM 3254, and MKTG 3254.) Three credits. Prerequisite: Open only to non-business students of junior or higher status. Not open to students who have passed or are taking BLAW/BADM 3254.

This course provides an introduction to market-based solutions to social and human rights challenges. Students learn how to identify societal challenges from a human rights perspective and business's role in addressing these challenges. Students will assess the modalities that businesses can adopt to generate positive social impact and will critically analyze business responses to societal challenges.

### **3256. Politics and Human Rights in Global Supply Chains**

(Also offered as POLS 3256.) Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: POLS 1202 and 1402 and POLS/HRTS 3212.

Political and human rights implications of regulating contemporary global supply chains: official regulatory frameworks; non-regulatory approaches to rule-making (such as voluntary corporate codes of conduct and industry standards); social responses to the dilemmas of "ethical" sourcing of goods and services.

### **3256W. Politics and Human Rights in Global Supply Chains**

(Also offered as POLS 3256W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011 or 3800, open to Political Science and Human Rights majors and minors; open to juniors or higher. Recommended preparation: POLS 1202, POLS 1402 and POLS/HRTS 3212.

Political and human rights implications of regulating contemporary global supply chains: official regulatory frameworks; non-regulatory approaches to rule-making (such as voluntary corporate codes of conduct and industry standards);

social responses to the dilemmas of “ethical” sourcing of goods and services.

**3257. Assessment for Human Rights and Sustainability**

Three credits. Prerequisite: Not open to students who have passed ENGR 3257.

Foundational concepts of human rights and environmental impacts pertaining to global supply chains. Regulations and voluntary standards in engineering-intensive sectors, including infrastructure, biofuels, electronics. Case study analysis of corporate assessment practices for labor rights protection and environmental impacts.

**3293. International Study**

Variable (1-15) credits. Prerequisite: Consent of the Minor Director required prior to departure. May be repeated for credit.

Special topics taken in the Education Abroad program.

**3295. Special Topics**

Variable (1-6) credits. Prerequisite: Prerequisites and recommended preparation vary. May be repeated for credit.

**3298. Variable Topics**

Three credits. May be repeated for credit.

Issues in human rights, history, law and policy, or practices. Prerequisites and recommended preparation vary.

**3299. Independent Study**

Variable (1-12) credits. Prerequisite: Instructor consent required. May be repeated for credit.

Supervised reading and writing on a subject of special interest to the student.

**3326. Global Health and Human Rights**

(Also offered as ANTH 3326.) Three credits.

Theories, methods and controversies in the interconnected fields of global health and human rights.

**3327. Power and Health in Latin America and the Caribbean**

(Also offered as ANTH 3327 and LLAS 3327.) Three credits. Prerequisite: Open to sophomores or higher.

History, theories, and concepts about the human right to health and structural inequalities in the region.

**3401. Applied Research in Human Rights**

Three credits. Prerequisite: Open to Sophomores or higher.

Development of research skills through practical experience in the field of human rights. In the classroom, students learn fundamentals of research design, data collection and analysis. Outside class, students develop these skills by directly contributing to active research projects centered on human rights issues led by faculty members.

**3418. International Organizations and Law**

(Also offered as POLS 3418.) Three credits. Prerequisite: Open to juniors or higher.

The role of intergovernmental and nongovernmental organizations and international law in world affairs with special attention to contemporary issues.

**3420. Being International: Geopolitics and Human Rights**

Three credits.

Human rights theories and debates and their historical, institutional and geopolitical contexts.

**3428. The Politics of Torture**

(Also offered as POLS 3428.) Three credits. Prerequisite: Open to juniors or higher.

Examination of the usage of torture by state and non-state actors. Questions include, “Why is torture perpetrated?” “What domestic and international legal frameworks and issues related to the use of torture?” “How effective are existing legal prohibitions and remedies?” “Who tortures?” and “How does torture affect transitional justice?”

**3430. Evaluating Human Rights Practices of Countries**

(Also offered as POLS 3430.) Three credits. Prerequisite: Open to juniors or higher.

Examination of the ways in which governments, businesses, NGOs, IGOs, and scholars assess which human rights are being respected by governments of the world. Hands-on experience in rating the level of government respect for human rights in countries around the world.

**3445. Economic Foundations of Gender Inequality**

(Also offered as WGSS 3445.) Three credits. Prerequisite: Not open to students who have passed or are taking ECON 2445.

Economic approaches to gender inequality in political representation, economic opportunities, access to education, and health.

**3460. Human Rights and Armed Conflict**

Three credits. Prerequisite: Open to juniors or higher.

Examines the relationship between human rights and armed conflict from a social science perspective. Explores human rights abuses as cause and consequence of armed conflict. Evaluates the effectiveness of the human rights and humanitarian approaches to conflict management

**3475. Economic Development and Human Rights**

Three credits.

Microeconomics of economic development and human rights. Impacts of human capital, health, education, on well-being and poverty.

**3540. Topics in Human Rights Practice**

Three credits. Prerequisite: Instructor consent. May be repeated for a total of 9 credits.

Seminar on topics in theoretical and practice-based knowledge and skills related to human rights. Topics vary by semester.

**3563. African American History to 1865**

(Also offered as HIST 3563 and AFRA 3563.) Three credits.

History of African-American people to 1865, from their West African roots, to their presence in colonial America, through enslavement and emancipation. Adaptation and resistance to their conditions in North America. Contributions by black people to the development of the United States.

**3575. Human Rights, Digital Media, Visual Culture**

(Also offered as ARTH 3575.) Three credits. Prerequisite: Open to juniors or higher.

The problematics of digital media and visual representation in conceptualizing, documenting,

and visualizing human rights and humanitarian issues. CA 1.

**3619. Topics in Literature and Human Rights**

(Also offered as ENGL 3619.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher. May be repeated for credit.

Study of literature from various historical periods and nationalities concerned with defining, exploring, and critiquing the idea of universal human rights.

**3631. Literature, Culture, and Humanitarianism**

(Also offered as ENGL 3631.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to sophomores or higher.

Relationships between literature and culture and humanitarian movements, from the eighteenth century to the present.

**3640. Human Rights Archives I: Documenting and Curating Community Memory**

(Also offered as DMD 3640.) Three credits. Prerequisite: Open to Digital Media Design majors and Human Rights majors or minors only; open to juniors or higher; instructor consent required. Recommended preparation: DMD 2200, 2210, or HRTS 3149W.

The use of human rights archival materials in documentary storytelling. Students will learn methods and best practices of collecting and managing digital visual and audio-visual archival assets. This is the first part of a two-semester unit addressing a common theme. Part I is not a prerequisite for Part II.

**3641. Human Rights Archives II: Visual Storytelling Practices**

(Also offered as DMD 3641.) Three credits. Prerequisite: Open to Digital Media Design majors and Human Rights majors or minors only; open to juniors or higher; instructor consent required. Recommended preparation: DMD 2200, 2210, 3640, or HRTS 3149W.

The use of human rights archival materials in documentary storytelling. Students will be trained in different documentary techniques and storytelling approaches working with oral history narratives and archival materials. This is the second part of a two-semester unit addressing a common theme. Part I is not a prerequisite for Part II.

**3710. Islam and Human Rights**

Three credits.

Introduction to Islamic law, international human rights, and questions of universalism and relativism, collectivism and individualism.

**3807. Constitutional Rights and Liberties**

(Also offered as POLS 3807 and AMST 3807.) Three credits. Prerequisite: Open to juniors or higher.

The role of the Supreme Court in interpreting the Bill of Rights. Topics include freedoms of speech and religion, criminal due process, and equal protection.

**3828. Social Documentary in Theory and Practice**

(Also offered as DMD 3828.) Three credits. Prerequisite: Open to Digital Media Design majors and Human Rights majors or minors only; open to sophomores or higher. Recommended preparation: DMD 2210, 2810, 3820, or HRTS 3149W.

The study of the evolution of the documentary genre and its potential use as a vehicle for social discourse and change. Through sustained engagement with the documentary genre, students will gain direct experience in shooting and editing short form documentary films.

### 3835. Refugees and Humanitarianism

(Also offered as SOCI 3835.) Three credits.

Social and political challenges of living as a refugee and working in humanitarian settings with a focus on refugee camps, institutional development of the UN High Commissioner for Refugees, and alternative approaches to refuge.

### 3835W. Refugees and Humanitarianism

(Also offered as SOCI 3835W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011. Recommended preparation: POLS 1007/HRTS 1007.

Social and political challenges of living as a refugee and working in humanitarian settings. Refugee camps, the institutional development of the UN High Commissioner for Refugees, and alternative approaches to sanctuary.

### 4291. Service Learning Seminar/Internship

Three credits. Prerequisite: Instructor consent; nine credits of 2000-level or above HRTS courses (six of which may be taken concurrently). May be repeated for a total of 6 credits.

Combination of supervised fieldwork within the larger human rights community with regular classroom meetings for reflection/analysis on the application of human rights concepts and practices. Students must secure a satisfactory intern position before the end of the second week of the semester of enrollment in this course; students should be in consultation with the instructor several months in advance.

### 4996W. Senior Thesis

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Research and writing of major project exploring a topic with human rights, with close supervision and production of multiple written drafts.

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## India Studies (INDS)

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### 3210. Ancient and Classical Indian Literature in Translation

Three credits.

Literary achievements of Indian civilization from the ancient and classical periods. Attention given to major genres and their development in both secular and religious texts.

### 3293. Foreign Study

Variable (1-15) credits. May be repeated for a total of 15 credits.

Special topics taken in a foreign study program. May be taken for a maximum of 15 credits. Consent of Coordinator of India Studies required prior to departure.

### 3295. Special Topics

Three credits. Prerequisite: Prerequisites and recommended preparation vary. May be repeated for credit.

### 3298. Variable Topics

Variable (1-6) credits. May be repeated for credit.

### 3299. Independent Study

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

Supervised reading and writing on a subject of special interest to the student.

### 3375. Indian Art and Popular Culture: Independence to the Present

(Also offered as ART 3375 and AAAS 3375.) Three credits. Prerequisite: Open to juniors or higher.

An interdisciplinary lecture/studio art course introducing diverse forms of Indian Art from the traditional through the contemporary. Students complete either research or studio art assignments responding to the course content. CA 1. CA 4-INT.

### 4296W. Senior Thesis

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Research and writing of a thesis.

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## Interdepartmental (INTD)

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### 1985. Special Topics

Variable (1-5) credits. Prerequisite: Instructor consent required. May be repeated for credit.

Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

### 1993. International Study

Variable (1-17) credits. Prerequisite: Instructor consent required. May be repeated for a total of 17 credits.

Course work undertaken within approved Study Abroad programs.

### 1995. Special Topics

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

### 1999. Independent Study

Variable (1-6) credits. Prerequisite: Open to First-Year or Sophomore students only. May be repeated for credit.

### 2245. Introduction to Diversity Studies in American Culture

Three credits. Prerequisite: Open to sophomores or higher.

An interdisciplinary introduction to comparative multicultural studies in the United States. Topics may include: African American, Asian American, Latino/a, and Native American cultures; gender, feminism, religious and sexual identities; and disability studies. CA 4.

### 3200. Introduction to Correctional Health

Three credits. Prerequisite: Open to Honors students.

Major concepts and topics in correctional health.

### 3222. Linkage through Language

One credit. Prerequisite: Language skills equivalent to two to four semesters of college course work in a single foreign language (may be completed concurrently). May be repeated for credit.

Supplements a three-credit course in a particular discipline by studying selected foreign language texts related to the topic of its companion course. Practice in oral and written expression. With a change in content this course may be repeated for credit.

### 3260. The Bible, the Holy Land, and History

Three credits.

The historical, literary, and archaeological investigation of the Old and New Testaments. CA 1.

### 3584. Seminar in Urban Problems

Three credits. Prerequisite: Must be taken concurrently with INTD 3590 and 3594; open to juniors or higher.

Discussions based upon assigned readings and led by faculty and invited speakers from outside and within the University. CA 4.

### 3590. Urban Field Studies

Nine credits. Prerequisite: Must be taken concurrently with INTD 3584 and 3594; open to juniors or higher.

Field experience supervised by the director and an examining committee consisting of the director and two or more faculty members from two departments in the College of Liberal Arts and Sciences.

### 3594. Urban Semester Field Work Seminar

Three credits. Prerequisite: Must be taken concurrently with INTD 3590 and 3584; open to juniors or higher.

Students make analytic presentations of their field experiences, relating these to the pertinent available literature. Particular issues are discussed with experts invited from inside and outside the University.

### 3594W. Urban Semester Field Work Seminar

Three credits. Prerequisite: INTD 3590 and 3584, which must be taken concurrently; ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

Students make analytic presentations of their field experiences, relating these to the pertinent available literature. Particular urban problems are discussed with invited experts from outside the University.

### 3985. Special Topics

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

### 3993. International Study

Variable (1-17) credits. Prerequisite: Instructor consent required. May be repeated for a total of 17 credits.

Course work undertaken within approved Study Abroad programs.

### 3995. Special Topics

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

### 3999. Independent Study

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

### 4200. Translating Evidence: Applied Correctional Research

Three credits. Prerequisite: Open to Honors students.

Systematic review as a research methodology for translation of clinical evidence into a clinical environment. Production of a poster for presentation. Two-semester projects are possible for students interested in oral presentation of findings, or co-authored publication.

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## Irish (IRIS)

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**1001. Elementary Irish I**

Four credits. Prerequisite: May not be taken out of sequence after passing IRIS 1002, 1003, or 1004.

Development of ability to communicate in Irish, orally and in writing, to satisfy basic communicative needs within a cultural setting.

**1002. Elementary Irish II**

Four credits. Prerequisite: IRIS 1001 or one year of Irish in high school. May not be taken out of sequence after passing IRIS 1003 or 1004.

Development of ability to communicate in Irish, orally and in writing, to satisfy basic communicative needs within a cultural setting.

**1003. Intermediate Irish I**

Four credits. Prerequisite: IRIS 1002 or two years of Irish in high school. May not be taken out of sequence after passing IRIS 1004.

Further development of understanding, speaking, reading, and writing skills within a cultural setting. Readings to enhance cultural awareness of the Irish-speaking world.

**1004. Intermediate Irish II**

Four credits. Prerequisite: IRIS 1003 or three years of Irish in high school.

Further development of understanding, speaking, reading, and writing skills within a cultural setting. Readings to enhance cultural awareness of the Irish-speaking world.

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## Italian Literature and Cultural Studies (ILCS)

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**1001. Elementary Italian I**

Four credits. Prerequisite: Not open for credit to students with three or more years of h.s. Italian. May not be taken out of sequence after passing ILCS 1002, 1003, or 1004 or after passing any 2000-level or above course taught in Italian.

Elementary Italian grammar. Practice of oral skills through pronunciation and easy conversation. Reading of simple texts and exposure to Italian media and culture.

**1002. Elementary Italian II**

Four credits. Prerequisite: ILCS 1001 or equivalent. Not open for credit to students with three or more years of high school Italian. Students with questions about placement should contact the head of the Department of Literatures, Cultures and Languages.

More elements of grammar and culture with integrated readings. Further practice in conversation and exposure to culture through simple examples from media, politics, and art.

**1003. Intermediate Italian I**

Four credits. Prerequisite: ILCS 1002 or equivalent. May not be taken out of sequence after passing ILCS 1004. May not be taken for credit after passing any 2000-level or above course taught in Italian, or three or more years of high school Italian. Students with questions about placement should contact the head of the Department of Literatures, Cultures and Languages.

Intensive oral-aural practice based on selected readings and exposure to a wide range

of contemporary cultural themes through materials such as newspaper articles, advertising material, and videos. Emphasis on more complex grammatical structures and vocabulary.

**1004. Intermediate Italian II**

Four credits. Prerequisite: ILCS 1003 or equivalent. May not be taken for credit after passing any 2000-level or above course taught in Italian. Students with questions about placement should contact the head of the Department of Literatures, Cultures and Languages.

Intensive oral-aural practice. Practice in speaking through a combination of group-based and individual activities, focusing on grammatical structures, language functions, and vocabulary. Further exposure to a wide range of contemporary cultural themes through materials such as newspaper articles, advertising material, and videos.

**1101. The Italian Renaissance**

Three credits.

A survey of Italian Renaissance civilization, with emphasis on literature and intellectual life. Taught in English. May not be used to meet the foreign language requirement. A knowledge of Italian is not required. CA 1.

**1149. Cinema and Society in Contemporary Italy**

Three credits.

A critical analysis of contemporary Italian society seen through the media of film and literature. Taught in English. May not be used to meet the foreign language requirement. Films in Italian with English subtitles. CA 1. CA 4-INT.

**1158. Italian American Experience in Literature and Film**

Three credits.

Focuses on the Italian American experience as represented in a variety of fields, including literature and cinema. Taught in English. CA 1. CA 4.

**1160. Culture of Fascist Italy**

Three credits.

The way Italian literary and cinematic culture justified, survived, and fought the terrors of the Fascist totalitarian regime. Taught in English. May not be used to meet the foreign language requirement. CA 1. CA 4-INT.

**1168. Adaptation: Italian Literature into Film**

Three credits.

Survey of literary genres adapted into film in Italian context. Literary and visual styles, visual literacy, and film criticism. Literary texts cover a range of time periods and cultural considerations. Films represent a variety of cinematic techniques and the new audiences and artistic goals targeted by film adaptations. General film theory and theories of adaptation. CA 1. CA 4-INT.

**1170. Introducing Italy through Its Regions**

Three credits. May be repeated for credit.

The diverse culture of Italy, studied through analysis of sociological, literary, artistic, and cinematic works from and about a single one of the different Italian regions and that region's cultural centers, such as Rome, Naples, Florence, Palermo, or Venice. Taught in English. May not be used to meet the foreign language requirement. CA 1.

**1193. Foreign Study**

Variable (1-6) credits. May be repeated for credit.

Special topics taken in a foreign study program. Consent of Department Head required, normally before the student's departure.

**3237. Italy Today**

Three credits. Prerequisite: ILCS 1004.

A survey of contemporary Italian political, social, economic and cultural life.

**3239. Italian Composition and Conversation I**

Three credits. Prerequisite: ILCS 1004.

Practice in written and oral composition. Syntax study.

**3240. Italian Composition and Conversation II**

Three credits. Prerequisite: ILCS 3239 or equivalent.

Further practice in written and oral composition. Treatment of the finer points in syntax.

**3245. Italian Literature and the City**

Three credits. Prerequisite: ILCS 1004.

Survey of Italian Literature through the changing images of Italian cities.

**3246. Italian Women Writers**

Three credits. Prerequisite: ILCS 1004.

Survey of Italy's women writers from the early modern period to the present. Developments of Italian feminism and gender issues.

**3247. Jewish Literature and Film in 20th Century Italy**

Three credits. Prerequisite: ILCS 1004.

Italy's literary and cinematic representations of Jews in the 20th Century. Jewish identity under Fascism, during World War II, and beyond. Taught in Italian.

**3248. The Italian Novella**

Three credits.

Survey of the novella from the Middle Ages to the 20th century. The course explores the cross-cultural origins of the genre and the influence of the Italian novella on other European literary traditions. Taught in English (Italian readings optional). CA 1. CA 4-INT.

**3248W. The Italian Novella**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011. Taught in English (Italian readings optional).

Survey of the novella from the Middle Ages to the 20th century. The course explores the cross-cultural origins of the genre and the influence of the Italian novella on other European literary traditions. Taught in English (Italian readings optional). CA 1. CA 4-INT.

**3250. Italian Theatre of the Eighteenth Century**

Three credits. Prerequisite: ILCS 3237 or 3239 or 3243 or equivalent.

Readings from Metastasio, Goldoni, and Alfieri.

**3251. Machiavelli, Michelangelo and Renaissance Literature**

Three credits. Prerequisite: ILCS 3237 or 3239 or 3243 or equivalent.

Selected readings from the works of Poliziano, Leonardo da Vinci, Lorenzo de' Medici, Michelangelo, Ariosto, Machiavelli, Castiglione, Tasso, and others.

**3253. Dante and His Time**

Three credits. Prerequisite: ILCS 3237 or 3239 or 3243 or equivalent.

Selected readings from Dante, Petrarch, Compagni, Villani.

**3254. Boccaccio and His Time**

Three credits. Prerequisite: ILCS 3237 or 3239 or 3243 or equivalent.

Readings from Boccaccio and others with special attention to the problems of social and sexual ethics.

**3255W. Dante's Divine Comedy in English Translation**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Dante's poem as a unique synthesis of Medieval culture. Emphasizes its integration of ethics, political thought, and theology with poetic imagination. Taught in English. CA 1.

**3256. The Literature of the Italian Renaissance**

Three credits. Prerequisite: Not open to students who have passed ILCS 3251 or 3252.

A survey, in English, of the major literary and philosophical currents of the Italian Renaissance. Selections from Boccaccio, Petrarch, Pico della Mirandola, Machiavelli, Castiglione, and others. Taught in English.

**3258W. Cinematic Representations of Italian Americans**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Cinematic representations of Italian Americans in the works of major directors from the silent era to the present. Construction of and attempts to dislodge negative stereotypes of Italian American male and female immigrants. Taught in English. CA 1. CA 4.

**3259. Topics in Italian Cinema**

Three credits. Prerequisite: ILCS 1004.

Major topics in modern and contemporary Italian cinema. Taught in Italian.

**3260W. Italian Cinema**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Italian cinema from the silent era to the present. Its genres, such as epic film, melodrama, comedy "Italian-style," "Spaghetti-Westerns," and political cinema. Cinema as a reflection on and comment upon the social and political contexts of Italian history from pre-fascist Italy to modernization and beyond. Taught in English. Films in Italian with English subtitles. CA 1. CA 4-INT.

**3261. Twentieth-Century Italian Literature**

Three credits. Recommended preparation: ILCS 3237 or 3239 or 3240.

Major trends in twentieth-century Italian Literature from the early modern period to contemporary times.

**3262. Nineteenth-Century Italian Literature**

Three credits. Recommended Preparation: ILCS 3237 or 3239 or 3240 or 3243 or instructor consent.

Nineteenth-century Italian drama, poetry, and narrative from the Napoleonic period to the years immediately following the conquest of Rome in 1870.

**3270. Business Italian**

Three credits. Prerequisite: ILCS 1004.

Introduction to Italian business culture. Written and oral practice in the language of business Italian.

**3291. Italian Internship**

Variable (1-6) credits. Prerequisite: ILCS 1147 or approval from instructor of record; instructor consent required.

Supervised experience in a work setting using Italian linguistic skills and cultural competencies. Context may include a specific trade or industry, business, medical or clinical setting, public agency, community-based organization, or research collaboration. May be taken in the context of a study abroad program. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

**3293. Foreign Study**

Variable (1-6) credits. May be repeated for credit.

Special topics taken in a foreign language program. Consent of Department Head required, normally granted prior to the student's departure. May count toward the major with consent of the advisor.

**3295. Special Topics**

Variable (1-6) credits. Prerequisite: Prerequisites and recommended preparation vary. May be repeated for credit.

Special topics taken in a foreign study program.

**3298. Variable Topics**

Three credits. May be repeated for credit.

Prerequisites and recommended preparation vary.

**3299. Independent Study**

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

**4279. Capstone in Italian Studies**

Three credits. Prerequisite: ILCS 1004.

Advanced language practicum and integration of studies in Italian Literature and Culture.

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## Japanese (JAPN)

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**1101. Elementary Japanese I**

Four credits. Prerequisite: Open only to students with no prior contact with the language. May not be taken out of sequence after passing JAPN 1102, 1103, or 1104.

Introduction to elementary Japanese emphasizing speaking, understanding, reading and writing through a communicative approach.

**1102. Elementary Japanese II**

Four credits. Prerequisite: JAPN 1101 or equivalent. May not be taken out of sequence after passing JAPN 1103 or 1104.

Further instruction in elementary Japanese emphasizing speaking, understanding, reading and writing skills using a communicative approach involving simple examples from contemporary media and culture.

**1103. Intermediate Japanese I**

Four credits. Prerequisite: JAPN 1102 or equivalent. May not be taken out of sequence after passing JAPN 1104.

Increasing communicative abilities in Japanese using more examples from contemporary Japanese media and culture.

**1104. Intermediate Japanese II**

Four credits. Prerequisite: JAPN 1103 or equivalent.

Increasing communicative abilities in Japanese with stronger emphasis on vocabulary and grammar using examples from contemporary Japanese media, politics, and culture.

**1193. Foreign Study**

Variable (1-6) credits. May be repeated for credit.

Special topics taken in a foreign study program. Credits and hours by arrangement. Consent of Department Head required, normally to be granted prior to the student's departure.

**2305. Modern Japanese Literature**

(Also offered as AAAS 2305 and ENGL 2305.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Japanese literature across genres from 1868 to the present, studied in English translation. CA 1. CA 4-INT.

**3293. Foreign Study**

Variable (1-6) credits. Prerequisite: Open to juniors or higher. May be repeated for credit.

Special topics taken in a foreign study program

**3295. Special Topics**

Variable (1-6) credits. Prerequisite: Open to juniors or higher. May be repeated for credit.

Prerequisites, required preparation, recommended preparation vary.

**3298. Variable Topics**

Three credits. May be repeated for credit.

**3299. Independent Study**

Variable (1-6) credits. Prerequisite: Open to juniors or higher. May be repeated for credit.

Credits and hours by arrangement. Open only with consent of Director.

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## Journalism (JOUR)

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**1002. The Press in America**

Three credits. Prerequisite: May not be taken out of sequence after passing JOUR 3002.

The development of American print journalism from 18th century print shops to 21st century corporations; how journalists and their work have evolved and influenced American life. CA 1.

**1095. Special Topics**

Variable (1-3) credits. Prerequisite: Prerequisites and recommended preparation vary. May be repeated for a total of 6 credits.

An introductory exploration of a specialized area of journalism.

**2000W. Newswriting I**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011. Cannot be taken out of sequence after passing JOUR 2001, 3005, 3030, 3040, 3045 or 4091.

Defining news; exercising news judgment in a diverse society; employing principles of Associated Press style; writing basic news stories. Laboratory offers intensive newswriting exercises.



**2001W. Newswriting II**

Three credits. Prerequisite: JOUR 2000W; ENGL 1007 or 1010 or 1011 or 2011. Cannot be taken out of sequence after passing JOUR 3000,3012, 3013, 3033, 4091.

Live reporting using the university and the surrounding community as a laboratory. Emphasis on fact gathering, interviewing, diversity of sources, news judgment and deadline writing.

**2003. Literary Journalism**

Three credits. Prerequisite: JOUR 1002 or 2000 (may be taken concurrently with JOUR 2000).

Critical survey embracing the diverse voices of literary journalism from the 17th century through the 21st.

**2010. Journalism in the Movies**

Three credits.

Viewing and analysis of motion pictures featuring journalistic themes; journalistic history, ethics, legal issues, contrasting forms of media, and other issues. CA 1.

**2040. Fundamentals of News Programming**

Three credits. Prerequisite: Open to sophomores or higher. Recommended preparation: JOUR 1002 and/or JOUR 2000W. Not open for credit to students who have passed JOUR 2095 when offered as TV and Video News Programming.

Exploration of the practical steps required to build a professional newscast for TV, radio, or digital distribution.

**2065. Mobile Storytelling**

Three credits. Recommended preparation: JOUR 1002, which may be taken concurrently.

Entry-level photojournalism course that develops aesthetic and technical skills for storytelling using mobile equipment such as smartphones.

**2095. Special Topics**

Variable (1-3) credits. Prerequisite: Open to sophomores or higher. Prerequisites and recommended preparation vary. May be repeated for a total of 4 credits.

Prerequisites and recommended preparation vary.

**2111. Journalism Portfolio I: Multimedia Skills**

One credit. Prerequisite: JOUR 2000W. Open to Journalism majors, others with permission.

Introduction to online and multimedia skills used by journalists; emphasis on ethical practices. Students provided portfolio space on a department-maintained site.

**2575. The Art of the Interview in Documentary Filmmaking**

Three credits. Prerequisite: Open to sophomores or higher. Recommended preparation: JOUR 2000W, 2111. Not open for credit to students who have passed JOUR 2095 when offered as Art of Interview in Documentary Filmmaking.

Exploration of the technical and ethical practices of preparing for and conducting filmed interviews. Development of essential skills for documentary film production and engagement in exercises that deepen understanding of how recorded interviews drive narratives forward.

**3000W. Community News Reporting**

Three credits. Prerequisite: JOUR 2001W; ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

In-depth reporting across platforms on local and state issues and events, including government, politics, schools, public safety, and a diverse base of community organizations and groups.

**3002. Journalism Ethics**

Three credits. Prerequisite: JOUR 1002. May not be taken out of sequence after passing JOUR 4091.

Discussion of such contemporary problems as privacy, good taste, community standards, effectiveness of the press and responsibility of the press.

**3005. Online Journalism**

Three credits. Prerequisite: JOUR 2000W.

Application of newswriting techniques to online journalism including assembling and producing interactive news stories.

**3012W. Feature Writing**

Three credits. Prerequisite: JOUR 2001W; ENGL 1007 or 1010 or 1011 or 2011.

Emphasis on finding, developing and writing feature stories. Outside stories will be assigned weekly.

**3013W. Magazine Journalism**

Three credits. Prerequisite: JOUR 2001W; ENGL 1007 or 1010 or 1011 or 2011.

Survey of magazine journalism examining different forms of periodicals and their operation, from mission to final product. Students research, report and write for various publications.

**3015. Sports Reporting Across Multiple Platforms**

Three credits. Prerequisite: JOUR 2000W. Recommended Preparation: JOUR 2111. Not open for credit to students who have passed JOUR 3045 when offered as Sports Journalism.

Evaluate some of the best sports journalism of the past and present, report and write a variety of sports stories, cover UConn sports, produce sports packages for broadcast and digital platforms, meet working sports journalists.

**3020. Media Law**

Three credits. Prerequisite: Open to juniors or higher.

The First Amendment, free speech, free press and prior restraint; issues in news gathering, recording, photography, investigative reporting and covering courts; tort law including defamation, privacy, emotional distress; intellectual property and internet regulation.

**3030. Multiplatform Editing**

Three credits. Prerequisite: JOUR 2000W. Recommended preparation: JOUR 2001W.

News value; information verification; editing for grammar, spelling, punctuation and style; headline writing; search engine optimization; handling visuals; building basic data visualizations; basic layout and design for print and digital platforms; aggregation; interactive news story production; audience engagement and social media.

**3031. Design for Digital Journalists**

Three credits. Prerequisite: JOUR 3030.

The fundamentals of visual communication design as applied to modern media. Topics

include design principles, aesthetics, social media, intuitive design, typography, layout, photo editing, color theory, motion graphics, and informational graphics.

**3035. Podcasting**

Three credits. Prerequisite: JOUR 2000W. Not open for credit to students who have passed JOUR 3095 when offered as Introduction to Podcasting.

Researching, recording, writing and producing news podcasts and associated web and social media posts. Ethical considerations.

**3040. Newswriting for Broadcast and Digital Media**

Three credits. Prerequisite: JOUR 2000W.

Application of newswriting and news reporting techniques for broadcast, digital video and digital audio. Practical use of digital media recording equipment and professional audio/video editing software.

**3041. Reporting and Editing TV News**

Three credits. Prerequisite: JOUR 3040.

This is an advanced broadcast journalism class that teaches students how to gather, edit and deliver accurate, newsworthy information for television newscasts. Students develop the skills needed to report news and organize newscasts through actual experience in and out of class.

**3042. Live News Program Production**

Three credits. Prerequisite: JOUR 3041. Not open for credit to students who have passed JOUR 4091 when offered as Live News Program Production.

Assemble a video newscast in a team-oriented, deadline-driven broadcast studio environment. Rotate through a variety of newsroom jobs including writer, producer, anchor, reporter, graphics creator and videographer. Write scripts, edit video and develop on-air presentation skills.

**3045. Specialized Journalism**

Three credits. Prerequisite: JOUR 2000W.

An introduction to specialized fields such as business, science, education, arts, sports, and entertainment reporting. Students will examine some of the best work in the fields and will consider ethical issues and other problems.

**3045W. Specialized Journalism**

Three credits. Prerequisite: JOUR 2000W; ENGL 1007 or 1010 or 1011 or 2011.

An introduction to specialized fields such as business, science, education, arts, sports, and entertainment reporting. Students will examine some of the best work in the fields and will consider ethical issues and other problems.

**3046E. Environmental Journalism**

Three credits. Prerequisite: JOUR 2000W or consent of the instructor. Open to Juniors or higher.

Explores specialized coverage of environmental issues by journalists, emphasizing news reporting with the opportunity to produce print, visual and multimedia news reports.

**3050. Professional Seminar**

Three credits. Prerequisite: JOUR 2000W, which may be taken concurrently.

Journalists discuss the economic, technological, sociological and ethical issues that challenge their profession.

**3065. Visual Journalism**

Three credits. Prerequisite: JOUR 2000W; open to juniors or higher. May not be taken out of sequence after passing JOUR 4065.

Examines current trends in visual digital journalism; develops skills in photojournalism, multimedia and video storytelling. Instructor approved digital camera required.

**3087. Honors Thesis Preparation Seminar**

One credit. Prerequisite: JOUR 2000, JOUR 2001 and at least three other journalism credits at the 2000-level or above.

Honors students choose topics for their theses or projects, develop research proposals and apply for funding if needed. Students work as a community of scholars to discuss and support each other's work. Usually taken the semester before JOUR 3097, Honors Thesis.

**3093. Foreign Study**

Variable (1-6) credits. May be repeated for credit.

May be repeated for credit with permission of Department Head. Consent of Department Head required before the student's departure. May count toward the major with consent of the advisor.

**3095. Special Topics**

Variable (1-6) credits. Prerequisite: Prerequisites and recommended preparation vary by section; open to juniors or higher. May be repeated for credit.

**3097. Honors Thesis**

Three credits. Prerequisite: JOUR 2000W and 2001W; six additional 2000 level or above credits of JOUR.

Students in the Honors Program undertake in-depth research and writing under the guidance of a faculty member. Majors must consult with the departmental Honors Advisor and develop a research proposal in the semester before taking the course.

**3098. Variable Topics**

Three credits. Prerequisite: Prerequisites and recommended preparation vary by section; open to juniors or higher. May be repeated for credit.

**3111. Journalism Portfolio II: Content Development**

One credit. Prerequisite: JOUR 2111.

Development of online and multimedia skills used by journalists; emphasis on ethical practices. Students will contribute journalism content completed in other courses and develop new content to build a professional portfolio provided on a department-maintained site.

**3575. Black Documentary Film Archival Practices**

(Also offered as AFRA 3575.) Three credits. Prerequisite: Students must have taken a film or media course where they learned how to edit.

Critical and historical examination of Black American archival usage through documentary films and media.

**4016. Publication Practice**

Variable (1-3) credits. Prerequisite: Instructor consent required. May be repeated for credit.

Students and faculty work together to research, write, edit and produce a publication.

**4035. Investigative Reporting**

Three credits. Prerequisite: JOUR 2001W.

Using the Internet, databases, and other computer resources to research and report on the actions of courts, businesses, public agencies, and governments. Consideration of ethical questions.

**4065. Video Storytelling**

Three credits. Recommended preparation: JOUR 2065 and 3065; students interested in this course should have prior experience with video storytelling.

Explores journalistic storytelling techniques through video. Students will learn how to gather video and audio content and develop production and post-production techniques to create and publish extended narrative multimedia projects.

**4091. Supervised Field Internship**

Variable (1-3) credits. Prerequisite: JOUR 2000W, 2001W, and 3002.

Students research, report and write for newspapers, news departments of radio and television stations, and online publications under supervision of professionals.

**4099. Independent Study**

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

Open to qualified students who present suitable projects for independent work in journalism.

**4111. Journalism Portfolio III: Professional Presentation**

One credit. Prerequisite: JOUR 3111.

Completion of student journalism portfolios that include examples of journalistic endeavors in print, still and video photography, audio and multimedia packages.

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## Kinesiology (KINS)

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**1100. Exercise and Wellness for Everyone**

Three credits.

Overview of the five pillars of health (exercise, nutrition, sleep, stress and relationships); role of exercise in health promotion and disease prevention across the lifespan; impacts of exercise in leisure time, culture, community, careers and the workplace.

**1160. Courses in Lifetime Sports Program**

One credit. Prerequisite: This course may be repeated with change of activity and/or skill level, not to exceed 3 credits toward graduation of combined AH 1200 and KINS 1160 credits. Students in the Dept. of Kinesiology may count up to 6 different activities for 6 credits. May be repeated for credit.

A variety of lifetime sports and skills are offered. The teaching of each activity will be geared to individual, dual, and team activities. Students who have physical disabilities in the least restrictive environment possible. Participants requiring accommodations should contact the Program Coordinator.

**2200. Introduction to Athletic Training**

Three credits.

An introduction to basic principles of the athletic training profession. Content includes history of the athletic training profession, sports medicine team concepts and applications, environmental

influences, health assessment screenings, basic injury and illness assessment, management and treatment, protective equipment, strength and conditioning concepts, and health risks related to the physically active. An overview of athletic training professional organizations and the role the athletic trainer plays in the health care system is introduced. Risk factors associated with blood-borne pathogens (BBP) and common diseases that affect the active population are investigated. Concepts of universal precautions and BBP training will also be provided.

**2227. Exercise Prescription**

Three credits. Recommended preparation: KINS 1100.

Addresses the Frequency, Intensity, Time, and Type or FITT principle of exercise prescription for apparently healthy adults; healthy populations with special considerations such as children, older adults, and women who are pregnant; and special populations with chronic disease and health conditions such as overweight and obesity, and cardiovascular, pulmonary, metabolic, and musculoskeletal disease. CA 3.

**3091. Internship**

Variable (1-12) credits. Prerequisite: Students must complete all concentration requirements excluding Athletic Training prior to taking an internship. Open to Kinesiology majors. May be repeated for credit.

Field service or experiences in cooperating agencies.

**3098. Variable Topics**

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

**3099. Independent Study for Undergraduates**

Variable (1-6) credits. Prerequisite: Must be of senior standing. May be repeated for credit.

Laboratory or library research to expand understanding of a specialized topic in sport, leisure, or exercise sciences.

**3099W. Independent Study for Undergraduates**

Variable (1-6) credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open only to seniors with consent of the Department Head. May be repeated for credit.

Laboratory or library research to expand understanding of a specialized topic in sport, leisure, or exercise sciences.

**3201. Research Methods and Statistical Analysis for Kinesiology**

Three credits. Prerequisite: Open only to Kinesiology majors.

Introduces Kinesiology students to a biopsychosocial model of health and disease. The selection of research methods, including statistical procedures most appropriate for research questions related to prevention, intervention and diagnosis forms the core of the course. Students will gain experiences using software to analyze data germane to Kinesiologists and the interpretation of data through frequentist and Bayesian reasoning.

**3212. Experiences in Athletic Training, Health Care, and Sport**

Three credits. Prerequisite: Instructor consent.

A course that allows students who are interested in a career in healthcare (physical therapy, athletic

training or related field) and/or sport a chance to engage in observation opportunities within the various clinical settings of healthcare, sports medicine, and/or sport performance. This class will also allow for inter-professional discussion and dialog in the online environment.

### **3222. Mind, Body, and Sport Performance**

Three credits. Prerequisite: PSYC 1100.

Examines the impact that sport performance can have on the athlete's mind and body as they devote time, energy, and effort into developing their skills in their given sport. Student-athletes navigate unique stressors and can be at greater risk to experience a negative impact on their mental health and well-being. Topics to be covered may include athlete identity, personality disorders, disordered eating, substance abuse, body dysmorphia, and other psychiatric disorders.

### **3320. Exercise Psychology**

Three credits.

The psychological components associated with exercise and sport performance. Specifically, how the psychosocial aspects (e.g., group cohesion, motivation, leadership, team vs. individual sport) and health related aspects (e.g., exercise behavior and adherence, burnout/overtraining, and injury) of sport and exercise relate.

### **3522. Biomechanics of Injury and Sport**

Three credits. Prerequisite: PNB 2264 and 2265.

Introduction to biomechanics related to injury and sport. Explores both the statics and dynamics of motion including kinetics and kinematics. Examines biomechanical issues of human movement related to exercise/sport and injury and the biomechanics of different body tissues. Uses examples from research and mass media to complement the teaching materials in the course.

### **3530. Aerobic Training for Health and Performance**

Three credits. Prerequisite: KINS 4500; open only to students in Kinesiology programs, others by consent of instructor.

Focuses on the knowledge, skills, and understanding of the scientific principles on which to design individualized aerobic training programs needed for optimal performance, health improvement, disease treatment, and injury prevention. Presents analysis techniques of human physiology specific to aerobic training and performing. Laboratory and field methods to evaluate aerobic ability, lactate threshold, economy, anthropometrics, and aerobic performance characteristics will be discussed.

### **3530W. Aerobic Training for Health and Performance**

Three credits. Prerequisite: KINS 4500; ENGL 1007 or 1010 or 1011 or 2011; open only to students in Kinesiology programs, others by consent of instructor.

Focuses on the knowledge, skills, and understanding of the scientific principles on which to design individualized aerobic training programs needed for optimal performance, health improvement, disease treatment, and injury prevention. Presents analysis techniques of human physiology specific to aerobic training and performing. Laboratory and field methods to evaluate aerobic ability, lactate threshold, economy,

anthropometrics, and aerobic performance characteristics will be discussed.

### **3531W. Scientific Writing in Aerobic Training for Health and Performance**

One credit. Prerequisite: KINS 4500; ENGL 1007 or 1010 or 1011; open only to students in Kinesiology programs, others by consent of instructor. Corequisite: KINS 3530. Not open for credit to students who have passed KINS 3530W.

A writing intensive class integrated with course content in KINS 3530.

### **3545. Resistance Training for Health and Performance**

Three credits. Prerequisite: KINS 4500; open only to students in Kinesiology programs, others by consent of instructor.

Focuses on the knowledge, skills, and understanding of the scientific principles on which to design individualized resistance training programs needed for optimal performance, health improvement, disease treatment, and injury prevention. Presents analysis techniques of human physiology specific to resistance training and performing. Laboratory and field methods to evaluate anaerobic ability, flexibility, muscular strength and power and body composition will be discussed.

### **3546W. Scientific Writing in Resistance Training for Health and Performance**

One credit. Prerequisite: KINS 4500; ENGL 1007 or 1010 or 1011; open only to students in Kinesiology programs. Corequisite: KINS 3545. Not open for credit to students who have passed KINS 3545W.

A writing intensive class integrated with course content in KINS 3545.

### **3610. Introduction to Honors Research**

Three credits. Prerequisite: Open only to Honors Students in Kinesiology Programs.

The student will meet with KINS faculty members and attend laboratory/program staff meetings to survey the opportunities available for future Honors Thesis research.

### **3615. Honors Literature Review**

Three credits. Prerequisite: Open only to Honors Students in Kinesiology Programs.

The student will identify specific Honors Thesis research questions and will write a library research paper that will serve as the thesis Literature Review.

### **3697W. Honors Thesis**

Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open only to Honors Students in Kinesiology Programs.

The student will collect and interpret data and will write the Honors Thesis, completing work begun during KINS 3615.

### **4205W. Exercise Science Capstone**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; good academic standing with a minimum of 90 credits and consent of instructor.

Participation in a scholarly project (original research, systematic review, or clinical case report) with one or more faculty mentors and students. Students prepare a manuscript meeting professional standards for form and content, and a poster consistent in format with a professional meeting call for abstracts.

### **4500. Exercise Physiology**

Three credits. Prerequisite: PNB 2264 and 2265.

An organ systems approach to optimal human performance including metabolism, energy transfer, nerve transmission, muscle contraction, endocrine control, and cardiopulmonary physiology.

### **4510. Advanced Topics in Health and Sport Performance**

Three credits. Prerequisite: KINS 4500. Open only to students in Kinesiology programs; others by consent of instructor.

Fundamental concepts and physiology in Exercise Science with focus on special topics and conditions that challenge the human exercise response. These include stressful environments, use of ergogenic aids and special diets, exercise in special conditions, and advanced topics associated with fatigue, the immune system and stress/sleep deprivation: incorporating current research in these and other select areas.

### **4510W. Advanced Topics in Health and Sport Performance**

Three credits. Prerequisite: KINS 4500; ENGL 1007 or 1010 or 1011 or 2011; open only to students in Kinesiology programs.

Fundamental concepts and physiology in Exercise Science with focus on special topics and conditions that challenge the human exercise response. These include stressful environments, use of ergogenic aids and special diets, exercise in special conditions, and advanced topics associated with fatigue, the immune system and stress/sleep deprivation: incorporating current research in these and other select areas.

## **Korean (KORE)**

### **1101. Elementary Korean I**

Four credits. Prerequisite: May not be taken out of sequence after passing KORE 1102, 1103, or 1104.

Development of ability to communicate in Korean, orally and in writing, to satisfy basic communicative needs within a cultural setting.

### **1102. Elementary Korean II**

Four credits. Prerequisite: KORE 1101 or equivalent. May not be taken out of sequence after passing KORE 1103 or 1104.

Development of ability to communicate in Korean, orally and in writing, to satisfy basic communicative needs within a cultural setting.

### **1103. Intermediate Korean I**

Four credits. Prerequisite: KORE 1102 or equivalent. May not be taken out of sequence after passing KORE 1104.

Further development of understanding, speaking, reading, and writing skills in Korean within a cultural setting. Readings to enhance cultural awareness of the Korean-speaking world.

### **1104. Intermediate Korean II**

Four credits. Prerequisite: KORE 1103 or equivalent.

Further development of understanding, speaking, reading, and writing skills in Korean within a cultural setting. Readings to enhance cultural awareness of the Korean-speaking world.

**1193. Foreign Study**

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

**3293. Foreign Study**

Variable (1-6) credits. Prerequisite: Department consent required. May be repeated for credit.

**3295. Special Topics**

Variable (1-6) credits. Prerequisite: Open to juniors or higher. May be repeated for credit.

**3298. Variable Topics**

Three credits. May be repeated for credit.

**3299. Independent Study**

Variable (1-6) credits. Prerequisite: Open to juniors or higher. May be repeated for credit.

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## Landscape Architecture (LAND)

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**2110. Landscape Architecture: Graphics I - Design Drawing**

Four credits. Prerequisite: Instructor consent required.

Knowledge and theory of graphic representation, exploration and development of design form. Introduction to basic design principles. Application of graphic and design theory through free-hand drawing in a studio environment. Abstraction and transformation of form emphasized.

**2120. Landscape Architecture: Graphics II Design Communication**

Four credits. Prerequisite: LAND 2110; open only to Landscape Architecture majors.

Knowledge and theory of visual perception and model making. Application of theory in the creation of various graphic products including plan, section, elevation, paraline and perspective drawings. Controlled free hand and computer methods in a studio environment.

**2210E. The Common (Shared) Landscape of the USA: Rights, Responsibilities and Values**

Three credits. Prerequisite: Open to sophomores or higher.

An introduction to the study of vernacular landscapes in the USA with an emphasis on the relationship between societal values and land use patterns. CA 1.

**2220. History of Designed Landscapes**

Three credits. Prerequisite: LAND 2210E.

The development of designed landscapes is followed through time, emphasizing influences on current landscape architecture theory and practice.

**2410. Landscape Architecture: Design I - Site Analysis**

Five credits. Prerequisite: LAND 2110 and 2210E; open to Landscape Architecture majors only.

Knowledge and theory of site design and site analysis. Dimensional requirements and appropriate relationships of site elements and systems. Collection and analysis of site data including legal, physical and cultural factors. Application in a variety of site design projects. Field trips are required.

**3130. Landscape Architecture: Graphics III - Computer Applications**

Four credits. Prerequisite: LAND 2120; open only to Landscape Architecture majors.

Knowledge and theory of computer use in landscape architecture. Computer applications for data gathering, analysis and graphic communication. Application of knowledge and theory to a variety of site planning and design projects.

**3140. Graphics IV: Advanced Computer Applications**

Three credits. Prerequisite: LAND 3130; open only to Landscape Architecture majors or with instructor consent.

Knowledge, theory and application of advanced computer applications used in site planning and site design.

**3230WE. Sustainable Environmental Planning and Landscape Design**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Theories, concepts, and methods for sustainable planning and design of the land to balance and integrate the needs for conservation and development. Literature and case-study based, writing intensive exploration across critical contemporary themes such as climate change, urbanization, health and wellness, and globalization.

**3310. Landscape Architecture: Construction I - Site Engineering**

Four credits. Prerequisite: LAND 2120; open only to Landscape Architecture majors.

Theory and practice in manipulating landform in landscape architecture. Earthwork computation, drainage systems, sedimentation and erosion control, roadway design and low-impact design.

**3311. Landscape Architecture: Construction II - Planting Design**

Four credits. Prerequisite: LAND 3310; open only to landscape architecture majors.

Knowledge and theory of the role of plants as visual, spatial, ecological, and cultural design elements and systems. Analysis and creation of planting plans that support and develop design concepts and respond to physical site conditions. Application on a variety of project types in a studio environment. Formerly offered as LAND 3330.

**3312. Landscape Architecture: Construction III - Materials and Methods**

Four credits. Prerequisite: LAND 3310; open to Landscape Architecture majors.

Knowledge and theory of site construction. Characteristics and installation methods of materials including concrete, masonry, wood and metal. Application of knowledge and theory through development of construction drawings and related documents for site construction projects. Formerly offered as LAND 3320.

**3420. Landscape Architecture: Design II - Space, Form and Meaning**

Five credits. Prerequisite: LAND 2410; open to Landscape Architecture majors.

Knowledge and theory of spatial form in architecture, landscape architecture and urban design. Application of theory in the creation of 3-dimensional landscape models in a studio environment. Student attitudes about self-expression, environmental issues and social responsibility will be explored.

**3430. Landscape Architecture: Design III - Program Development**

Five credits. Prerequisite: LAND 3420; open to Landscape Architecture majors.

Knowledge and theory of site design and planning with a focus on program analysis and development. Design of appropriate form and function through precedent study and research on user and client needs, development regulations and site context. Application of theory to a variety of project types and scales. Field trips required.

**3510. European Urban Form and Design**

Variable (3-6) credits.

Study abroad course in Florence, Italy or other European location. The study of historical gardens, cityscapes and the critical inquiry of visual form and coherent patterns in cities. Site visits and team design projects.

**3580. Field Studies in the Built Environment**

One credit. Prerequisite: LAND 2410; open only to Landscape Architecture majors or with instructor consent. May be repeated for a total of 6 credits.

Travel to examples of landscape architecture, urban design, art installations or other related examples of spaces or places. Three day-long field trips.

**3582. Field Studies - Professional Conference**

One credit. Prerequisite: LAND 3420, which may be taken concurrently; open only to Landscape Architecture majors, others with instructor consent. May be repeated for a total of 4 credits.

Travel and participation in a professional conference or meeting related to landscape architecture.

**4294. Landscape Architecture: Seminar**

Three credits. Prerequisite: Open to Landscape Architecture majors only; instructor consent required.

A lecture and discussion-based course that builds a framework to critically investigate the extended geographies of urban socio-ecological processes. Opportunities are given for students to develop their interests within the discipline of landscape architecture connecting theory and practice to contemporary debates in the field.

**4340. Landscape Architecture: Professional Practice**

Three credits. Prerequisite: LAND 2220; open only to Landscape Architecture majors.

Business, legal and professional dimensions of landscape architecture. Modes of practice, licensure and ethics, and contract development and administration. Emphasis on portfolio development and licensure preparation.

**4440. Landscape Architecture: Design IV - Community Planning**

Five credits. Prerequisite: LAND 3430; open only to landscape architecture majors.

Knowledge and theory of design of large scale landscapes such as open space systems, village and town centers and residential subdivisions. Application of theory to a variety of projects including community outreach work. Field trips are required.

**4450. Landscape Architecture: Design V - Capstone**

Five credits. Prerequisite: LAND 4440; open to Landscape Architecture majors.

Knowledge and theory of site planning and design. Application of theory and skills from previous design courses to a single, comprehensive site planning and design project. Field trips are required.

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## Latino and Latin American Studies (LLAS)

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**1000. Introduction to Latina/o Studies**

Three credits.

Interdisciplinary examination of the Latina/o experience and impact across the United States. Consideration of behavioral, institutional, and societal perspectives; national and transnational identity; cultural, legal, and educational issues. CA 2. CA 4.

**1009. Latino Literature, Culture, and Society**

(Also offered as SPAN 1009.) Three credits.

Critical approaches to Latinos/as and cultural representation, production, and agency, as impacted by globalization and local dynamics. Will engage the value and function of race, gender and sexuality in popular culture, literature, film, music, digital culture, visual arts, and urban culture. Taught in English. Knowledge of Spanish is not required. CA 1. CA 4.

**1009W. Latino Literature, Culture, and Society**

(Also offered as SPAN 1009W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Critical approaches to Latinos/as and cultural representation, production, and agency, as impacted by globalization and local dynamics. Will engage the value and function of race, gender and sexuality in popular culture, literature, film, music, digital culture, visual arts, and urban culture. Taught in English. Knowledge of Spanish is not required. CA 1. CA 4.

**1190. Introduction to Latin America and the Caribbean**

(Also offered as HIST 1600.) Three credits.

Multidisciplinary exploration of the historical development of such aspects of Latin America and the Caribbean as colonization and nation formation; geography and the environment; immigration and migration; race, ethnicity, and gender in society, politics, economy, and culture. CA 1. CA 4-INT.

**1190W. Introduction to Latin America and the Caribbean**

(Also offered as HIST 1600W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Multidisciplinary exploration of the historical development of such aspects of Latin America and the Caribbean as colonization and nation formation; geography and the environment; immigration and migration; race, ethnicity, and gender in society, politics, economy, and culture. CA 1. CA 4-INT.

**1193. Foreign Study**

Variable (1-15) credits. May be repeated for a total of 15 credits.

Course work undertaken within approved Study Abroad programs, usually focusing on the history, culture, and society of a particular Latin American

or Caribbean country or countries. Consent of Director of Latin American and Caribbean Studies required before departure.

**1570. Migrant Workers in Connecticut**

(Also offered as HIST 1570.) Four credits. Prerequisite: Instructor consent required.

Interdisciplinary honors course on the life and work experiences of contemporary Latin American and Caribbean migrant workers with focus on Connecticut. Integrated service learning component. Field trips required. CA 1. CA 4.

**2001. Latinos, Leadership and Mentoring**

Three credits.

Introduces issues affecting Latinos in higher education. Leadership and mentoring training. Students analyze responsibilities and commitments in context of leadership for the common good and for purposeful change.

**2011W. Introduction to Latino-American Writing and Research**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011 or instructor consent; open to sophomores or higher. Recommended preparation: 1000-level introductory course on Latino or Latin American Studies.

Students refine writing skills and learn how and where to conduct transnational academic research on the Latino-American experience. Interdisciplinary approaches, historical background of Latino American studies. CA 4.

**2012. Latinos in Connecticut: Writing for the Community**

Four credits. Prerequisite: Open to sophomores or higher. Recommended preparation: LLAS 2011W.

Students partner with Latino agencies to apply research and writing skills to community needs. Community theory, digital literacy, historical background of CT Latinos, contemporary issues that impact the population. Service learning component.

**2293. Foreign Study**

Variable (1-12) credits. Prerequisite: Department consent required. May be repeated for a total of 12 credits.

Course work undertaken within approved Education Abroad programs, usually focusing on the history, culture, and society of a particular Latin American or Caribbean country or countries.

**2450. Human Rights in Latin America**

(Also offered as HRTS 2450.) Three credits. Prerequisite: Not open for credit to students who have passed LLAS 3998 or HRTS 3298 when offered as "Human Rights in Latin America."

Fundamental concepts and recurrent challenges of human rights in Latin America.

**2474. Economic Development in Latin America and the Caribbean**

(Also offered as ECON 2474.) Three credits. Prerequisite: ECON 1200 or both ECON 1201 and 1202.

Survey of the economic history of Latin America and the Caribbean. Analysis of present-day development issues in the region, including economic growth, poverty, education, and health.

**2507. New England and the Caribbean Plantation Complex, 1650-1900**

(Also offered as HIST 2507 and MAST 2507.) Three credits.

New England's role in the creation and expansion of the Caribbean plantation complex. CA 1. CA 4.

**2621. Cuba in Local and Global Perspective**

(Also offered as HIST 2621 and AFRA 2621.) Three credits.

Major themes in Cuban politics and culture. Local and global perspective. Key topics include race, gender, class, cultural movements and practices, slavery, political economy and movements, nationalism. CA 1. CA 4-INT.

**2622. History of Gender and Sexuality in Latin America and the Caribbean**

(Also offered as HIST 2622, WGSS 2622, and AFRA 2622.) Three credits.

Topics may include: empire and colonialism/anti-colonialism; slavery, science, and the state; cultural practices and institutions; feminisms and masculinities; law and public policies; immigration; forms of labor and political mobilization; sex and reproduction; and human rights from historical perspective. Formerly offered as AFRA/HIST/LLAS/WGSS 3622.

**2995. Special Topics in Latino and Latin American Studies**

Variable (1-6) credits. May be repeated for credit.

**3021. Contemporary Latin America**

(Also offered as ANTH 3021.) Three credits.

Survey of anthropological contributions to the study of contemporary Mexico, Central America, South America, and the Hispanic Caribbean. Special focus on the comparative analysis of recent ethnographic case studies and local/regional/national/international linkages.

**3029. The Caribbean**

(Also offered as ANTH 3029.) Three credits.

Comparative perspectives on the cultural formation of Caribbean societies; the region's demographic, economic and political links with the wider world.

**3208. Making the Black Atlantic**

(Also offered as AFRA 3208 and HIST 3208.) Three credits. Recommended preparation: AFRA/HIST/HRTS 3563 or AFRA/HIST 3564 or 3620; or HIST/LLAS 3609.

Recent scholarship on the central role played by African-descended communities in shaping the early history of the Americas and their interconnection beyond geopolitical boundaries; race, gender, sexuality, class, religion, cultural movements and practices; slavery, political economy, and political movements.

**3210. Contemporary Issues in Latino Studies**

Three credits.

Topics in socio-demographic patterns, cultural identity claims, community organization, migration and citizenship issues of Latino groups in post-WWII United States. Emphasis on comparative analysis and on policy implications. CA 4.

**3211. Puerto Rican/Latino Studies Research**

Three credits.

Students design, execute and write original, library or archival-based research on Latino/a

experience using documents, films, literary works, surveys, photographic and newspaper materials.

**3220. History of Latinos/as in the United States**

(Also offered as HIST 3674.) Three credits.

Settlement and growth of Hispanic-origin populations in the United States today, from Spanish and Mexican settlement of the western United States to the growth of Latino communities. Student oral history project. CA 1. CA 4.

**3221. Latinos/as and Human Rights**

(Also offered as HIST 3575 and HRTS 3221.) Three credits.

Latino/a issues related to human, civil and cultural rights, and gender differences.

**3230. Latina Narrative**

(Also offered as WGSS 3258.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Feminist topics in contemporary Latina literature and cultural studies.

**3231. Fictions of Latino Masculinity**

(Also offered as WGSS 3259.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Topics in Latino literature and cultural studies with an emphasis on masculinity and male authors.

**3232. Latina/o Literature**

(Also offered as ENGL 3605.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011 or 3800 or instructor consent; open to juniors or higher.

Extensive readings in Latina/o literature from the late nineteenth century to the present. CA 4.

**3233. Studies in Latina/o Literature**

(Also offered as ENGL 3607.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011 or 3800 or instructor consent; open to juniors or higher. May be repeated for credit.

Advanced study of a theme, form, author, or movement in contemporary Latina/o literature.

**3241. Latin American Minorities in the United States**

(Also offered as ANTH 3041.) Three credits.

Emphasis on groups of Mexican, Puerto Rican and Cuban origin, including treatment and historical background, social stratification, informal social relations, ethnic perceptions, relations and the concept of Latino identity.

**3250. Latino Health and Health Care**

(Also offered as HDFS 3442.) Three credits. Prerequisite: Open to juniors or higher.

Overview of health and health care issues among Latinos in the United States. Particular attention is paid to cultural and social factors associated with health and well being (e.g. migration, acculturation, SES).

**3251. Latinos: Sexuality and Gender**

(Also offered as HDFS 3268.) Three credits. Prerequisite: Open to juniors or higher.

Critical discussion of issues involving gender and sexuality among Latinos, with particular attention to race, class, ethnicity, and acculturation.

**3264. Latinas and Media**

(Also offered as WGSS 3260 and COMM 3321.) Three credits. Prerequisite: Open to juniors or higher.

The role of ethnicity and race in women's lives. Special attention to communication research on ethnic and racial minority women. CA 4.

**3265. Literature of Puerto Rico and the Spanish Caribbean**

(Also offered as SPAN 3265.) Three credits. Recommended preparation: SPAN 3178 or instructor consent.

Readings and discussions of major authors and works of the Spanish Caribbean with special emphasis on Puerto Rico.

**3270. Latino Political Behavior**

(Also offered as POLS 3662.) Three credits. Prerequisite: Open to juniors or higher.

Latino politics in the United States. Political histories of four different Latino populations: Mexican, Puerto Rican, Cuban and Central American. Different forms of political expressions, ranging from electoral behavior to political art. CA 4.

**3271. Immigration and Transborder Politics**

(Also offered as POLS 3834 and AMST 3271.) Three credits. Prerequisite: Open to juniors or higher.

U.S. immigration policy, trans-border politics, and the impact diasporas and ethnic lobbies have on U.S. foreign policy, with emphasis on Latino diasporas.

**3293. Foreign Study**

Variable (1-17) credits. May be repeated for a total of 17 credits.

Special topics taken in a foreign study program. Consent of Director of Latin American and Caribbean Studies required before departure. May count toward the major with consent of advisor.

**3320. Media and Diverse Audiences**

(Also offered as COMM 3320.) Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: COMM 1000, 2300 or 2600.

Issues of race, ethnicity, culture, class, gender, and sexuality in mainstream and alternative media. Analysis of how diverse groups use the media, are represented in, and interpret media content. Formerly offered as COMM/LLAS 4320.

**3322. Soap Opera/Telenovela**

(Also offered as COMM 3322.) Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: COMM 1000, 2300 or 2600.

Socio-cultural functions of soap operas/telenovelas as mediated serials constructed by commercial organizations and consumed by United States and global audiences. Formerly offered as COMM/LLAS 4470.

**3327. Power and Health in Latin America and the Caribbean**

(Also offered as ANTH 3327 and HRTS 3327.) Three credits. Prerequisite: Open to sophomores or higher.

History, theories, and concepts about the human right to health and structural inequalities in the region.

**3470. The Latinx Family**

Three credits.

Current issues in the study of Latinx youth and families from a social and developmental

psychological perspective. Topics include parenting, youth development and adjustment, risky and healthy behaviors, cultural values, and immigration.

**3525. Latino Sociology**

(Also offered as SOCI 3525.) Three credits.

The economic, social, political, and cultural experiences of Latinos in the United States. CA 2. CA 4.

**3525W. Latino Sociology**

(Also offered as SOCI 3525W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

The economic, social, political, and cultural experiences of Latinos in the United States. CA 2. CA 4.

**3575. Cinema and Society in Latin America**

Variable (1-3) credits. May be repeated for a total of 6 credits.

The aesthetic, social, and political significance of Latin American film.

**3607. Latin America in the Colonial Period**

(Also offered as HIST 3607.) Three credits. Prerequisite: Open to sophomores or higher.

Pre-Columbian Civilization in America, the epoch of conquest and settlement, together with a study of the Ibero-Indian cultural synthesis which forms the basis of modern Latin American civilization. CA 1. CA 4-INT.

**3608W. The Hispanic World in the Ages of Reason and Revolution**

(Also offered as HIST 3608W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher. Recommended preparation: HIST 3607.

The transformation of Spanish America from the Bourbons in 1700, through the wars of independence and the struggle to build stable national states in the Nineteenth Century.

**3609. Latin America in the National Period**

(Also offered as HIST 3609.) Three credits. Prerequisite: Open to sophomores or higher.

Representative countries in North, Central, and South America and the Caribbean together with the historic development of inter-American relations and contemporary Latin American problems. CA 1. CA 4-INT.

**3618. Comparative Slavery in the Americas**

(Also offered as AFRA 3618 and HIST 3618.) Three credits.

The rise and fall of trans-Atlantic slavery. Topics include resistance, migration, antislavery mobilization, abolitionism, empire, revolution, cultural production, political economy, labor, gender, race and identity formation.

**3619. History of the Caribbean**

(Also offered as HIST 3619 and AFRA 3619.) Three credits.

Encounter experience; slavery, antislavery mobilization, and abolitionism; colonialism; citizenship and nation building; race and gender; political cultures and movements; migration/immigration; cultural production; and political economy; topics will be examined from a historical perspective. CA 1. CA 4-INT.

**3619W. History of the Caribbean**

(Also offered as AFRA 3619W and HIST 3619W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Encounter experience; slavery, antislavery mobilization, and abolitionism; colonialism; citizenship and nation building; race and gender; political cultures and movements; migration/immigration; cultural production; and political economy; topics will be examined from a historical perspective. CA 1. CA 4-INT.

**3635. History of Modern Mexico**

(Also offered as HIST 3635.) Three credits. Recommended preparation: HIST 3607.

The emergence of modern Mexico from independence to the present with emphasis on the Revolution of 1910. CA 1. CA 4-INT.

**3660W. History of Migration in Las Americas**

(Also offered as HIST 3660W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher. Recommended preparation: LLAS 1190, ANTH 3042, HIST 3635, HIST 3609 or HIST 2674/LLAS 3220; LLAS 3210. Spanish useful but not required.

Applies broad chronological and spatial analyses of origins of migration in the Americas to the experiences of people of Latin American origin in Connecticut. Addresses a range of topics from the initial settlement of the Americas to 21st century migrations. CA 1. CA 4.

**3662. Borderlands of the Americas**

(Also offered as HIST 3662.) Three credits.

A consideration of the importance of borderlands in the expansion and consolidation of European empires in the American continent, and later, in the shaping of newly independent republics. Contemporary issues related to Latin American borders, including migration, smuggling, violence, and the role of the state in shaping the borders of national cultures and societies.

**3667. Puerto Rican Politics and Culture**

(Also offered as POLS 3667.) Three credits. Prerequisite: Open to juniors or higher.

Legal and political history of the relationship between Puerto Rico and the United States with an emphasis on the question of United States empire and the politics of cultural resistance.

**3675. Latina History and Biography**

(Also offered as HIST 3675 and WGSS 3675.) Three credits.

Examination of the history of Latinas in the US with a focus on women, gender, and sexuality. Students will consider how historians use oral histories, life histories, memoirs, biographies, and testimonials as sources to restore Latinas to histories from which they were previously omitted. CA 1. CA 4.

**3875. Asian Diasporas in the Americas**

(Also offered as HIST 3875 and AAAS 3875.) Three credits. Prerequisite: Open to sophomores or higher. Recommended preparation: HIST 3607, 3609, 3610, 3635, 3660W, or 3674. Not open to students who have passed HIST 3995 Asian Diasporas in the Americas.

Transnational history of migration and settlement of Chinese, Japanese, Korean, and South Asian diasporas across South, Central, and North America and the Caribbean, colonial through

national period. Emphasis on political economy, racial formations, and constructions of national identity.

**3990. Field Study**

Variable (1-6) credits. May be repeated for a total of 6 credits.

Work in cultural community-oriented setting(s).

**3998. Variable Topics in Latino and Latin American Studies**

Three credits. Prerequisite: Prerequisites and recommended preparation vary. May be repeated for credit.

**3999. Independent Study in Latino and Latin American Studies**

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

**4100. Experiential/Service Learning Seminar**

(Also offered as AAAS 4100, AFRA 4100, and WGSS 4100.) Four credits.

Interdisciplinary examination of the history of social justice organizing in the U.S.; theories, strategies, and practice of community organizing movements such as those for immigration, environmental, reproductive, and racial justice. Includes practice in community organizing and political advocacy.

**4212. Field Internship in Latino Studies**

Variable (1-3) credits. May be repeated for a total of 6 credits.

Work in cultural community-oriented setting(s).

**4994W. Latin American Studies Research Seminar**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Capstone course in which majors and minors in Latin American Studies design, execute and write up original, library-based research on Latin America. Some readings may be in Spanish or Portuguese.

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## Linguistics (LING)

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**1010. Language and Mind**

Three credits.

Discussion of nature-nurture debate with specific reference to language acquisition. Pros and cons of Chomsky's Innateness Hypothesis. CA 1.

**1020. Language and Environment**

Three credits.

Effects of geography, society, and politics on language use and variation (sociolinguistics). The geographical spread, growth and death of languages (language ecology). CA 2. CA 4-INT.

**1030. The Diversity of Languages**

Three credits.

Overview of world languages and language families. Typological classifications of linguistic properties: what can we expect in the structure of a language? Unity and diversity of language systems. Mechanisms of language change and variation. CA 2. CA 4.

**1793. Foreign Study**

Variable (1-3) credits. May be repeated for credit.

Special topics taken in a foreign study program. Consent of Department Head or advisor may be required prior to the student's departure.

**1795. Special Topics Lecture**

Three credits. Prerequisite: Prerequisites and recommended preparation vary.

Credits, prerequisites and hours as determined by the Senate Curricula and Course Committee.

**2010Q. The Science of Linguistics**

Three credits. Prerequisite: May not be taken out of sequence after passing LING 3110.

An introduction to the methods and major findings of linguistic research as applied to the sound systems of languages and the structure and meaning of words and sentences. CA 3.

**2793. Foreign Study**

Variable (1-15) credits. May be repeated for credit.

Special topics taken in a foreign study program. Consent of Program Director required, normally to be granted before the student's departure. May count toward the major with consent of the advisor up to a maximum of six credits.

**2795. Special Topics**

Variable (1-3) credits. May be repeated for a total of 12 credits.

**2850. Introduction to Sociolinguistics of the Deaf Community**

Three credits.

Sociolinguistics, demographics of the Deaf community; study of Deaf subgroups with different sociological, linguistic and cultural backgrounds; sociolinguistic integration of community members with the larger population in their cultural/ethnic community. Knowledge of American Sign Language not required. CA 2. CA 4.

**3000Q. Introduction to Computational Linguistics**

Three credits. Recommended preparation: At least one course in Linguistics or Computer Science.

Computational methods in linguistic analysis and natural language processing. Topics include the use of text corpora and other sources of linguistic data; morphological analysis, parsing and language modeling; applications in areas such as information retrieval and machine translation.

**3110. Experimental Linguistics**

Three credits. Prerequisite: PSYC 1100; LING 2010Q; open to juniors or higher.

Research methods and laboratory techniques for the study of language acquisition and/or sentence processing. Students design and conduct a study using a computer database of child speech.

**3310Q. Phonology**

Three credits. Prerequisite: LING 2010Q; open to juniors or higher.

The analysis of sound patterns in language within a generative framework: distinctive features, segmental and prosodic analysis, word formation, the theory of markedness.

**3410Q. Semantics**

Three credits. Prerequisite: LING 2010Q. Not open for credit for students who have passed LING 3510.

Analysis of the semantics of natural languages in a generative framework: truth conditions, compositionality, quantification.

**3510Q. Syntax and Semantics**

Three credits. Prerequisite: LING 2010Q; open to juniors or higher.

The analysis of form and meaning in natural languages in a Chomskyan framework: surface structures, deep structures, transformational rules, and principles of semantic interpretation.

### 3511Q. Syntax

Three credits. Prerequisite: LING 2010Q. Not open for credit for students who have passed LING 3510.

Analysis of the syntax of natural languages in a generative framework: phrase structure, movement, syntactic operations and dependencies.

### 3610W. Language and Culture

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

The study of language, culture, and their relationship. Topics include the evolution of the human language capacity; the principles of historical language change including reconstruction of Indo-European and Native American language families; writing systems; linguistic forms such as Pidgins and Creoles arising from languages in contact; the interaction between language and political systems, the struggle for human rights, gender, ethnicity, and ethnobiology. CA 2. CA 4-INT.

### 3700W. Field Methods in Linguistics

Three credits. Prerequisite: LING 3310Q or 3410Q or 3511Q; ENGL 1007 or 1010 or 1011 or 2011. May be repeated for a total of 6 credits.

Hands-on training in the investigation and analysis of an unfamiliar language from scratch through question and answer with a native-speaker linguistic consultant, and in writing scholarly papers documenting the linguistic phenomena that such investigations yield.

### 3789. Undergraduate Research

Variable (1-3) credits. Prerequisite: Instructor consent required. May be repeated for credit.

Individual research-related work directed by a faculty member.

### 3790. Field Study

Variable (1-3) credits. Prerequisite: Instructor consent required. May be repeated for credit.

Experiential learning at an agency or business. Students taking this course will be awarded a grade of S (satisfactory) or U (unsatisfactory).

### 3793. Foreign Study

Variable (1-6) credits. Prerequisite: Open to juniors or higher. May be repeated for credit.

Special topics taken in a foreign study program. Consent of Department Head required, normally to be granted prior to the student's departure. May count toward the major with the consent of the advisor.

### 3795. Special Topics

Variable (1-3) credits. Prerequisite: Prerequisites and recommended preparation vary by section; open to juniors or higher. May be repeated for credit.

### 3798. Variable Topics

Three credits. Prerequisite: Prerequisites and recommended preparation vary by section; open to juniors or higher. May be repeated for credit.

### 3799. Independent Study

Variable (1-6) credits. Prerequisite: Open to juniors or higher. May be repeated for credit.

### 3800. Structure of American Sign Language

(Also offered as ASLN 3800.) Three credits. Prerequisite: ASLN 1102 or LING 2010Q. Recommended preparation: Both ASLN 1102 and LING 2010Q.

Linguistic analyses of American Sign Language focusing on the phonological, morphological, syntactic, and semantic levels.

### 3850. Cultural and Linguistic Variation in the Deaf Community

Three credits. Prerequisite: LING 2850.

Language and cultural models used in the Deaf community. Critical examination of demographic subgroups of the Deaf community and their linguistic background.

### 4500. Advanced Introduction to Syntax

Three credits. Prerequisite: LING 3511Q.

Concepts and tools of current syntactic theory. Syntactic features, lexical and functional categories, representation of phrase structure, argument structure, Case, movement, locality.

### 4793. Foreign Study

Variable (1-6) credits. May be repeated for credit.

Special topics taken in a foreign study program. Consent of Program Director required, normally to be granted before the student's departure. May count toward the major with consent of the advisor up to a maximum of six credits.

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## Management and Engineering for Manufacturing (MEM)

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### 1151. Introduction to the Management and Engineering for Manufacturing Program

Three credits.

Introduction to the goals of engineering and management for manufacturing enterprises, including lean concepts in business and engineering. Review of the history of technological development, including its effects on new products and processes. Written and oral communication skills will be developed.

### 2210. Manufacturing Equipment Lab

One credit.

Introduction to machine shop equipment, metrology, general safety, and hands on experience in machining and fabrication of metals. Topics include: introduction to instrumentation; knee miller, engine lathe, drill press, grinder, and sander operation; welding; chipping; and grinding.

### 2211. Introduction to Manufacturing Systems

Three credits. Prerequisite: STAT 1000Q or 1100Q or 3025Q or 3345Q or 3375Q, or CE 2210 or 2251, or MATH 3160.

Fundamental engineering aspects of manufacturing. Students become familiar with common processes in manufacturing such as cutting, casting, and bending and are introduced to advanced techniques such as additive manufacturing. Overview of manufacturing operations management, production optimization, and the systems used in controlling manufacturing enterprises including the concepts of global competition, and manufacturing as a competitive weapon.

### 2212. Introduction to Manufacturing Systems Lab

One credit. Prerequisite: MEM 2211, which may be taken concurrently; enrollment restricted to Management and Engineering for Manufacturing majors.

Introduction to the steps required for manufacturing. Students will move from a part sketch, to an engineering drawing, to a drawing using state-of-the-art CAD software. Students will build both a prototype and an improved final model of the part, which are required to be of different materials. One or more site visits are included as parts of this laboratory, for students to gain exposure to operational manufacturing facilities.

### 2213. Introduction to Manufacturing Systems Lab

Three credits. Prerequisite: Corequisite: MEM 2211.

Introduction to the steps required for manufacturing: preparation of a part sketch, an engineering drawing, and drawing using state-of-the-art CAD software; building prototype and improved final model of the parts. Hands-on experience with subtractive manufacturing and additive manufacturing, and product outcome analysis. Site visits to operational manufacturing facilities.

### 2221. Principles of Engineering Management

Three credits. Prerequisite: Open to sophomores or higher. Not open to students who have passed or are taking OPIM 3104 or BADM 3761.

The fundamentals of engineering management tasks of planning and control; the human element in production, research, and service organizations; the stochastic nature of management systems. May not be used to satisfy Junior-Senior level major requirements of the School of Business. Will not substitute for OPIM 3104 for students who enter the School of Business. Will not substitute for BADM 3761. May not be used to satisfy Junior-Senior level major requirements of the School of Business.

### 3221. Introduction to Products and Processes

Three credits. Prerequisite: MEM 2211.

Overview of the factors affecting the design of products and the various processes used in their manufacture. An introduction to manufacturing processes and their capabilities and limitations. Value engineering, methods improvement and simplification techniques will be covered.

### 3231. Computers in Manufacturing

Three credits. Prerequisite: MEM 2211, which may be taken concurrently.

The utilization of computers and information systems in manufacturing, with special emphasis placed on decision support systems and operations analytics.

### 3281. Manufacturing Internship

Zero credits. Prerequisite: Instructor consent required. May be repeated.

Designed to educate students in the MEM program with the realities of the manufacturing environment and to provide them with the opportunity to exercise problem solving skills while fulfilling a need of the internship sponsor. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory.)



**3293. Foreign Study**

Variable (1-6) credits. Prerequisite: Open to juniors or higher. May be repeated for a total of 6 credits.

These credits must be awarded for regularly scheduled course work at a recognized foreign university in a clearly defined technical area of Business or Engineering. Credits used towards the technical elective credits must be approved by the specific MEM program director from the appropriate school, Business or Engineering.

**3295. Special Topics in Management and Engineering for Manufacturing**

Variable (1-16) credits. Prerequisite: Prerequisites and/or consent as announced for each offering. May be repeated for credit.

A classroom course on special topics as announced. Credits and hours by arrangement or as announced.

**3299. Problems in Management and Engineering for Manufacturing**

Variable (1-4) credits. Prerequisite: Open only to junior and senior Management and Engineering for Manufacturing majors. Program of study is to be approved by a program co-director and by instructor before registration is completed. May be repeated for credit.

Designed primarily for students who wish to pursue a special line of study or investigation.

**4225. Advanced Products and Processes**

Three credits. Prerequisite: MEM 3221.

Introduction to advanced topics relevant to the design and manufacture of products. Special emphasis on the relationship between manufacturing products and processes. Student projects.

**4296. Honors Research**

Variable (1-6) credits. Prerequisite: Open to Honors students. May be repeated for a total of 6 credits.

Research programs of students' choice in areas of Management and Engineering for Manufacturing. Research work will be directed by an MEM faculty member who serves as the research advisor for the course. Projects will provide significant independent problem solving experience to supplement the classroom experience obtained from traditional coursework. May be used to convert independent research into course credit that may be applied toward the Honors Program requirements and will count as a technical elective.

**4971W. Senior Design Project I**

Two credits. Prerequisite: MEM 2211; ENGL 1007 or 1010 or 1011 or 2011. Not open to students who have passed MEM 4915W.

Part I of the capstone design course for the MEM Program. This semester will cover manufacturing and production cases in preparation for the senior design experience. Both written and oral reports are required. Students will also complete the first phase of their two-semester engineering design project focused on product/process creation or improvement, including problem definition, background, and a preliminary proposal. The Business and Engineering faculty will be jointly involved.

**4972W. Senior Design Project II**

Two credits. Prerequisite: MEM 4971W. Not open to students who have passed MEM 4915W.

Part 2 of the capstone design course for the MEM Program. Students will perform the design, fabrication, and testing of their product design; or implementation, testing, and procedure writing for their process design. The proposal from MEM 4971W will guide the fabrication, or implementation, and testing, to meet a detailed specification of engineering requirements. Both written and oral reports will be required. The Business and Engineering faculty will be jointly involved.

**4977. Senior Design for Visiting International Students**

Three credits. Prerequisite: Open only to visiting international students subject to prior approval of the Management and Engineering for Manufacturing co-directors. Not open to UConn students.

A one-semester version of the capstone design course for the Management and Engineering for Manufacturing Program. Both written and oral reports are required. Students will work on an engineering design project focused on product/process creation or improvement, including problem definition, background, and proposed solutions, followed by fabrication or implementation and testing to meet a detailed specification of engineering requirements.

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## Management and Entrepreneurship (MENT)

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**1801. Contemporary Issues in the World of Management**

Variable (1-3) credits. Prerequisite: May be repeated in different sections in combination with BADM 1801 for up to three credits; open to freshmen and sophomores. May be repeated for a total of 3 credits.

Topics reflecting the complexities, challenges and excitement of today's business world. May not be used to meet junior-senior level major requirements in the School of Business. May be repeated in different sections in combination with BADM 1801 for up to three credits. Formerly offered as MGMT 1801.

**2234. The Entrepreneurial Journey**

(Also offered as BADM 2234.) Three credits. Prerequisite: Open only to business majors; not open to students who have passed or are currently taking MENT or BADM 3234.

Interdisciplinary introduction to entrepreneurship; evaluating benefits and risks, assessing opportunities, and considering entrepreneurship as part of academics and career. Formerly offered as MGMT 2234.

**2236. Content Entrepreneurship**

(Also offered as BADM 2236.) Three credits. Prerequisite: Open only to business majors.

Preparation to assess entrepreneurial opportunities as they relate to the content media sector. Building an accessible content media business to establish a unique niche, grow an audience, and create value from the content the business develops. Hiring and leading creative content and business teams; developing external networks as resources for growth; determining a strategy to guide business development; managing content production and delivery; formulating

monetization strategies built on innovative business models.

**3101. Managerial and Interpersonal Behavior**

Three credits. Prerequisite: ACCT 2001; ECON 1200, or ECON 1201 and 1202; ENGL 1007 or 1010 or 1011 or 2011; all of which may be taken concurrently; open only to business majors of sophomore or higher status. Not open to students who have passed BADM 3740.

Topics covered include individual work motivation, interpersonal communications in organizations, team building and group processes, leadership, decision-making, and understanding and managing cultural diversity. Classes will emphasize interpersonal and leadership skill-building through the inclusion of exercises which rely on active participation of class members. Formerly offered as MGMT 3101.

**3225. International Business**

Three credits. Prerequisite: MENT 3101 or BADM 3740; open only to business majors of junior or higher status.

Fundamental concepts and theories of international business and develop an awareness of international political, economic, and cultural issues. Students will examine the opportunities and challenges in the global economy, understand the strategies and behaviors of multinational enterprises, and gain basic knowledge of international trade and investment operations. Formerly offered as MGMT 3225.

**3234. Opportunity Generation, Assessment, and Promotion**

(Also offered as BADM 3234.) Three credits. Prerequisite: Open only to business majors of junior or higher status. It is highly recommended that students take MENT 3101 or BADM 3740, and ACCT or BADM 2101 prior to MENT 3234.

A hands-on experience in opportunity development, exposing students to three distinct modules. The first, creativity and innovation, stimulates the flow of ideas. The second, feasibility analysis, runs these ideas through a comprehensive assessment framework. The third module, getting the first customer, focuses on the initial sales and marketing process needed to get the idea off the ground. Formerly offered as MGMT 3234.

**3235. Venture Planning, Management, and Growth**

(Also offered as BADM 3235.) Three credits. Prerequisite: Open only to Business majors of junior or higher status. Recommended preparation: MENT 3234 or BADM 3234; MENT 3101 or BADM 3740; and ACCT or BADM 2101.

An exposure to multiple facets of starting and managing new ventures in a very hands-on fashion. The course involves an integration of business skills that are required for preparing and pitching new business plans. Formerly offered as MGMT 3235.

**3236. Managerial Negotiations**

Three credits. Prerequisite: MENT 3101 or BADM 3740; open only to business majors of junior or higher status.

Explores the broad spectrum of negotiation problems faced by business people and complements the technical and diagnostic skills learned in other courses at UConn. The goal is to help students understand the theory and

processes of negotiation so that they can negotiate successfully in a variety of settings. A basic premise is that the manager needs analytic skills as well as interpersonal skills to effectively negotiate. Will allow you the opportunity to develop these skills experientially and to understand negotiation in useful analytical frameworks. Emphasizes in-class role-playing as a learning tool and topics covered include: diagnosing negotiation situations, planning negotiations, dealing with agents, multi-issue negotiations, multi-party negotiations, ethical considerations in negotiation, and global negotiations. Formerly offered as MGMT 3236.

### **3237. Managing Human Capital**

Three credits. Prerequisite: MENT 3101 or BADM 3740; open only to business majors of junior or higher status.

An introduction to the human resources function and related strategic and tactical elements and activities. The course covers a broad range of employee life cycle topics from the perspectives of the HR professional, manager, employee and organization. Topics may include staffing, development, rewards and recognition, employee engagement, performance management and career planning. Students will explore the relationships between human capital management and strategic business outcomes. Formerly offered as MGMT 3237.

### **3238. Leading Teams and Organizations**

Three credits. Prerequisite: MENT 3101 or BADM 3740; open only to business majors of junior or higher status.

Prepares students with practical leadership skills to lead high-performing, successful teams and organizations. It is a combination of theoretical reading and practical application to: a) equip students with cutting-edge management knowledge and theory about self-leadership, team leadership, and the leader's effect on organizational behavior, and b) provide students with opportunities for in-depth self-examination of skills, attitudes, and behaviors to increase self-awareness of leadership competencies and develop them into more effective leaders. Drawing on key management and leadership theories, students will learn to make effective decisions, motivate and influence others, facilitate team collaboration and teamwork, managing diversity and conflicts, lead for creativity and innovation, and initiate and implement change to help your team and organization thrive in today's dynamic, competitive, and global marketplace. The course uses a variety of teaching methods including cases, video, simulations, discussions, and exercises to enrich student learning. Formerly offered as MGMT 3238.

### **3239. Managing a Diverse Workforce**

Three credits. Prerequisite: MENT 3101 or BADM 3740; open only to business majors of junior or higher status.

Examines issues related to managing an increasingly diverse workforce. Diversity in the workplace may result from differences in individual characteristics such as gender, race, ethnicity, national origin, and physical ability/disability. Diversity-related issues with management implications to be examined include personal identity, recruitment and selection, work group interactions, leadership, career development and advancement, sexual harassment, work and

family, accommodation of people with disabilities, and organizational strategies for promoting equal opportunity and a positive attitude toward diversity among all employees. Formerly offered as MGMT 3239.

### **3500. Technology Innovation and Entrepreneurship**

Three credits. Prerequisite: Open only to Business majors of junior or higher status. Not open to students who have passed or are taking ENGR 3500.

An integration of the best business and engineering principles and practices. Identification of customer need, development of technical solution and financial viability. Collaboration between School of Business and School of Engineering, teaching product design process combined with business principals required for any viable startup and enterprise. Experiential nature of course will enable students to go through process of conceiving of a new product, building an MVP, developing a business model and business plan, and testing the market. Students will learn the art of successful pitching and presenting business models to successful entrepreneurs. Taught with ENGR 3500. Formerly offered as MGMT 3500.

### **3501. Technology Innovation and Entrepreneurship II**

Three credits. Prerequisite: ENGR 3500 or MENT 3500; open to Business majors of junior or higher status. Not open to students who have passed or are taking ENGR 3501.

The product design process combined with business principles required for a viable technology-based startup and enterprise. Students will take proof-of-concept designs from ENGR or MENT 3500 to the point of further iterating a minimum viable product for field testing, with a heavy focus on physical prototyping. Development of a testable business model, successful business pitch strategies. Students will present their business model to entrepreneurs and potential customers. Taught with ENGR 3501. Formerly offered as MGMT 3501.

### **3741. Foundations of Venture Capital**

(Also offered as BADM 3741.) Three credits. Prerequisite: Open only to Business majors of sophomore or higher status.

This course introduces students to venture capital investing, one of the primary ways that early-stage entrepreneurial firms acquire funding for growth. This interdisciplinary course requires no prior knowledge and seeks to nurture interest and enthusiasm for venture capital investing and entrepreneurship. Students learn the structure of the venture capital industry, how venture firms operate, and key components of venture deals. The course helps students assess whether participation in Hillside Ventures – UConn's student-led venture investing fund might be part of their UConn career.

### **3742. Venture Investment Sourcing and Analysis**

(Also offered as BADM 3742.) Three credits. Prerequisite: Open only to business majors of junior or higher status. Consent of instructor and Department Head required. Recommended preparation: MENT 3741 or BADM 3741.

Students learn to apply venture investment concepts and tools by engaging in real venture investing as part of Hillside Ventures – UConn's

student-led venture investing fund. The course teaches students skills for sourcing potential deals, communicating with founders, and completing multi-faceted analyses of each opportunity. Students learn from industry experts and build their own network of founders, investors, and topic experts to support their hands-on skill development.

### **3882. Professional Practice in Management or Entrepreneurial Consulting**

Variable (1-3) credits. Prerequisite: Students are restricted to no more than six credits of coursework from experiential learning courses including MENT 3882, 3982, and 4891; consent of instructor and Department Head required. May be repeated for a total of 6 credits.

Structured, team-based field work in management or entrepreneurial consulting. Team performance will be assessed and supervised by faculty with professional consulting experience. Students will be selected to enroll in this course through a competitive application process. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory). Formerly offered as MGMT 3882.

### **3982. Professional Practice in Entrepreneurial Business Development**

Variable (1-3) credits. Prerequisite: Students are restricted to no more than six credits of coursework from experiential learning courses including MENT 3882, 3982, and 4891; consent of instructor and Department Head required. May be repeated for a total of 6 credits.

Training, mentorship, resources, and networking opportunities to facilitate the launch of their own ventures or transition a creative/innovative idea into a business start-up. Performance will be evaluated on the basis of an appraisal by the faculty supervisor and a detailed written report or a presentation by the student. Students will be selected to take this course through a competitive application process. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory). Formerly offered as MGMT 3892.

### **4292. Venture Consulting**

Three credits. Prerequisite: Open to seniors only.

Application of small business management concepts to a consulting project in an on-going small business in Connecticut. Students will be required to take examinations on course content and submit a report on the consulting project. Formerly offered as MGMT 4292.

### **4741. Advanced Venture Investing**

(Also offered as BADM 4741.) Three credits. Prerequisite: MENT 3742 or BADM 3742; open only to Business majors of junior or higher status; consent of instructor and Department Head required. May be repeated for a total of 6 credits.

This course strengthens students' understanding of what constitutes a quality venture capital investment opportunity through their role in Hillside Ventures – UConn's student-led venture investing fund. Members in this class lead teams through the venture investment cycle including sourcing investment opportunities, evaluating growth potential, completing due diligence assessments, and developing and finalizing deal terms.

**4742. Leading a Venture Fund**

(Also offered as BADM 4742.) Three credits. Prerequisite: MENT 4741 or BADM 4741; open only to Business majors of junior or higher status; consent of instructor and Department Head required. May be repeated for a total of 6 credits.

These students lead in all phases of managing a student-led venture capital fund including designing processes and structures for making high quality investments, leading student peers, and communicating with external constituencies.

**4881. Internship in Management**

Variable (1-6) credits. Prerequisite: Open only to junior or higher Business majors; consent of instructor and department head required. Students are restricted to no more than six credits of coursework from experiential learning courses including MENT 3892, 3882, or 4891. May be repeated for credit.

Provides students with an opportunity for a supervised internship relevant to one or more major areas within the Department. Students will work under the supervision of one or more professionals in the specialty in question. Student performance will be evaluated on the basis of an appraisal by the field supervisor and a detailed written report submitted by the student. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory). Formerly offered as MGMT 4881.

**4893. Foreign Study**

Variable (1-6) credits. Prerequisite: Open to juniors or higher. May be repeated for credit.

Special topics taken in a foreign study program. Consent of Department Head required, prior to the student's departure. Formerly offered as MENT 4893.

**4895. Special Topics**

Variable (1-6) credits. Prerequisite: Prerequisites and recommended preparation vary by section; open only to business majors of junior or higher status. May be repeated for credit.

Classroom course in special topics in management as announced in advance for each semester. Formerly offered as MGMT 4895.

**4899. Independent Study**

Variable (1-6) credits. Prerequisite: Open only to business majors of junior or higher status. May be repeated for credit.

Individual study of special topics in management as mutually arranged between a student and an instructor. Formerly offered as MGMT 4899.

**4900. Strategy, Policy and Planning**

Three credits. Prerequisite: ACCT 2101 or BADM 2710; BLAW 3175 or BADM 3720; FNCE 3101; MENT 3101 or BADM 3740; MKTG 3101 or BADM 3750; OPIM or BADM 3103 and 3104 (or CSE1010 or CSE 1100 and MEM 2211 if MEM majors); senior Business students. Prerequisite courses may be taken concurrently. Not open to students who have passed MENT 4902.

An integrative analysis of the administrative processes of the various functional areas of an enterprise viewed primarily from the upper levels of management. The formulation of goals and objectives and selection of strategies under conditions of uncertainty as they relate to the planning, organizing, directing, controlling and

evaluating policies and activities in each of the functional areas separately and jointly to achieve corporate objectives. Developing an integral business perspective is an integral part of the course. Formerly offered as MGMT 4900.

**4902. Strategic Analysis**

Three credits. Prerequisite: ACCT 2101 or BADM 2710; FNCE 3101; OPIM or BADM 3103 and 3104; MENT 3101 or BADM 3740; MKTG 3101 or BADM 3750; BLAW 3175 or BADM 3720; all of which may be taken concurrently; senior Regional Campus Business students only. Not open to students who have passed MENT 4900.

Capstone business policy course providing an integrative view of managing the different functional elements and activities of the enterprise. Focuses in particular on strategy formulation and implementation, extending from analysis of the enterprise's current situation, through determination of goals, objectives and direction, to establishment of plans and programs to bring these to fruition. Provides a broad perspective on how firms compete and position themselves in the external marketplace. Examines impact of technology and innovation on changing industry environments in which these activities take place. Course format includes extensive use of case studies and simulation exercises. Formerly offered as MGMT 4902.

**4997. Senior Thesis in Management**

Variable (1-3) credits. Prerequisite: Open only to Management Department Honors students who are juniors or higher with consent of instructor and Department Head. May be repeated for a total of 4 credits.

Preparation of a thesis for one or two credits and the development and presentation of that thesis to the department in the following semester for two or three credits. Minimum of three credits required to graduate with Honors. Formerly offered as MGMT 4997.

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## Marine Sciences (MARN)

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**1001E. The Sea Around Us**

(Also offered as MAST 1001E.) Three credits.

The relationship of humans with the marine environment. Exploitation of marine resources, development and use of the coastal zone, and the impact of technology on marine ecosystems. Taught at Storrs and Avery Point. CA 3.

**1002E. Introduction to Oceanography**

Three credits. Recommended preparation: A background in secondary school physics, chemistry or biology. Not open to students who have passed MARN 1003, 2002 or 3001.

Processes governing the geology, circulation, chemistry, and biological productivity of the world's oceans. Emphasis on the interactions and interrelationships between humans and the physical, chemical, biological, and geological processes that contribute to both the stability and the variability of the marine environment. Students who complete both MARN 1002 and 1004 will receive credit for a CA 3 laboratory course. CA 3.

**1003E. Introduction to Oceanography with Laboratory**

Four credits. Recommended preparation: A background in secondary school physics,

chemistry, or biology. Not open to students who have passed MARN 1002, 2002, or 3001.

Processes governing the geology, circulation, chemistry, and biological productivity of the world's oceans. Emphasis on the interactions and interrelationships of humans and the physical, chemical, biological, and geological processes that contribute to both the stability and the variability of the marine environment. Laboratory experiments, hands-on exercises, and field observations. CA 3-LAB.

**1004. Oceanography Laboratory**

One credit. Prerequisite: MARN 1002 or equivalent. Not open to students who have passed MARN 1003.

Laboratory experiments, hands-on exercises, and field observations (including required cruise on research vessel) that teach fundamental oceanographic concepts emphasizing physical, chemical, and biological processes and their interaction in the marine environment. First semester (Avery Point). First and second semester (Storrs). Students who complete both MARN 1002 and 1004 will receive credit for a CA 3 laboratory course.

**1160. Introduction to Scientific Diving**

Two credits.

Introduction to scuba diving history, physics and physiology of diving, dive planning, open-circuit diving equipment, and marine environments. Open-water diving certification possible with successful completion of course. Approved medical questionnaire and liability waiver required.

**1893. International Study**

Variable (1-6) credits. Prerequisite: Department consent required. May be repeated for a total of 6 credits.

Special topics taken in an international study program. Consultation with Marine Sciences program coordinator recommended prior to the student's departure.

**1996. Introduction to Research**

Variable (1-6) credits. Prerequisite: Instructor consent.

Investigation of a special problem involving field and/or laboratory observations in marine sciences.

**2801WE. Marine Sciences and Society**

Three credits. Prerequisite: MARN 1002 or MARN 1003; ENGL 1007 or 1010 or 1011 or 2011.

Scientific analysis of coastal zone issues and interdisciplinary implications for society, including theories, observations, and models of how humans impact the health and well-being of the natural world and how the natural world impacts the health of humans. Topics incorporate public policies, legal frameworks, and moral and/or ethical dimensions regarding the environment. Written analysis and discussion of primary literature.

**2893. International Studies**

Variable (1-6) credits. Prerequisite: Department consent required. May be repeated for a total of 6 credits.

Special topics taken in an international study program. Consultation with Marine Sciences program coordinator recommended prior to the student's departure.

**2996. Directed Research 1**

Variable (1-6) credits. Prerequisite: Instructor consent.

Investigation of a special problem involving field and/or laboratory observations in marine sciences.

**3000E. The Oceans and Global Climate**

Three credits. Prerequisite: CHEM 1127Q; PHYS 1201Q or 1401Q or 1501Q or 1601Q. Recommended preparation: GSCI 1051 and MARN 1002.

Understanding human impacts on the global climate system; the basics of domestic and international climate policy; and strategies for communicating climate-change science to the broader public, with special emphasis on the oceans. Topics include the Earth's energy budget and carbon cycle; the properties of greenhouse gases; historical and future changes in Earth's climate; impacts of global change on the oceans; and the implications of climate change for human behavior and energy usage. CA 3.

**3001. Foundations of Marine Sciences**

Four credits. Prerequisite: MARN 1002 or 1003; MATH 1110Q or 1071Q or 1131Q; BIOL 1107 and 1108; CHEM 1127Q and 1128Q; and PHYS 1201Q or 1401Q.

Biological, chemical, physical and geological structure and function of coastal systems; with a special focus on field observations in three important coastal habitats: beaches and rocky shores, marshes, and estuaries.

**3002. Foundations of Marine Sciences**

Three credits. Prerequisite: MARN 1002 or 1003; MATH 1110Q or 1071Q or 1131Q; BIOL 1107 and 1108; CHEM 1127Q and 1128Q; and PHYS 1201Q or 1401Q. Not open for credit to students who have passed MARN 2002.

Relationships between biological and physical processes in the ocean. Topics include spatial structure of physical properties, patterns and mechanisms of circulation, biological production, food web structure and function, recycling and export of nutrients and organic matter.

**3012. Marine Invertebrate Biology**

Three credits. Prerequisite: BIOL 1107 and 1108. Recommended preparation: MARN 1002 or 1003 or instructor consent.

Comparative examination of major adaptations and functional responses of marine invertebrates to biotic and abiotic factors in the marine environment. Field trips required.

**3014. Marine Biology**

(Also offered as EEB 3230.) Three credits. Prerequisite: One year of laboratory biology.

The study of the kinds and distributions of marine organisms. Particular attention is paid to biotic features of the oceans, organism-habitat and relationships and general ecological concepts influencing marine populations and communities. Field trips are required.

**3015. Techniques in Marine Molecular Biology**

Three credits. Prerequisite: BIOL 1107 and 1108 or BIOL 1107 and 1110; or consent of instructor.

Principles and technology in molecular genetics, including nucleic acid purification and manipulation, DNA fingerprinting, gene cloning

and sequencing, phylogenetic analysis, and detection of gene expression.

**3017. Plankton Ecology**

Three credits. Prerequisite: MATH 1060Q or 1131Q; PHYS 1201Q or 1401Q; CHEM 1122Q or equivalent; BIOL 1107 and 1108. Recommended preparation: MARN 1002. Consent of instructor for graduate students in lieu of requirements. Not open for credit to students who have passed both 5014 and 5016.

Ecology of planktonic organisms (bacteria, protista and metazoa). The evolutionary ecology concept, methods of research, special features of aquatic habitats; adaptations to aquatic environments; population biology; predation, competition, life histories, community structure, and role of plankton in ecosystem metabolism.

**3030. Coastal Pollution and Bioremediation**

Three credits. Prerequisite: BIOL 1107 and 1108; CHEM 1127Q and 1128Q, or instructor consent.

Overview of processes and compounds leading to pollution in the nearshore marine environment. The impact of pollution on the marine foodweb and its response is emphasized. Alleviation of pollution through metabolism of organisms, including bacteria, seagrasses, and salt marshes.

**3060. Coastal Circulation and Sediment Transport**

Three credits. Prerequisite: MARN 3001.

Circulation and mixing in estuaries and the inner continental shelf, including surface gravity waves, tides, and buoyancy and wind-driven circulation. Coastal sediments, geomorphology, and processes of sedimentation, erosion and bioturbation. Required field trips.

**3230. Beaches and Coasts**

(Also offered as EARTH 3230.) Three credits. Prerequisite: MARN 1002 or MARN 1003 or EARTH 1050 or EARTH 1051, or consent of instructor.

Introduction to the processes that form and modify coasts and beaches, including tectonic setting, sediment supply, coastal composition, energy regimes and sea level change; tools and techniques utilized in marine geologic mapping and reconstruction of submerged coastal features; field trips to selected coastal features. Formerly offered as GSCI 3230.

**3505. Remote Sensing of Marine Geography**

(Also offered as GEOG 3505.) Three credits. Recommended preparation: GEOG 2300 or MARN 1002.

Introduction to remote sensing applications in oceans and seas. Applications include image analysis of sea surface temperature, winds, altimetry, sea ice, chlorophyll, primary productivity, and bathymetry.

**3811. Seminar on Marine Mammals**

Three credits. Prerequisite: One year college laboratory biology. Offered at the Mystic Marinelife Aquarium.

Instructors from different areas of expertise discuss the natural history, evolution, anatomy, physiology, husbandry, and conservation of marine mammals. Current research is emphasized. (Special registration: Contact Mystic Marinelife Aquarium, Mystic, CT 06355. 860-572-5955.)

**3812. Seminar in Marine Biodiversity and Conservation**

Three credits. Prerequisite: MARN 2801WE or EEB 2244E or instructor consent.

Critical examination of state-of-the-art research, policy and regulatory frameworks of marine conservation biology and associated environmental, cultural, and socio-economic implications. Topics may include aquaculture, endangered species, strandings, biomedicine, ocean pollution, and marine protected areas. Research projects to be conducted at Mystic Aquarium.

**3893. International Study**

Variable (1-6) credits. May be repeated for a total of 6 credits.

Consent of Department Head required, preferably prior to the student's departure.

**3899. Independent Study**

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

**3995. Special Topics**

Variable (1-6) credits. May be repeated for credit.

Prerequisites and recommended preparation vary.

**3996. Directed Research 2**

Variable (1-6) credits. Prerequisite: Instructor consent. May be repeated for a total of 12 credits.

Investigation of a special problem involving field and/or laboratory observations in marine sciences.

**4001. Measurement and Analysis in Coastal Ecosystems**

Four credits. Prerequisite: MARN 3001 and MARN 3002.

Examination of oceanographic processes in local coastal systems; collection and analyses of samples from field trips and lab experiments; data analysis using computers. Required field trips.

**4002. Science and the Coastal Environment**

Three credits. Prerequisite: MARN 4001 or instructor consent.

Specific cases of multiple impacts on environmental resources and coastal habitats. Current scientific understanding as a basis for sociopolitical decision-making (e.g., land-use impacts on coastal processes in relation to zoning regulation and water-quality criteria).

**4010. Biological Oceanography**

Three credits. Prerequisite: CHEM 1128Q; MATH 1122Q or 1132Q; PHYS 1202Q or equivalent; BIOL 1107 and 1108.

Structure and function of marine food webs, from primary producers to top trophic levels; interaction of marine organisms with the environment; energy and mass flow in food webs; elemental cycling; coupling between pelagic and benthic environments.

**4018. Ecology of Fishes**

Three credits. Prerequisite: MARN 3014.

General concepts in fish ecology such as distribution, feeding, bioenergetics, growth, larval fish ecology, biotic interactions, life history evolution and other contemporary research topics.

**4030W. Chemical Oceanography**

Three credits. Prerequisite: CHEM 1128Q; MATH 1132Q; PHYS 1202Q or equivalent; ENGL 1010 or 1011 or 2011.

Composition, origin, and solution chemistry of seawater and the marine biogeochemical cycles of salts, elements, and gases. Distributions and transfer in the marine environment through chemical equilibria, rates, redox, partitioning, ocean circulation, biological cycles, and crustal exchanges.

**4050. Geological Oceanography**

Three credits. Prerequisite: EARTH 1051 or MARN/ERTH 3230 or instructor consent.

Concepts in geological oceanography, including the role of plate tectonics in the control of the Earth and ocean system, fundamentals of biosphere-geosphere interaction over geologic timescales, and the reconstruction of past climates using marine sediment archives.

**4052. Paleooceanography**

Three credits. Prerequisite: CHEM 1126Q or 1128Q and PHYS 1202Q or 1402Q.

Exploration of how the geologic record, geochemical proxies and model simulations can be used to understand climate change at centennial and longer timescales, with an emphasis on oceanographic processes. Topics include global overturning circulation, carbon cycle dynamics, and feedback mechanisms that govern long-term climate variability.

**4060. Physical Oceanography**

Three credits. Prerequisite: PHYS 1202Q, 1402Q, 1502Q or 1602Q; MATH 1122Q or 1132Q.

Overview of physical properties and dynamics influencing the oceans and coastal waters. Descriptions of global water property distributions, surface mixed layer, pycnocline, surface heat fluxes, and major ocean currents. Introduction to dynamics of ocean circulation, waves, tides, and coastal circulation.

**4066. River Influences on the Marine Environment**

Three credits. Recommended preparation: Calculus and general physics.

Influences of rivers on estuaries, coastal and open ocean water properties, energy budgets and ecosystems including inputs of buoyant waters, sediments and pollutants and variability from storms, seasons, human alterations, and climate change.

**4130. Geomicrobiology**

(Also offered as EARTH 4130.) Three credits. Prerequisite: CHEM 1124Q, 1125Q and 1126Q; or CHEM 1127Q and 1128Q; or EARTH 2500; or permission of instructor.

Microbial diversity and biogeochemistry in aquatic ecosystems, microbe-mineral interactions, fossil record, atmospheric record, microbialites, and research methodology in geomicrobiology. A weekend field trip may be required. Formerly offered as GSCI 4130.

**4160. Scientific Diving**

Three credits. Recommended preparation: MARN 1160.

Physics and physiology of scuba diving, federal regulation, consensus standards, dive planning, dive accident management and emergency

planning, scientific diving methods, diving modes. Scientific diver certification possible with successful completion of course plus CPR, First Aid and Emergency Oxygen certification. Scuba certification and approved diving physical required.

**4202Q. Models of the Ocean Carbon Cycle**

Four credits. Prerequisite: MARN 1002 or 1003; MATH 1110Q or 1071Q or 1131Q or 1151Q or 2141Q; BIOL 1107 and 1108; CHEM 1126Q and 1128Q; and PHYS 1201Q or 1401Q.

Introduction to the chemical/biological reactions and transport dynamics of ocean models with the focus on attribution of anthropogenic carbon in the global ocean. Quantitative topics include mass balances, the coupled dynamics of oceans and the atmosphere as biogeochemical systems, and parameterizations of important biogeochemical processes. Formerly offered as MARN 3003Q.

**4210Q. Experimental Design in Marine Ecology**

Three credits. Prerequisite: MARN 3001 or EEB 3230/MARN 3014; or instructor consent.

Introduction to experimental design and data analysis for marine biology and ecology. Analysis and visualization of experimental data using the statistical software package R. Topics include analysis of variance, replication and pseudoreplication, factorial designs, and significance testing.

**4891. Internship in Marine Sciences**

Variable (1-3) credits. Prerequisite: Instructor consent. Recommended preparation: Nine credits of MARN courses at the junior-senior level. May be repeated for a total of 9 credits.

An internship under the direction of MARN faculty. Placements stress application of academic training. A journal of activities is required. One credit may be earned for each 42 hours of pre-approved activities in a semester to a maximum of three credits. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

**4893. International Study**

Variable (1-6) credits. Prerequisite: Department Head consent. Consultation with Marine Sciences program coordinator recommended prior to the student's departure. May be repeated for a total of 6 credits.

Special topics taken in an international study program.

**4895. Special Topics**

Variable (1-6) credits. Prerequisite: Prerequisites and recommended preparation vary. May be repeated for credit.

**4897W. Senior Research Thesis**

Three credits. Prerequisite: Three credits of MARN 3899, which may be taken concurrently; ENGL 1007 or 1010 or 1011 or 2011. Recommended preparation: MARN 2801WE.

Senior thesis reflecting independent research. Not limited to honors students. Formerly offered as MARN 4896W.

**4898. Variable Topics**

Variable (1-3) credits. Prerequisite: Prerequisites and recommended preparation vary. May be repeated for credit.

**4996. Independent Research**

Variable (1-6) credits. Prerequisite: Instructor consent. May be repeated for a total of 12 credits.

Investigation of a special problem involving field and/or laboratory observations in marine sciences.

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**Maritime Studies (MAST)**


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**1001E. The Sea Around Us**

(Also offered as MARN 1001E.) Three credits.

The relationship of humans with the marine environment. Exploitation of marine resources, development and use of the coastal zone, and the impact of technology on marine ecosystems. Taught at Storrs and Avery Point. CA 3.

**1200. Introduction to Maritime Culture**

Three credits.

A study of history and literature to understand the international maritime culture that links peoples, nations, economies, environments, and cultural aesthetics. CA 1.

**1300E. People and Society in the Maritime Environment**

Three credits.

People and society in the maritime environment in an interdisciplinary and international context from economic, geographic, historical, and other social science perspectives. CA 2. CA 4-INT.

**1993. International Study**

Variable (1-6) credits. Prerequisite: Department consent required. May be repeated for credit.

Coursework completed while abroad.

**2100W. Ports of Passage**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

A selection of readings concerning ports around the world. Interdisciplinary approach to the cultural and historical significance of the port as a setting of philosophical and commercial exchange. CA 4-INT.

**2101. Introduction to Maritime Studies**

Three credits. Prerequisite: May not be taken out of sequence after passing MAST 4994W.

An introduction to the interdisciplinary study of maritime-related topics with an examination of the maritime physical environment and maritime cultures, history, literature, and industries.

**2210E. History of the Ocean**

(Also offered as HIST 2210E.) Three credits.

Cultural, environmental, and geopolitical history of the ocean from prehistory to the present. Examines the impact of migration, industrialization, modernization, and globalization on the relationships between people and oceans. CA 1.

**2300E. Marine Environmental Policy**

Three credits. Recommended preparation: MARN/MAST 1001.

Introduction to historical and contemporary issues associated with the governance of marine and coastal environments and resources at the international, national, state, and local levels. Topics may include fisheries management, aquaculture, biodiversity, ocean energy resources, pollution, international ocean governance, and anthropogenic

climate change. Designed for students with diverse departmental affiliations. Field trips are required.

**2460E. Maritime Politics**

(Also offered as POLS 2460E.) Three credits.

The political dimensions of the world's oceans. This course draws upon international relations theories to analyze states, international law, intergovernmental organizations, trade, and non-state actors with respect to the world's largest bodies of water. CA 2.

**2467E. Economics of the Oceans**

(Also offered as ECON 2467E.) Three credits. Prerequisite: ECON 1200 or 1201.

Economics of industries that use and manage ocean resources. Applications of industrial organization, law and economics, natural resource theory, and environmental economics.

**2507. New England and the Caribbean Plantation Complex, 1650-1900**

(Also offered as HIST 2507 and LLAS 2507.) Three credits.

New England's role in the creation and expansion of the Caribbean plantation complex. CA 1. CA 4.

**2993. International Study**

Variable (1-6) credits. May be repeated for credit.

Coursework completed while abroad. May count toward major with consent of advisor and program coordinator.

**2995. Special Topics Lecture**

Variable (1-6) credits. Prerequisite: Prerequisites and recommended preparation vary. May be repeated for credit.

**3501. Mariners' Skills for Interpreting the Maritime Humanities**

Three credits. Prerequisite: Open to sophomores or higher.

Exploration of mariners' operational and technical skills and their use in interpreting maritime history, literature, art, and economic development. Course will pair technical and operational discussions and demonstrations with maritime humanities texts to explore how maritime service has influenced, framed, and contextualized human perspectives of seafaring. Topics may include vessel stability, laminar flow, piloting, navigation, marine cartography, voyage planning, vessel construction, maritime labor recruitment and management, marine engine mechanics, and maritime business management.

**3531. Maritime Archaeology of the Americas**

(Also offered as ANTH 3531 and HIST 3209.) Three credits. Recommended preparation: ANTH 1500, ANTH 2501, ANTH 2510 or HIST 3544.

Archaeological and historical sources to examine the development of seafaring practices, exploration, waterborne trade and economic systems, naval warfare and shipbuilding in the Americas from the fifteenth to the beginning of the twentieth century.

**3532. Archaeology of the Age of Sail**

(Also offered as ANTH 3532 and HIST 3210.) Three credits. Recommended preparation: ANTH 1500, ANTH 2501, or ANTH 2510.

Overview of archaeological and historical sources on the development of seafaring and navigation, exploration, waterborne trade and

economic systems, colonialism and empire building, naval warfare and shipbuilding in Europe, Asia and Australia from the fifteenth to the beginning of the twentieth century.

**3544. Atlantic Voyages: European Maritime Expansion, 1400-1650**

(Also offered as HIST 3544 and AMST 3544.) Three credits.

Late medieval and early modern European expansion into the Atlantic and Indian oceans, with particular attention to European, Asian, African, and American contexts within which that expansion took place. Topics include the transatlantic slave trade; technology adoption and adaptation; convergence of trade, racial ideology, imperial expansion, and imperial identity construction; piracy and settlement; historiographical legacies and later imperialism; and decolonization of contemporary understandings.

**3545. The Modern Atlantic, 1650-1950**

(Also offered as HIST 3545.) Three credits.

The development and decline of the early modern Atlantic imperial system between 1650 and 1950, focusing upon imperial structures, slavery, anti-imperialism, abolitionism, free labor, and self-determination.

**3600. Global Dynamics of the Shipping Industry**

(Also offered as GEOG 3600.) Three credits.

Introduction to the global shipping industry and the essential role it plays in the conduct of world trade and the growth of the global economy.

**3652. Maritime Literature to 1800**

(Also offered as ENGL 3652.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011, sophomores or higher.

Maritime fiction and non-fiction from the beginnings to 1800: Shakespeare, Falconer, Defoe, and others.

**3652W. Maritime Literature to 1800**

(Also offered as ENGL 3652W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011, sophomores or higher.

Maritime fiction and non-fiction from the beginnings to 1800: Shakespeare, Falconer, Defoe, and others.

**3653. Maritime Literature Since 1800**

(Also offered as ENGL 3653.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to sophomores or higher. Not open for credit to students who have passed ENGL 3650.

Maritime fiction and non-fiction since 1800: Melville, Conrad, Douglass, and others.

**3653W. Maritime Literature Since 1800**

(Also offered as ENGL 3653W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to sophomores or higher. Not open for credit to students who have passed ENGL 3650.

Maritime fiction and non-fiction since 1800: Melville, Conrad, Douglass, and others.

**3832. Maritime Law**

(Also offered as POLS 3832.) Three credits. Prerequisite: Open to juniors or higher.

International and domestic legal concepts concerning jurisdiction in a maritime setting.

**3991. Supervised Internship in Maritime Studies**

Variable (1-3) credits. Prerequisite: Completion of 9 credits of Maritime Studies core courses, and consent of the program coordinator. May be repeated for a total of 15 credits.

Internship with institutions, businesses, or agencies engaged in areas directly related to Maritime Studies. Maritime Studies faculty supervisor, student, and field supervisor of host organization will jointly define a specific project to advance student's educational program as well as mission of the host institution. Grades will be based on performance of the learning contract and a final academic product. May be repeated for credit with change in content and program coordinator's consent.

**3993. International Study**

Variable (1-6) credits. May be repeated for a total of 12 credits.

May count toward major with consent of advisor.

**3995. Special Topics**

Variable (1-6) credits. Prerequisite: Prerequisites and recommended preparation vary. May be repeated for credit.

**3998. Variable Topics**

Three credits. Prerequisite: Prerequisites and recommended preparation vary. May be repeated for credit.

**4993. International Study**

Variable (1-6) credits. May be repeated for a total of 12 credits.

May count toward major with consent of advisor.

**4994W. Maritime Studies Capstone Seminar**

Three credits. Prerequisite: MAST 1101; MARN 1001E; ENGL 1010 or 1011 or 2011; open to Maritime Studies majors.

Topical themes related to diverse aspects of society and commerce in coastal and oceanic zones, such as African Americans and the maritime experience; politics and economics of fisheries; or cultural perspectives of Long Island Sound.

**4999. Independent Study**

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

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**Marketing (MKTG)**

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**2237. Personal Brand Management**

(Also offered as BADM 2237.) Three credits. Prerequisite: Open only to business majors.

Introduction to building, leveraging, and managing a personal brand; concepts and perspectives relevant to any student looking to build a personal brand and business. Consideration of various media to engage with target customers and businesses and how to choose among alternative media platforms and messages. Students will analyze their individual strengths, weaknesses, opportunities, and threats; learn how to position and design a personal brand; learn how to measure personal brand assets and performance over time; and create a personal brand portfolio and a plan for marketing themselves within their chosen industry.

**3101. Introduction to Marketing Management**

(Also offered as BADM 3750.) Three credits. Prerequisite: ACCT 2001; ECON 1200, or ECON 1201 and 1202; ENGL 1007 or 1010 or 1011 or 2011; MATH 1070 and 1071, or MATH 1131 and 1070/1132, or MATH 1125,1126 and 1132/1070; STAT 1000 or 1100; open only to business majors of junior or higher status.

This course provides an introduction to key marketing principles and the foundation for advanced marketing electives. Students learn to explain the role of marketing in organizations, evaluate strategies and formulate recommendations. Students gain experience in using data to develop and effectively communicate marketing decisions.

**3208. Consumer Behavior**

Three credits. Prerequisite: MKTG 3101 or BADM 3750; open only to Business majors of junior or higher status.

This course provides an introduction to consumer behavior and its underlying psychological processes. Students learn to apply social science concepts to gain insights into consumer behavior. Students gain experience applying consumer behavior concepts to develop firm strategies and to be better consumers.

**3252. Corporate Social Responsibility and Accountability**

(Also offered as BLAW 3252, BADM 3252, and HRTS 3252.) Three credits. Prerequisite: Open only to business students of junior or higher status. Not open to students who have passed or are taking HRTS 3252.

This course provides an introduction to the human rights implications of multinational enterprises' global operations. Students learn how to assess corporate social impact through a human rights framework, consider the challenges of regulating the human rights impacts of global business, analyze international policy responses, and evaluate the effectiveness of different approaches to enforcing human rights standards for corporations.

**3253. Sustainability, Markets, and Society**

(Also offered as BADM 3253 and BLAW 3253.) Three credits. Prerequisite: Open only to business majors of junior or higher status.

This course examines sustainability in the context of the natural and social ecosystems in which business operates. Students learn how the environmental and related social impacts of business are affected by the interactions of firms with laws, institutions, markets, and society. Students assess firm sustainability policies and practices and examine innovations undertaken by different business functions and industries. Students practice developing ethically-aware policies to achieve sustainability and resilience and to generate positive environmental and social outcomes.

**3254. Business Solutions for Societal Challenges**

(Also offered as BLAW 3254, BADM 3254, and HRTS 3254.) Three credits. Prerequisite: Open only to Business students of junior or higher status. Not open to students who have passed or are taking HRTS 3254.

This course provides an introduction to market-based solutions to social and human rights challenges. Students learn how to identify societal challenges from a human rights perspective and business's role in addressing these challenges. Students will assess the modalities that businesses can adopt to generate positive social impact and will critically analyze business responses to societal challenges.

**3260. Marketing Research**

Three credits. Prerequisite: MKTG 3101 or BADM 3750; open only to business majors of junior or higher status.

This course provides an introduction to obtaining and using data to gain marketing insights. Students learn to translate managerial problems into research questions and identify and apply appropriate methods to collect and analyze data. Students gain hands-on computer-based experience analyzing marketing data, interpreting analyses, and communicating findings to aid managerial decision making.

**3370. Global Marketing Strategy**

(Also offered as BADM 3370.) Three credits. Prerequisite: MKTG 3101 or BADM 3750; open only to business majors of junior or higher status.

This course focuses on developing sound marketing strategies in the global marketplace. Students learn to uncover and assess global market opportunities; analyze challenges and solutions posed by cultural, economic, and political differences; and develop effective international marketing strategies considering legal, ethical, and social sustainability issues. Students gain experience conducting research on global markets and applying their knowledge in complex business settings.

**3452. Professional Selling**

(Also offered as BADM 3452.) Three credits. Prerequisite: MKTG 3101 or BADM 3750; open only to business majors of junior or higher status.

This course provides an introduction to the role of professional selling in generating customer demand and delivering compelling customer experiences as part of the marketing mix. Students learn concepts and skills to create mutual value at each stage of the sales process, with a focus on business-to-business marketing contexts. Students gain experience interacting virtually with clients and colleagues and practice these skills in an integrated manner to win orders for an organization.

**3454. Sales Management and Leadership**

(Also offered as BADM 3454.) Three credits. Prerequisite: MKTG 3101 or BADM 3750; open only to business majors of junior or higher status.

This course provides an introduction to sales force management. Students learn to effectively work within, manage, and ultimately lead in a dynamic sales force environment from the perspectives of sales operations, sales management, sales strategy, and sales leadership. Students gain experience in executing practical selling and engagement techniques in a professional selling situation.

**3625. Integrated Marketing Communications in the Digital Age**

(Also offered as BADM 3625.) Three credits. Prerequisite: MKTG 3101 or BADM 3750; open only to business majors of junior or higher status.

This course provides an introduction to the design, coordination, integration, and management of marketing communications in the digital age. Students learn how advertising aligns with companies' strategic goals and to develop and evaluate media strategies. Students gain experience critiquing and developing key aspects of integrated marketing communications campaigns using traditional, social, and mobile media.

**3661. Marketing and Digital Analytics**

(Also offered as BADM 3661.) Three credits. Prerequisite: MKTG 3101 or BADM 3750; open only to business majors of junior or higher status.

This course provides an advanced understanding of how to analyze data to gain insights in digital marketing. Students learn to select appropriate analytical tools, conduct analyses, and extract insights from data analysis to support managerial decision making. Students gain hands-on computer-based experience with basic and advanced analytical tools, analyzing digital data sets, and making marketing decisions.

**3665. Digital Marketing**

(Also offered as BADM 3665.) Three credits. Prerequisite: MKTG 3101 or BADM 3750; open only to business majors of junior or higher status.

This course provides an introduction to digital marketing strategies. Students learn to align digital marketing strategies with companies' overall marketing goals, and to understand the major tools of digital marketing, such as web research, analytics, search engine optimization, online ads, and social media. Students gain experience developing, implementing, and evaluating digital marketing strategies.

**3753. Entrepreneurial Marketing**

(Also offered as BADM 3753.) Three credits. Prerequisite: MKTG 3101 or BADM 3750; open only to business majors of junior or higher status.

This course provides an introduction to the role of marketing in introducing new products and services. Students learn to assess market potential, develop marketing strategies, and make decisions with limited resources and under market uncertainty.

**3757. Strategic Brand Management**

(Also offered as BADM 3757.) Three credits. Prerequisite: MKTG 3101 or BADM 3750; open only to business majors of junior or higher status.

This course provides an introduction to building, leveraging, and enhancing brand equity and making strategic brand decisions. Students learn to design brands, build brand communities, measure brand performance, manage a brand portfolio, and conduct brand assessments.

**4362. Marketing Planning and Strategy**

Three credits. Prerequisite: MKTG 3101 or BADM 3750; MKTG 3208; MKTG 3260; open only to business majors with senior class standing.

This capstone course provides an advanced understanding of strategic market planning. Drawing on knowledge from MKTG 3101/BADM 3750, MKTG 3208, and MKTG 3260, students learn to identify, evaluate, and propose actionable solutions to complex marketing problems and develop comprehensive marketing strategies in novel and unstructured contexts. Formerly offered as MKTG 3362.

**4881. Internship in Marketing**

Three credits. Prerequisite: MKTG 3101 or BADM 3750 and consent of instructor; open only to business majors of junior or higher status.

Course credit for a marketing internship. Students are responsible for obtaining an internship with a host company in the field of marketing. Student performance is evaluated based on an appraisal by the host company and a detailed written report submitted by the student. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

**4882. Practicum in Professional Sales**

(Also offered as BADM 4882.) Three credits. Prerequisite: MKTG 3101 or BADM 3750 and consent of instructor; open only to Business students of junior or higher status.

Course credit for a professional sales internship. Students are responsible for obtaining an internship with a host company in the field of professional sales. Student performance will be evaluated based on an appraisal by the host company and a detailed written report submitted by the student. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

**4893. Foreign Study**

Variable (1-6) credits. Prerequisite: MKTG 3101; open to juniors or higher; consent of department head required prior to student's departure. May be repeated for a total of 6 credits.

Special topics taken in a foreign study program. Consent of Department Head required, prior to student's departure.

**4895. Special Topics**

Variable (1-6) credits. Prerequisite: Prerequisites and recommended preparation vary by section; open only to business majors of junior or higher status. May be repeated for credit.

Classroom course in special topics as announced in advance for each semester.

**4899. Independent Study**

Variable (1-6) credits. Prerequisite: Open only to business majors of junior or higher status. May be repeated for credit.

Individual study of special topics as mutually arranged between student and instructor.

**4996. Independent Honors Research**

Three credits. Prerequisite: MKTG 3260; open to juniors or higher; open only to Marketing Department Honors Students with consent of the instructor.

Students are expected to develop their own plan for a research project, conduct the research, and write-up this research, consulting periodically with a faculty member.

**4997W. Senior Thesis in Marketing**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; MKTG 3208, 3260; open only to Marketing Department Honor Students with consent of thesis advisor and the Marketing Department honors advisor; open to juniors or higher.

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## Materials Science and Engineering (MSE)

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**2001. Introduction to Structure, Properties, and Processing of Materials I**

Three credits. Prerequisite: CHEM 1127Q or 1147Q. Not open to students who have passed MSE 2101.

Bonding in materials, the crystal structure of metals and ceramics, and defects in materials will be introduced. Basic principles of phase diagrams and phase transformations will be given with particular emphasis on microstructural evolution and the effect of microstructure on the mechanical properties of metals and alloys. Introductory level knowledge of mechanical properties, testing methods, strengthening mechanisms, and fracture mechanics will be provided.

**2002. Introduction to Structure, Properties, and Processing of Materials II**

Three credits. Prerequisite: MSE 2001 or 2101.

Structures, properties, and processing of ceramics; structure, properties and processing of polymers and composites; electrical, thermal, magnetic and optical properties of solids; and corrosion.

**2053. Materials Characterization and Processing Laboratory**

One credit. Prerequisite: Open to Materials Science and Engineering majors or by instructor consent.

First semester of a three-semester MSE laboratory sequence. Foundational aspects of materials processing, specimen preparation, materials characterization, and materials design/selection will be introduced through experiments involving qualitative and quantitative microscopy, mechanical testing, thermal and mechanical processing. Course modules focus on metals, ceramics, and polymers.

**2101. Materials Science and Engineering I**

Three credits. Prerequisite: CHEM 1127Q or 1147Q. Not open to students who have passed MSE 2001.

Relation of crystalline structure to chemical, physical, and mechanical properties of metals and alloys. Testing, heat treating, and engineering applications of ferrous and non-ferrous alloys.

**2102. Materials Science and Engineering II**

Three credits. Prerequisite: MSE 2001 or 2101. Not open to students who have passed MSE 2002.

Structures, properties, and processing of ceramics; structure, properties and processing of polymers and composites; electrical, thermal, magnetic and optical properties of solids; and corrosion.

**3001. Applied Thermodynamics of Materials**

Four credits. Prerequisite: MSE 2001 or 2101.

Thermodynamic principles will be applied to the behavior and processing of materials. Topics covered will include thermodynamic properties, solution thermodynamics, phase equilibria, phase diagram prediction, gas-solid reactions and electrochemistry.

**3002. Transport Phenomena in Materials Processing**

Four credits. Prerequisite: MSE 3003 and MATH 2110Q, both of which may be taken concurrently.

Mechanisms and quantitative treatment of mass, energy, and momentum transfer will be applied to design and analysis of materials processing. Increasingly complex and open-ended engineering design projects will be used to illustrate principles of diffusion; heat conduction, convection, and radiation, and fluid flow.

**3003. Phase Transformation Kinetics and Applications**

Three credits. Prerequisite: MSE 2001 or 2101.

Principles and applications of phase transformations to control microstructure and materials properties. In depth, quantitative coverage will include vacancies, solid solutions, phase diagrams, diffusion, solidification of metals, nucleation and growth kinetics, and thermal treatments to control microstructure.

**3004. Mechanical Behavior of Materials**

Three credits. Prerequisite: MSE 2001 or 2101.

Elements of elastic plastic deformation of materials and the role of crystal structure. Strengthening and toughening mechanisms. Fracture; including fatigue, stress corrosion and creep rupture. Test methods.

**3020. Failure Analysis**

Three credits. Prerequisite: MSE 2001 or 2101.

Methods for determining the nature and cause of materials failure in structures and other mechanical devices. Analysis of case histories.

**3029. Ceramic Materials**

Three credits. Prerequisite: MSE 2002; PHYS 1502Q.

Microstructure of crystalline ceramics and glasses and role of thermodynamics and kinetics on its establishment. Effect of process variables on microstructure and ultimately on mechanical, chemical and physical properties.

**3030. Introduction to Composite Materials**

Three credits. Prerequisite: MSE 3004.

Principles and applications of manufacturing and mechanics of polymer-matrix, and ceramic-matrix composites. Processing and properties of fibers. Interface characteristics. Design of components using composite materials.

**3032. Introduction to High Temperature Materials**

Three credits. Prerequisite: MSE 2001 or 2101.

Plastic deformation of metals and other solid materials at elevated temperatures. Dislocation mechanisms; creep processes; oxidation. Strengthening mechanism, including ordering and precipitation hardening.

**3034. Ferrous Alloys**

Three credits. Prerequisite: MSE 3001 and 3003, both of which may be taken concurrently. Open to juniors and seniors.

Application of materials science and engineering principles to extraction, refining, processing, phase transformations, heat treatment, properties and applications of iron-based alloys. Alloys covered include: plain-carbon steels, alloy steels (microalloyed, high-speed, stainless) and cast irons.

**3036. Non-Ferrous Alloys**

Three credits. Prerequisite: MSE 3001 and 3003, both of which may be taken concurrently. Open to juniors and seniors.



Application of materials science and engineering principles to extraction, refining, processing, phase transformations, heat treatment, properties and applications of non-ferrous alloys. Materials covered include alloys of: aluminum, copper, magnesium, nickel, titanium, zinc and refractory metals.

### 3055. Materials Processing and Microstructures Laboratory

One credit. Prerequisite: MSE 2053. Departmental consent required.

Second semester of a 3-semester MSE laboratory sequence. Application of advanced characterization techniques, including x-ray diffraction, electron microscopy, differential scanning calorimetry, thermogravimetric analysis and Fourier-transform infrared spectroscopy, to all major classes of materials. Analysis of complex data sets. Culminates in a junior design project.

### 3056. Mechanical Behavior Laboratory

Two credits. Prerequisite: MSE 3004, which may be taken concurrently.

Third semester of a 3-semester MSE laboratory sequence. Introduces methods for the quantification of material deformation, fatigue, and fracture, including tensile, bending, torsion, rheological, cyclic, and/or high temperature testing. Applicable to materials processed by drawing, forging, extrusion, rolling, and hot pressing, and their use in structural applications and design. Incorporates laboratory and computational modelling of thermal and mechanical behavior of materials.

### 3156. Polymeric Materials

(Also offered as CHEG 3156.) Three credits. Prerequisite: Open only to School of Engineering students. Recommended preparation: CHEM 2444. Not open to students who have passed CHEM 3661.

Structure, properties, and chemistry of high polymers; solution and phase behavior; physical states, viscoelasticity and flow; production and polymer processing; design of polymers for specific applications.

### 3193. International Study in Materials Science and Engineering

Variable (1-6) credits. May be repeated for a total of 6 credits.

Special engineering topics taken in an international study program. May count toward the Major, substituting a core course or as a Professional or Technical Elective, only with consent of the advisor and approved plan of study.

### 3700. Biomaterials

Three credits. Prerequisite: MSE 2001 or MSE 2101. Not open to students who have passed BME 3700.

Introduction to a series of implant materials, including metals, ceramics, glass ceramics, polymers, and composites, including comparison with natural materials. Issues related to mechanical properties, biocompatibility, degradation of materials by biological systems, and biological response to artificial materials will be addressed. Particular attention will be given to the materials for the total hip prosthesis, dental restoration, and implantable medical devices.

### 4001. Electrical and Magnetic Properties of Materials

Three credits. Prerequisite: MSE 2101 or both PHYS 1502Q and MSE 2001.

Principles underlying electrical and magnetic behavior will be applied to the selection and design of materials. Topics covered will include: thermoelectricity, photoelectricity, conductors, semiconductors, superconductors, dielectrics, ferroelectrics, piezoelectricity, pyroelectricity, and magnetism. Device applications.

### 4003. Materials Characterization

Three credits. Prerequisite: MSE 2001 or 2101.

Principles and experimental methods of optical, electron, and x-ray examination of engineering materials. Emphasis on use of x-ray analysis, with introduction to electron microscopy, Auger spectroscopy, scanning electron microscopy, and microanalysis.

### 4004. Thermal/Mechanical Processing of Materials

Three credits. Prerequisite: MSE 3004, which may be taken concurrently.

Fundamental principles of materials processing and their quantitative application to process design will be illustrated for deformation processes: forging, rolling, drawing, extrusion, injection molding, powder compaction and sintering.

### 4005. Processing of Materials in the Liquid and Vapor State

Three credits. Prerequisite: MSE 3001 and 3002, both may be taken concurrently.

Fundamental principles of materials processing and their quantitative application to process design will be illustrated for materials processes involving liquids and gasses: crystal growth, zone refining, shape casting, continuous casting, refining, welding, and vapor deposition.

### 4021. Materials Joining

Three credits. Prerequisite: MSE 2001 or 2101.

Basic materials principles applied to fusion and solid phase welding, brazing and other joining processes. Effects of joining process and process variable values on microstructure, soundness and mechanical properties of as-processed joints. Treatment and properties of joints and joined assemblies. Joining defects and quality control.

### 4034. Corrosion and Materials Protection

Three credits. Prerequisite: MSE 2001 or 2101.

Corrosion and materials protection designed for engineering students. Principles of materials degradation, extensive case histories and practical applications. Selection of metals, alloys, ceramics and polymers for atmospheric, soil, marine and chemical environments. Evaluation methods, protective measures and the techniques of failure analysis.

### 4038. Alloy Casting Processes

Three credits. Prerequisite: MSE 3002 and 3003, both of which may be taken concurrently.

Principles of alloy solidification are discussed and applied in the context of sand, investment, and die casting; continuous and direct chill casting; electroslag and vacuum arc remelting, crystal growth, rapid solidification, and laser coating.

### 4040. Materials Selection in Mechanical Design

Three credits. Prerequisite: MSE 3004.

Study of materials and how they are chosen for various mechanical designs. A wide range of materials will be discussed (metal, ceramic, polymer, etc.) and their key properties (modulus, strength, density, etc.) in design will be reviewed. Guidelines for material selection will be shown. As part of the course, design trades will also be discussed.

### 4095. Special Topics in Materials Science and Engineering

Variable (1-3) credits. Prerequisite: Instructor consent required. May be repeated for credit.

### 4097. Undergraduate Research in Materials Science and Engineering

Variable (1-3) credits. Prerequisite: Instructor consent required. May be repeated for a total of 3 credits.

Methods of research and development. Laboratory or computational investigation. Correlation and interpretation of experimental or modelling results. Writing technical reports and presenting conclusions.

### 4098. Variable Topics in Materials Science and Engineering

Variable (1-3) credits. Prerequisite: Instructor consent required. May be repeated for credit.

Does not constitute original research.

### 4099. Independent Study in Materials Science and Engineering

Variable (1-3) credits. Prerequisite: Instructor consent required.

Specialized non-classroom-based coursework under the regular supervision of a faculty instructor. Does not constitute original research.

### 4240. Nanomaterials Synthesis and Design

Three credits. Prerequisite: MSE 2002.

Introduces synthesis and design of materials in the nanoscale. Typical synthesis strategies of low dimensional materials including nanoparticles, nanowires, nanotubes and hierarchical nanostructures are presented and discussed. The reasons behind growth mechanisms are interpreted and the nanoscale structure-properties relations are described. Design strategies of multifunctional nanomaterials will be addressed as well. Readings from modern scientific literature are assigned weekly for in-class discussions.

### 4241. Nanomaterials Characterization and Application

Three credits. Prerequisite: MSE 2002.

Introduces materials characterization and applications at the nanoscale. Standard and advanced methods in Scanning Probe Microscopy, Electron Microscopy, and Focused Ion Beams are presented. Self-Assembled and Lithographically defined structures are treated. Nanoscale particles, tubes, films, and structures are discussed. Applications for enhanced mechanical, electronic, magnetic, optical, and biological properties are described. Societal implications including performance, costs, environmental impacts, and health issues are addressed. Readings from modern scientific literature are assigned weekly for in-class discussions.

### 4701. Biomedical Materials and Implants

Three credits. Prerequisite: MSE 3700 or BME 3700. Not open to students who have passed BME 4701.

This advanced course will enable students to further expand their knowledge in various aspects of biomaterials science, engineering and applications. The course will focus on the strategies to improve cell-material and tissue-implant interaction. An emphasis is placed on the biomaterial innovations and technologies that integrate bioactivity, functionality to improve the performance of the implants. The course will also provide an overview of the FDA regulatory pathways for biomaterial and implant approvals.

#### **4800. Materials for Advanced Fossil Energy Systems**

Three credits. Prerequisite: MSE 3001 and 3002 both of which can be taken concurrently.

Will familiarize students with the state of the art in fossil fuel power generation technologies ranging from conventional combustion to emerging technologies such as oxyfuel combustion; integrated coal gasification (IGCC) and fuel cell (IGFC) systems; and CO<sub>2</sub> separation and sequestration.

#### **4801. Materials for Alternative, Renewable Energy**

Three credits. Prerequisite: MSE 3001 and 3002 both of which can be taken concurrently.

Overview of energy conversion and storage systems - centralized and distributed generation to stationary and motive batteries; efficiency calculation and thermodynamics; electrochemistry - primary and secondary batteries; fuels - chemistry, processing, impurities; combustion, gasification and electrochemical systems; materials requirements; bulk and surface properties; metals, ceramics and superalloys; gas-metal interactions; gas-liquid-metal interactions; development trend - alloying principles, coatings, claddings; alloy processing and coating techniques.

#### **4901W. Capstone Design Project I**

Three credits. Prerequisite: MSE 3002; 3004; 3055; ENGL 1007 or 1010 or 1011 or 2011.

Seniors working in teams with faculty and industry mentors solve open ended projects in design of materials, materials processes, and material systems. Oral and written reports are required in each semester. For students with high academic standing the BSE and MS projects may overlap.

#### **4902W. Capstone Design Project II**

Three credits. Prerequisite: MSE 4901; ENGL 1007 or 1010 or 1011 or 2011.

Seniors working in teams with faculty and industry mentors solve open ended projects in design of materials, products, and processes. Oral and written reports are required in each semester. For students with high academic standing the BSE and MS projects may overlap.

#### **4996. Thesis Research in Materials Science and Engineering**

Variable (1-3) credits. Prerequisite: Up to three credits of MSE 4097 or 4996 can satisfy the Professional Elective requirement.

Academic research conducted by a student under the supervision of the thesis advisor that involves completing and documenting a major original project.

## **Mathematics (MATH)**

### **1011Q. Introductory College Algebra and Mathematical Modeling**

Three credits. Prerequisite: Not open to students who have passed a Q course. RHAG students cannot take more than 22 credits of 1000 level courses.

Emphasizes two components necessary for success in 1000-level courses which employ mathematics. The first component consists of basic algebraic notions and their manipulations. The second component consists of the practice of solving multi-step problems from other disciplines, called mathematical modeling. The topics include: lines, systems of equations, polynomials, rational expressions, exponential and logarithmic functions. Students will engage in group projects in mathematical modeling. Strongly recommended as preparation for Q courses for students whose high school algebra needs reinforcement.

### **1020Q. Problem Solving**

Three credits. Recommended preparation: MATH 1011 or equivalent. Not open for credit to students who have passed any math course other than MATH 1010, 1011, 1020, 1030, 1040, 1050, 1060 or 1070.

An introduction to the techniques used by mathematicians to solve problems. Skills such as Externalization (pictures and charts), Visualization (associated mental images), Simplification, Trial and Error, and Lateral Thinking learned through the study of mathematical problems. Problems drawn from combinatorics, probability, optimization, cryptology, graph theory, and fractals. Students will be encouraged to work cooperatively and to think independently. Not eligible for course credit by examination.

### **1030Q. Elementary Discrete Mathematics**

Three credits. Recommended preparation: MATH 1011 or equivalent. Not open for credit to students who have passed any math course other than MATH 1010, 1011, 1020, 1030, 1040, 1050, 1060 or 1070.

Topics chosen from discrete mathematics. May include counting and probability, sequences, graph theory, deductive reasoning, the axiomatic method and finite geometries, number systems, voting methods, apportionment methods, mathematics of finance, number theory.

### **1040Q. Elementary Mathematical Modeling**

Three credits. Recommended preparation: MATH 1011 or equivalent. Not open to students who have passed any MATH course other than MATH 1010, 1011, 1020, 1030, 1040, 1050, 1070. This course and MATH 1060 cannot both be taken for credit.

Use of algebraic and trigonometric functions with technology to analyze quantitative relationships and illustrate the role of mathematics in modern life; graphical numerical and symbolic methods. Most sections require a graphing calculator; some require work with a computer spreadsheet. This course should not be considered as adequate preparation for MATH 1071, 1120, 1131, or 1151.

### **1060Q. Precalculus**

Three credits. Prerequisite: A qualifying score on the math placement assessment (placement.uconn.

edu/mathematics-placement). May not be taken out of sequence after passing MATH 1120, 1125, or 1131. Not open for credit after passing MATH 1040.

Preparation for calculus. Review of algebra. Functions and their applications; in particular, polynomials, rational functions, exponentials, logarithms and trigonometric functions.

### **1070Q. Mathematics for Business and Economics**

Three credits. Recommended preparation: MATH 1011Q or equivalent. Not open for credit to students who have passed MATH 1132Q, 1152Q or 2142Q.

Linear equations and inequalities, matrices, systems of linear equations, and linear programming; sets, counting, probability and statistics; mathematics of finance; applications to business and economics.

### **1071Q. Calculus for Business and Economics**

Three credits. Recommended preparation: MATH 1011Q or the equivalent, and MATH 1070Q, and a qualifying score on the math placement assessment (placement.uconn.edu/mathematics-placement).

Not open to students who have passed MATH 1110Q. Only one credit for students who have passed MATH 1121Q, 1131Q, or 1151Q.

Derivatives and integrals of algebraic, exponential and logarithmic functions. Applications to business and economics.

### **1131Q. Calculus I**

Four credits. Prerequisite: A qualifying score on the math placement assessment (placement.uconn.edu/mathematics-placement). Students cannot receive credit for MATH 1131 and either MATH 1120, 1121, 1126 or 1151 (2 credits for students who have passed MATH 1125).

Limits, continuity, differentiation, antidifferentiation, definite integral, with applications to the physical sciences and engineering sciences. Suitable for students with some prior calculus experience. Substitutes for MATH 1120, 1126 or 1151 as a requirement. Two credits for students who have passed MATH 1125.

### **1132Q. Calculus II**

Four credits. Prerequisite: A qualifying score on the math placement assessment (placement.uconn.edu/mathematics-placement); one of MATH 1121Q, 1126Q, 1131Q, or 1151Q, or AP credit for calculus. Recommended preparation: C- or better in MATH 1121Q or MATH 1126Q or 1131Q. Not open to students who have passed MATH 1122Q or 1152Q. Substitutes for MATH 1122Q.

Transcendental functions, formal integration, polar coordinates, infinite sequences and series, vector algebra and geometry, with applications to the physical sciences and engineering. Substitutes for MATH 1122 as a requirement.

### **1151Q. Honors Calculus I**

Four credits. Prerequisite: A qualifying score on the math placement assessment (placement.uconn.edu/mathematics-placement). Students cannot receive credit for MATH 1151 and either MATH 1121 or 1131.

The subject matter of MATH 1131 in greater depth, with emphasis on the underlying mathematical concepts. May be used in place of MATH 1131 to fulfill any requirement satisfied by MATH 1131.

**1152Q. Honors Calculus II**

Four credits. Prerequisite: A qualifying score on the math placement assessment (placement.uconn.edu/mathematics-placement); MATH 1151Q or AP credit for calculus, or consent of instructor. Students cannot receive credit for MATH 1152Q and either MATH 1122Q or 1132Q.

The subject matter of MATH 1132 in greater depth, with emphasis on the underlying mathematical concepts. May be used in place of MATH 1132 to fulfill any requirement satisfied by MATH 1132.

**1793. Foreign Study**

Variable (1-15) credits. Prerequisite: May be repeated for credit to a maximum of 15 for MATH 1793, 2793, and 3793 together. May be repeated for a total of 15 credits.

Consent of the Department Head or Undergraduate Coordinator required, normally before the student's departure. May count toward the major with consent of the advisor and either the department head or undergraduate coordinator.

**1795Q. Special Topics Lecture**

Variable (1-3) credits.

Credits, prerequisites and hours as determined by the Senate Curricula and Courses Committee.

**2010Q. Fundamentals of Algebra and Geometry**

Three credits. Prerequisite: PSYC 1100 and three credits of Mathematics; open only to students enrolled in the Elementary Education program in the Neag School of Education or by consent of instructor. May not be taken out of sequence after passing MATH 2011Q.

Development of the number system with applications to elementary number theory and analytic geometry. May not be counted in any of the major groups described in the Mathematics Departmental listing.

**2011Q. Fundamentals of Algebra and Geometry**

Three credits. Prerequisite: MATH 2010Q. May not be counted in any of the major groups described in the Mathematics Departmental listing.

A continuation of MATH 2010Q, furthering the treatment of elementary number theory and analytic geometry.

**2110Q. Multivariable Calculus**

Four credits. Prerequisite: MATH 1132Q or 1152Q or a score of 4 or 5 on the AP Calculus BC exam. Recommended preparation: a grade of C- or better in MATH 1132Q. May not be taken for credit after passing MATH 2130Q or 2143Q. May not be taken out of sequence after passing MATH 2720, 3146, 3160, 3330, 3370, 3410, 3412, 3510, or 3610. Repeat restrictions apply; see advising.uconn.edu/ repeat-policy.

Two- and three-dimensional vector algebra, calculus of functions of several variables, vector differential calculus, line and surface integrals.

**2130Q. Honors Multivariable Calculus**

Four credits. Prerequisite: MATH 1152Q, or AP credit for MATH 1131Q and 1132Q, or instructor consent. Not open to students who have passed MATH 2110Q or 2143Q. May not be taken out of sequence after passing MATH 2720, 3160, 3330, 3370, 3412, 3510, 3610.

(Honors Course) The subject matter of MATH 2110 in greater depth, with emphasis on the underlying mathematical concepts. May be used in place of MATH 2110 to fulfill any requirement satisfied by MATH 2110.

**2141Q. Advanced Calculus I**

Four credits. Prerequisite: A year of calculus (may include calculus taken in high school). May not be taken out of sequence after passing MATH 2142.

A rigorous treatment of the mathematics underlying the main results of one-variable calculus. Intended for students with strong interest and ability in mathematics who are already familiar with the computational aspects of basic calculus. May be used in place of MATH 1131Q or 1151Q to fulfill any requirement satisfied by MATH 1131Q or 1151Q.

**2142Q. Advanced Calculus II**

Four credits. Prerequisite: MATH 2141Q. May not be taken out of sequence after passing MATH 2110Q, 2130Q, 2143Q, 2210Q, 2410Q, or 2420Q.

A continuation of the rigorous treatment of the mathematics underlying the main results of one variable calculus. Basic properties of vectors and vector valued functions. May be used in place of MATH 1132Q, 1152Q or 2710 to fulfill any requirement satisfied by MATH 1132Q, 1152Q or 2710.

**2143Q. Advanced Calculus III**

Four credits. Prerequisite: MATH 2142Q. May not be taken for credit after passing MATH 2110Q, 2130Q, 2144Q, 2210Q, 2410Q, or 2420Q.

A rigorous treatment of advanced topics in calculus including vector spaces and their applications in multivariable calculus. May be used in place of MATH 2110Q to fulfill any requirement satisfied by MATH 2110Q.

**2144Q. Advanced Calculus IV**

Four credits. Prerequisite: MATH 2143Q. May not be taken for credit after passing MATH 2110Q, 2130Q, 2210Q, 2410Q, or 2420Q.

The continuation of the rigorous treatment of advanced topics in multivariable calculus, vector spaces and systems of differential equations. May be used in place of MATH 2210Q or 2410Q to fulfill any requirement satisfied by MATH 2210Q or 2410Q.

**2210Q. Applied Linear Algebra**

Three credits. Prerequisite: MATH 1132Q or 1152Q or 2142Q. Recommended preparation: a grade of C- or better in MATH 1132Q. May not be taken out of sequence after passing MATH 2144Q, 3210, 3510, or 3710. Repeat restrictions apply. See advising.uconn.edu/ repeat-policy for information.

Systems of equations, matrices, determinants, linear transformations on vector spaces, characteristic values and vectors, from a computational point of view. The course is an introduction to the techniques of linear algebra with elementary applications.

**2360Q. Geometry**

Three credits. Prerequisite: MATH 1126Q or 1131Q or 1151Q or 2142Q (MATH 1126Q may be taken concurrently).

Deductive reasoning and the axiomatic method, Euclidean geometry, parallelism, hyperbolic and other non-Euclidean geometries, geometric transformations.

**2410Q. Elementary Differential Equations**

Three credits. Prerequisite: MATH 1132Q, 1152Q, or 2142Q. Recommended preparation: A grade of C- or better in MATH 1132Q; MATH 2110Q or 2130Q. Cannot be taken after MATH 2144Q, 2420Q, 2720, 3146, 3150, 3410, 3412, 3510, 3710. Repeat restrictions apply; see advising.uconn.edu/ repeat-policy.

Introduction to ordinary differential equations and their applications, linear differential equations, systems of first order linear equations, numerical methods.

**2420Q. Honors Differential Equations**

Three credits. Prerequisite: MATH 1152Q or instructor consent. Not open for credit to students who have passed MATH 2410Q or 2144Q. May not be taken out of sequence after passing MATH 3146, 2720, 3150, 3410, 3412, 3710.

The subject matter of MATH 2410 in greater depth, with emphasis on the underlying mathematical concepts. MATH 2420 satisfies any requirement met by MATH 2410, and provides superior preparation for prospective mathematics, science, and engineering majors.

**2610. Introduction to Actuarial Science**

Three credits. Prerequisite: Instructor consent required.

An introduction to actuarial science, covering many of the topics in the first Foundations of Actuarial Practice module, Role of the Actuary, of the Society of Actuaries. Topics include: what an actuary is and does; external forces that influence actuarial work; and the framework and processes actuaries use to perform actuarial work using Microsoft Excel.

**2620. Financial Mathematics I**

Three credits. Prerequisite: MATH 1132Q or 1152Q or 2141Q. May not be taken out of sequence after passing MATH 3615, 3620, 3630, 3634, 3650, 3660. Not open for credit to students who have passed MATH 5620.

Fundamental concepts of financial mathematics, with applications in calculating present and accumulated values for various streams of cash flows as a basis for future use in: reserving, valuation, pricing, duration calculation, asset/liability management, investment income, capital budgeting and valuing contingent cash flows.

**2705W. Technical Writing in Mathematics**

One credit. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011, and MATH 1132Q or 2141Q; completion of or concurrent enrollment in either MATH 2110Q, 2142Q, 2210Q, or 2410Q; open only to Mathematics majors.

An introduction to the communication of mathematics through formal writing.

**2710. Transition to Advanced Mathematics**

Three credits. Prerequisite: MATH 1132Q or 1152Q. May not be taken for credit after passing MATH 2143. May not be taken out of sequence after passing 3150, 3210, 3230, 3240, 3260, 3270, 3330, or 3370.

Basic concepts, principles, and techniques of mathematical proof common to higher mathematics. Logic, set theory, counting principles, mathematical induction, relations, functions. Concepts from abstract algebra and analysis. Students intending to major in mathematics should

ordinarily take this course during the third or fourth semester. Students wishing to use MATH 2710 or 2710W as a prerequisite for later MATH courses need to earn a "C" or better.

#### **2710W. Transition to Advanced Mathematics**

Three credits. Prerequisite: MATH 1132Q or 1152Q; ENGL 1007 or 1010 or 1011 or 2011. Open only to Mathematics majors. Not open for credit to students who have passed MATH 2143Q.

Basic concepts, principles, and techniques of mathematical proof common to higher mathematics. Logic, set theory, counting principles, mathematical induction, relations, functions. Concepts from abstract algebra and analysis. Students intending to major in Mathematics should ordinarily take this course or Math 2710 during the third or fourth semester. Students wishing to use MATH 2710 or 2710W as a prerequisite for later MATH courses need to earn a "C" or better.

#### **2720. History of Mathematics**

Three credits. Prerequisite: Either (i) MATH 2110Q or 2130Q, and either 2210 or 2410Q, or (ii) 2144Q or 2420Q.

A historical study of the growth of the various fields of mathematics. This course may not be counted in any of the major groups described in the Mathematics Departmental listing.

#### **2720W. History of Mathematics**

Three credits. Prerequisite: Either (i) MATH 2110 or 2130, and either MATH 2210 or 2410; or (ii) MATH 2420 or 2144; ENGL 1007 or 1010 or 1011 or 2011.

A historical study of the growth of the various fields of mathematics. This course may not be counted in any of the major groups described in the Mathematics Departmental listing.

#### **2793. Foreign Study**

Variable (1-6) credits. Prerequisite: May be repeated for credit to a maximum of 15 for MATH 1793, 2793, and 3793 together. May be repeated for a total of 15 credits.

Consent of the Department Head or Undergraduate Coordinator required, normally before the student's departure. May count toward the major with consent of the Advisor and either the Department Head or Undergraduate Coordinator.

#### **2794W. Mathematics Writing Seminar**

Two credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; and one of the following: (1) MATH 2144Q, or (2) one of MATH 2110Q, 2130Q, 2143Q and one of MATH 2210Q, 2410Q, 2420Q.

Contemporary topics in mathematics.

#### **3094. Undergraduate Seminar**

Three credits. Prerequisite: Instructor consent required. May be repeated for credit.

#### **3146. Introduction to Complex Variables**

Three credits. Prerequisite: MATH 2110Q and 2410Q, or MATH 2420Q or 2144Q. Not open for credit to students who have passed MATH 5046.

Functions of a complex variable, integration in the complex plane, conformal mappings.

#### **3150. Analysis I**

Three credits. Prerequisite: MATH 2144 or 2410 or 2420; MATH 2110 or 2130 or 2143; and a grade of C or better in either MATH 2142 or 2710.

Introduction to the theory of functions of one real variable.

#### **3151. Analysis II**

Three credits. Prerequisite: MATH 3150 or 4110.

Introduction to the theory of functions of several real variables.

#### **3160. Probability**

Three credits. Prerequisite: MATH 2110Q or 2130Q or 2143Q. Cannot be taken for credit after passing MATH 3165, 3610, 3621, 3634, 4735.

Introduction to the theory of probability. Sets and counting, probability axioms, conditional probabilities, random variables, limit theorems.

#### **3165. Honors Probability**

Three credits. Prerequisite: MATH 2130Q or 2143Q. Not open to students who have passed MATH 3160.

The subject matter of MATH 3160 in greater depth, with emphasis on the underlying mathematical concepts. May be used in place of MATH 3160 to satisfy any requirement satisfied by MATH 3160.

#### **3170. Elementary Stochastic Processes**

(Also offered as STAT 3965.) Three credits. Prerequisite: STAT 3025Q or 3345Q or 3375Q or MATH 3160.

Conditional distributions, discrete and continuous time Markov chains, limit theorems for Markov chains, random walks, Poisson processes, compound and marked Poisson processes, and Brownian motion. Selected applications from actuarial science, biology, engineering, or finance.

#### **3180. Mathematics for Machine Learning**

Three credits. Prerequisite: MATH 2110Q and 2210Q. Recommended preparation: MATH 3160.

Applications of elementary linear algebra, probability theory, and multivariate calculus to fundamental algorithms in machine learning. Topics include the theory of orthogonal projection, bilinear forms, and the spectral theorem to multivariate regression and principal component analysis; optimization algorithms such as gradient descent and Newton's method applied to logistic regression; and convex geometry applied to support vector machines. Other topics include Bayesian probability theory and the theory of convolution especially as applied to neural networks. Theory illustrated with computer laboratory exercises.

#### **3210. Abstract Linear Algebra**

Three credits. Prerequisite: MATH 2210Q or 2144Q; a grade of C or better in MATH 2142Q or 2710.

Vector spaces and linear transformations over fields.

#### **3230. Abstract Algebra I**

Three credits. Prerequisite: A grade of C or better in MATH 2710 or 2142Q. Recommended preparation: MATH 2144Q or 2210Q. Cannot be taken after passing MATH 3231.

The fundamental topics of modern algebra including elementary number theory, groups, rings, polynomials and fields.

#### **3231. Abstract Algebra II**

Three credits. Prerequisite: MATH 3230. Recommended preparation: MATH 3210.

Topics from ring theory, Galois theory, linear and multilinear algebra, or algebraic geometry.

#### **3240. Introduction to Number Theory**

Three credits. Prerequisite: A grade of C or better in MATH 2142Q or 2710.

Euclid's algorithm, modular arithmetic, Diophantine equations, analogies between integers and polynomials, and quadratic reciprocity, with emphasis on developing both conjectures and their proofs.

#### **3250. Combinatorics**

Three credits. Prerequisite: A grade of C or better in MATH 2142Q or 2710.

Analysis of combinatorial problems and solution methods. Topics include: Enumeration, generating functions, bijective proofs, sieve methods, recurrence relations, graphs, partially ordered sets, and extremal combinatorics.

#### **3260. Introduction to Mathematical Logic**

Three credits. Prerequisite: A grade of C or better in MATH 2142Q or 2710. Recommended preparation: PHIL 2211Q.

Formalization of mathematical theories, elementary model theory with applications to algebra, number theory, and non-standard analysis. Additional topics: Elementary recursion theory and axiomatic set theory. Emphasis on the applications of logic to mathematics rather than the philosophical foundations of logic.

#### **3265. Applied Mathematical Logic**

Three credits. Prerequisite: MATH 2142Q, or a grade of C or better in MATH 2710, or CSE 2500, or PHIL 2211Q.

Applied logic selected from set theory, computability theory, nonclassical logic, and type theory. Topics may include ordinal and cardinal numbers, transfinite recursion, the ZFC axioms, models of computation, undecidable problems, modal logic, intuitionistic logic.

#### **3330. Elements of Topology**

Three credits. Prerequisite: MATH 2110Q or 2130Q or 2143Q; and a grade of C or better in either MATH 2142Q or 2710.

Metric spaces, topological spaces and functions, topological properties, surfaces, elementary topics in geometric topology.

#### **3370. Differential Geometry**

Three credits. Prerequisite: A grade of C or better in either MATH 2142Q or 2710 and either (i) MATH 2110Q or 2130Q, and MATH 2410Q or 2420Q; or (ii) MATH 2144Q.

The in-depth study of curves and surfaces in space.

#### **3410. Differential Equations for Applications**

Three credits. Prerequisite: MATH 2110Q and 2410Q, or MATH 2144Q or 2420Q. Not open for credit to students who have passed MATH 3412. May not be taken out of sequence after passing MATH 3430.

Series solutions of differential equations, Bessel functions, Fourier series, partial differential equations and boundary value problems, nonlinear differential equations.

#### **3435. Partial Differential Equations**

Three credits. Prerequisite: MATH 2110Q and one of MATH 2410Q or 2420Q or 2144Q.

Solution of first and second order partial differential equations with applications to engineering and the sciences.

**3510. Numerical Analysis I**

Three credits. Prerequisite: Either (i) MATH 2110Q or 2130Q, and MATH 2410Q, and MATH 2210Q or 3210; or (ii) MATH 2144Q; knowledge of at least one programming language. May not be taken out of sequence after passing MATH 3511.

Analysis of numerical methods associated with linear systems, eigenvalues, inverses of matrices, zeros of non-linear functions and polynomials. Roundoff error and computational speed.

**3511. Numerical Analysis II**

Three credits. Prerequisite: MATH 3510.

Approximate integration, difference equations, solution of ordinary and partial differential equations.

**3545. Actuarial Case Studies using SAS**

One credit. Prerequisite: MATH 2620, MATH 3160, STAT 3375Q, and consent of instructor.

Design, development, testing, and implementation of solutions to problems in actuarial science using SAS.

**3550. Programming for Actuaries**

Three credits. Prerequisite: Instructor consent required.

Design, development, testing and implementation of programs to solve actuarial problems using software such as Microsoft Office Excel with Visual Basic.

**3610. Probability Problems**

One credit. Prerequisite: MATH 2110Q or 2130Q or 2143Q; MATH 3160.

Preparation through problem solving for the probability actuarial examination, which tests a student's knowledge of the fundamental probability tools for quantitatively assessing risk. Recommended prior knowledge: a thorough command of probability, as well as basic concepts in insurance and risk management.

**3615. Financial Mathematics Problems**

One credit. Prerequisite: MATH 2620.

Preparation for the financial mathematics actuarial examination, which tests a student's knowledge of the theory of interest and financial economics at an introductory level.

**3620. Foundations of Actuarial Science**

Three credits. Prerequisite: MATH 2620. Not open for credit to students who have passed MATH 2610 or FNCE 3221 or HCMI 3221. Repeat restrictions apply; see [advising.uconn.edu/repeat-policy](http://advising.uconn.edu/repeat-policy) for details.

The foundations of actuarial science, the role of the actuary, external forces that influence actuarial work, and the framework and processes used in actuarial work.

**3621. Actuarial Statistics**

Three credits. Prerequisite: MATH 3160; STAT 3375Q.

Regression and time series applied to actuarial science. Covers the learning objectives established by the Society of Actuaries for Validation by Educational Experience in Applied Statistics.

**3630. Long-Term Actuarial Mathematics I**

Four credits. Prerequisite: MATH 3160 or 3165 or STAT 3375Q; MATH 2620. Cannot be taken for credit after passing MATH 3631 or 5630.

Mathematical foundations of life contingencies and their applications to quantifying risks in other actuarial contexts. Topics include long-term insurance products, survival and longevity models, life tables, life insurance, life annuities, premium calculations, reserves.

**3631. Long-Term Actuarial Mathematics II**

Three credits. Prerequisite: MATH 3630. Not open to students who have passed MATH 5631.

Topics include multiple state models, multiple decrements, multiple lives, profit and loss analysis, pension plans and funding, retirement benefits, long-term health and disability.

**3632. Loss Models**

Three credits. Prerequisite: MATH 3630, which may be taken concurrently.

Topics from the fourth actuarial exam relating to survival, severity, frequency and aggregate models, and the use of statistical methods to estimate parameters of such models given sample data.

**3634. Actuarial Models**

Three credits. Prerequisite: MATH 3160 or STAT 3025Q or 3375Q; MATH 2620.

Introduction to the design of computerized simulations for analyzing and interpreting actuarial and financial problems. This course, together with MATH 5637, MATH 5640, and MATH 5641, helps the student prepare for the actuarial examination on the construction and evaluation of risk models.

**3636. Actuarial Statistical Modeling I**

Three credits. Prerequisite: MATH 3160 or 3165; Math 3550; STAT 3375Q.

Introduction to linear regression models, generalized linear models, and time series models. Case studies are used to demonstrate applications.

**3637. Actuarial Statistical Modeling II**

Three credits. Prerequisite: MATH 3621 or 3636.

Introduction to principal component analysis, decision tree models, and cluster analysis. Case studies are used to demonstrate applications.

**3639. Actuarial Loss Models**

Three credits. Prerequisite: MATH 2610 or 3620; and MATH 3160 or 3165 or STAT 3375Q.

Loss distribution models for claim frequency and severity, aggregate risk models, coverage modifications, risk measures, construction and selection of parametric models, introduction to simulation.

**3640. Short-Term Insurance Ratemaking**

Three credits. Prerequisite: MATH 3620. Not open to students who have passed MATH 5640.

Credibility theory, pricing for short-term insurance coverages, reinsurance, experience rating, risk classification, introduction to Bayesian statistics.

**3641. Short-Term Insurance Reserving**

Three credits. Prerequisite: MATH 3620. Not open to students who have passed MATH 5641.

Techniques and underlying statistical theory for estimating unpaid claims, use of claims triangles, basic adjustments to data and estimation techniques to account for internal and external environments, estimating recoveries, model adequacy and reasonableness.

**3650. Financial Mathematics II**

Three credits. Prerequisite: MATH 2620; ACCT 2001, which may be taken concurrently. Cannot be taken for credit after passing MATH 5621. Repeat restrictions apply- see [www.advising.uconn.edu/repeat-policy](http://www.advising.uconn.edu/repeat-policy).

The continuation of MATH 2620. Measurement of financial risk, the mathematics of capital budgeting, mathematical analysis of financial decisions and capital structure, and option pricing theory.

**3660. Advanced Financial Mathematics**

Three credits. Prerequisite: MATH 2620 and 3160.

Advanced topics in financial mathematics such as single period, multi-period and continuous time financial models; Black-Scholes formula; interest rate models; and immunization theory.

**3670W. Technical Writing for Actuaries**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Students will write a technical report on an advanced topic in actuarial science.

**3710. Introduction to Mathematical Modeling**

Three credits. Prerequisite: MATH 2144Q or MATH 2420Q; or MATH 2210Q and MATH 2410Q.

Theoretical and numerical analysis, using concepts from calculus, differential equations, linear algebra and discrete mathematics, applied to derive and analyze various mathematical models used in other disciplines.

**3710W. Introduction to Mathematical Modeling**

Three credits. Prerequisite: MATH 2144Q or 2420Q; or MATH 2210Q and 2410Q; ENGL 1007 or 1010 or 1011 or 2011; open only to Mathematics majors.

Theoretical and numerical analysis, using concepts from calculus, differential equations, linear algebra and discrete mathematics, applied to derive and analyze various mathematical models used in other disciplines.

**3790. Field Study Internship**

Variable (1-3) credits. Prerequisite: Completion of freshmen - sophomore level requisite courses in the major. May be repeated for a total of 6 credits.

Consent of the Department Head, Director of the Actuarial Program, or the Undergraduate Coordinator required. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory.)

**3793. Foreign Study**

Variable (1-15) credits. Prerequisite: May be repeated for credit to a maximum of 15 for MATH 1793, 2793, and 3793 together. May be repeated for a total of 15 credits.

May be repeated for credit (to a maximum of 15 for MATH 1793 and 3793 together). Consent of the Department Head or Undergraduate Coordinator required, normally before the student's departure. May count toward the major with consent of the Advisor and either the Department Head or Undergraduate Coordinator.

**3794. Problem Seminar**

One credit. Prerequisite: MATH 1122Q or 1132Q or 1152Q. May be repeated for credit.

Problem sequences selected from algebra, geometry, calculus, combinatorics, and other branches of mathematics, designed to introduce mathematical concepts and to give experience in problem solving.

### 3795. Special Topics

Variable (1-6) credits. Prerequisite: Prerequisites and recommended preparation vary. May be repeated for credit.

### 3796W. Senior Thesis in Mathematics

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open only to Honors students.

The student should define a general subject area for the thesis before choosing a thesis advisor and seeking consent at the time of registration. The student should submit a written proposal for the senior thesis to the advisor by the end of the semester preceding enrollment for thesis credit.

### 3798. Variable Topics

Three credits. Prerequisite: Prerequisites and recommended preparation vary. May be repeated for credit.

### 3799. Independent Study

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

### 3899. Independent Study

Variable (1-3) credits. Prerequisite: Instructor consent. May be repeated for a total of 6 credits.

Credits and hours by arrangement. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

### 4110. Introduction to Modern Analysis

Three credits. Prerequisite: Not open for credit to students who have passed MATH 5510.

Metric spaces, sequences and series, continuity, differentiation, the Riemann-Stieltjes integral, functions of several variables.

### 4210. Advanced Abstract Algebra

Three credits. Prerequisite: Not open for credit to students who have passed MATH 5210.

Group theory, ring theory and modules, and universal mapping properties.

### 4310. Introduction to Geometry and Topology

Three credits. Prerequisite: Not open for credit to students who have passed MATH 5310.

Topological spaces, connectedness, compactness, separation axioms, Tychonoff theorem, compact-open topology, fundamental group, covering spaces, simplicial complexes, differentiable manifolds, homology theory and the De Rham theory, intrinsic Riemannian geometry of surfaces.

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## Mechanical Engineering (ME)

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### 2193. International Study

Variable (1-6) credits. May be repeated for a total of 6 credits.

Special engineering topics taken in an international study program. May count toward the major with consent of the advisor and approved plan of study.

### 2233. Thermodynamic Principles

Three credits. Prerequisite: CHEM 1127Q or both CHEM 1124Q and CHEM 1125Q; PHYS 1401Q

or PHYS 1501Q; MATH 2110Q, which may be taken concurrently. May not be taken out of sequence after passing ME 3232, 3242, or 3250.

Introduction to the First and Second Laws of Thermodynamics. Thermodynamic properties of pure substances and ideal gases. Analysis of ideal and real processes - including turbines, pumps, heat exchangers, and compressors.

### 2234. Applied Thermodynamics

Three credits. Prerequisite: ME 2233 or CHEG 2111. May not be taken out of sequence after passing ME 3232 or 3276.

Thermodynamic first and second law analysis of vapor and gas cycles, property relations for simple pure substances, properties of ideal gas mixtures, psychrometry, fundamentals of combustion thermodynamics, application of thermodynamics in the design of thermal engineering systems.

### 3130. Advanced Engineering Mathematics

Three credits. Prerequisite: MATH 2410Q; ME 2015.

Linear algebra, systems of linear equations, eigenvalues, vector calculus and integral theorems, series solutions to ordinary differential equations, Laplace and Fourier transforms, solution to partial differential equations. The course stresses on the application of mathematics and methods to solve engineering problems rather than derivation of mathematical theorems. Applications include structural analysis, vibration, control systems, heat transfer, and fluid dynamics.

### 3161. Introduction to Robotics

(Also offered as ECE 3161.) Three credits. Prerequisite: Corequisite: MATH 2210; Recommended preparation: ECE 1401 and either ECE 3101 or ME 3253 or ME 3254 or BME 3400.

Fundamentals of mathematical modeling of robots commonly found in industrial and household domains. History of robots with multidisciplinary applications, robot classifications, coordinate frame transformations, modeling rigid body motions, forward and inverse kinematics, velocity kinematics. Course includes project work.

### 3162. Robot Motion Planning

(Also offered as ECE 3162.) Three credits. Prerequisite: ECE/ME 3161; Corequisite: ECE 3411; Recommended preparation: CSE 2050 and 3500.

This course covers the fundamentals of motion planning of robots. Topics include sensing systems for obstacle avoidance and environment mapping, robot localization, shortest path planning using potential field-based, grid-based and sampling-based methods, coverage path planning using cellular decomposition, spanning trees and potential fields, deep neural networks and their application to path planning, motion planning under constraints, adaptive planning in changing environments. Course includes project work.

### 3163. Robot Control and Dynamics

(Also offered as ECE 3163.) Three credits. Prerequisite: ECE/ME 3161; ECE 3111 or ME 3253 or ME 3254; open only to students in the School of Engineering.

Basic concepts of robot manipulator modeling and control including joint space and task space control, Euler-Lagrange dynamics, independent joint control, whole robot manipulator control, robot control using visual feedback, robot control

with trajectory planner. The course will include robot controller implementation via a course project and practical examples throughout the course.

### 3193. International Study

Variable (1-6) credits. May be repeated for a total of 6 credits.

Special engineering topics taken in an International study program. May count toward the major with consent of the advisor and approved plan of study.

### 3214. Dynamics of Particles and Rigid Bodies

Three credits. Prerequisite: CE 2120.

Kinematics and dynamics of particles. Motion relative to translating and rotating observers; inertial reference systems; central forces and orbits. Kinematics and dynamics of groups of particles and rigid bodies. Lagrangian description of motion.

### 3217. Metal Cutting Principles

Three credits. Prerequisite: CE 3110, which may be taken concurrently.

Examination of metal cutting processes including turning, shaping, drilling, grinding. Mechanics of two and three dimensional cutting. Principles and mechanisms of wear. Tool materials. Theoretical prediction of surface finish. Chemistry of cutting fluids. Laboratory period includes operation of machine tools. Experimental determination of cutting energies forces, stresses and strains. The interrelationship between these and practical metal cutting conditions.

### 3220. Mechanical Vibrations

Three credits. Prerequisite: ME 3253; MATH 2110Q and 2410Q; CE 2120. May not be taken out of sequence after passing ME 3232.

Free and forced vibrations, with damping, of linear systems with one and two degrees of freedom. Transient vibrations. Vibration isolation. Rigid rotor balancing. Elements of Laplace transforms.

### 3221. Manufacturing Automation

Three credits. Prerequisite: Instructor consent.

Introduction to Computer Integrated Manufacturing (CIM). Fundamentals of automated manufacturing; Computer Numerical Control (CNC); production economics and optimization of production systems.

### 3222. Production Engineering

Three credits. Prerequisite: Instructor consent.

Introduction to the modern techniques of Production Systems including the Decision-Making Process, Economic Analysis, Demand Forecasting, Production and Process Design and Optimization, Production Scheduling, and Statistical Quality Control.

### 3224. Analysis and Design of Mechanisms

Three credits. Prerequisite: MATH 2110Q and 2410Q; CE 2110.

Application of kinematics in the analysis and synthesis of mechanisms. Type and dimensional design of linkages, cams and gears based on motion requirements and kinetostatic force transmission, in contrast to the strength requirements. Graphical, analytical and computer methods in analysis and design of mechanisms. Design considerations in mechanism synthesis. Design project.

**3225. Computer-Aided Design, Modeling, and Graphics**

Three credits. Prerequisite: CSE 1010 or 1100; CE 3110; MATH 2110Q.

Introduction to computer-aided graphics, modeling and design. Applications of graphics software and hardware with mini- and micro-computer systems. Interactive computer graphic techniques. Extensive laboratory study of wire-frame and raster computer graphics. Static and dynamic graphic presentation methods.

**3227. Design of Machine Elements**

Three credits. Prerequisite: CE 3110.

Application of the fundamentals of engineering mechanics, materials and manufacturing to the design and analysis of machine elements.

**3228. Introduction to Fatigue in Mechanical Design**

Three credits. Prerequisite: CE 3110. Not open to students who have passed ME 5431.

Design calculation methods for fatigue life of engineering components. Crack initiation and crack propagation fatigue lives; introduction to current literature in the field. Emphasis on finite life prediction by strain life methods.

**3230. Biosolid Mechanics**

Three credits. Prerequisite: CE 3110.

Contemporary topics on applications of nonlinear solid mechanics to modeling of biological tissues and design of biomedical devices. Study of the theoretical aspects of nonlinear solid mechanics including kinematics, stretch, stress and hyperelastic material models along with review of current literature. Stress analysis of soft biological tissues, tissue functions and disorders, and interventional device design. The modern techniques pertinent to mechanical testing, computational modeling and simulation of soft biological tissue behaviors will also be discussed. Students are expected to review literature and actively participate in classroom discussion.

**3232. Automotive Engineering**

Three credits. Prerequisite: ME 2233, 2234, 3220; CE 2110, 2120.

Applied course in automotive systems and components, including topics on engine thermodynamics, combustion process, solid mechanics of components, suspension geometry and dynamics; includes a team project in designing a system or a component of a typical collegiate FSAE car.

**3239. Combustion for Energy Conversion**

Three credits. Prerequisite: ME 2234.

Introduction to combustion processes and chemical kinetics. Mechanism of the formation of pollutants such as nitrogen oxides, carbon monoxide, soot, and unburned hydrocarbons in stationary and vehicular power plants.

**3242. Heat Transfer**

Three credits. Prerequisite: ME 2233 and 3250.

Fundamentals of conduction, convection, and radiation heat transfer. Application of the general laws of heat transfer, and heat exchange to a wide variety of practical problems. The analytical, numerical, and graphical solution of one, two, and three dimensional problems.

**3250. Fluid Dynamics I**

Three credits. Prerequisite: ME 2233; MATH 2110Q and 2410Q. May not be taken for credit after passing CE/ENVE 3120. May not be taken out of sequence after passing ME 3242, 3251, 3270, 3275, 3276, 3280, or 4972.

Laws of conservation of mass, momentum, and energy in fluid systems, fluid statics, dimensional analysis, incompressible, inviscid and viscous flows, steady and unsteady flows, internal and external flows.

**3251. Fluid Dynamics II**

Three credits. Prerequisite: ME 3250 or CE 3120.

One-dimensional compressible flow with applications to propulsion systems and gas-dynamic testing devices. Flows with friction and heat addition. Normal and oblique shock waves. Prandtl-Meyer flow. Selected topics in liquid flow.

**3253. Linear Systems Theory**

Three credits. Prerequisite: CE 2120; MATH 2410Q. May not be taken out of sequence after passing ME 3220.

Review of ODE Solutions, mathematical modeling of dynamic systems, linearization of nonlinear behavior, Laplace domain representation of dynamics, transfer functions, block diagram algebra, signal-flow graphs, Mason's rule, transient analysis of system response, convolution integral, Duhamel's integral, Green's function, stability of linear systems, Routh-Hurwitz method, root locus, frequency response, Bode and polar representations, introduction to feedback systems.

**3254. Linear Systems Theory**

Three credits. Prerequisite: ME 3130.

Introduction to block diagram algebra, signal-flow graphs, Mason's rule, transient analysis of system response, convolution integral, Duhamel's integral, Green's function, stability of linear systems, Routh-Hurwitz method, root locus, frequency response, Bode and polar representations, introduction to feedback systems.

**3255. Computational Mechanics**

Three credits. Prerequisite: MATH 2410Q and CE 3110.

Topics include elementary numerical analysis, finite differences, initial value problems, ordinary and partial differential equations and finite element techniques. Applications include structural analysis, heat transfer, and fluid flow.

**3263. Introduction to Sensors and Data Analysis**

Three credits. Prerequisite: ME 2233; PHYS 1230 or PHYS 1402Q or PHYS 1502Q or PHYS 1530; CE 2110.

Introduction to the design and behavior of common sensors, highlighting their proper use and physical limitations. In the lab, each type of sensor is used in a practical engineering problem, with data being taken via data acquisition software. Data analysis techniques, including Gaussian statistics, uncertainty analysis, frequency domain studies, are also covered and used on the acquired data.

**3264. Applied Measurements Laboratory**

Three credits. Prerequisite: ME 3263 and ME 2234.

Application of fundamental measurement techniques developed in ME 3263 to various mechanical systems and processes. Hands-on

laboratory experiences include measurements in energy conversion, solid mechanics, dynamics, and fluid and thermal sciences, as well as statistical methods to analysis of experimental data.

**3266. Principles of Optimum Design**

Three credits.

Application of mathematical optimization concepts to the numerical solution of engineering design problems. Heuristic methods for the solution of optimization problems for which efficient gradient-based solution methods cannot be used. When and how to cast a design problem into an optimization problem, choosing an appropriate algorithm to solve it, how to interpret the results of the optimization, and how to diagnose problems when things go wrong.

**3270. Fuel Cells**

Three credits. Prerequisite: ME 2233 and 3250.

Advanced course on fuel cells as an alternative energy conversion technology. Subjects covered include: thermodynamics and electrochemistry of fuel cells, operating principles, types of fuel cells, overview of intermediate/high temperature fuel cells, polymer electrolyte fuel cells and direct methanol fuel cells.

**3275. Introduction to Computational Fluid Dynamics**

Three credits. Prerequisite: ME 3242, 3250.

Computational fluid dynamics (CFD) based on pressure-based finite volume methods. Topics covered include: integral derivations of governing equations of fluid flow, finite volume discretization of diffusion and convection equations, pressure-velocity coupling algorithms based on SIMPLE method for flow field solutions and finite volume solutions of unsteady problems. The course also covers iterative and non-iterative solution methods for large systems of linear equations, as well as methods for verification and validation of computational solutions.

**3276. Propulsion**

Three credits. Prerequisite: ME 2234 and 3250.

Physical and chemical concepts of basic importance in modern propulsion systems, including rockets and air-breathing engines. Topics of interest include energy sources of propulsion, performance criteria, one-dimensional gas dynamics, chemical thermodynamics, deflagration, detonation, rocket flight performance, rocket staging, chemical rockets, electric propulsion, turboprop, turbofan, turbojet, ramjet, scramjet, cycle analysis, solar sails, etc.

**3279. Honors Research**

Three credits. Prerequisite: Open to Honors students.

May be used to convert independent research into course credit that may be applied toward the Honors Program requirements and will count as a technical elective. As part of the course, students will be involved in research programs of their choice in areas of emerging technologies. Research work will be directed by a Mechanical Engineering faculty member who serves as the research advisor for the course. Will typically involve collaborative efforts with graduate students and other researchers, and will provide significant independent problem solving experience to supplement the classroom experience obtained from traditional coursework.

**3280. Turbines and Centrifugal Machinery**

Three credits. Prerequisite: ME 3250.

Review of fundamental fluids and thermodynamics. Introduction to compressible flow concepts. Theory, design and performance of centrifugal and axial flow machinery including turbines, blowers, fans, compressors, superchargers, pumps, fluid couplings and torque converters. A detailed study of the mechanics of the transfer of energy between a fluid and a rotor. Preparation for practical design of turbomachinery.

**3285. Sustainable Energy Sources and Systems**

Three credits. Prerequisite: ME 2234 and 3250 (which may be taken concurrently).

Topics include current energy sources and usage, environmental pollution from use of fossil fuels, nuclear energy, biomass energy, geothermal energy resources and usage, hydroelectric, solar, wind and tidal energy conversion principles, hydrogen generation and usage in electrochemical devices, energy economics and effects of energy pricing on economically viable energy options.

**3295. Special Topics in Mechanical Engineering**

Variable (1-3) credits. Prerequisite: Prerequisites and recommended preparation vary. May be repeated for credit.

A classroom course on special topics as announced.

**3296. Independent Research in Mechanical Engineering**

Variable (1-4) credits. Prerequisite: Instructor consent; open to Juniors or higher. May be repeated for a total of 9 credits.

Designed primarily for students who wish to pursue academic research in a research group affiliated with Mechanical Engineering. The program of study is to be approved by the head of the department or director of undergraduate studies and by the instructor before registration is completed.

**3299. Problems in Mechanical Engineering**

Variable (1-4) credits. Prerequisite: Open only to juniors and seniors in mechanical engineering. May be repeated for a total of 9 credits.

Designed primarily for students who wish to pursue a special line of study or investigation. The program of study is to be approved by the head of the department or director of undergraduate studies and by the instructor before registration is completed.

**3396. Honors Research**

Variable (1-4) credits. Prerequisite: Instructor consent; open to juniors or higher.

May be used to convert independent research into course credit that may be applied toward the Honors Program requirements and will count as a technical elective. As part of the course, students will be involved in research programs of their choice in areas of emerging technologies. Research work will be directed by a Mechanical Engineering faculty member who serves as the research advisor for the course. Will typically involve collaborative efforts with graduate students and other researchers, and will provide significant independent problem solving experience to supplement the classroom experience obtained from traditional coursework.

**3970. Junior Design**

Three credits. Prerequisite: ME 2140.

Principles of design are introduced. Fundamentals of project management, risk analysis, scheduling are covered. Effective technical presentation and writing techniques are introduced. Students conduct a design project through the semester.

**4161. Robotics Systems Laboratory**

(Also offered as ECE 4161.) Three credits. Prerequisite: ECE/ME 3163; open only to students in the School of Engineering.

Hands on introduction to autonomous robotics emphasizing the synergy between hardware (microprocessors, sensors, actuators), technology (optimization, control system, machine learning) and systems (integration, programming) to achieve perception, action, and behavior in real world environment. Students will be able to apply principles of robot modeling, planning and control to the real-world platforms.

**4972. Senior Design Project I**

Three credits. Prerequisite: ME 3250; ME 3227, which may be taken concurrently. May not be taken out of sequence after passing ME 4973.

The first part of the senior design experience. It will cover topics on design process, planning, and costs. Design for manufacture and assembly will be covered. Both oral and written reports are required.

**4973W. Senior Design Project II**

Three credits. Prerequisite: ME 3260 or 3264, 3262 or 3263, and 4972; ENGL 1007 or 1010 or 1011 or 2011.

Projects which have started in the previous semester will be completed. The project analysis, design, and manufacture stages will take place. Both written and oral reports will be required.

**4975. Senior Design Project I**

Three credits. Prerequisite: ME 3227 and 3970. May not be taken out of sequence after passing ME 4976.

The first part of the senior design experience. It will cover topics on design process, planning, and costs. Design for manufacture and assembly will be covered. Both oral and written reports are required.

**4976. Senior Design Project II**

Three credits. Prerequisite: ME 3262 and 4975.

Projects which have started in the previous semester will be completed. The project analysis, design, and manufacture stages will take place. Both written and oral reports will be required.

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## Medical Laboratory Sciences (MLSC)

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**3301. Fundamentals of Medical Laboratory Sciences**

Three credits. Prerequisite: Open only to Medical Laboratory Sciences majors and Medical Laboratory Sciences certificate students; others with consent of Medical Laboratory Sciences Program Director.

Introduction to the various disciplines of study in laboratory medicine. Principles of laboratory safety, quality assurance and quality control and laboratory mathematics, as well as use of common laboratory equipment.

**3333. Mycology, Parasitology and Virology**

Three credits. Prerequisite: MCB 2610; open only to Medical Laboratory Sciences majors, others with consent of Program Director.

Principles of disease and epidemiology, mechanisms of pathogenicity and laboratory isolation and identification of fungi, parasites and viruses causing human disease.

**3365. Theory of Phlebotomy**

One credit. Prerequisite: A grade of C or better in AH 2001; open only to Medical Laboratory Sciences majors, others with consent of Program Director.

Venipuncture and special phlebotomy techniques, safety, ethics, and management of phlebotomy services. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

**4094W. Seminar in Medical Laboratory Sciences**

Two credits. Prerequisite: A grade of C or better in AH 4241; ENGL 1007 or 1010 or 1011 or 2011; open only to Medical Laboratory Sciences majors, others with consent of Program Director.

Examination of case studies integrating all areas of the clinical laboratory in the prevention, diagnosis, and treatment of disease. Design and implementation of a research project or investigation of a topic in Medical Laboratory Sciences. Oral and written presentation of research project or topic.

**4095. Special Topics**

Variable (1-6) credits. Prerequisite: Completion of first-year - sophomore requirements in the Medical Laboratory Sciences Program. May be repeated for credit.

Application of the scientific method of inquiry to plan, implement, evaluate and report a study of a problem in medical technology or investigation of a special topic not covered in undergraduate medical technology courses.

**4099. Independent Study for Undergraduates**

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

Designed primarily for students who wish to extend their knowledge in some specialized areas in the field of Medical Laboratory Sciences.

**4301. Clinical Chemistry and Instrumentation**

Variable (1-3) credits. Prerequisite: MCB 2000; open only to Medical Laboratory Sciences majors, others with consent of Program Director. May be repeated for a total of 3 credits.

Manual and automated methods for the biochemical analysis of blood and body fluids; principles of operation, maintenance, and troubleshooting of laboratory instruments. Evaluation of test results in normal and diseased states.

**4302. Clinical Chemistry Laboratory**

Three credits. Prerequisite: A grade of "C" or better in MLSC 4301. Open only to Medical Laboratory Sciences majors and Medical Laboratory Sciences certificate students; others with consent of Medical Laboratory Sciences Program Director.

Application of the theory and techniques learned in MLSC 4301 to the clinical laboratory setting. Understanding work flow, teamwork, evaluation of normal and abnormal results; instrumentation



and quality assurance or the general laboratory environment.

#### **4311. Hematology**

Four credits. Prerequisite: Open only to Medical Laboratory Sciences majors and Medical Laboratory Sciences certificate students; others with consent of Medical Laboratory Sciences Program Director.

Principles of body fluids, blood cell formation, morphology, function and kinetics; pathophysiology of body fluid and blood cell disorders; principles and procedures used to evaluate blood cells in blood and body fluids; and, laboratory practice in microscopic examination.

#### **4312. Hematology Laboratory**

Three credits. Prerequisite: A grade of C or better in MLSC 4311; open only to Medical Laboratory Sciences majors and Medical Laboratory Sciences certificate students; others with consent of Medical Laboratory Sciences Program Director.

Application of the theory and techniques learned in MLSC 4311 to the clinical laboratory setting. Understanding work flow, teamwork, evaluation of normal and abnormal results, instrumentation and quality assurance in the general laboratory environment. Correlation of blood cell morphology and laboratory data in normal and disease states.

#### **4321. Clinical Immunology**

Two credits. Prerequisite: A grade of C or better in AH 3121. Open only to Medical Laboratory Sciences majors and Medical Laboratory Sciences certificate students; others with consent of Medical Laboratory Sciences Program Director.

Methods for detection of antigens and antibodies in blood and body fluids; immunological methods for the diagnosis of infectious diseases and abnormalities of the immune system.

#### **4322. Clinical Immunology Laboratory**

One credit. Prerequisite: A grade of C or better in MLSC 4321; open only to Medical Laboratory Sciences majors and Medical Laboratory Sciences certificate students; others with consent of Medical Laboratory Sciences Program Director.

Application of the theory and techniques learned in MT 4321 to the clinical laboratory setting. Understanding work flow, teamwork, evaluation of normal and abnormal results, instrumentation, and quality assurance in the general laboratory environment.

#### **4341. Clinical Microbiology**

Four credits. Prerequisite: MCB 2610; open only to Medical Laboratory Sciences majors, others with consent of Program Director.

Isolation and identification of normal flora and clinically significant bacteria and fungi from clinical specimens, correlation of the organisms isolated to disease states, and susceptibility testing of bacteria.

#### **4342. Clinical Microbiology Laboratory**

Four credits. Prerequisite: A grade of C or better in MLSC 4341; open only to Medical Laboratory Sciences majors and Medical Laboratory Sciences certificate students; others with consent of Medical Laboratory Sciences Program Director.

Application of the theory and techniques learned in MLSC 3333 and MLSC 4341 to the clinical laboratory setting. Understanding work flow, teamwork, evaluation of normal and abnormal

results, instrumentation, and quality assurance in the general laboratory environment.

#### **4351. Transfusion Services**

Three credits. Prerequisite: A grade of C or better in AH 3121; open only to Medical Laboratory Sciences majors and Medical Laboratory Sciences certificate students; others with consent of Medical Laboratory Sciences Program Director.

Human blood groups, HLA antigens, compatibility testing, donor selection, and their relationship to transfusion and transplantation. Evaluation of laboratory results for selection of blood components for therapy.

#### **4352. Transfusion Services Laboratory**

Three credits. Prerequisite: A grade of C or better in MLSC 4351; open only to Medical Laboratory Sciences majors and Medical Laboratory Sciences certificate students; others with consent of Medical Laboratory Sciences Program Director.

Application of the theory and techniques learned in MLSC 4351 to the clinical laboratory setting. Understanding work flow, teamwork, evaluation of normal and abnormal results, instrumentation and quality assurance and preparation of blood components in the general laboratory environment.

#### **4371. Urinalysis and Hemostasis**

Two credits. Prerequisite: Open only to Medical Laboratory Sciences majors and Medical Laboratory Sciences certificate students; others with consent of Medical Laboratory Sciences Program Director.

Introduction to the analysis of urine including physical, chemical and microscopic examination as well as other miscellaneous laboratory procedures. Principles of hemostasis, pathophysiology of coagulation disorders; and, laboratory procedures to evaluate coagulation.

#### **4372. Urinalysis Laboratory**

One credit. Prerequisite: A grade of C or better in MLSC 4371; open only to Medical Laboratory Sciences majors and Medical Laboratory Sciences certificate students; others with consent of Medical Laboratory Sciences Program Director.

Application of the theory and techniques learned in MLSC 4371 to the clinical laboratory setting. Understanding work flow, teamwork, evaluation of normal and abnormal results, instrumentation and quality assurance in the general laboratory setting environment.

#### **4500. Laboratory Operations and Professional Practice**

Two credits. Prerequisite: Open to Medical Laboratory Sciences and Diagnostic Genetic Sciences programs, others with consent of instructor.

Professionalism and basic management practice in the clinical laboratory. Human resource management, continuous quality improvement/performance improvement, financial management. Educational methodology and terminology and communication skills.

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## **Military Science (MISI)**

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### **1101. General Military Science Ia**

One credit. Prerequisite: Instructor consent required.

Effective leadership competencies, basic soldier and life skills; critical thinking; goal setting; physical fitness; time management; stress management.

### **1102. General Military Science Ib**

One credit. Prerequisite: May not be taken out of sequence after passing MISI 2201.

Leadership attributes and professional ethics; Army rank, structure, and military duties; professional communications; land navigation and small-unit tactics.

### **1133. General Military Science: Air Rifle Marksmanship**

One credit.

Air Rifle Marksmanship will provide an introduction to the fundamentals of rifle marksmanship, the safe and proper use, and care of the rifle, the elements of competitive shooting, and the psychology of shooting. May be taken only once for credit.

### **2201. General Military Science IIa**

One credit. Prerequisite: MISI 1102. May not be taken out of sequence after passing MISI 2202.

Dimensions of tactical leadership; team dynamics and team building; historic leadership models; understanding personal motivations.

### **2202. General Military Science IIb**

One credit. Prerequisite: MISI 2201; open only to freshmen and sophomores.

Leading teams in complex environments; terrain analysis, patrolling, and operations orders; theoretical study of Army Leadership Requirements model and adaptive leadership.

### **3301. General Military Science III**

Three credits. Prerequisite: Completion of the basic course in military science, basic training or a six week basic summer camp.

Leadership principles, techniques, and the responsibilities of command. Military instruction techniques, to include student class presentations. One weekend field training exercise.

### **3302. General Military Science IIII**

Three credits. Prerequisite: MISI 3301.

Dynamics of small unit tactics, and branches of the Army. One weekend field training exercise.

### **4401. General Military Science IV**

Three credits. Prerequisite: MISI 3302.

Army staff organization, unit administration and management, logistics, military intelligence, leadership seminar, the international system, and strategic doctrine. One weekend field training exercise.

### **4402. General Military Science IVI**

Three credits.

Military law, obligations and responsibilities of an officer, contemporary human problems, and a leadership seminar. One weekend field training exercise.

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## **Modern Greek (MGRK)**

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### **1101. Elementary Modern Greek I**

Four credits. Prerequisite: Open only to students with no prior experience with the language. May not be taken out of sequence after passing MGRK 1102, 1103, or 1104.

Introduction to the basic elements of Modern Greek emphasizing speaking, understanding, reading and writing through a communicative approach.

#### **1102. Elementary Modern Greek II**

Four credits. Prerequisite: MGRK 1101. Not open for credit to students with three or more years of high school Greek. May not be taken out of sequence after passing MGRK 1103 or 1104.

More elements of introductory Modern Greek emphasizing speaking, understanding, reading and writing using simple examples from contemporary media and culture.

#### **1103. Intermediate Modern Greek I**

Four credits. Prerequisite: MGRK 1102. May not be taken out of sequence after passing MGRK 1104.

Increasing communicative abilities in Modern Greek emphasizing an interactive approach using more examples from Greek culture.

#### **1104. Intermediate Modern Greek II**

Four credits. Prerequisite: MGRK 1103.

Increasing communicative abilities in Modern Greek with stronger emphasis on vocabulary and grammar using examples from media, politics, and culture.

#### **1193. Foreign Study**

Variable (1-6) credits. Prerequisite: Instructor consent required.

#### **3293. Foreign Study**

Variable (1-6) credits. Prerequisite: Department consent required. May be repeated for credit.

Special topics taken in a foreign study program

#### **3295. Special Topics**

Variable (1-3) credits. May be repeated for credit.

Prerequisites, required preparation, recommended preparation vary.

#### **3299. Independent Study**

Variable (1-6) credits. May be repeated for credit.

Either or both semesters. Credits and hours by arrangement. Open only with consent of Director.

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### **Molecular and Cell Biology (MCB)**

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#### **1200. Virus Hunters**

Four credits. Prerequisite: Not open for credit to students who have passed MCB 1895 when taught as "Virus Hunting Laboratory."

Introduction to the biology of bacterial viruses (phages). Isolation from the environment and characterization of a novel phage for sequencing in MCB 1201. Data from this classroom-based research experience will be shared in a nationwide program fostering discovery-based undergraduate research. May be taken before or after MCB 1201 for students choosing both classes. CA 3-LAB.

#### **1201. Virus Hunting: Applied Bioinformatics**

Four credits.

Analysis of bacteriophages isolated in MCB 1200. Computational biology approaches including genome assembly, phylogenetic analysis and database searching to characterize gene content and evolutionary relationships. Focus on research methods and approaches, data interpretation, written and oral communication of scientific findings. Part of a two-semester series with MCB

1200, which can be taken in either order. CA 3-LAB.

#### **1401. Honors Core: Computational Molecular Biology**

(Also offered as BME 1401 and CSE 1401.) Three credits.

Introduction to research in computational biology through lectures, computer lab exercises, and mentored research projects. Topics include gene and genome structure, gene regulation, mechanisms of inheritance, biological databases, sequence alignment, motif finding, human genetics, forensic genetics, stem cell development, comparative genomics, early evolution, and modeling complex systems. CA 3.

#### **1405. Honors Core: The Genetics Revolution in Contemporary Culture**

Three credits. Prerequisite: Open only to freshmen and sophomores in the Honors Program.

Exploration of the use of genetics concepts in popular culture. Topics include genetic analysis, genetic engineering, cloning and DNA forensics as represented in media including news, film, literature and art. Discussion includes influence on society, attitudes towards science, domestic and foreign policy as well as medical practice and law. CA 3.

#### **1893. Foreign Study**

Variable (1-6) credits. Prerequisite: Department consent required. May be repeated for a total of 6 credits.

Special topics taken in an international study program.

#### **1895. Special Topics in Molecular and Cell Biology**

Variable (1-4) credits. Prerequisite: Prerequisites and recommended preparation vary. May be repeated for a total of 8 credits.

Credits and hours by arrangement.

#### **2000. Introduction to Biochemistry**

Four credits. Prerequisite: CHEM 2241 or 2444. CHEM 2444 may be taken concurrently. Not open for credit to students who have passed MCB 3010. Repeat restrictions apply. See [advising.uconn.edu/repeat-policy](http://advising.uconn.edu/repeat-policy) for information.

The structure, chemistry, and metabolism of carbohydrates, lipids and proteins. Enzyme function and kinetics, energy metabolism, and structure and function of nucleic acids. A survey course for students of agriculture, general biology, medical technology, nursing, and pharmacy. Molecular and Cell Biology majors, biophysics majors, and other students desiring a more intensive introduction or considering advanced course work in biochemistry or molecular biology should take MCB 3010.

#### **2210. Cell Biology**

Three credits. Prerequisite: BIOL 1107. Not open for credit to students who have passed MCB 2215. May not be taken out of sequence after passing MCB 3211, 3220, 3246, or 3842W.

Structural organization of cells and the molecular basis of dynamic cellular processes, with emphasis on eukaryotic cells. Topics include protein targeting, vesicle trafficking, cytoskeleton, cell-cell interactions in tissues, and the molecular basis of related human diseases. Intended to be taken before MCB 2000 or 3010.

#### **2215. Honors Cell Biology**

Three credits. Prerequisite: BIOL 1107; open to Honors students, others with consent. Not open to students who have passed MCB 2210. May not be taken out of sequence after passing MCB 3211, 3220, 3246, or 3842W.

Overview of eukaryotic cell biology for Honors students. Emphasizes primary research literature and in-class discussion.

#### **2225. Cell Biology Laboratory**

Four credits. Prerequisite: BIOL 1107 or equivalent; open to honors students, non-honors students with instructor consent.

A laboratory experience that will prepare students for thesis research in the biological sciences. Experimental design, quantitative analysis and presentation of data. Topics include cell culture, fluorescence and time-lapse microscopy, DNA transfection, image processing, and flow cytometry. Students will also pursue independent research projects.

#### **2400. Human Genetics**

Three credits. Prerequisite: BIOL 1107; not open to students who have passed MCB 2410.

Foundational principles of classical genetics and modern genomics with a specific focus on humans. Emphasis on case studies and applications to human genetic diseases.

#### **2410. Genetics**

Three credits. Prerequisite: BIOL 1107. Not open to students who have passed MCB 2400. Repeat restrictions apply; see [advising.uconn.edu/repeat-policy](http://advising.uconn.edu/repeat-policy) for information.

Foundational principles of classical genetics and modern genomics with a focus on eukaryotic model genetic organisms. Emphasis on molecular mechanisms underlying heredity. Intended for majors in MCB and related disciplines.

#### **2610. Fundamentals of Microbiology**

Four credits. Prerequisite: CHEM 2241 or 2443, which may be taken concurrently. Recommended preparation: BIOL 1107. May not be taken out of sequence after passing MCB 3246, 3617, 3633, 3635, 3636, 3637, 3640, or 4624. Repeat restrictions apply; see [advising.uconn.edu/repeat-policy](http://advising.uconn.edu/repeat-policy) for information.

Biology of microorganisms, especially bacteria. Cellular structure, physiology, genetics, and interactions with higher forms of life. Laboratory familiarizes students with methodology of microbiology and aseptic techniques.

#### **2612. Honors Core: Microbe Hunters - Crowdsourcing Antibiotic Discovery**

Four credits.

Concepts of microbiology taught through the lens of antibiotic resistance. Using environmental samples students actively engage in the hunt for novel antimicrobials. Broader concepts include the meaning of disease, how that meaning has changed over time and the implications of widespread antibiotic resistance for society. CA 3-LAB.

#### **2893. Foreign Study**

Variable (1-5) credits. May be repeated for credit.

Special topics taken in an international study program. Consent of Associate Department Head for Undergraduate Research and Education required, normally to be granted before the student's departure.

**3003. Biophysical Chemistry I**

Three credits. Prerequisite: MATH 2110Q or 2130Q; PHYS 1402Q, 1502Q, or 1602Q, or instructor consent. Recommended preparation: MCB 2000 or 3010.

An introduction to the physical chemistry of biological molecules and systems. Principal topics include biomolecular thermodynamics, kinetics, transport properties, and biomolecular structure.

**3004. Biophysical Chemistry II**

Three credits. Prerequisite: MATH 2110Q or 2130Q; PHYS 1402Q, 1502Q, or 1602Q, or instructor consent. Recommended preparation: MCB 2000 or 3010; MCB 3003 or CHEM 3563.

The physical chemistry of biological molecules and systems. Emphasis on a statistical framework for understanding biomolecular phenomena. Principal topics will include electrostatics, intermolecular forces, ligand binding, and protein stability and folding.

**3010. Biochemistry**

Five credits. Prerequisite: CHEM 2444, which may be taken concurrently. Recommended preparation MCB 2210 or 2610. Not open for credit to students who have passed MCB 2000. Repeat restrictions apply. Go to <http://www.advising.uconn.edu/repeatpolicy.php> for more information.

The structure and function of biological macromolecules. The metabolism of carbohydrates, lipids, amino acids, proteins and nucleic acids. The regulation of metabolism and biosynthesis of biological macromolecules. An in-depth introduction intended for students planning to take advanced coursework in biochemistry, biophysics or other areas of molecular biology.

**3011. Human Metabolism and Disease**

Two credits. Prerequisite: MCB 2000 or 3010 or instructor consent.

A thorough analysis of the inter-relationships of metabolic pathways in connection with human health and disease, including inherited metabolic diseases and the role of hormones in metabolic pathways.

**3022W. Human Disease and the Development of Therapeutic Agents**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011. Recommended preparation: one 2000 level course in MCB.

Molecular basis of human disease and strategies for developing therapeutic treatments. Applications of genetic, cellular, and biochemical information in treating disease states. Especially appropriate for students interested in biomedical research and the health profession.

**3100. Introduction to Translational Research**

Three credits. Prerequisite: BIOL 1107; open to juniors or higher; open to honors students, others with instructor consent. Recommended preparation: MCB 2000, 2210, 2610 or 3010.

Basic science and design of human subject research; participation in clinical, patient-oriented research projects in a hospital setting.

**3189. Clinical Research Laboratory**

Three credits. Prerequisite: MCB 3100. May be repeated for credit.

Participation in a clinical research study at a medical center (transportation to this off-campus site to be arranged by the student).

**3201. Gene Expression**

Three credits. Recommended preparation: MCB 2000, 2210, 2400, 2410 or 3010.

Basic mechanisms of genetic information transfer in eukaryotic cells from DNA to folded and assembled proteins. Regulation of transcription, translation, DNA replication, and the cell cycle.

**3211. Cancer Cell Biology and Genetics**

Three credits. Prerequisite: MCB 2210. Recommended preparation: MCB 2400 or 2410.

Genetics and epigenetics of cancer cells. Cellular signaling and growth control. The role of oncogenes and tumor suppressor genes in regulating cancer cell proliferation and death. DNA damage and repair mechanisms. Carcinogen activation detoxification. General and targeted approaches to cancer therapy.

**3219. Developmental and Regenerative Biology**

Three credits. Prerequisite: BIOL 1107. Recommended preparation: MCB 2210 and 2400 or 2410 which may be taken concurrently.

Fundamental principles that govern animal embryonic development and regeneration with emphasis on the cellular and molecular basis of pattern formation and cell differentiation in a variety of model organisms. Relevance to human development and disease and therapeutic applications will be discussed.

**3220. Developmental Biology Laboratory**

Four credits. Prerequisite: MCB 2210 or 2215, and MCB 2400 or 2410. Recommended preparation: MCB 3219.

Zebrafish used as an experimental model system to investigate molecular mechanisms of vertebrate development. Self-directed experiments utilize cellular, genetic, pharmacological and microscopic techniques to recreate established findings and pursue new knowledge.

**3246. Virology**

Three credits. Prerequisite: MCB 2610 and MCB 2210. Recommended preparation: MCB 3201 or 3010.

Biological, biochemical, physical, and genetic characteristics of viruses, with an emphasis on molecular and quantitative aspects of virus-cell interactions.

**3400. Human Evolutionary Genomics**

Three credits. Prerequisite: MCB 2400 or 2410. Recommended preparation: EEB 2245.

Principles of evolutionary genomics and their applications in understanding recent human evolutionary history and the origin and distribution of genetic and phenotypic variation, including disease, within and among human populations.

**3410. Eukaryotic Genomics**

Three credits. Prerequisite: MCB 2400 or 2410; open to sophomores or higher.

Introduction to the study of eukaryotic genomes. Topics include genome sequence organization and analysis, comparative genomics, structural variants, transposable elements and genome regulation in human health and disease.

**3412. Genetic Engineering and Functional Genomics**

Three credits. Prerequisite: MCB 2400 or 2410. Recommended preparation: MCB 2000 or 3010.

Methods and applications of genetic engineering, including gene manipulation and transfer techniques in prokaryotes and eukaryotes. Emphasis on applications of recombinant DNA technology in the elucidation of gene function. Consideration of recent technological developments in molecular genetics, such as cloning, gene therapy, the patenting and release of genetically engineered organisms, and societal issues related to these developments.

**3413. Concepts of Genetic Analysis**

Four credits. Prerequisite: MCB 2400 or 2410. Not open for credit to students who have passed MCB 2413.

Survey of genetic theory and applications of genetic analysis to model organisms including animals, plants, and microbes.

**3417. The Molecular Genetics of Inherited Human Disease**

Two credits. Prerequisite: MCB 2400 or 2410. Recommended preparation: MCB 2000.

An overview of the genetic basis for inherited human disease and how changes in protein structure due to mutations produce disease phenotypes.

**3421. Introduction to Molecular Evolution and Bioinformatics**

Three credits. Recommended preparation: At least one 2000 level course in MCB.

Evolution of biomolecules and application to molecular data analysis and the design of new molecules. Topics include prebiotic chemistry, origin of cells, selfish genes, molecular innovations, data bank searches, alignment of sequence and 3-D protein structures. Course includes lectures, discussions and computer lab exercises.

**3602W. Introduction to Bioinformatic Tools for Microbial Genome Annotation**

One credit. Prerequisite: MCB 2000 or 2610 or 3010; ENGL 1007 or 1010 or 1011 or 2011.

Analysis of microbial genome sequences using computational tools to examine metabolic pathways and genetic features as they relate to an organism's lifestyle. Writing assignments utilize information gathered from the relevant scientific literature and students' analyses of genome-derived information.

**3617. Molecular Biology and Genetics of Prokaryotes**

Four credits. Prerequisite: MCB 2610.

Molecular genetics of bacteria, archaeobacteria, and their viruses. Transcription and replication of DNA, transformation, transduction, conjugation, genetic mapping, mutagenesis, regulation of gene expression, genome organization.

**3620. Host-Associated Microbiomes**

Three credits. Prerequisite: MCB 2610 or 2612. Not open for credit to students who have passed MCB 3895 when taught as "Host-Associated Microbiomes."

Current research on microbial communities associated with living hosts, with a focus on evolution, ecology, immunology and human health.

**3633. Pathogenic Microbiology**

Four credits. Prerequisite: MCB 2610.

Descriptions of infectious diseases caused by bacteria, viruses, and protozoans in relation to the affected human organ systems and discussions

of the underlying virulence factors, molecular mechanisms, and epidemiological data. Modern techniques are used in the laboratory to identify and characterize pathogenic bacteria.

### 3637. Practical Methods in Microbial Genomics

Three credits. Prerequisite: MCB 2610 or instructor consent.

Analysis of microbial genomes, including genome assembly, annotation, and comparison. Students will design and perform computational analyses of public domain genomic data. No previous computational experience is expected.

### 3841W. Research Literature in Molecular and Cell Biology

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011. Recommended preparation: One 2000 level course in MCB. May be repeated for credit.

Discussion of current research in molecular and cell biology.

### 3842W. Current Investigations in Cancer Cell Biology

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; MCB 2000 or 2210 or 3010.

Mechanisms involved in cancer initiation, promotion, and progression: cancer genomes, epigenetic regulation of gene expression and reprogramming, cancer stem cells, alterations in cell signaling networks, cancer cell bioenergetics, environmental exposures and xenobiotic metabolism, development of resistance to therapeutics.

### 3843W. Research Literature in Comparative Genomics

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; MCB 2400 or 2410. Not open for credit to students who have passed MCB 3841W when taught as "Comparative Genomics."

Current research in comparative genomics, which uses cross-species analyses to identify functional genome sequences. Primary research literature concerning the complex and dynamic nature of eukaryotic genomes. Emphasis on communicating scientific findings using experimental data.

### 3844W. Microbiology and the Media

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; at least two MCB courses at the 2000 level or above; open only to Molecular and Cell Biology and Biological Sciences majors; others by permission.

Analysis and comparison of how contemporary microbiological topics such as food-borne diseases and influenza outbreaks are represented in the scientific literature and in popular media.

### 3845W. Microbial Diversity, Ecology and Evolution

Three credits. Prerequisite: BIOL 1107; ENGL 1007 or 1010 or 1011 or 2011. Recommended preparation: MCB 2610.

Readings from the scientific literature will provide a focus for investigating the mechanisms and strategies for the exchange of genetic information, as well as the impact of gene transfer on environmental adaptation and evolution.

### 3847W. Historically Excluded and Underrepresented Scientists

Three credits. Prerequisite: MCB 2400 or 2410 and 2610; ENGL 1007 or 1010 or 1011 or 2011. Not open for credit to students who have passed MCB 3841W when offered as "Women and Historically Excluded and Underrepresented Scientists."

The history and implication of the exclusion of people from various backgrounds in science. A focus on biological research and ways to improve scientific and academic environments to include people from diverse backgrounds.

### 3849W. Symbiosis: The Science of Living Together

Three credits. Prerequisite: MCB 2610 and ENGL 1007 or 1010 or 1011 or 2011. Recommended preparation: any additional 2000-level MCB course.

All animals and plants enter into lifelong associations with beneficial microorganisms that have a profound impact on host development and health. Readings from the scientific literature will explore the molecular mechanisms by which these complex associations are established and maintained in various model systems.

### 3893. Foreign Study

Variable (1-5) credits. Prerequisite: Open to sophomores or higher. May be repeated for credit.

Special topics taken in an international study program. Consent of instructor required, normally to be granted before the student's departure.

### 3895. Special Topics

Variable (1-6) credits. Prerequisite: Prerequisites and recommended preparation vary. May be repeated for credit.

### 3898. Variable Topics

Three credits. Prerequisite: Prerequisites and recommended preparation vary. May be repeated for credit.

### 3899. Independent Study

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

Designed for the advanced undergraduate student who is pursuing a special problem as an introduction to independent investigation.

### 4008. Techniques of Biophysical Chemistry

Three credits. Prerequisite: MCB 3003 or CHEM 3563 or instructor consent.

Theory and applications of biophysical methods for the analysis of the size, shape and interactions of proteins and nucleic acids. Topics include analytical ultracentrifugation, light scattering, X-ray scattering, calorimetry, surface plasmon resonance and single molecule approaches.

### 4009. Structure and Function of Biological Macromolecules

Three credits. Prerequisite: MCB 2000 or 3010, which may be taken concurrently, or instructor consent.

Fundamentals of protein structure and the forces that stabilize structure. Topics include recurrent structural motifs, molecular ancestry/homology, evolution of protein structure, structure-function correlations, and the structural basis of regulation. Discussion of the techniques used to investigate structure, including X-ray diffraction, NMR, TEM, AFM, structure prediction, and computational

simulations. Advanced topics may include chaperones, structural genomics and the roles of misfolded proteins in disease.

### 4014. Structure and Dynamics of Macromolecular Complexes

Three credits. Prerequisite: MCB 2000 or 3010. Not open for credit to students who have passed MCB 3895 when offered as "Structure and Dynamics of Cellular Machines."

Biochemical and biophysical characteristics of macromolecular biological assemblies from atomic to the cellular level. Topics include ribosomes, viruses, polymerases, membrane protein assemblies and ion transporters, examined through lecture, discussion, primary literature and interactive computational modules.

### 4026W. Advanced Biochemistry Laboratory

Four credits. Prerequisite: MCB 3010, or MCB 2000 with consent of instructor; ENGL 1007 or 1010 or 1011 or 2011.

Theory and application of modern techniques for separation and characterization of biological macromolecules, including several types of liquid chromatography, liquid scintillation spectro-photometry, and SDS polyacrylamide gel electrophoresis. Instruction in writing a scientific paper.

### 4211. Basic Immunology

Three credits. Prerequisite: BIOL 1107. Recommended preparation: MCB 2210.

An introduction to the genetic, biochemical, and cellular mechanisms of the immune system. This course will address basic aspects of immune function, and will examine abnormal immune function associated with cancer, autoimmune disease, AIDS, and other immunological abnormalities.

### 4215. Fundamentals of Light Microscopy and Digital Imaging

Three credits. Prerequisite: MCB 2210 or 2215. Recommended preparation: MCB 2225; experience with fluorescence microscopy gained through independent study in a biological sciences laboratory. Not open for credit to students who have passed MCB 3895 when offered as "Fundamentals of Light Microscopy and Digital Imaging."

The principles behind a wide range of microscopy techniques, including epifluorescence, confocal, Total Internal Reflectance Microscopy (TIRFM), and super-resolution and expansion microscopy.

### 4416. Forensic Application of DNA Science

Three credits. Prerequisite: MCB 2400 or 2410.

DNA analysis in forensic science, with emphasis on molecular genetic technology in criminal investigations and issues surrounding the use of DNA evidence. Team-taught with forensic practitioners.

### 4601. Physiology of Archaea and Bacteria

Three credits. Prerequisite: MCB 2000, 2610, or 3010. Not open for credit to students who have passed MCB 3601.

Examination of biochemical energy generation, regulation of metabolism, and cellular structures of archaea and bacteria. Physiological processes as they occur in nature and the biotechnology industry.

**4624. Experiments in Bacterial Genetics**

Three credits. Prerequisite: MCB 2610. Recommended preparation: MCB 3617.

Experiments in bacterial genetics, emphasizing genetic manipulations and analyses using modern biological techniques including transposon mutagenesis, DNA isolation, PCR, DNA sequencing and phenotypic analysis.

**4893. Foreign Study**

Variable (1-5) credits. Prerequisite: Open to sophomores or higher. May be repeated for credit.

Special topics taken in an international study program. Consent of program director required, normally to be granted before the student's departure.

**4894. Undergraduate Seminar**

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

Credits and hours by arrangement.

**4896. Undergraduate Research**

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

Laboratory research project carried on by the student under the guidance of a faculty member. The student is required to submit a brief report on the research findings at the end of the semester.

**4897W. Senior Research Thesis**

Three credits. Prerequisite: Three credits of MCB 3989 or 4989, which may be taken concurrently; ENGL 1007 or 1010 or 1011 or 2011.

Writing of a thesis based upon the student's independent laboratory research project. Formerly offered as MCB 3996W.

**4996. Honors Undergraduate Research**

Variable (1-6) credits. Prerequisite: Open only to honors students with consent of instructor. May be repeated for credit.

Laboratory research project carried on by the student under the guidance of a faculty member. The student is required to submit a brief report on the research findings at the end of the semester.

**4997W. Senior Honors Research Thesis**

Three credits. Prerequisite: Three credits of MCB 3989 or 4989, which may be taken concurrently; ENGL 1007 or 1010 or 1011 or 2011; open only to honors students.

Writing of a thesis based upon a student's independent laboratory research project.

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## Music (MUSI)

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**1001. Music Appreciation**

Three credits. Prerequisite: Not appropriate for students who have previously passed MUSI 1021 or 1022.

An approach toward intelligent listening, illustrated by recordings. Intended primarily for students who are not music majors. No previous training required. CA 1.

**1002. Sing and Shout! The History of America in Song**

(Also offered as AMST 1002.) Three credits.

Develop an understanding of American people, history and culture through the study and singing of American folk songs. CA 1. CA 4.

**1003. Popular Music and Diversity in American Society**

Three credits.

An introduction to popular music and diversity in America: jazz, blues, Top-40 pop, rock, hip-hop and other genres. Musicians and their music studied in the context of twentieth-century and contemporary American society, emphasizing issues of race, gender, class, and resistance. No prior musical training or knowledge required. CA 1. CA 4.

**1004. Non-Western Music**

Three credits. Prerequisite: Not open to students who have passed MUSI 3421.

Folk, popular, and classical musics of selected non-Western cultures, with an emphasis on the distinctive characteristics of each culture. Intended primarily for students who are not music majors. CA 1. CA 4-INT.

**1005. Honors Core: Music and Nature, Music and the Environment**

Three credits.

An exploration of how 1) musicians have drawn upon nature as a source of inspiration, and 2) music has been used, in the recent past and continuing today, to call attention to the dangers facing the environment. No previous musical training required. CA 1.

**1006. Earthtones: Vocal Ensemble**

(Also offered as FINA 1001.) One credit. May be repeated for a total of 8 credits.

A world music vocal ensemble that brings to life the songs of specific cultures as a means to gain knowledge and understanding of communities, culture, spirituality and social justice. CA 1.

**1011. Music Fundamentals and Ear Training I**

Three credits. Prerequisite: May not be taken out of sequence after passing MUSI 1012.

Basic skills in note reading, rhythm, meter, pitch symbols, scales, key signatures, intervals, triads, sight singing, and dictation. No previous training is required.

**1012. Music Fundamentals and Ear Training II**

Three credits. Prerequisite: MUSI 1011.

Further development of skills in music reading, sight singing, and dictation.

**1022. Introduction to Music History II**

Three credits. Prerequisite: Not intended for MUSI majors.

Music history in relation to other arts from the mid 18th Century to the present. Some background in music fundamentals or performance is highly recommended. CA 1.

**1101. Convocation, Concert and Recital Repertoire**

Zero credits. May be repeated.

Required of all music majors every semester of residence. No credit. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

**1103. Introduction to University-Level Musical Study**

Zero credits.

Required of all music majors during the first fall semester of residence. Study, rehearsal, audience and technology skills. Students taking this course

will be assigned a grade of S (satisfactory) or U (unsatisfactory).

**1107. Steel Pan Ensemble**

One credit. May be repeated for a total of 10 credits.

Performance of a repertoire that varies from the traditional calypso and soca styles of Trinidad and Tobago to today's pop music. No previous musical experience required.

**1108. Marching Band**

One credit. Prerequisite: Instructor consent required. May be repeated for credit.

Repertoire, rehearsal techniques, preparation and presentation of marching band shows.

**1109. Varsity Band**

One credit. Prerequisite: Instructor consent required. May be repeated for credit.

Repertory, rehearsal techniques, preparation and presentation of performances in support of the University community.

**1110. Band**

One credit. Prerequisite: Instructor consent required. May be repeated for credit.

Repertoire, rehearsal technique, preparation and presentation of concerts. Wind Ensemble, Symphony Band, Concert Band.

**1111. Chorus**

One credit. Prerequisite: Instructor consent required. May be repeated for credit.

Choral repertoire from all periods, concentration on vocal and choral techniques as related to musical styles, preparation and presentation of concerts. Concert Choir, Chamber Singers, University Chorale.

**1112. University Symphony Orchestra**

One credit. Prerequisite: Instructor consent required. May be repeated for credit.

Standard symphonic repertoire, technique of orchestral routine, preparation and presentation of concerts. CA 1.

**1113. Chamber Ensemble**

One credit. Prerequisite: MUSI 1110 or MUSI 1111 or MUSI 1112 must be taken concurrently. May be repeated for credit.

Chamber music for various combinations of voices, string, woodwind, brass, percussion and keyboard instruments. Preparation and presentation of concerts. Students may register for two or more sections concurrently with consent of instructors. As a requirement for credit, the student must participate in MUSI 1110, 1111, or 1112.

**1114. Voices of Freedom Gospel Choir**

One credit. Prerequisite: Instructor consent required. May be repeated for credit.

Preparation and presentation of concerts. Gospel and spiritual music of the Black experience.

**1115. Jazz Ensembles**

One credit. Prerequisite: Instructor consent and placement audition required. Recommended preparation: instrumental proficiency. May be repeated for a total of 8 credits.

The preparation, study and performance of large jazz ensemble music, representing a spectrum of styles and periods, as a means to provide understanding of the genre's historical, social, and cultural contexts. CA 1.

**1116. Small Ensemble**

One credit. Prerequisite: MUSI 1110 or MUSI 1111 or MUSI 1112 must be taken concurrently. May be repeated for credit.

Small ensemble music under the direction of a conductor. Preparation and presentation of concerts. Students may register for two or more sections concurrently with consent of instructors. As a requirement for credit, the student must participate in MUSI 1110, 1111, or 1112.

**1118. Collegium Musicum**

One credit. Prerequisite: Instructor consent required. May be repeated for credit.

Performance practices, iconography, notation, instrumentation in vocal and instrumental music before 1700. Preparation and participation in historically authentic performance.

**1119. Opera Workshop**

One credit. Prerequisite: Instructor consent required. May be repeated for credit.

Performance practices. Preparation and participation in scenes from operatic repertoire.

**1120. Jazz Combos**

One credit. Prerequisite: Instructor consent; placement audition required. Recommended preparation: instrumental proficiency. May be repeated for a total of 8 credits.

Engagement in the artistic process of performing improvised jazz combo music as a unique, cultural form of human expression. CA 1.

**1193. Foreign Study**

Variable (1-12) credits. May be repeated for credit.

Specific topics taken in a foreign study program. Consent of department head required, normally before the student's departure to study abroad.

**1221. Secondary Applied Music**

One credit. Prerequisite: Music majors must take MUSI 1110 or 1111 or 1112 concurrently. Requirement is waived for non-majors. May be repeated for credit.

Basic performance techniques. Elementary and intermediate repertoire. Primarily for students majoring in another applied area.

**1222. Applied Music**

Variable (1-3) credits. Prerequisite: MUSI 1110 or MUSI 1111 or MUSI 1112 must be taken concurrently. May be repeated for credit.

Open to qualified students. Before registering for the course, students must obtain an audition with the department and obtain the consent of the department head.

**1231. Class Instruction in Piano**

One credit. Prerequisite: Instructor consent required. May be repeated for credit.

**1241. Applied Accompanying**

One credit. Prerequisite: This course is intended for students whose area of emphasis is keyboard. An audition is required for all other students. May be repeated for credit.

Performance class in accompanying skills.

**1251. Introduction to Diction for Singers**

One credit. Prerequisite: Concurrent enrollment in applied voice study under MUSI 1222 or 3222 or 5323.

An introduction to the International Phonetic Association (IPA) symbols with special application to the study of English diction for singers.

**1252. Italian Diction for Singers**

One credit. Prerequisite: MUSI 1251 and concurrent registration in applied voice study under MUSI 1222, 3222, or 5323.

A continuing study of the IPA symbols with their special application to the study of Italian diction for singers.

**1311. Ear Training and Musicianship I**

One credit. Prerequisite: May not be taken out of sequence after passing MUSI 1312.

Devoted to the development of musicianship skills, including sight singing, rhythmic reading, melodic and harmonic dictation, and aural comprehension of musical structure.

**1312. Ear Training and Musicianship II**

One credit. Prerequisite: MUSI 1311.

Devoted to the continuing development of musicianship skills, including sight singing, rhythmic reading, melodic and harmonic dictation, and aural comprehension of musical structure.

**1313. Harmony I**

Three credits. Prerequisite: Instructor consent required.

Writing and analysis of tonal harmony; relation to melody and counterpoint.

**1314. Harmony II**

Three credits. Prerequisite: MUSI 1313. May not be taken out of sequence after passing MUSI 3313, 3611, 3631, 3641, 4731.

Continuation of MUSI 1313.

**1501. Applied Music Techniques**

One credit. Prerequisite: Instructor consent required. May be repeated for credit.

Performance and teaching techniques.

**1601. Introduction to Jazz Improvisation**

Two credits. Prerequisite: Instrumental proficiency and instructor consent. Recommended preparation: students must be able to read music fluently in treble and bass clef and demonstrate proficiency in writing and playing the 12 major scales.

Basic jazz theory and the elements of improvisation.

**1701. Introduction to Music Education**

One credit.

Overview of music education and the total music program, K-12 for music pre-teaching students. Demonstration and discussion of relevant approaches to the teaching of music at all levels. Explores career opportunities in music education and related fields. Includes class observations.

**1995. Special Topics Lecture**

Variable (1-6) credits. Prerequisite: Prerequisites and recommended preparation vary. May be repeated for credit.

Credits, prerequisites and hours as determined by the Senate Curricula and Course Committee.

**2253. German Diction for Singers**

One credit. Prerequisite: MUSI 1251 and concurrent registration in applied voice study under MUSI 1222, 3222, or 5323.

A continuing study of the IPA symbols with their special application to the study of German diction for singers.

**2254. French Diction for Singers**

One credit. Prerequisite: MUSI 1251 and concurrent registration in applied voice study under MUSI 1222, 3222, or 5323.

A continuing study of the IPA symbols with their special application to the study of French diction for singers.

**3222. Applied Music, Advanced Course**

Variable (1-5) credits. Prerequisite: Open to juniors or higher. Advanced standing in performance as recommended by a faculty jury, recommendation by an instructor in this department and consent of the Department Head. May be repeated for credit.

A continuation of MUSI 1222 for students with proven ability.

**3231. Vocal Pedagogy**

Two credits. Prerequisite: MUSI 3222; open to juniors or higher.

Vocabulary, methodology and practical application of pedagogical techniques.

**3232. Instrumental Pedagogy and Literature**

One credit. Prerequisite: MUSI 3222, which must be taken concurrently; open to juniors or higher.

One or two instrumental hours per week.

**3233. Instrumental Pedagogy**

Two credits. Prerequisite: Open to juniors or higher. Corequisite: MUSI 3222 must be taken concurrently.

Philosophy, methodology, and practical application of pedagogical techniques for applied music instruction. MUSI 3222 must be taken concurrently.

**3234. Instrumental Literature and Performance**

Two credits. Prerequisite: Open to juniors or higher. Corequisite: MUSI 3222 must be taken concurrently.

Foundational solo, chamber, and ensemble repertoire. MUSI 3222 must be taken concurrently.

**3311. Ear Training and Musicianship III**

One credit. Prerequisite: MUSI 1312.

Devoted to the continuing development of musicianship skills, including sight singing, rhythmic reading, melodic and harmonic dictation focusing on chromaticism, and aural comprehension of musical structure.

**3312. Ear Training and Musicianship IV**

One credit. Prerequisite: MUSI 3311. May not be taken out of sequence after passing MUSI 3342.

Devoted to the continuing development of musicianship skills, including sight singing, rhythmic reading, melodic and harmonic dictation focusing on chromaticism, and aural comprehension of musical structure.

**3313. Harmony III**

Three credits. Prerequisite: MUSI 1314.

Continuation of MUSI 1314.

**3314. Harmony IV**

Three credits. Prerequisite: MUSI 3313. May not be taken out of sequence after passing MUSI 3321, 3331, 3342, 3361, or 3371.

Continuation of MUSI 3313.

**3321. Form and Analysis I**

Three credits. Prerequisite: MUSI 3314.

Aspects of musical structure and style in works from the 17th through the 19th centuries. Application of a variety of approaches to analysis.

**3322W. Form and Analysis II**

Three credits. Prerequisite: MUSI 3321; ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

Continuation of MUSI 3321. Emphasis on the larger works of the 19th-century and 20th-century styles.

**3331. Composition I**

Three credits. Prerequisite: MUSI 3314; open to juniors or higher.

Creative writing in the smaller forms. Extensive analysis and discussion.

**3332. Composition II**

Two credits. Prerequisite: MUSI 3331; open to juniors or higher.

**3341. Introduction to Electronic Composition**

Three credits. Prerequisite: Open to juniors or higher.

Composition by synthesizer and computer.

**3342. Arranging for Music Educators**

Two credits. Prerequisite: MUSI 3312 and 3314.

Through in-class instrument presentations and score study, students will be exposed to concepts and techniques of adapting and scoring music for small and large instrumental and vocal ensembles.

**3351. Orchestration I**

Three credits. Prerequisite: MUSI 3313; open to juniors or higher.

Range, tone quality, and characteristics of the various orchestral and band instruments. Elementary scoring problems.

**3361. Counterpoint I**

Three credits. Prerequisite: MUSI 3314; open to juniors or higher.

Two- and three-voiced textures in the principal 16th-century styles: Josquin, Lassus, Palestrina.

**3371. Twentieth Century Theory and Analysis**

Three credits. Prerequisite: MUSI 3314 and 3321; open to juniors or higher. With consent of instructor, MUSI 3321 may be taken concurrently. Recommended preparation: A course in mathematics.

Analytical techniques appropriate to selected styles of twentieth century music. Problems in twentieth century counterpoint and composition.

**3401. Music History to 1750**

Three credits. Prerequisite: MUSI 1313, which may be taken concurrently. Recommended preparation: MUSI 1314.

Medieval, Renaissance, to High Baroque periods. Score study, development of notation, and relation to other artistic traditions.

**3404. Culture and Context in Western Art Music**

Three credits. Prerequisite: MUSI 1011 or 1313. Corequisite: MUSI 1313. Recommended preparation: MUSI 1313 and 1314.

A one-semester survey of the history of Western art music. Active listening and identification of repertory; exploration and interrogation of standard periodization; critical analysis of repertory through

theories of gender and/or race; engagement of topics of Self and Other, Europe and non-Europe.

**3405. Music History from 1750 to the New Millennium**

Three credits. Prerequisite: MUSI 3401. Prerequisite or corequisite: MUSI 1314. Recommended preparation: MUSI 3313 and 3401.

Leading composers, genres, elements of style, form and harmony, musical institutions and aesthetics from 1750 through the New Millennium.

**3407W. History of Jazz**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

Introduction to the historical, cultural, and musical contexts of jazz as an American art form and global practice. CA 1. CA 4.

**3409. Masterpieces of Western Music in Historical Context, 1700-1930**

Three credits. Prerequisite: MUSI 3314, 3401 and 3405.

An analytical and stylistic study of selected masterpieces of Western music in their musical and broad historical contexts: cultural, social, political, critical, and interpretive.

**3410W. Music, History, and Ideas**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

Relationships of musical styles to cultural and intellectual backgrounds.

**3421W. Music, Culture, and Difference in Globalization**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher, instructor consent required.

Music as a platform of cultural representation through which people challenge imbalances and asymmetries which inform notions of cultural difference in globalization. CA 4-INT.

**3568. Hip Hop, Politics and Youth Culture in America**

(Also offered as HIST 3568, AFRA 3568, and AMST 3568.) Three credits.

History of hip-hop, its musical antecedents and its role in popular culture. Race, class, and gender are examined as well as hip-hop's role in popular political discourse.

**3601. Jazz Improvisation and Performance**

One credit. Prerequisite: MUSI 1601; open to juniors or higher. May be repeated for credit.

Advanced jazz theory, styles, and ensemble techniques.

**3631. Jazz Arranging I**

Two credits. Prerequisite: MUSI 1314 or equivalent and consent of instructor; open to juniors or higher.

Arranging and composition of chamber jazz ensembles and big band.

**3632. Jazz Arranging II**

Two credits. Prerequisite: MUSI 3631; open to juniors or higher.

Continuation of MUSI 3631.

**3721. Vocal Literature I**

Two credits. Prerequisite: MUSI 3222, which must be taken concurrently; open to juniors or higher.

Songs and arias of the Renaissance and Baroque Periods: Oratorio Literature.

**3722. Vocal Literature II**

Two credits. Prerequisite: MUSI 3222, which must be taken concurrently; open to juniors or higher.

Classical Period Songs; German Lied.

**3723. Vocal Literature III**

Two credits. Prerequisite: MUSI 3222, which must be taken concurrently; open to juniors or higher.

French melodie; Songs of Nationalistic origin.

**3724. Vocal Literature IV**

Two credits. Prerequisite: MUSI 3222, which must be taken concurrently; open to juniors or higher.

British and American Songs; The Modern Period.

**3777. Introduction to Audio and Recording**

Three credits. Prerequisite: Instructor consent required.

Audio theory and recording in the digital domain for musicians, performers, composers and digital media specialists.

**3801. Acoustics and the Perception of Music**

Three credits. Prerequisite: Open to juniors or higher.

Science of Music, using basic quantitative techniques.

**3851. Music Technology for Music Teachers**

Two credits. Prerequisite: Open only to students in the Music Education Degree program; open to juniors or higher.

Current approaches to the application of music technology to the task of teaching music in elementary and secondary schools.

**3982. Practicum in Music**

Variable (1-15) credits. Prerequisite: Open to juniors or higher. May be repeated for credit.

Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

**3993. Foreign Study**

Variable (1-6) credits. Prerequisite: Open to juniors or higher. May be repeated for credit.

Special topics taken in a foreign study program.

**4333. Composition III**

Two credits. Prerequisite: MUSI 3332; open to juniors or higher. May be repeated for credit.

Individual instruction in musical composition.

**4339. Composition Forum**

One credit. Prerequisite: Music major with a composition emphasis. May be repeated for a total of 8 credits.

Weekly forum for students enrolled in the composition emphasis to discuss with each other, faculty, and visiting artists topics relevant to the professional development of composers. Topics include various aspects of the business of music, media technology, and score study.

**4371. Theory Review**

Three credits. Prerequisite: Open to juniors or higher.

An overview of traditional undergraduate theory. Intended for graduate students in Music.

**4471. Seminar: The Life and Works of Individual Composers**

Three credits. Prerequisite: MUSI 3403 and one MUSI 2000 level or higher W course; open to juniors or higher. May be repeated for credit.

**4473. Seminar: History of Musical Forms**

Three credits. Prerequisite: MUSI 3403 and one MUSI 2000 level or higher W course; open to juniors or higher. May be repeated for credit.

Sonata, concerto, madrigal, motet, or other musical forms.

**4489. Procedures in Historical Research**

Three credits. Prerequisite: MUSI 3403 and one MUSI 2000 level or higher W course; open to juniors or higher.

A project-oriented approach to bibliographic tools and research methods applicable to the historical study of music.

**4731. Conducting I**

Two credits. Prerequisite: MUSI 1314; open to juniors or higher.

Physical aspects of conducting, reading of full and condensed scores.

**4732. Conducting II: Choral**

Two credits. Prerequisite: MUSI 4731; open to juniors or higher.

**4733. Conducting II: Instrumental**

Two credits. Prerequisite: MUSI 4731; open to juniors or higher.

**4979. Senior Recital**

Zero credits. Prerequisite: Open to juniors or higher.

Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory). Required of all Bachelor of Music performance majors.

**4995. Special Topics**

Variable (1-4) credits. Prerequisite: Open to juniors or higher. May be repeated for credit.

Classroom course in a special topic as announced in advance for each semester.

**4999. Independent Study**

Variable (1-12) credits. Prerequisite: Open to juniors or higher. May be repeated for credit.

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## Natural Resources and the Environment (NRE)

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**1000E. Environmental Science**

Three credits.

An introduction to basic concepts and areas of environmental concern and how these problems can be effectively addressed. Topics include human population; ecological principles; conservation of biological resources; biodiversity; croplands, rangelands, forestlands; soil and water conservation; pollution and water management; and wildlife and fisheries conservation. CA 3.

**1235E. Environmental Conservation**

Three credits.

Overview of the history of natural resource use and environmental conservation policy development from prehistoric to present times. Examination of the emergence of the 20th century conservation movement in North America and the transition to the environmental movement is used to highlight recurring environmental issue themes such as: private ownership vs. public trust doctrine; commercial trade in natural resources; development vs. protection; sustainability; and the role of society and governments in regulation.

Through selected readings and case studies, students are challenged to begin development of their personal ethics regarding the development, conservation and protection of the environment. CA 1.

**2000. Introduction to Geomatics**

Four credits.

Principles and applications of geographic information systems (GIS), global positioning system (GPS), and remote sensing. Students will be provided with the scientific knowledge and technical skills needed to collect and use spatial data effectively in a GIS.

**2010. Natural Resources Measurements**

Three credits. Prerequisite: Open only to Natural Resources and Environmental Sciences majors, or by instructor consent.

Principles and instrumentation used in the measurement of environmental conditions and processes. Field trips required.

**2215E. Introduction to Water Resources**

Three credits. Prerequisite: Open to sophomores or higher. Recommended preparation: NRE 1000 and EARTH 1050.

Introduction to surface and ground water resource assessment, development and management. Integration of scientific, legal, environmental and human factors that enter into developing and maintaining sustainable water resources. Examines current and future plight of water shortages and water quality issues here and abroad. Three class periods and two field trips (two virtual field trips if taken online).

**2345. Introduction to Fisheries and Wildlife**

Three credits.

An introduction to the basic principles used in the management of wildlife and fish populations, their habitats and ecosystems, and their human stewards. Students will be introduced to the fundamental concepts, topics, and skill sets that are commonly needed in the wildlife and fisheries profession.

**2415. Dendrology**

Three credits. Recommended preparation: BIOL 1108 or 1110. May not be taken out of sequence after passing NRE 3500 or 4475.

The taxonomy, silvics, and distribution of trees and shrubs of the United States with emphasis upon Northeastern species. Field trips will be required.

**2455. Forest Ecology**

Three credits. Recommended preparation: NRE 2415, which may be taken concurrently.

Forest structure and functional processes and their relation to physical environment (light, temperature, water, soil); the influence of time (succession, disturbance, stand dynamics) and space (landscape ecology, ecosystem management). Laboratory will be in the field or computer lab.

**2550. Nature-based Outdoor Recreation Resource Management**

Three credits. Recommended preparation: Prior coursework in environmental science, environmental studies, natural resources, or a related field.

Overview of major issues, concepts, theories, and management approaches related to nature

based outdoor recreation and its management. Introduces a historical overview, the role of various agencies and interest groups, current stakeholder issues, impacts of recreation, and contemporary management approaches for addressing topics such as satisfaction, crowding, and conflict.

**2600E. Global Sustainable Natural Resources**

Three credits.

Sustainable management of natural resources across cultural, political, and ecological boundaries. Topics include marine and fresh waters, forests, food production, and urban development. CA 4-INT.

**3000. Human Dimensions of Natural Resources**

Three credits. Prerequisite: Open to juniors or higher.

Understanding the diverse perspectives of stakeholder groups involved in natural resources management. Analysis of decision-making behaviors based on social, psychological, and motivational factors; communication tools for working with stakeholder groups; and conflict resolution will be covered.

**3105. Wetlands Biology and Conservation**

Three credits. Prerequisite: Open to juniors or higher. Recommended Preparation: BIOL 1107 or 1108 or consent of instructor.

Principal wetland habitats of North America are surveyed, and the relationship of wildlife associations to biological and physical features of wetlands is reviewed. Emphasis is placed on issues relating to wetlands conservation and management. Requires one weekend field trip.

**3115. Air Pollution**

Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: NRE 3145 or 3146.

The atmospheric effects and controls of air pollution and air quality, air pollution emissions and assessments, and impacts of atmospheric air pollutants.

**3125. Watershed Hydrology**

Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: NRE 2010.

Fundamental hydrologic processes, water balances, precipitation analyses, infiltration, soil water, evapotranspiration, open channel flow, discharge measurements, and analysis, flow frequencies, ground water-surface water interactions, runoff processes and prediction. Problem oriented course requiring use of computer spreadsheets.

**3145. Meteorology**

Three credits. Prerequisite: Open to juniors or higher.

A survey course in meteorology at the introductory level covering weather and climate processes.

**3146. Climatology**

Three credits.

Fundamentals of climatology: elements, processes, and mechanisms that govern or affect the climate and climate change, climatological theories and observations, climate across spatial and temporal scales, scientific methods for climatic analysis and applications.



**3150. Green Stormwater Infrastructure Practices**

Three credits. Recommended preparation: NRE 3125.

Design specifications, installation processes, and maintenance of bioretention/rain gardens, pervious pavements, and green roofs will be covered. Stormwater retrofit analysis for municipalities will be introduced.

**3201. Conservation Law Enforcement**

Three credits.

Basic pre-professional course for majors in natural resource conservation and related disciplines. Recommended for persons considering a career in wildlife, fisheries, law enforcement, or other natural resource conservation and management disciplines.

**3245E. Environmental Law**

Three credits. Prerequisite: Open to juniors or higher.

An overview of environmental law including the common law principles of nuisance, negligence, and trespass. Students will become acquainted with legal research techniques; emphasis will be on federal, state, and municipal programs addressing clear air, clean water, hazardous waste, inland wetlands, coastal zone management, and prime agricultural farm land and aquifer protection.

**3255. Environmental Science and Policy in the Tropics**

(Also offered as ENV5 3255.) Four credits. Prerequisite: Instructor consent required.

Taught in Costa Rica. Evaluation of the conservation and management of natural resources using tools and perspectives relevant to both the natural and social sciences. Students are introduced to issues and problems in environmental science and conservation biology under three main themes: social and political history of Costa Rica as a case study of the neotropics, tropical ecosystem management, and the global environment. This course is offered in partnership with the Organization for Tropical Studies.

**3265. Sustainable Urban Ecosystems**

Three credits. Recommended preparation: prior coursework in environmental conservation.

Evaluating the state of the knowledge about natural resources in urban systems from the perspectives of natural science and social science. Exploring the complexity of managing ecosystems in and in relation to urban environments.

**3275. Recreational Trails: Design, Construction, and Management**

Three credits. Prerequisite: Open to sophomores or higher.

This course provides an overview of sustainable, natural surface trail design principles and best practices. Students will learn to plan, construct and maintain trails in a variety of environmental settings. Coursework includes trail planning, field design and layout, assessing trail conditions, and working with hand-tools outside. This course will also provide students with a foundation for understanding the trail experience, as well as a natural resources management perspective towards using recreational trails for public outdoor recreation.

**3305. African Field Ecology and Renewable Resources Management**

Four credits. Recommended preparation: EEB 2244.

An intensive, field oriented methods course conducted primarily in South Africa at the Basil Kent Field Station, Great Fish River Reserve in collaboration with the University of Fort Hare. An introduction to South Africa culture and history, ecology, and natural resources is provided in weekly meetings during the semester. This is followed by three weeks in the field in South Africa. Topics covered include vegetation and faunal surveys, data collection and analysis, biodiversity monitoring, and conservation management. A research paper relating to an independent study conducted by the student in the field is required. CA 4-INT.

**3335. Wildlife Management**

Three credits. Prerequisite: NRE 2345. Recommended preparation: Prior course work in ecology.

Brief review of wildlife conservation and ecological principles; management of wetlands, farmlands, rangelands, and forest lands for wildlife; programs dealing with exotic, urban, nongame, and endangered wildlife; contemporary economic, administrative, and policy aspects of management.

**3345. Wildlife Management Techniques**

Four credits. Prerequisite: NRE 2345; open to junior or higher Natural Resources majors, others by instructor consent. Recommended preparation: STAT 1100; MATH 1060, and MATH 1110 or higher; and EEB 2244E.

Design and implementation of projects for wildlife research and monitoring that address conservation and management issues. Topics include capture and handling of animals, population estimation, wildlife-habitat relationships, resource selection, and space use. This course is designed for pre-professional students and meets professional certification requirements. One or more field trips will be required.

**3345W. Wildlife Management Techniques**

Four credits. Prerequisite: NRE 2345; ENGL 1007 or 1010 or 1011 or 2011; open to junior or higher Natural Resource majors, others by instructor consent. Recommended preparation: STAT 1100; MATH 1060 and MATH 1110 or higher; and EEB 2244.

Design and implementation of projects for wildlife research and monitoring that address conservation and management issues. Topics include capture and handling of animals, population estimation, wildlife-habitat relationships, resource selection, and space use. This course is designed for pre-professional students and meets professional certification requirements. One or more field trips will be required.

**3365. Private Lands Wildlife Management**

Three credits. Prerequisite: One 2000 level or above course in ecology or wildlife management; open to juniors or higher.

Companion course for Public Lands Wildlife Management (NRE 3355). Provides practical experience and acquaintance with persons or groups managing wildlife resources on private properties such as nature preserves, land trusts, non-governmental organizations, farms, recreational clubs, commercial shooting preserves

and propagation facilities. Appreciation for private land management options, economic realities and other challenges, plus ability to assess resource potentials on private land, are stressed. Field trips required.

**3385W. Fisheries Techniques**

Three credits. Prerequisite: STAT 1000 or higher, ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher Natural Resources majors, others with instructor consent.

Techniques used in fisheries science to manage and conserve wild populations of fishes (and select bivalves and crustaceans). Topics include sampling design, gear selection, gear bias, animal capture and handling, habitat measurement and characterization, population estimation, commonly used data analyses, and scientific report writing. Laboratory meetings are often held outside at local waterbodies. Course is designed as a pre-professional experience for students interested in fisheries careers, and counts towards individual certification requirements set by the American Fisheries Society.

**3390. South African Ecosystems and Diversity**

(Also offered as EEB 3390.) Four credits. Prerequisite: Instructor consent required.

Taught in South Africa. Understanding South Africa's diverse ecosystems with an emphasis on savannas. Classroom instruction and fieldwork in Kruger National Park, South Africa. Form and function of individual organisms and ecosystems. This course is offered in partnership with the Organization for Tropical Studies.

**3425. Fundamentals of Arboriculture**

Three credits. Recommended preparation: NRE 2415.

Theory, science, and practice of evaluating, growing, managing and safe removal of trees within or in built environments. Laboratories are field-based and will take place in outdoor conditions. Taught with SANR 325.

**3490. Conservation, Biodiversity, Management, and Protected Area Design in South Africa**

(Also offered as EEB 3490.) Four credits. Prerequisite: Instructor consent required.

Study abroad in South Africa. History of conservation biology as a science and practice. Emphasis on the links between pattern and process, strategies and tools available to conservationists to maintain biodiversity; the relationship between biodiversity and ecosystem functioning and debates on the maintenance of biodiversity in human-dominated landscapes. This course is offered in partnership with the Organization for Tropical Studies.

**3500. Exurban Silviculture**

Four credits. Prerequisite: NRE 2415; recommended preparation: NRE 2455.

Application of ecological principles in controlling forest establishment, composition, health and growth. Study of cultural treatments that maintain and enhance desired benefits from the forest on a sustainable basis, with an emphasis on the diverse needs and values of landowners and society within the exurban forest.

**3535. Remote Sensing of the Environment**

Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: NRE 2000 or equivalent.

The principles of the interpretation of remote sensing imagery acquired from aircraft and satellite platforms will be studied. Applications of remote sensing to natural resources and the environment will be discussed.

**3674. Introduction to Environmental and Natural Resources of China**

One credit.

Basics about the environmental and natural resources of China, including geography, climate, agriculture, history and culture.

**3675. Environmental and Natural Resources of China**

Three credits. Prerequisite: Open to Juniors or higher; advanced sophomores (above 50 credits) may be considered. Recommended preparation: NRE 3674.

Introduction to the environment of China, focusing on the management and sustainability of natural resources and environmental systems. A field trip to China is required.

**3690. Field Study Internship**

Variable (1-6) credits. Prerequisite: Open to juniors or higher. May be repeated for credit.

Designed to acquaint students through actual work experience with research and management activities not available on campus. Students will work with professionals in an area of concentration. Student evaluation will be based upon the recommendation of the field supervisor and a detailed written report submitted by the student. This course may be repeated provided that the sum total of credits earned does not exceed six. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

**3693. Foreign Studies in Natural Resources**

Variable (1-6) credits. Prerequisite: Department consent required. May be repeated for credit.

Courses taken in Natural Resources and related areas as part of an approved Study Abroad Program. Students may only count a maximum combined credit total of 6 credits toward the Natural Resource major of foreign study, Independent Study and Internship credits.

**3699. Independent Study**

Variable (1-6) credits. Prerequisite: Open to juniors or higher. May be repeated for credit.

**4000W. Natural Resources Planning and Management**

Three credits. Prerequisite: Senior standing; ENGL 1007 or 1010 or 1011 or 2011; open only to Natural Resources and Environmental Science majors, or by instructor consent.

Concepts and methods of planning for the allocation, management and utilization of terrestrial and aquatic ecosystems. Techniques and methods of managerial decision making. Written technical reports required.

**4094. Seminar**

One credit. Prerequisite: Open only to senior Natural Resources majors, others with consent of instructor. May be repeated for credit.

**4135. Introduction to Ground Water Hydrology**

(Also offered as EARTH 4735.) Four credits. Prerequisite: Open to juniors or higher. Recommended preparation: EARTH 1050, or both EARTH 1052 and one of EARTH 1010, 1051, 1055, or 1070.

Basic hydrologic principles with emphasis on ground water flow and quality, geologic relationships, quantitative analysis and field methods. Occasional field trips. Formerly offered as GSCI 4735.

**4150. Ecosystem Science and Management**

Three credits. Prerequisite: EEB 2244E or equivalent general ecology course; CHEM 1127Q or equivalent general chemistry course; instructor consent required. This course and NRE 5150 may not both be taken for credit.

Ecosystem biogeochemical processes, the organism-environment interactions that regulate them, and natural resources management strategies that explicitly consider ecosystem structure and function.

**4165. Soil and Water Management and Engineering**

Three credits. Prerequisite: Open to juniors or higher. Recommended Preparation: NRME 3125 or CE 4820.

Floodplain management, erosion and erosion control, reservoir management, storm water control, watershed management, and on-site sewage treatment systems. Written technical reports, use of spreadsheets and field work required. Some field trips required.

**4170. Climate-Human-Ecosystem Interactions**

Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: introductory courses in climate and environmental science.

Understanding pathways of interactions among climate change, ecological processes, and human activities through time are studied. Feedbacks that either reinforce or limit such interactions will also be discussed.

**4180. Climate Change Adaptation Science**

Three credits.

An overview of climate change adaptation science including knowledge, principles, and applications of adaptation practices, technologies, tools, and strategies. Topics include the scientific evidence of anthropogenic climate change, climate change impacts on our lives and society, two-way relationships between climate change and humans, and multiple approaches applied in adaptation across diverse sectors (agriculture, forestry, fisheries, etc.) from local to regional and global scales. Emphasis on the fundamental concepts of climate change adaptation science, different disciplinary perspectives and interconnections, and its effectiveness, limitations, and future needs.

**4205. Stream Ecology**

Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: BIOL 1108 or equivalent.

A broad overview of stream ecology will be presented. Topics covered will include stream habitats and the diversity of organisms which inhabit them, adaptations to life in running water, and energy flow and nutrient cycling in stream ecosystems. Efforts targeted at the conservation of

streams will be integrated throughout the semester. One or more field trips required. Formerly offered as NRE 3205. Taught with NRE 5335.

**4255. Water Quality Management**

Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: NRME 3125 or 4165.

An introduction to all aspects of water quality problems relating to the many beneficial uses of water, including the physical, chemical, and biological properties. Formerly offered as NRE 3155.

**4335. Fisheries Management**

Three credits. Prerequisite: STAT 1000Q or higher; open to juniors or higher. Recommended preparation: NRE 3385W.

Introduction to fisheries management principles with application to the biotic, habitat, and human components of fisheries. Selected topics include harvest regulations, stocking, population dynamics, endangered species, and habitat management practices in coastal and freshwater fisheries. Students will practice interpreting fisheries data which can inform the adaptive management of and regulation decision making in fisheries.

**4340. Ecotoxicology**

Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: a course in chemistry and biology.

Understanding the fate and effects of environmental contaminants. Major classes of contaminants and their sources, uptake, biotransformation, elimination, bioaccumulation, biomagnification and toxicological effects in organisms will be covered. Discussions are focused around case studies, readings, and class presentations that further explore toxicant exposures and responses in ecosystems.

**4370. Population Dynamics**

Three credits. Prerequisite: Open to juniors or higher. Advanced sophomores (above 50 credits) may be considered. Recommended preparation: STAT 1100Q, MATH 1060Q, and MATH 1110Q or higher, and NRE 3345.

How population dynamics models are used in science and in the management of fish and wildlife populations, factors influencing population dynamics. Design, evaluation, and use of a population model.

**4390. Fundamentals of Tropical Biology**

(Also offered as EEB 4390.) Four credits. Prerequisite: Instructor consent required.

Taught in Costa Rica. Fundamental principles of tropical biology, the natural history of local ecosystems, and field methods for biological studies. Natural, tropical ecosystems are used as the platform to develop hypotheses and methods, analyze data, and present the results of scientific projects. This course is offered in partnership with the Organization for Tropical Studies.

**4425. Urban and Community Forestry**

Three credits. Recommended preparation: NRE 2415 and 3425.

The theory, science and practice of evaluating and managing urban trees and forest resources, recognizing urban forest resources as part of socio-ecological economic systems.

**4475. Forest Management**

Four credits. Prerequisite: NRE 2415; open to juniors or higher. Recommended preparation: NRE 3500.

Application of forest mensuration, ecology, and silviculture in sustainable forest management. Field trips required.

**4490. Tropical Biology on a Changing Planet**

(Also offered as EEB 4490.) Four credits. Prerequisite: Instructor consent required.

Taught in Costa Rica or South Africa. Fundamental principles of tropical biology and natural history of local plants and animals. Coursework highlights ecological complexity of the tropics, patterns of species diversity, and species interactions. Field visits to a variety of ecosystems including tropical wet forest, dry forest/wetland, premontane wet forest, cloud forest, páramo, oak forest, mangrove forest, or coastal marine. This course is offered in partnership with the Organization for Tropical Studies.

**4535. Remote Sensing Image Processing**

Three credits. Prerequisite: NRE 2000 or 3535; open to juniors or higher.

The principles of quantitative remote sensing, image processing and pattern recognition will be studied. Computer-assisted data analysis techniques will be used.

**4544. Land Surveying for Environmental Management and Planning**

Four credits. Recommended preparation: NRE 2000.

Use of spirit levels and total stations for high-accuracy land measurement, with applications to common practices in natural resource management and planning. Students will learn to perform control surveys and to create detailed maps from the control surveys.

**4575. Natural Resource Applications of GIS**

Four credits. Prerequisite: Open to juniors or higher.

Principles and applications of computer-assisted spatial data analysis in natural resources management. Hypothetical and actual case studies of the use of geographic information systems (GIS) to solve natural resource problems will be discussed. Raster- and vector-oriented, microcomputer-based GIS software will be applied.

**4601. Current Topics in Environmental and Natural Resources - Honors**

Three credits. Prerequisite: Open only to Junior or higher Honors students. Not open to students who have completed NRE 4600.

An exploration of a diverse set of environmental and natural resource topics that will be examined using a continuum of applied-to-theoretical approaches. Each week, readings will introduce and familiarize students with a guest lecturer's research and allow students to engage in an in-depth discussion with each lecturer prior to attending their seminar. Honors students will meet for an hour after each seminar and will include student-led discussion and presentations on the seminar research topic.

**4665. Natural Resources Modeling**

Three credits. Prerequisite: MATH 1120 or higher; open only to Natural Resources majors, others with instructor consent; open to juniors or higher.

Applications of conservation of mass, energy and momentum in modeling natural resources systems. Defining systems; determining flows and storages; interactions and feedback mechanisms within systems. Problem oriented course including computer solutions using spreadsheets or modeling programs.

**4695. Special Topics**

Variable (1-6) credits. Prerequisite: Open to juniors or higher. May be repeated for credit.

Topics and credits to be published prior to the registration period preceding the semester offerings.

**4696. Undergraduate Research in Natural Resources**

Variable (2-6) credits. Prerequisite: Open to juniors or higher. May be repeated for a total of 6 credits.

Field or laboratory research performed by the advanced undergraduate student in an area of natural resources under the supervision of a NRE faculty member. A report and/or an oral presentation will be required at the end of the semester.

**4697W. Undergraduate Research Thesis in Natural Resources**

Three credits. Prerequisite: Three credits of either NRE 3699 or 4696, which may be taken concurrently; ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher; open only with consent of instructor.

Writing of a formal thesis based on independent research conducted by the student. Thesis proposal and final thesis must follow guidelines developed by the Department; and be submitted to, and approved by, a department review committee.

**4990. Directed Field Experience**

(Also offered as EEB 4990.) Four credits. Prerequisite: Instructor consent required.

Taught in Costa Rica or South Africa. An introduction to research design, field methods, and basic data analysis in a tropical context. Hypothesis testing and statistical analysis, including orientation to basic software packages. Students design, implement, and analyze data for their own field projects. This course is offered in partnership with the Organization for Tropical Studies.

**4998. Variable Topics**

One credit. May be repeated for credit.

Prerequisites and recommended preparation vary.

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## Nursing (NURS)

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**1130. Health Care Delivery System**

Three credits.

An exploration of the U.S. health care system, including its history and evolution and the challenges associated with balancing the competing interests of different facets of health care quality, i.e., safe, timely, effective, efficient, equitable, and patient-centered.

**1131. Introduction to the Discipline of Nursing**

Three credits. Prerequisite: NURS 1130; open only to Nursing students.

An examination of the history, values, language, and theories of the nursing discipline to create a

platform of understanding and commonality for all future nursing courses.

**1175W. The End of Life: A Multicultural Interdisciplinary Experience**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

An examination of experiences at the end of life to enhance student awareness of related issues through a societal, personal, multicultural, and interdisciplinary lens. CA 4.

**1500. Introduction to Correctional Health Care**

Three credits.

Health care delivery for persons involved in the United States correctional system at the individual, cultural, societal, and national level. Examination of social theories such as critical theory to analyze and understand the social determinants of health such as gender, race, culture, and status that influence behavior and health care access, delivery, and treatment in the correctional system. CA 2.

**2100W. Fostering a Culture of Health through Health Equity and Interprofessional Collaboration**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

An in-depth examination of our nation's quest toward a Culture of Health, with movement toward health equity by reducing disparities and improving social determinants of health for all members of our society. The principles of interprofessional collaborative practice will be applied as a method to strengthen this work with under-represented, diverse, and vulnerable populations, including enhancing cultural continuity for groups from outside the US. CA 4.

**2175. Global Politics of Childbearing and Reproduction**

Three credits.

Maternal health and reproductive issues on a global scale. Focused and sustained examination of the social, cultural, and political forces which organize childbirth and reproductive experiences. Emphasizes a critical exploration of the diversity of women's childbirth and reproductive experiences and the past and current approaches to this care from a global perspective. CA 1. CA 4-INT.

**3070. Culturally Informed Communication with Spanish-Speaking Healthcare Consumers**

Three credits.

Navigating cultural differences and exploring varying beliefs, values, and perceptions related to health care issues of Hispanic Healthcare consumers, families, and communities. Discussion includes topics such as disease prevalence, disparities, social determinants, and systemic barriers that impact health outcomes. Introductory phrases in Spanish related to healthcare situations will be presented. Taught in English; Spanish not required; does not fulfill foreign language requirement. CA 4.

**3100. Clinical Science I**

Three credits. Prerequisite: CHEM 1122, 1124Q, or 1127Q; BIOL 1107; open only to sophomore or higher Nursing majors. Corequisite: PNB 2264 or 2274. Students in the Master of Science in Surgical Neurophysiology Program who have completed PNB 5101 may take this course with instructor

consent. May not be taken out of sequence after passing NURS 3110.

Critical examination of concepts from pathophysiology, pharmacology, and nutritional science as they apply to the diverse health care needs of individuals throughout the lifespan. Using a systems approach, foundational principles of nutrition and pharmacology are applied to specific pathophysiologic conditions to develop a holistic (and/or inclusive) care plan that incorporates non-pharmacologic, dietary, and pharmacologic interventions to a diverse patient population.

### 3110. Clinical Science II

Three credits. Prerequisite: CHEM 1122 or 1127Q; NURS 3100; PNB 2264; and PNB 2265, which may be taken concurrently; open only to Sophomore or higher Nursing majors; open to Master of Science in Surgical Neurophysiology students with instructor consent.

Critical examination of concepts from pathophysiology, microbiology, and pharmacology as they apply to the diverse health care needs of individuals throughout the lifespan. Using a systems approach, foundational principles of microbiology and pharmacology are applied to specific pathophysiologic conditions to develop a holistic (and/or inclusive) care plan that incorporates non-pharmacologic and pharmacologic interventions.

### 3120. Patient Centered Health Assessment Across the Lifespan

Three credits. Prerequisite: NURS 3100; PNB 2264; and PNB 2265, which may be taken concurrently; open only to Nursing majors; students in the Master of Science in Surgical Neurophysiology Program who have completed PNB 5101 may take this course with instructor consent.

Students will acquire knowledge, skills, and values needed for assessing individuals from diverse cultures and vulnerable populations through the lifespan. This course will address the nursing science and disease science as appropriate for the development of student skills for patient/client assessment. Supervised laboratory sessions will provide opportunities to practice newly acquired skills.

### 3205. Nursing Research and Evidence-Based Practice

Three credits. Prerequisite: STAT 1000Q or 1100Q and ENGL 1007 or 1010 or 1011 or 2011.

An introduction to qualitative and quantitative research and application to evidence-based nursing practice. Focus placed on developing the ability to understand, interpret, critically appraise, and apply research for high value nursing practice.

### 3220. Clinical Science for Sub-Acute and Chronically Ill Adults

Three credits. Prerequisite: To enroll in this course, a student must have earned a "C" or better in NURS 1130, 1131, 3100, 3110, and 3120; open only to Nursing majors.

Critical examination of concepts of pharmacology, microbiology, nutrition and pathophysiology as they relate to nursing care of adults with sub-acute and chronic health problems and their families.

### 3225. Ethical Ways of Knowing

Three credits. Prerequisite: A grade of C or better in NURS 3234; open only to Nursing majors, others with instructor consent.

An exploration of the ethical way of knowing in nursing. Selected models and theories illustrating an ethical approach will be analyzed.

### 3234. Theory and Nursing Practice for Adults with Sub-Acute or Chronic Problems

Nine credits. Prerequisite: To enroll in this course, a student must have earned a "C" or better in NURS 1130, 1131, 3100, 3110, and 3120; open only to Nursing majors. May not be taken out of sequence after passing NURS 3225 or 3715W.

Critical examination of theory, research and expert clinical practices supportive of nursing care for the adult population. This includes adults from diverse cultures and vulnerable communities that are experiencing sub-acute and/or chronic health conditions and the impact of illness on client families and caregivers.

### 3295. Special Topics in Nursing

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

### 3334. Theory and Nursing Practice for Perinatal and Women's Health

Six credits. Prerequisite: To enroll in this course, a student must have earned a "C" or better in NURS 3205, 3220, and 3234; open only to Nursing.

Builds on students' understanding of microbiology, pharmacology, nutrition, genetics, and pathophysiology as these sciences relate to perinatal and women's health. Emphasis is on the development of clinical decision making skills related to nursing care of childbearing families with a particular focus on anticipatory guidance, prevention, interventions and health restoration along with providing care that is culturally responsive to particular needs of the perinatal family and women's health. Provides experience in clinical and simulation learning environments for the application of theory from nursing and related disciplines to perinatal and women's health. Emphasis is on the role of the nurse.

### 3444. Theory and Nursing Practice for Child Health

Six credits. Prerequisite: To enroll in this course, a student must have earned a "C" or better in NURS 3205, 3220, and 3234; open only to Nursing.

Builds on students' understanding of microbiology, pharmacology, nutrition, genetics, and pathophysiology as these sciences relate to child health. Emphasis is on development of clinical decision-making skills related to nursing care of culturally diverse childrearing families with a particular focus on anticipatory guidance, prevention, intervention and health restoration. Provides experience in clinical and simulation learning environments for the application of theory from nursing and related disciplines to child health. Emphasis is on the role of the nurse in the delivery of interdisciplinary care.

### 3554. Theory and Nursing Practice for Behavioral Health

Six credits. Prerequisite: To enroll in this course, a student must have earned a "C" or better in NURS 3205, 3220, and 3234; open only to Nursing.

Major theoretical perspectives regarding etiology and treatment of psychiatric illness are

described and discussed including biological, psychological, sociological and environmental factors. The evolving role of the nurse with regard to promoting mental health, patient advocacy, and preventing and/or minimizing adverse sequelae to psychiatric illness are explored, including use of therapeutic communication, critical thinking and application of the nursing care of culturally diverse individuals, families and their populations with a variety of behavioral health problems. Provides experience in clinical and simulation learning environments for the application of theory from nursing and related disciplines to deliver care to culturally diverse individuals, families, and populations behavioral health. Emphasis is on the role of the nurse.

### 3664. Theory and Nursing Practice for Acutely Ill Adults

Six credits. Prerequisite: To enroll in this course, a student must have earned a "C" or better in NURS 3205, 3220, and 3234; open only to Nursing.

Critical examination of pharmacology, microbiology, nutrition, genetics, and pathophysiology as they relate to nursing care of culturally diverse adults experiencing acute and/or life threatening problems. Critical examination of theory, research, and expert clinical practice supportive of nursing care with culturally diverse adults experiencing acute and/or life threatening problems. Includes experience in clinical and simulation environments for the application of theory from nursing and related disciplines to the care of culturally diverse acutely ill adults. Emphasis is on the role of the nurse.

### 4230W. Quality Improvement and Evidence Based Practice in Nursing

Three credits. Prerequisite: "C" or better in NURS 3234; and ENGL 1007 or 1010 or 1011 or 2011.

Framework for health care system change through evidence-based practice (EBP) and quality improvement (QI). Strategies for implementing evidence-based practice are addressed. QI processes, use of information technology to monitor and evaluate quality indicators, and implementation of strategies to improve outcomes are addressed.

### 4250E. Public Health Nursing

Three credits. Prerequisite: NURS 3554, 3664, and 4230W. Corequisite: NURS 4282.

Theories from nursing, public health, and environmental science within the context of aggregate/population-based care; interdependence of the health of the natural environment and human systems; consequences of historical social injustices and social and structural determinants of health on population and environmental health inequities. Using population-centered, trauma-informed, and culturally responsive approaches, primary, secondary, and tertiary prevention strategies are used to promote the health of a selected population/community. Learners will gain knowledge, skills, and motivation for sociopolitical advocacy of public and environmental health.

### 4282. Nursing Leadership and Capstone Practicum

Nine credits. Prerequisite: NURS 3334, NURS 3444, NURS 3554, NURS 3664, and NURS 4230W.

In-depth analysis of the components that facilitate new nursing graduates to become leaders

in healthcare, within diverse interprofessional groups, and in the community. Students will have an opportunity to explore professional nursing issues as they synthesize knowledge, skills, and values from all prior learning to provide safe care as a beginning practitioner. An interprofessional approach to resolving problems, enhancing leadership through decision-making, and collaborating with culturally diverse teams are used.

#### **4289. Independent Study**

Variable (0-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

Primarily for qualified students who wish to extend their knowledge by investigating special problems in nursing and through practicum experience. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

#### **4299. Independent Study**

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

Primarily for qualified students who wish to extend their knowledge by investigating special problems in nursing.

#### **4300. Clinical Science: Pharmacology and Pathophysiology**

Three credits. Prerequisite: Student must be accepted into CEIN\_B.S. Program.

Critical examination of concepts of pathophysiology and pharmacology as they apply to needs of diverse individuals and populations throughout the lifespan. Using the nursing process to examine systematic and individual factors in the application of pharmacology to pathophysiologic conditions in diverse individuals/populations.

#### **4301. Concepts and Theories of Nursing Practice**

Three credits. Prerequisite: NURS 4304, which may be taken concurrently; students must be accepted into the CEIN/B.S. program. Students must earn at least a grade of "C" in this course to progress.

The nurse's role is explored in the context of the health care delivery systems, interprofessional and collaborative teams, health beliefs, practices and cultural needs of diverse patients, and legal and ethical issues in providing care. Nursing history, patterns of knowing, theory, and concepts of evidence-based practice are discussed as the foundation of nursing praxis.

#### **4304. Health Assessment and Fundamentals of Nursing Praxis**

12 credits. Prerequisite: Open to students in the Basic Nursing CEIN/B.S. Program.

Utilizes a combination of didactic and laboratory methods to explore all realms of health assessment (inspection, palpation, percussion, and auscultation) and introduces learners to the technological skills necessary for safe nursing practice: vital signs, activities of daily living, medication administration, wound healing and dressing changes, tubes and lines, safety and isolation precautions, and routine monitoring. Patient populations are adults in sub-acute and chronic settings. Addresses the nursing science, clinical science and disease science as appropriate to the assessment and skills. Students must earn at least a grade of "C" in this course to progress.

#### **4305. Nursing Research and Evidence-Based Practice - CEIN/BS**

Three credits. Prerequisite: NURS 4301, 4414, 4424, 4434.

Introduction to qualitative and quantitative research and application to evidence-based nursing practice. Focus on developing the ability to understand, interpret, critically appraise, and apply research for nursing practice. Students must earn at least a grade of "C" in this course to progress.

#### **4414. Theory and Nursing Practice for Behavioral Health**

Four credits. Prerequisite: To enroll in this course, a student must have earned a "C" or better in NURS 4304. Student must be accepted into Basic Nursing (CEIN/B.S.) Certificate Program.

Major theoretical perspectives regarding etiology and treatment of psychiatric illnesses are described and discussed including biological, psychological, sociological, and environmental factors. The evolving role of the nurse with regard to promoting mental health, patient advocacy, and preventing and/or minimizing adverse sequelae to psychiatric illness are explored, including use of therapeutic communication, critical thinking and application of the nursing process to assist culturally diverse individuals, families, and communities with a variety of behavioral health problems. Provides experience in clinical and simulation learning environments for the application of theory from nursing and related disciplines to behavioral health. Emphasis is on the role of the nurse in the delivery of interdisciplinary care.

#### **4424. Theory and Nursing Practice for Perinatal and Women's Health**

Four credits. Prerequisite: NURS 4300 and 4304; student must be accepted into Basic Nursing (CEIN/B.S.) Certificate Program. Students must earn at least a grade of "C" in this course to progress.

Builds on students' understanding of microbiology, pharmacology, nutrition, genetics, and pathophysiology as these sciences relate to perinatal and women's health. Emphasis is on development of clinical decision-making skills related to nursing care of culturally diverse childrearing families with a particular focus on anticipatory guidance, prevention, intervention and health restoration. Provides experience in clinical and simulation learning environments for the application of theory from nursing and related disciplines to perinatal and women's health. Emphasis is on the role of the nurse in the delivery of interdisciplinary care.

#### **4434. Theory and Nursing Practice for Child Health**

Four credits. Prerequisite: NURS 4304 with a grade of C or better; student must be accepted into Basic Nursing (CEIN/B.S.) Certificate Program. Corequisite: NURS 4301 and 4424.

Builds on students' understanding of microbiology, pharmacology, nutrition, genetics, and pathophysiology as these sciences relate to child health. Emphasis is on development of clinical decision-making skills related to nursing care of culturally diverse childrearing families with a particular focus on anticipatory guidance, prevention, intervention and health restoration. Provides experience in clinical and simulation learning environments for the application of theory

from nursing and related disciplines to child health. Emphasis is on the role of the nurse in the delivery of interdisciplinary care.

#### **4544. Theory and Nursing Practice for Community Health**

Four credits. Prerequisite: To enroll in this course, a student must have earned a "C" or better in NURS 4434; student must be accepted into Basic Nursing (CEIN/B.S.) Certificate Program.

Builds on students' understanding of microbiology, pharmacology, nutrition, genetics, and pathophysiology as these sciences relate to community health. Principles of epidemiology will be introduced. Emphasis is on development of clinical decision-making skills related to nursing care of individuals, families, and populations living in the community. Attention will be given to the co-existence of diverse cultures and minority groups that reside in the community. Major concepts of wellness, prevention, and chronicity will be explored. Provides experience in clinical and simulation learning environments for the application of theory from nursing and related disciplines to community health. Emphasis is on the role of the nurse in the delivery of culturally responsive interdisciplinary care.

#### **4554. Theory and Nursing Practice for Adult Acute Care**

Eight credits. Prerequisite: To enroll in this course, a student must have earned a C or better in NURS 4434; student must be accepted into Basic Nursing (CEIN/B.S.) Certificate Program.

Critical examination of pharmacology, microbiology, nutrition, genetics, and pathophysiology as they relate to nursing care of adults experiencing acute and/or life threatening problems. Critical examination of theory, Research, and expert clinical practice supportive of nursing care with adults experiencing acute and/or life-threatening problems. Provides experience in clinical and simulation learning environments for the application of theory from nursing and related disciplines to the care of acutely ill adults. Emphasis is on the role of the nurse in the delivery of interdisciplinary care. Apply selected nursing and interdisciplinary theories to the safe management of patient-centered care and the promotion of health for culturally diverse individuals and their families for acutely ill adults.

#### **4597W. Senior Thesis in Nursing**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; at least four credits of NURS 4299; open only to Honors students; open only by instructor consent.

This course provides the synthesis of all the elements from prior semesters as students have worked toward their Honors thesis. The overall objective is that the student will write a comprehensive and meritorious thesis using skills of critical and analytical thinking, and scholarly writing.

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### **Nutritional Sciences (NUSC)**

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#### **1030. Interdisciplinary Approach to Obesity Prevention**

(Also offered as AH 1030.) Three credits. Prerequisite: Open to freshmen and sophomores in the Honors Program.

Explores the biology of obesity including genetic predispositions and behaviors that increase obesity risk (dietary, physical activity, social, psychological), the obesigenic environment, including how communities are physically built, as well as the economic relationship to obesity risk, and policy and ethical implications for obesity prevention. Multi-level obesity prevention approaches that involve the individual, family, organization, community, and policy. CA 3.

#### **1161. Husky Reads: Introducing Food and Nutrition to Children through Reading**

(Also offered as EDLR 1161.) Two credits. Prerequisite: Instructor consent required.

Supervised field work and experiential learning in nutritional literacy for preschoolers and young children, geared to individual, dual, and team activities. Readings and reflections.

#### **1165. Fundamentals of Nutrition**

Three credits. Prerequisite: May not be taken out of sequence after passing NUSC 3171, 3172, 3180, 3233, 3234, 4236 or 4250.

An introduction to the principles and concepts of nutrition with emphasis on the nature and function of carbohydrates, fats, proteins, minerals and vitamins, and their application to the human organism. CA 3.

#### **1166. Honors Colloquium in Nutrition**

One credit. Prerequisite: Concurrent enrollment in NUSC 1165 is required. This course is primarily for, but not restricted to, honors students.

Lectures, discussions, and laboratory exercises to complement topics from NUSC 1165.

#### **1167. Food, Culture and Society**

Three credits.

Social, cultural, and economic factors affecting food intake and nutritional status. Includes contemporary topics such as world food problems, hunger in the United States, dieting and eating disorders, health foods and vegetarianism. CA 4-INT.

#### **1195. Special Topics**

Variable (1-3) credits. Prerequisite: Prerequisites and recommended preparation vary.

Credits, prerequisites and hours as determined by the Senate Curricula and Course Committee.

#### **1245. Introduction to Dietetics**

One credit. Prerequisite: Open only to CAHNR students, others with consent. Not open for credit to students who have passed NUSC 3245.

Introduction to the profession of dietetics, including clinical, community, and food service management. Dietetic internship application preparation.

#### **1645. The Science of Food**

(Also offered as ANSC 1645.) Three credits.

An introductory level course for students interested in the application of science to food. Nutritional and functional attributes of various food constituents are discussed. Issues concerning food processing and food safety are covered. CA 3.

#### **1693. International Studies in Nutritional Sciences**

Variable (1-15) credits. Prerequisite: Open to sophomores or higher. May be repeated for credit.

Coursework undertaken within approved education abroad programs.

#### **2200. Nutrition and Human Development**

Three credits. Prerequisite: NUSC 1165. May not be taken out of sequence after passing NUSC 4294.

Nutritional needs and consequences of nutritional deficiencies throughout the life cycle: preconception, pregnancy, lactation, infancy, childhood, adolescence, adulthood, and aging. Maternal and child public health issues.

#### **3150. Medical Nutrition Therapy I**

(Also offered as DIET 3150.) Three credits. Prerequisite: MCB 2000; PNB 2264, 2265; NUSC 1165; open only to Dietetics majors and NUSC Didactic Program students: open to juniors or higher.

Introduction to the nutrition care process, nutrition assessment, planning of special diets and applications of medical nutrition therapy to selected disease states and conditions.

#### **3171. Husky Nutrition**

Three credits. Prerequisite: NUSC 1165; instructor consent.

Graded lecture and experiential learning in preschools where students conduct learning activities about reducing sweetened beverage consumption. Lecture, applied learning laboratory, supervised field work with community nutrition education and problem-solving. Readings, discussion and reflections.

#### **3180. Experience in Community Nutrition**

Variable (1-6) credits. Prerequisite: NUSC 1165 and 3230; open to juniors or higher. May be repeated for credit.

Supervised field work with community nutrition education or problem-solving. Readings and reports. No more than 6 credits of experience or independent study may apply toward the major.

#### **3230. Community Nutrition**

(Also offered as DIET 3230.) Three credits. Prerequisite: NUSC 2200; open to Dietetic majors, NUSC majors, and AHS majors; open to juniors or higher, others by consent. Not open to students who have passed NUSC 3267. May not be taken out of sequence after passing 3180.

Role of community structure, agencies, and resources in community health relating to nutrition.

#### **3233. Food Composition and Preparation**

Three credits. Prerequisite: NUSC 1165; Recommended preparation: CHEM 2241 or 2443. May not be taken out of sequence after passing NUSC 3271 or 3273.

Study of the composition of food and the physical and chemical changes that occur during preparation and/or processing that affect taste, palatability, shelf-life, and nutrient content.

#### **3234. Food Composition and Preparation Laboratory**

One credit. Prerequisite: NUSC 1165; concurrent enrollment in NUSC 3233; CHEM 2241 or 2443; open to Nutritional Sciences and Dietetic majors, others with instructor consent. May not be taken out of sequence after passing NUSC 3271 or 3273.

Laboratory techniques related to composition of foods, and the physical and chemical changes that occur during preparation.

#### **3245. Profession of Dietetics**

One credit. Prerequisite: NUSC 1245; open only to Nutritional Sciences Didactic Program students; others with consent.

Overview of dietetic internships and application process. Resume writing, job placement, ethics and dietetics.

#### **3250. Medical Nutrition Therapy II**

(Also offered as DIET 3250.) Three credits. Prerequisite: DIET 3150 or NUSC 3150; open only to Dietetics majors and NUSC Didactic Program students.

Continuation of Medical Nutrition Therapy I. Further investigation of the interrelationships of physiology and biochemistry of disease and dietary intervention.

#### **3271. Food Services Systems Management Laboratory/Discussion**

Two credits. Prerequisite: NUSC 3233, 3234. Open only to NUSC students enrolled in NUSC 3272.

Laboratory/discussion of quantity food preparation, recipe modification, cost analysis, recipe nutrient analysis and application of food sanitation.

#### **3272. Food Service Systems Management I**

(Also offered as DIET 3272.) Two credits. Prerequisite: Open only to junior or higher Dietetics and Nutritional Science majors, others with instructor consent. Recommended preparation: NUSC 3233, 3234. Not open to students who have passed NUSC 3270.

Quantity food procurement, preparation and distribution; recipe standardization and menu development; sanitation and safety; portion and quality control; systems approach and delivery systems.

#### **3291. Nutritional Sciences Internship**

Variable (1-3) credits. Prerequisite: NUSC 1165 and 2200. Open to juniors or higher; open to Nutritional Science majors with consent. May be repeated for a total of 6 credits.

Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

#### **3693. International Studies in Nutritional Sciences**

Variable (1-6) credits. Prerequisite: Open to sophomores or higher. May be repeated for a total of 15 credits.

Variable topics. Coursework undertaken within approved study abroad programs.

#### **3782. Experience in Food Service Systems Management**

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

Application of principles of food service management. Supervised placement. No more than six credits of experience or independent study may apply toward the major.

#### **3823. Experience in Medical Nutrition Therapy**

Variable (1-3) credits. Prerequisite: NUSC 3150.

Mentored experiences in Medical Nutrition Therapy that include traditional (e.g., hospitals, long term care centers) and contemporary (e.g., wellness clinics, sports nutrition practice) placement with registered dietitians/nutritionists. No more than six credits of experience or independent study may apply toward the major.

**4100. Dietetic Career Readiness**

One credit. Prerequisite: NUSC 3245. Instructor consent required.

Preparing the dietetic internship application. Exploring dietetic careers, resume and personal statement writing and evaluating strengths and weaknesses.

**4236. Nutritional Biochemistry and Metabolism**

Four credits. Prerequisite: NUSC 1165; MCB 2000 or 3010.

Metabolism and functions of carbohydrates, proteins, fats, minerals, and vitamins.

**4237W. Writing in Nutritional Sciences**

One credit. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; NUSC 4236, which must be taken concurrently.

A writing-intensive class that emphasizes both style and content consistent with the discipline of Nutritional Science.

**4250. Nutrition for Exercise and Sport**

Three credits. Prerequisite: NUSC 1165; PNB 2250 or 2265.

Basic nutrition principles. Physical activity, exercise, sport performance and consequences of nutritional ergogenic aids.

**4260. Dietary Supplements and Functional Foods**

Three credits. Prerequisite: NUSC 1165; CHEM 2241 or 2443 or concurrent registration.

Efficacy, safety, and regulations of dietary supplements and health-promoting foods.

**4272. Food Service Systems Management II**

(Also offered as DIET 4272.) Two credits. Prerequisite: DIET 3272 or NUSC 3272. Cannot be taken for credit after passing NUSC 4270.

Institutional menu development; cost and budgeting; equipment layout and design; personnel management; marketing and merchandising; purchasing and inventory control.

**4280. US Food Laws and Regulations: Product Concept through Launch**

Three credits. Prerequisite: NUSC 1165 or instructor consent.

Process for developing new nutrition products; the regulations applicable to foods, medical foods, dietary supplements and ingredients; and how to represent scientific evidence accurately and appropriately when substantiating label claims and advertisements.

**4294. Seminar**

One credit. Prerequisite: NUSC 2200. May be repeated for credit.

Review, evaluation, and oral and written presentation of contemporary nutrition issues.

**4295. Special Topics**

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

Topics and credits to be published prior to the registration period preceding the semester offerings.

**4296W. Senior Thesis in Nutrition**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open only by consent of honors advisor and department head;

Consent of honor advisor and department head required.

**4299. Independent Study**

Variable (1-3) credits. Prerequisite: Instructor consent required. May be repeated for credit.

Individual study and research with faculty. Written report. No more than six credits of experience or independent study may apply toward the major.

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## Occupational Safety and Health (OSH)

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**4291. OSH Internship**

(Also offered as AH 4291.) Variable (1-6) credits. Prerequisite: Open only to BGS students and Allied Health Sciences-OEHS concentration majors juniors or higher, and OSH Certificate students; others with consent. May be repeated for credit.

Application of the principles and concepts of hazard assessment and safety management to an actual workplace under the supervision of an approved onsite supervisor. May be repeated for credit to a maximum of 6 credits applied to the major. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

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## Operations and Information Management (OPIM)

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**3103. Business Information Systems**

(Also offered as BADM 3103.) Three credits. Prerequisite: Open only to BUSN majors of sophomore or higher status, others with consent of OPIM Department Head. May not be taken out of sequence after passing OPIM 3505, 3506, 3211, 3212, 3223, or 3777.

Information needs of managers, the structure of the information systems required to fill these needs, systems development, business computing technology, and management applications within major business functional subsystems.

**3104. Operations Management**

(Also offered as BADM 3104.) Three credits. Prerequisite: Open only to Business majors of junior or higher status.

Introduction to concepts, models, and information systems applicable to the planning, design, operation and control of systems which produce goods and services. Topics include process design, facility locations, aggregate planning, inventory control, and scheduling.

**3203. Analytics for Business Intelligence**

(Also offered as BADM 3203.) Three credits. Prerequisite: Open only to Analytics and Information Management majors of junior or higher status. May not be taken out of sequence after passing OPIM 3211.

The course introduces students to the field of analytics and business intelligence. It positions them to structure and successfully complete analytics projects. The course exemplifies and explores how businesses gather and use data as well as set up and execute business problems. Students will make use of programming tools to build predictive models. Formerly offered as BADM/OPIM 3802.

**3204. Business Database Systems**

Three credits. Prerequisite: Open only to Analytics and Information Management majors of junior or

higher status. May not be taken out of sequence after passing OPIM 3211.

Introduces market-leading techniques for transaction processes as well as decision making and business intelligence, that help to identify and manage key data from business processes. Provides the essential tools required for further data mining applications. Combines lecture, class discussion and hands-on computer work in a business-oriented environment. Formerly offered as OPIM 3221.

**3207. Information Security**

Three credits. Prerequisite: Open only to Analytics and Information Management majors of junior or higher status. May not be taken out of sequence after passing OPIM 3211

Introduces the basic principles of information security, its role in reducing information risk exposure and tools and solutions that can be used to prevent information loss and business interruption. Discusses appropriate laws and industry standards for IT Governance. Presents the process of information systems audit, discusses tools of IT audit and its role in detection and prevention of fraud and other data anomalies. An introduction to risk management software and methodologies will also be covered. Formerly offered as OPIM 3777.

**3211. Systems Analysis and Design**

Three credits. Prerequisite: OPIM 3103, 3203, 3204 and 3207; Open only to Analytics and Information Management majors of junior or higher status.

System development methodologies for business information systems. Project management concepts, hardware and software technology, and organizational considerations are explored. Students participate in a system development project.

**3223. Advanced Business Application Development**

Three credits. Prerequisite: OPIM 3103; open only to Management Information Systems majors; open to juniors or higher.

Covers structured and object-oriented programming methodologies for developing business applications. Program design techniques and logic emphasized. Students participate in a business application design and implementation project.

**3301. Spreadsheet Modeling for Business Analysis**

(Also offered as BADM 3301.) Three credits. Prerequisite: OPIM or BADM 3103; Open only to business majors of junior or higher status.

This course provides an introduction to business decision and data analysis with electronic spreadsheets in Excel, the primary quantitative analysis software in business environments. Modeling and decision techniques are covered in combination with Excel functions and tools. Applications in different business functional areas are also covered. Each student is required to bring a laptop installed with Microsoft Excel that can connect to the internet. Formerly offered as BADM/OPIM 3803.

**3302. Data Visualization**

(Also offered as BADM 3302.) Three credits. Prerequisite: OPIM or BADM 3103; Open only to business majors of junior or higher status.

Introduces the techniques and best practices in visualizing data. Examines cognitive function and its role in data visualization designs; showing that data visualization can reveal answers and questions alike. Utilizing state of the art software, the use of parameters, filters, calculated variables, color, space and motion to visually articulate the data are surveyed. The use of dashboards to quickly reveal data-driven information that has daily relevance to executives, managers, supervisors and line personnel are investigated. Each student is required to bring a laptop (with Windows or Mac OS) that can connect to the Internet and handle required software (see School of Business specifications). Formerly offered as BADM/OPIM 3804.

#### **3401. Business Software Development**

Three credits. Prerequisite: Open only to business majors of junior or higher status.

The development of computer software for business information processing. Topics include flowcharting, pseudocode, programming with a business oriented computer language, file processing concepts, and on-line and batch processing. Formerly offered as OPIM 3220.

#### **3402. Mobile Application Development**

Three credits. Prerequisite: Open only to business majors of junior or higher status.

The focus of this course is to develop cross-platform mobile applications for both iOS and Android systems. Students will learn how to plan and create their own mobile applications. Graphical User Interface (GUI) design skills as well as programming logics will be taught and emphasized throughout the course. Upon completion of this course, students should be able to use the programming skills they learn to develop user-friendly mobile apps for both iPhones and Android devices. Formerly offered as OPIM 3224.

#### **3403. UX / UI Design**

(Also offered as BADM 3403.) Three credits. Prerequisite: OPIM 3401; Open only to business majors of junior or higher status.

Discusses the concepts of gamification and how to apply design thinking in a business setting. This course is practically oriented with a focus of applying user interface (UI) and user experience (UX) design. Various gamification concepts are discussed including prototyping, iterative design, and digital platform implementation. The use of point systems, digital badging, and leaderboards to engage users will be investigated. Formerly offered as OPIM 3805.

#### **3505. Business Database Management**

Three credits. Prerequisite: OPIM 3103 or equivalent; open only to business majors of junior or higher status, others with consent of Operations and Information Management Department Head. Cannot be used toward fulfilling MIS major requirements.

Introduction to the development and implementation of database applications. Topics covered include costs and benefits of database approach, database design lifecycle, the relational data model, Structured Query Language, database applications development and data warehousing. Students will learn the relational database concept and participate in the hands-on design and implementation of a database using the relational architecture and a database management system.

Cannot be used toward fulfilling MIS major requirements. Offered only at regional campus locations.

#### **3506. Business Application Programming**

Three credits. Prerequisite: OPIM 3103 or equivalent; open to juniors or higher; open only to Business Administration, Business and Technology, and Financial Management majors, others with department head consent. Cannot be taken for credit after OPIM 3507 or 3508.

Development of business application software using structured and object oriented programming techniques. The emphasis is on programming logic, rapid application development techniques and personal productivity tools. Topics include program design techniques, programming constructs, interface development techniques, event driven programming, file and database processing, and object linking and embedding. Offered only at the Hartford, Waterbury and Stamford Regional Campus locations. Cannot be used toward fulfilling MIS major requirements.

#### **3510. Business Data Analytics I**

Three credits. Prerequisite: OPIM 3103 or equivalent; open to juniors or higher; open only to School of Business majors; others with the consent of the Operations and Information Management Department Head.

Presents essential data analytics topics. Covers basic programming logic and techniques necessary for developing business data applications. The course will also cover topics related to data preprocessing and data cleaning with a light introduction to data mining and visualization techniques. Cannot be used toward fulfilling MIS major requirements. Offered only at regional campus locations.

#### **3511. Business Data Analytics II**

Three credits. Prerequisite: OPIM 3510 or equivalent; open only to business majors of junior or higher status, others with the consent of the OPIM Department Head. Credit will not be given if OPIM 5604 has been taken to fulfill undergraduate degree requirements.

Presents data analytics principles and state-of-the-art data mining software, with an emphasis placed on applications in business. The course provides an introduction to a variety of statistical techniques and algorithmic principles used in data mining. Various data mining procedures will be discussed and subsequently implemented using state-of-the-art analytics toolsets. Cannot be used toward fulfilling MIS major requirements. Offered only at regional campus locations.

#### **3512. Project Management for Business Data Analytics**

Three credits. Prerequisite: OPIM 3505, 3510; 3511, which may be taken concurrently; open only to business majors of junior or higher status, others with consent of OPIM department head. Credit will not be given if OPIM 5270 has been taken to fulfill undergrad degree requirements.

Introduction to the concepts necessary for both project managers and project team members to deliver successful data analytics projects on time, on budget and in scope. The phases and knowledge areas of project management, as defined by the Project Management Institute (PMI), are covered as well as the tools and techniques in each area for

successful project management. An introduction to appropriate project management software will also be covered. As part of the course, students will be divided into teams, with each team responsible for the satisfactory management and completion of a data analytics report. Cannot be used toward fulfilling MIS major requirements. Offered only at regional campus locations.

#### **3601. Managerial Supply Chain Management**

Three credits. Prerequisite: Open only to business majors of junior or higher status.

This course is designed to introduce students to the fundamentals of supply chain management. It will discuss the parts of a supply chain and how they relate to each other. Techniques to manage supply chain related interactions and relationships will also be taught. Topics will be presented with a focus on preparing students to make decisions relating to supply chain management. Specific skills that will be taught are business analysis, sourcing, quality, global impacts, financial considerations, contracting, negotiation, and other skills for managing a supply chain.

#### **3602. Supply Chain Logistics**

Three credits. Prerequisite: STAT 1000Q or STAT 1100Q or equivalent; open only to business majors of junior or higher status.

This course will introduce students to supply chain logistics that manages movement and storage of goods, services, and related information from source to destination along the supply chain. Topics include distribution network design, supply/demand planning, inventory management, transportation planning, warehouse operations. Students will learn quantitative methods and analytics tools and apply them to various decisions in supply chain logistics.

#### **3603. Project Management and Planning**

(Also offered as BADM 3603.) Three credits. Prerequisite: Open only to business majors of junior or higher status. Credit will not be given if OPIM 5270 has been taken to fulfill undergraduate degree requirements.

Provides an introduction to the concepts necessary for both project managers and project team members to deliver successful projects on time, on budget and in scope. The phases and knowledge areas of project management, as defined by the Project Management Institute (PMI), are covered as well as the tools and techniques in each area for successful project management. An introduction to Microsoft Project software will also be covered. Formerly offered as BADM/OPIM 3801.

#### **3701. Network Design and Applications**

Three credits. Prerequisite: Open only to Analytics and Information Management majors of junior or higher status. May not be taken out of sequence after passing OPIM 3211.

Principles and applications of business telecommunications emphasized. Course covers important network systems as well as crucial techniques in building these systems. Students participate in network design and implementation project. Formerly offered as OPIM 3222.

#### **3702. Risk, Trust, and Modern Security**

Three credits. Prerequisite: OPIM 3207. Open only to business majors of junior or higher status.



This course explores systems of trust and the technologies used to support them. Students will take an interdisciplinary look at the assessment of risk and explore modern methods used to cover various types of risks.

### **3806. Introduction to Cryptocurrency and Blockchain Technology**

Three credits. Prerequisite: OPIM 3103; open only to business majors of junior or higher status.

This course explores the fundamental knowledge of blockchain technology, its practical applications and impact in industries. The course discusses the popular cryptocurrencies on the market, their operating mechanisms, and related decentralized applications including Defi, NFTs, DAOs, and Web 3.0. The course will also evaluate the ethical, legal, social, and environmental impacts of Blockchain technology.

### **4881. Internship in Operations and Information Management**

Variable (1-6) credits. Prerequisite: Completion of first-year - sophomore School of Business Requirements and consent of instructor and Department Head; open only to Business majors of junior or higher status. May be repeated for credit.

Designed to provide students with an opportunity for a supervised internship relevant to one or more major areas within the Department. Students will work under the supervision of one or more professionals in the specialty in question. Student performance will be evaluated on the basis of an appraisal by the field supervisor and a detailed written report submitted by the student. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

### **4893. Foreign Study**

Variable (1-6) credits. Prerequisite: Open to juniors or higher. May be repeated for credit.

Special topics taken in a foreign study program. Consent of Department Head required, prior to the student's departure. These credits must be awarded for regularly scheduled course work at a recognized foreign university in the field of information systems or in the student's Applications Area; if in the Applications Area the consent of both the Department Head and the Head of the Applications Area is required. Prior to taking the course the student must sign up for the course in advance as a course in that Applications Area. No credits can be counted toward required courses in the MIS major.

### **4895. Special Topics**

Variable (1-3) credits. Prerequisite: OPIM 3103 and others as announced separately for each offering; open to juniors or higher. May be repeated for credit.

Classroom course in special topics in operations management, operations research and information management as announced in advance for each semester.

### **4899. Independent Study**

Variable (1-6) credits. Prerequisite: Open only to business majors of junior or higher status. May be repeated for credit.

Individual study of special topics in operations management, operations research and information management as mutually arranged between a student and an instructor.

### **4996. Independent Honors Research in OPIM**

Three credits. Prerequisite: Open to juniors or higher; open only to OPIM Department Honors Students with consent of the instructor.

Students are expected to develop their own plan for a research project, conduct the research, and write-up this research, consulting periodically with a faculty member.

### **4997. Senior Thesis in Operations and Information Management**

Three credits. Prerequisite: OPIM 4996; open only to OPIM Department Honors Students with consent of instructor and Department Head; open to juniors or higher.

## **Pathobiology (PATH)**

### **1000. Biomedical Issues in Pathobiology**

Two credits.

This introductory course focuses on current global issues of health and disease to describe fundamental topics in pathobiology. Global biomedical concerns regarding infectious diseases, population, cancer, biotechnology and environmental health will be addressed. Course content will provide examples of the impact of veterinary and human pathology on world health issues. Formerly offered as PVS 1000.

### **1201. Exploring Careers in Pathobiology**

Two credits.

Exposure to the Pathobiology major and careers in Pathobiology through interactions with professionals in relevant careers, training in basic laboratory safety and research compliance, and development of a personalized career journal.

### **1202. Fundamental Biomedical Laboratory Techniques**

Two credits.

Hands-on, basic biomedical research laboratory techniques with an emphasis on chemical and biological safety, as well as laboratory proficiency.

### **2095. Special Topics**

Variable (1-6) credits. Prerequisite: Prerequisites and recommended preparation vary. May be repeated for credit.

Credits, prerequisites and hours as determined by the Senate Curricula and Course Committee. Formerly offered as PVS 2095.

### **2100. Anatomy and Physiology of Animals**

Four credits. Prerequisite: BIOL 1107 or equivalent.

A study of the anatomy and physiology of animals with reference to pathological changes of the component parts of the body. Formerly offered as PVS 2100.

### **2301. Health and Disease Management of Animals**

Three credits. Prerequisite: PATH 2100.

Designed for students who plan to own and work with domestic animals. Its purpose is to develop student competence in disease management and to foster an intelligent working relationship with their veterinarian. The course will cover a systematic study of infectious and noninfectious diseases of domestic animals from the standpoint of economy and public health. Formerly offered as PVS 2301.

### **3093. Foreign Studies in Pathobiology**

Variable (1-15) credits. Prerequisite: Instructor consent required. May be repeated for a total of 15 credits.

Special topics taken in a foreign study program. Formerly offered as PVS 3093.

### **3094W. Seminar**

Two credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011. May be repeated for credit.

Majors may take this course in each semester of the senior year. Formerly offered as PVS 3094W.

### **3095. Special Topics**

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

Topics and credits to be published prior to the registration period preceding the semester offerings. Formerly offered as PVS 3095.

### **3099. Independent Study**

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

Special problems in connection with departmental research programs and diagnostic procedures for diseases of animals. Some suggested topics are histopathologic laboratory procedures, clinical hematology, diagnostic bacteriology, diagnostic parasitology. Formerly offered as PVS 3099.

### **3100. Histologic Structure and Function**

Four credits. Prerequisite: Open to juniors or higher; open only with consent of instructor. Recommended preparation: PATH 2100 or PNB 2264-2265 or PNB 2274-2275 or an equivalent course in vertebrate anatomy and physiology.

Designed for students in biologic, paramedical and animal sciences; its purpose is to integrate histologic and cellular structure with function, utilizing human tissues and those from other vertebrates. Formerly offered as PVS 3100.

### **3201. Principles of Animal Virology**

Three credits. Prerequisite: Open to juniors or higher.

Structure and classification of viruses, cultivation and multiplication, pathogenesis and epidemiology of viral infections, host response, oncogenic viruses, immunization against, and laboratory diagnosis of viral diseases. Formerly offered as PVS 3201.

### **3201W. Principles of Animal Virology**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

Structure and classification of viruses, cultivation and multiplication, pathogenesis and epidemiology of viral infections, host response, oncogenic viruses, immunization against, and laboratory diagnosis of viral diseases. Formerly offered as PVS 3201W.

### **3341. Pathobiology of the Avian Species**

Three credits. Prerequisite: Open to juniors or higher.

A systematic study of metabolic, nutritional, genetic, and infectious diseases of commercial poultry, avian wildlife, and caged pet birds. Emphasis is placed upon diagnosis and disease prevention. For each system of the body, pertinent anatomy, physiology, histology, pathology, and histopathology will be discussed. Formerly offered as PVS 3341.

**3401. Immunobiology**

Three credits. Prerequisite: BIOL 1107. Recommended preparation: Previous coursework in Cell Biology.

Principles of basic and clinical immunobiology; phylogeny and ontogeny of the immune response, characteristics of the immune response, cellular and humoral immunity; central and peripheral lymphoid tissues; mechanisms of immunologic injury and immunologic diseases; comparative and veterinary immunology; transplantation and tumor immunology.

**3501. Diagnostic Techniques for the Biomedical Sciences**

Two credits. Prerequisite: MCB 3414; open to juniors or higher; open to Agricultural Biotechnology minors. Recommended preparation: MCB 2000.

Theoretical basis and practical exposure to modern laboratory methods used in the biomedical sciences for disease diagnosis. Formerly offered as PVS 3501.

**3700. Emerging Infectious Diseases and Pandemics**

Three credits.

Mechanisms of emergence that different pathogens have used to cause disease in new hosts. Formerly offered as PVS 3700.

**3810. Systems Pathophysiology I**

Three credits. Recommended preparation: PATH 2800 or equivalent.

Organ-based study of human and animal diseases. Use of gross, microscopic, and physiologic evidence to diagnose disease. Topics covered include respiratory, cardiovascular, hematopoietic, lymphoid, musculoskeletal, and urinary systems.

**4000. Bioinformatics in Molecular Epidemiology of Infectious Diseases**

Three credits. Prerequisite: ANSC 3121, MCB 2400, or MCB 2410.

Basic concepts and terminologies in bioinformatics and infectious disease epidemiology. Hands-on, practical experiences in sequence analysis: database, alignment, phylogenetic analysis, and visualization of data. Formerly offered as PVS 4000.

**4203. Principles of Antibacterial Development**

Three credits. Prerequisite: MCB 2610, or an equivalent course in general microbiology or bacteriology with consent of the instructor. Open to juniors or higher.

Designed to cover important concepts and pioneering strategies currently being used to develop novel antibacterials. Formerly offered as PVS 4203.

**4300. Principles of Pathobiology**

Three credits. Prerequisite: PATH 2100 or PNB 2264-2265 or PNB 2274-2275 or an equivalent course in vertebrate anatomy and physiology; open to juniors or higher. Recommended preparation: PATH 3100 or equivalent course in histology or cell biology.

The body's response to chemical, physical, and microbial injuries including the functional and morphologic alterations in disease of the major organ systems. Formerly offered as PVS 4300.

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**Persian (PERS)**

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**1101. Elementary Persian I**

Four credits.

Introductory reading, writing, speaking, listening and cultural context. Development of linguistic skills required to interact in everyday contexts. Intended for students with no previous knowledge of Persian.

**1102. Elementary Persian II**

Four credits. Prerequisite: PERS 1101 or comparable proficiency; instructor consent required.

Continuation of PERS 1101. Development of oral and written skills. Deepening of cultural competence. Taught in English and Persian.

**1103. Intermediate Persian I**

Four credits. Prerequisite: PERS 1102 or equivalent.

Further development of listening, speaking, reading, and writing skills in Persian within a cultural setting. Readings to enhance cultural awareness of the Persian-speaking world.

**1104. Intermediate Persian II**

Four credits. Prerequisite: PERS 1103 or equivalent.

Further development of listening, speaking, reading, and writing skills in Persian within a cultural setting. Readings to enhance cultural awareness of the Persian-speaking world.

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**Pharmacy - PHAR (PHAR)**

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**1000. Drugs: Actions and Impact on Health and Society**

Three credits. Prerequisite: Not open to Pharmacy students. Not open to students who have passed PHAR 2000 when taken as Drugs: Actions and Impact on Health and Society.

Introductory survey of common drugs used medically and nonmedically. Biological emphasis with historical, cultural, social implications. General Concepts: mechanisms of action, modification drug response, new drug development. CA 3.

**1001E. Toxic Chemicals and Health**

Three credits.

Human and environmental health issues and problems associated with voluntary and involuntary exposure to toxic chemicals. Toxic chemical risks as compared to other societal health risks, the processes of scientific risk assessment, how environmental and human exposure to toxic chemicals are interdependent, and the social and environmental management of toxic chemical risks. CA 3.

**1005. Molecules in the Media**

Three credits. Prerequisite: Not open to pharmacy students in the Professional Program.

Introduction to the fundamental concepts of chemistry and biology within the context of common molecules discussed in the media. Major topics include the structure and function of essential biological macromolecules, the mechanisms through which various molecules regulate natural processes, and the design and development of

synthetic small molecules as therapeutic agents. CA 3.

**2000. Special Topics**

Variable (1-6) credits. May be repeated for credit.

Credits and hours as determined by the Senate Curricula and Courses Committee.

**3012. Pharmacy Research Seminar**

(Also offered as PHRX 3012.) One credit. Recommended Preparation: A cumulative gpa of 2.3 or above is normally required. May be repeated for credit.

A seminar series providing an overview of current research areas and contemporary issues in pharmacy practice and the pharmaceutical sciences.

**3095. Special Topics**

Variable (1-6) credits. Prerequisite: Open only to Pharmacy students. May be repeated for credit.

**3097W. Honors Thesis in Pharmacy**

(Also offered as PHRX 3097W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open only to honors students within the School of Pharmacy with consent of the instructor and Associate Dean.

**3099. Undergraduate Research**

(Also offered as PHRX 3099.) Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

Designed primarily for qualified students who wish to extend their knowledge in the various fields represented in the School of Pharmacy. A divisional and pharmacy cumulative grade point average of 2.8 or above is normally required for enrollment. A written summary of work performed is required at the end of each semester.

**4000. Personalized Medicine**

Three credits. Prerequisite: BIOL 1107; open to juniors or higher. Not open to students who have passed PHAR 3095 when offered as Pharmacogenomics.

Overview of personalized medicine. Discussion of individual response to treatment based on genetics, adaptation of treatment plans and medicines, phenotypes, genetics and environment, life style changes, and genomes.

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**Pharmacy - PHRX (PHRX)**

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**3000. Cellular Biology**

Two credits. Prerequisite: Open only to students in the School of Pharmacy. Must have satisfied the pre-pharmacy prerequisites. May not be taken out of sequence after passing PHRX 3001.

Introduction to basic principles in cell biology, intracellular signaling, gene expression and biotechnology in the pharmaceutical sciences.

**3001. Immunology**

Two credits. Prerequisite: PHRX 3000; open only to students in the School of Pharmacy.

Principles of immunology underlying disease processes.

**3002. Foundations in Bioorganic Chemistry**

Three credits. Prerequisite: Open to students in the School of Pharmacy who have satisfied the pre-pharmacy prerequisites.

Fundamental knowledge of medicinal and natural products chemistry, metabolic biotransformation, and drug design.

### 3003. Nutrition

Two credits. Prerequisite: PHRX 3000, 3002; open only to students in the School of Pharmacy.

Principles of enteral and parenteral nutrition related to prescription and non-prescription medication effects. Classification of nutrition status, and nutrition assessment. Identification of drug-nutrient deficiencies/interactions and preparation of disease-specific nutritional care plans. Evaluation, resources, and classification of complementary and alternative medicine (CAM).

### 3006. Drug Information I

One credit. Prerequisite: Must have satisfied the pre-pharmacy prerequisites; open to students in the first professional year of the PharmD curriculum. May not be taken out of sequence after passing PHRX 3007, 3052 or 4001.

A blended course designed to introduce students to drug information resources that are common in pharmacy practice and the process of answering drug information questions by using these resources to retrieve accurate information. There is a mixture of scheduled face-to-face class meetings and class activities via HuskyCT (presentations, readings, quizzes, assignments, discussions and other activities).

### 3007. Drug Information II

Two credits. Prerequisite: PHRX 3006; open only to student in the School of Pharmacy. May not be taken out of sequence after passing PHRX 4001 or 4053.

Development of skills to identify and use information from primary literature in clinical or research practice and to assess research methodology, biostatistics, epidemiology in drug information literature.

### 3008. Pharmacy Communications

Three credits. Prerequisite: Open to students in the School of Pharmacy who have satisfied the pre-pharmacy prerequisites.

Basic principles of interpersonal communication, including effective questioning, empathic listening, reflective responding, and adherence techniques. Development of skills to achieve effective communication with patients and with other health care professionals. Students will have the opportunity to practice their patient counseling and interprofessional communication skills in a simulated environment.

### 3009. Principles of Drug Action

Three credits. Prerequisite: Open only to students in the School of Pharmacy. Must have satisfied the pre-pharmacy prerequisites. May not be taken out of sequence after passing PHRX 3040.

Fundamental mechanisms of drug actions and effects with emphasis on interactions with cellular macromolecules and resulting downstream signaling events. Autonomic drugs and nomenclature.

### 3012. Pharmacy Research Seminar

(Also offered as PHAR 3012.) One credit. Prerequisite: Open only to students in the pharmacy program. May be repeated for credit.

A seminar series providing an overview of current research areas and contemporary issues

in pharmacy practice and the pharmaceutical sciences.

### 3030. Pharmacokinetics/Biopharmaceutics

Three credits. Prerequisite: Open to students in the School of Pharmacy who have satisfied the pre-pharmacy prerequisites.

Principles of pharmacokinetics and biopharmaceutics in the design of both dosage forms and dosing regimens.

### 3031. Foundations in Pharmaceutics I

Four credits. Prerequisite: PHRX 3030; open only to students in the School of Pharmacy. May not be taken out of sequence after passing PHRX 4030.

Principles underlying the formulation, dissolution, stability and release of drug products for optimum delivery. Dosage forms discussed include colloids, suspensions, emulsions, suppositories, aerosols, ointments and transdermals.

### 3032. Non-Sterile Pharmaceutical Compounding

One credit. Prerequisite: PHRX 3030; open only to students in the School of Pharmacy. May not be taken out of sequence after passing PHRX 4030.

Preparation of sterile and non-sterile dosage forms, with attention to solutions, solids and dispersed systems.

### 3040. Neurology Module

Four credits. Prerequisite: PHRX 3000, 3002, and 3009; open only to students in the School of Pharmacy. May not be taken out of sequence after passing PHRX 4040.

Principles of pathophysiology, pharmacology, medicinal chemistry, clinical pharmacokinetics and pharmacotherapy (including both prescription and non-prescription medications) as they apply to neurology drug therapy management.

### 3050. Public Health and Healthcare Policy

Three credits. Prerequisite: Open to students in the School of Pharmacy who have satisfied the pre-pharmacy prerequisites.

A study of health care policy, health care systems management, health status of the U.S. population; organization, resources and financing of the U.S. health care system; and the behavioral aspects of patients pertaining to the provision of pharmaceutical care.

### 3052. Hospital Pharmacy Practice

One credit. Prerequisite: PHRX 3006; open only to students enrolled in the School of Pharmacy.

Overview of the practice of hospital pharmacy. Medication management in the hospital, informatics and technology impact on hospital pharmacy practice, regulations and evidence based medicine on practice and improvements in patient care through clinical pharmacy.

### 3053. Evidence-Based Pharmacy

Two credits. Prerequisite: Open only to students in the pharmacy program.

Designed to facilitate student's understanding of the need for and value of evidence-based practice, to describe steps and processes involved in conducting a systemic review and meta-analysis and to teach students how to critically assess the validity of systemic reviews and meta-analyses and their roles in shaping clinical practice.

### 3054. Drugs and Society

Two credits. Prerequisite: Open only to students in the pharmacy program.

Examination of the broad impact of drugs on society including health, athletic competition, lifestyle and appearance, literature, movies, reproduction and sexual behavior, drug abuse and advertising.

### 3055. Quantitative Pharmacy

Two credits. Prerequisite: Open only to students in the pharmacy program.

Predominantly online course with some hands-on patient case scenarios to refresh and strengthen confidence with mathematical calculations commonly utilized in pharmacy practice.

### 3056. Medication Safety

Two credits. Prerequisite: Open only to students enrolled in pharmacy program.

Exposes students to the principles and processes involved with improving safety within medication use systems.

### 3057. Discovering the Leader Within

One credit. Prerequisite: Open only to students in the pharmacy program. May be repeated for credit.

Students will read a popular leadership book and participate in activities focused on its content. Discussion posts, study guides and participation in in-class discussions. Applications to fundamental principles to pharmacy practice. Culminates with a discussion with the author or other leadership expert. This course can be repeated for credit because each year will focus on a new book.

### 3058. Future Pharmacy Leaders

One credit. Prerequisite: Open to first year Pharmacy students.

A broad overview of leadership development, appreciation of personal strengths, and professional development. Run in collaboration with the University's Office of Leadership Programs, with the school's Phi Lambda Sigma members serving as mentors.

### 3060. Pharmacy Skills Development I

Two credits. Prerequisite: Must have satisfied the pre-pharmacy prerequisites; open to juniors or higher in the School of Pharmacy program.

Introduction to the pharmacists' patient care process and interprofessional practice competencies. Students will develop patient care skills including but not limited to immunization administration and education, vaccine scheduling and CPR training. These activities will be applied in IPPE (Introductory Pharmacy Practice Experiences) at selected community pharmacy practice sites.

### 3065. Pharmacy Skills Development II

Two credits. Prerequisite: PHRX 3020 or 3060; open to juniors or higher in the School of Pharmacy.

Reinforces the use of the pharmacists' patient care process and interprofessional practice competencies. Students will develop patient care skills including management of selfcare with over the counter (OTC) products, taking medication histories, use of OTC testing devices, assessing patient medication regimens, interprofessional communication skills, and taking blood pressure measurements. These activities will be applied in IPPE (Introductory Pharmacy Practice

Experiences) at selected community pharmacy practice sites.

### 3095. Special Topics

Variable (1-6) credits. Prerequisite: Open only to students in the pharmacy program. May be repeated for credit.

### 3097W. Honors Thesis in Pharmacy

(Also offered as PHAR 3097W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open only to honors students within the School of Pharmacy with consent of the instructor and Associate Dean.

### 3099. Undergraduate Research

(Also offered as PHAR 3099.) Variable (1-6) credits. Prerequisite: Open only to students in the pharmacy program. May be repeated for credit.

Designed primarily for qualified students who wish to extend their knowledge in the various fields represented in the School of Pharmacy. A divisional and pharmacy cumulative grade point average of 2.8 or above is normally required for enrollment. A written summary of work performed is required at the end of each semester.

### 4000. Pharmacoeconomics

One credit. Prerequisite: ECON 1201; PHRX 4050; open only to students in the School of Pharmacy.

Application of pharmacoeconomic principles to formulary management, health-related quality of life, cost-benefit analysis, and pharmacoeconomic literature analysis.

### 4001W. Current Topics in Pharmacy

Three credits. Prerequisite: PHRX 3006, 3007 and 3008; ENGL 1007 or 1010 or 1011 or 2011; open only to students in the School of Pharmacy.

Presentation of a specific sub area of pharmacy with focus on biological, chemical, clinical/therapeutic, sociological or legal/ethical aspects of drugs, dosage forms or health care systems to improve the student's writing, presentation, and discussion skills.

### 4030. Foundations in Pharmaceutics II

Three credits. Prerequisite: PHRX 3031 and 3032; open only to students in the School of Pharmacy.

Principles and factors affecting performance of dosage forms classified as dispersed systems: suspensions, emulsions, suppositories, aerosols, ointments and transdermals.

### 4031. Sterile Pharmaceutical Compounding

One credit. Prerequisite: PHRX 3031 and 3032; open only to students in the School of Pharmacy.

Dosage forms preparation and basic techniques for compounding sterile and non-sterile dosage forms.

### 4040. Psychiatry Module

Five credits. Prerequisite: PHRX 3040; open only to students in the School of Pharmacy.

Principles of pathophysiology, pharmacology, medicinal chemistry, clinical pharmacokinetics and pharmacotherapy (including both prescription and non-prescription medications) as they apply to psychiatric drug therapy management.

### 4041. Immunology Module

Two credits. Prerequisite: PHRX 3001 and PHRX 3040; open only to students in the School of Pharmacy.

Principles of pathophysiology, pharmacology, medicinal chemistry, clinical pharmacokinetics and pharmacotherapy (including both prescription and non-prescription medications) as they apply to immunologic drug therapy management.

### 4042. Gastroenterology Module

Two credits. Prerequisite: PHRX 4040 and 4041; open only to students in the School of Pharmacy.

Principles of pathophysiology, pharmacology, medicinal chemistry, clinical pharmacokinetics and pharmacotherapy (including both prescription and non-prescription medications) as they apply to gastroenterological drug therapy management.

### 4043. Endocrine Module

Three credits. Prerequisite: PHRX 4040 and 4041; open only School of Pharmacy students. May not be taken out of sequence after passing PHRX 5052.

Principles of pathophysiology, pharmacology, medicinal chemistry, clinical pharmacokinetics and pharmacotherapy (including both prescription and non-prescription medications) as they apply to endocrinologic drug therapy management.

### 4044. Dermatology Module

One credit. Prerequisite: PHRX 4041; open only to students in the School of Pharmacy.

Principles of pathophysiology, pharmacology, medicinal chemistry, clinical pharmacokinetics, and pharmacotherapy (including both prescription and non-prescription medications) as they apply to dermatologic drug therapy management.

### 4050. Pharmacy Practice Management

Two credits. Prerequisite: PHRX 3008 and 3050; open only to students in the School of Pharmacy.

This course is designed to provide students with 1) and understanding of the core management principles used across pharmacy settings; 2) exposure to practical experiences on practice-specific management topics; 3) application of pharmacy practice management principles to "real-world" management challenges.

### 4052. Advanced Compounding

Two credits. Prerequisite: PHRX 4031; open only to students in the School of Pharmacy.

Advanced techniques and knowledge in prescription compounding will be applied to the preparation of extemporaneously prepared dosage forms that meet the needs of individual patients.

### 4053. All About E-Health

Two credits. Prerequisite: PHRX 3006 and 3007. Open only to students enrolled in the School of Pharmacy.

Use of health information technology (electronic health records, e-prescribing, online health and drug information, remote disease monitoring, medication therapy management, medication safety) in patient care. A holistic view of these topics is examined from the consumer/patient, health care professional, payor and health system perspectives.

### 4054. Urban Service Track

One credit. Prerequisite: Open only to UConn Urban Health Scholars. May be repeated for credit.

An interprofessional program designed to develop future health professionals dedicated to caring for urban underserved populations and working in interprofessional teams. Open to UConn Urban Health Scholars only.

### 4055. Advanced Clinical Concepts in Pain Management

Two credits. Prerequisite: PHRX 3040; open only to students in the School of Pharmacy.

Emphasis is placed on evaluation of the pain patient, the pharmacology of analgesics, adjuvant agents and interventional techniques for the treatment of pain such as patient controlled analgesia, nerve blocks, intrathecal pumps, and alternative therapies (relaxation, Reike therapy, hypnosis, acupuncture). The role of the pharmacist in acute and chronic pain management, palliative care and special populations (pediatrics, geriatrics) will be addressed. Regulatory issues and "hot topics" such as addiction issues in pain management, health disparities in pain care, and pain contracts will also be discussed.

### 4056. A Bar and Grill Approach to Outpatient Pharmacy Practice

Two credits. Prerequisite: PHRX 3021; open only to students in the School of Pharmacy.

Emphasis on developing skills and knowledge necessary to the practice of pharmaceutical care in an outpatient setting. Value to students seeking careers in ambulatory or community pharmacy.

### 4057. Developing Pharmacy Leaders

Two credits. Prerequisite: PHRX 3021; open only to students in the School of Pharmacy.

Provides training and experience in leadership skills to include identifying personal strengths, envisioning change, team building and advocacy in the field of pharmacy.

### 4058. Pharmacy LEADERS Track

Two credits. Prerequisite: Enrollment in the Pharmacy LEADERS Track. May be repeated for credit.

Designed to supplement and support the Pharmacy LEADERS Track by developing knowledge, attitudes, and behaviors essential for leaders through leadership-related curricular and co-curricular activities, documentation of leadership experiences, self-reflection on leadership experiences, and presentation skills.

### 4059. Follow the Money: Impact of Payment Reform and Health Policy on Pharmacy Practice

Two credits.

Introductory course on the impact of health care delivery and payment reform on new practice opportunities for pharmacists. Topics include patient-centered medical homes, accountable care organizations, community health teams, population health, medication therapy management, value-based insurance design, and new reimbursement models to support pharmacists in direct patient care roles. A holistic view of these topics is examined from the consumer/patient, health care professional, payor, and health-system perspectives.

### 4060. Leadership in Pharmacy

Two credits.

Second in a two-semester sequence for students in the LEADERS Track. Provides an introduction to effective leadership through an exploration of leadership styles and concepts and their application to various opportunities and challenges in pharmacy.

**4061. Organizational Dynamics for Corporate and Non Profit Leaders**

Two credits. Prerequisite: Open only to students in the pharmacy program.

Introduces pharmacy students to regional C-Suite healthcare executives. Showcases best-practice organizational and leadership dynamics found in corporate and boardroom settings, including meeting with healthcare executives to learn about their careers. Discussions with C-Suite executives will illuminate behaviors, traits and skills needed to lead an organization. Roles and responsibilities of board of directors, organizational staff, and senior leadership will be explored. Through a simulated non-profit organization, students will apply corporate governance policies and parliamentary procedures to prepare them for leading meetings and organizations upon graduation.

**4062. Healthcare Ethics and History**

Two credits. Prerequisite: Open to students in the School of Pharmacy. Recommended preparation: PHRX 3050.

Introduction to healthcare ethics, engages students with an interest in treating patients in case-study practice scenarios allowing them to develop a working knowledge of ethical principles and render patient care decisions based upon ethical reasoning. Introduces ethical concepts and professional codes of ethics, and discusses the application of these concepts to contemporary examples of health care scenarios. Introduces the history of American healthcare, exploring the period from our nation's founding to the present. Introduces the theories of health and disease that have changed over time as has the role of healthcare professionals and the pharmaceutical industry.

**4063. Pharmacy Skills Development III**

Three credits. Prerequisite: PHRX 3021 or 3065; open to seniors in the School of Pharmacy.

Reinforces the use of the pharmacists' patient care process and interprofessional practice competencies. Introduction to continuing professional development and interviewing skills. Students will develop patient care skills including, assessment of patient medication regimens, perform medication reconciliation, and accurate computation of pharmaceutical calculations essential to safe pharmacy practice. These activities will be applied in IPPE (Introductory Pharmacy Practice Experiences) at selected institutional pharmacy practice sites. Completion of community IPPE hours contributes toward one credit in this course.

**4065. Pharmacy Skills Development IV**

Two credits. Prerequisite: PHRX 4020 or 4063; open to seniors in the School of Pharmacy.

Reinforces the use of the pharmacists' patient care process and interprofessional practice competencies. Reinforcing and applying skills learned in previous courses. Develops patient care skills including assessment of patient medication regimens of increasing complexity and diabetes device education for patients. Students will prepare to engage with pharmacy medication distribution processes, pharmacy informatics processes, patient safety, and professional networking. These activities will be applied in IPPE (Introductory Pharmacy Practice Experiences) at selected institutional pharmacy practice sites.

**5040. Cardiovascular Module**

Four credits. Prerequisite: PHRX 4042 and 4043; open only to students in the School of Pharmacy.

Principles of pathophysiology, pharmacology, medicinal chemistry, clinical pharmacokinetics and pharmacotherapy (including both prescription and non-prescription medications) as they apply to cardiovascular drug therapy management.

**5041. Renal Module**

Two credits. Prerequisite: PHRX 4042 and 4043; open only to students in the School of Pharmacy.

Principles of pathophysiology, pharmacology, medicinal chemistry, clinical pharmacokinetics and pharmacotherapy (including both prescription and non-prescription medications) as they apply to renal disorders drug therapy management.

**5042. Respiratory Module**

Two credits. Prerequisite: PHRX 4042 and 4043; open only to students in the School of Pharmacy.

Principles of pathophysiology, pharmacology, medicinal chemistry, clinical pharmacokinetics and pharmacotherapy (including both prescription and non-prescription medications) as they apply to respiratory drug therapy management.

**5043. Infectious Disease Module**

Four credits. Prerequisite: PHRX 5040, 5041 and 5042; open only to students in the School of Pharmacy.

Principles of pathophysiology, pharmacology, medicinal chemistry, clinical pharmacokinetics and pharmacotherapy (including both prescription and non-prescription medications) as they apply to infectious disease drug therapy management.

**5044. Hematology/Oncology Module**

Three credits. Prerequisite: PHRX 5040, 5041 and 5042; open only to students in the School of Pharmacy.

Principles of pathophysiology, pharmacology, medicinal chemistry, clinical pharmacokinetics and pharmacotherapy (including both prescription and non-prescription medications) as they apply to hematologic/oncologic disorders drug therapy management.

**5045. Special Populations**

Four credits. Prerequisite: PHRX 3030, 3040, 4040, 4041, 4042, 4043, 4044, 5040, 5041 and 5042; open only to students in the School of Pharmacy.

Development of knowledge and skills necessary to make appropriate, patient-population specific, pharmacotherapeutic contributions to patient care.

**5046. Clinical Toxicology**

Two credits. Prerequisite: PHRX 3040, 4040, 4041, 4042, 4043, 4044.

Introduction to acute toxicity in humans to common drugs, chemicals and household products. Physical and laboratory assessment of common poisonings including the development of clinical management plans for common poisonings and the prevention of poisoning.

**5048. Patient Assessment**

Two credits. Prerequisite: PHRX 3003, 3006, 3007, 3040, 4040, 4041, 4042, 4043, 4044 and 4050; open only to students in the School of Pharmacy.

Teaches and reinforces patient assessment skills essential in the provision of pharmaceutical care

to patients. This includes application of medical literature as it applies to patient care.

**5050. Pediatric Pharmacotherapy**

Two credits. Prerequisite: B.S. in Pharmacy Studies.

Extended therapeutic knowledge of common pediatric disease states and an understanding of some of the specific pharmacologic concerns in the pediatric population.

**5051. Careers in Pharmacy**

One credit. Prerequisite: B.S. in Pharmacy Studies.

Survey of career options available to Pharm.D. graduates and the broad role of pharmacy graduates in healthcare. Exploration and self-examination of critical professional and personal factors that will contribute to greater career satisfaction.

**5052. Pharmacotherapy of Diabetes Mellitus**

Two credits. Prerequisite: PHRX 4043; open only to Pharmacy students.

To enhance students' perception of diabetes mellitus as a multi-organ disease and to provide the necessary skills to recognize challenges to management, analyze laboratory data, and apply evidence-based medicine to real-world practicalities when developing a therapeutic plan.

**5055. Hot Topics in Infectious Diseases**

Two credits.

Introduces aspiring clinicians to how knowledge of basic microbiology, familiarity with the evolution of bacteria, and pharmacologic principles can be used to guide therapy in patients. Provides an overview of diseases and conditions caused by microorganisms not present in the ID module of the Doctor of Pharmacy curriculum.

**5060. Pharmacy Skills Development V**

Three credits. Prerequisite: PHRX 4065 or 4021; open to students in the Doctor of Pharmacy program.

Reinforces the use of the pharmacists' patient care process and interprofessional practice competencies. Develops patient care skills including medication reconciliation, use of point of care testing devices, smoking cessation, CPR recertification, and pain management. These activities will be applied in IPPE (Introductory Pharmacy Practice Experiences) at selected service learning clinics and Advanced Pharmacy Practice Experience (APPE) practice sites. This is a Service Learning course designed to challenge students to gain a greater appreciation for the profession of pharmacy as it relates to their communities and societal needs. Students will have the opportunity to work in an interprofessional environment with other health profession students and providers to assist the student in developing professional attitudes, judgment, and skills needed to function as a team. Completion of institutional IPPE hours contributes toward one credit in this course.

**5062. Pharmacy Law and Regulatory Affairs**

Three credits. Prerequisite: PHRX 4051 or PHRX 4062; open to students in the Doctor of Pharmacy program.

An examination of federal and Connecticut statutes, regulations, policies, executive orders, and court decisions (with comparative law analysis of certain other States' specific pharmacy laws, and discussion of federal and international treaties) that

regulate the practice of pharmacy, including the mitigation of prescription drug abuse and diversion.

#### **5065. Pharmacy Skills Development VI**

Two credits. Prerequisite: PHRX 5060 or 5020 and 5047; open only to students in the School of Pharmacy.

Student's readiness for embarking on Advanced Pharmacy Practice Experiences and for working collaboratively on health care teams will be assessed. Service Learning in this course is designed to challenge students to gain a greater appreciation for the profession of pharmacy in relation to societal needs and the community. Students will work in an interprofessional environment with other health professional students and providers to develop professional attitudes, judgment, and skills needed to function as a team. Completion of simulation and service learning IPPE hours contributes toward one credit in this course.

#### **5070. Continuous Registration**

Zero credits. Prerequisite: B.S. in Pharmacy Studies. May be repeated.

Allows continuous registration in the professional pharmacy program while enrolled in the dual degree programs of PharmD/MBA and PharmD/MPH.

#### **5100. Professional Experience in Community Pharmacy**

Four credits. Prerequisite: PHRX 5047 or PHRX 5065; open to students in the School of Pharmacy.

The student will apply knowledge, skills and attitudes in the provision of patient care in a community pharmacy. Gain the knowledge, skills, and attitudes necessary to efficiently fill prescriptions while focusing on patient safety, inter-professional communication and patient satisfaction. Required.

#### **5101. Professional Experience in Health System Pharmacy**

Four credits. Prerequisite: PHRX 5047 or PHRX 5065; open to students in the School of Pharmacy.

The student will apply knowledge, skills and attitudes in the provision of pharmacy services in a health system pharmacy. Gain hands-on experience with operational and clinical duties of a staff pharmacist. Departmental workflow and interprofessional collaboration will be practiced. Required.

#### **5102. Professional Experience in Ambulatory Care**

Four credits. Prerequisite: PHRX 5047 or PHRX 5065; open to students in the School of Pharmacy.

The student will apply knowledge, skills and attitudes in the provision of patient care in the ambulatory setting. Emphasis is on optimizing medication-related outcomes in patients through medication therapy management, interprofessional collaboration, and patient/caregiver education. Required.

#### **5103. Professional Experience in General Medicine**

Four credits. Prerequisite: PHRX 5047 or PHRX 5065; open to students in the School of Pharmacy.

The student will apply knowledge, skills and attitudes to the provision of care to general medicine inpatients. Emphasis is on optimizing medication-related outcomes in patients through medication therapy management, interprofessional

collaboration, and patient/caregiver education. Required.

#### **5104. Professional Experience in Cardiology**

Four credits. Prerequisite: PHRX 5047 or PHRX 5065; open to students in the School of Pharmacy.

The student will apply knowledge, skills and attitudes to the provision of care to patients with cardiac diseases. Emphasis is on optimizing medication-related outcomes in patients through medication therapy management, interprofessional collaboration, and patient/caregiver education. Direct patient care.

#### **5105. Professional Experience in Infectious Disease**

Four credits. Prerequisite: PHRX 5047 or PHRX 5065; open to students in the School of Pharmacy.

The student will apply knowledge, skills and attitudes to the provision of care to patients with infectious diseases. Emphasis is on optimizing medication-related outcomes in patients through medication therapy management, interprofessional collaboration, and patient/caregiver education. Direct patient care.

#### **5106. Professional Experience in Oncology**

Four credits. Prerequisite: PHRX 5047 or PHRX 5065; open to students in the School of Pharmacy.

The student will apply knowledge, skills and attitudes to the provision of care to patients with cancer. Emphasis is on optimizing medication-related outcomes in patients through medication therapy management, interprofessional collaboration, and patient/caregiver education. Direct patient care.

#### **5107. Professional Experience in Psychiatry**

Four credits. Prerequisite: PHRX 5047 or PHRX 5065; open to students in the School of Pharmacy.

The student will apply knowledge, skills and attitudes to the provision of care to patients with psychiatric diseases. Emphasis is on optimizing medication-related outcomes in patients through medication therapy management, interprofessional collaboration, and patient/caregiver education. Direct patient care.

#### **5108. Professional Experience in Pediatrics**

Four credits. Prerequisite: PHRX 5047 or PHRX 5065; open to students in the School of Pharmacy.

The student will apply knowledge, skills and attitudes to the provision of care to pediatric patients. Emphasis is on optimizing medication-related outcomes in patients through medication therapy management, interprofessional collaboration, and may include patient/caregiver education. Direct patient care.

#### **5109. Professional Experience in Geriatrics**

Four credits. Prerequisite: PHRX 5047 or PHRX 5065; open to students in the School of Pharmacy.

The student will apply knowledge, skills and attitudes to the provision of care to geriatric patients. Emphasis is on optimizing medication-related outcomes in patients through medication therapy management, interprofessional collaboration, and patient/caregiver education. Direct patient care.

#### **5110. Professional Experience in Community Pharmacy II**

Four credits. Prerequisite: PHRX 5047 or PHRX 5065; open to students in the School of Pharmacy.

Students apply knowledge, skills and attitudes in a unique community pharmacy setting. Examples

of this type of practice include, but are not limited to, compounding and specialty pharmacy. Non-direct patient care.

#### **5111. Professional Experience in Critical Care**

Four credits. Prerequisite: PHRX 5047 or PHRX 5065; open to students in the School of Pharmacy.

The student will apply knowledge, skills and attitudes to the provision of care to critically ill patients. Emphasis is on optimizing medication-related outcomes in patients through medication therapy management, interprofessional collaboration and may include patient/caregiver education. Direct patient care.

#### **5114. Professional Experience in Emergency Medicine**

Four credits. Prerequisite: PHRX 5047 or PHRX 5065; open to students in the School of Pharmacy.

The student will apply knowledge, skills and attitudes to the provision of care to emergency medicine patients. Emphasis is on optimizing medication-related outcomes in patients through medication therapy management, interprofessional collaboration, and patient/caregiver education. Direct patient care.

#### **5115. Professional Experience in Home Health Care**

Four credits. Prerequisite: PHRX 5047 or PHRX 5065; open to students in the School of Pharmacy.

The student will apply knowledge of pharmacy practice and skills in patient interaction to the provision of pharmaceutical care to patients in their homes. Emphasis is on optimization of medication-related outcomes in patients with common medical disorders served by home health care pharmacists, including medication assessment, efficacy and safety monitoring, and patient education.

#### **5116. Professional Experience in Health System Pharmacy II**

Four credits. Prerequisite: PHRX 5047 or PHRX 5065; open to students in the School of Pharmacy.

Applying knowledge, skills and attitudes in a focused area of pharmacy services in a health system pharmacy. Emphasis is on problem-solving and project work within specialized operations in a health systems pharmacy. Non-direct patient care.

#### **5117. Professional Experience in Industry**

Four credits. Prerequisite: PHRX 5047 or PHRX 5065; open to students in the School of Pharmacy.

The student will apply knowledge, skills and attitudes to the roles of pharmacists in the pharmaceutical industry. Non-direct patient care.

#### **5118. Professional Experience in Managed Care**

Four credits. Prerequisite: PHRX 5047 or PHRX 5065; open to students in the School of Pharmacy.

The student will apply knowledge, skills and attitudes to the practice of managed care pharmacy. Emphasis is on the development of strategies that optimize pharmacotherapy within the economic constraints of a managed care system. Non-direct patient care.

#### **5119. Professional Experience in Nuclear Pharmacy**

Four credits. Prerequisite: PHRX 5047 or PHRX 5065; open to students in the School of Pharmacy.

The student will apply knowledge, skills and attitudes to the provision of patient care in a nuclear pharmacy. Emphasis is on hands-

on instruction in radiation safety, radioisotope prescription processing, compounding, dispensing and providing pharmacist cognitive services. Non-direct patient care.

#### **5122. Professional Experience in Long-term Care**

Four credits. Prerequisite: PHRX 5047 or PHRX 5065; open to students in the School of Pharmacy.

Applying knowledge, skills and attitudes to the provision of patient care in a long-term care pharmacy setting. Emphasis is on optimizing medication-related outcomes in patients through medication therapy management, interprofessional collaboration, and professional education as it relates to medication distribution in long-term care. Non-direct patient care.

#### **5123. Professional Experience in Surgery**

Four credits. Prerequisite: PHRX 5047 or PHRX 5065; open to students in the School of Pharmacy.

The student will apply knowledge, skills and attitudes to the provision of care to surgical patients. Emphasis is on optimizing medication-related outcomes in patients through medication therapy management, interprofessional collaboration, and patient/caregiver education. Direct patient care.

#### **5124. Professional Experience In General Medicine II**

Four credits. Prerequisite: PHRX 5047 or PHRX 5065; open to students in the School of Pharmacy.

The student will apply knowledge, skills and attitudes in the provision of patient care in a unique general medicine inpatient setting. Emphasis is on continued development of optimizing medication-related outcomes in patients through medication therapy management, interprofessional collaboration, and patient/caregiver education. Direct patient care.

#### **5125. Professional Experience in Ambulatory Care II**

Four credits. Prerequisite: PHRX 5047 or PHRX 5065; open to students in the School of Pharmacy.

The student will apply knowledge, skills and attitudes in the provision of patient care in a unique ambulatory setting. Emphasis is on continued development of optimizing medication-related outcomes in patients through medication therapy management, interprofessional collaboration, and patient education. Direct patient care.

#### **5126. Professional Experience in Anticoagulation Service**

Four credits. Prerequisite: PHRX 5047 or PHRX 5065; open to students in the School of Pharmacy.

Applying knowledge, skills and attitudes to the provision of care to patients with thrombotic disorders. Emphasis is on optimizing medication-related outcomes in patients through medication therapy management, interprofessional collaboration, and patient education. Direct patient care.

#### **5128. Professional Experience in Hospice Care**

Four credits. Prerequisite: PHRX 5047 or PHRX 5065; open to students in the School of Pharmacy.

The student will apply knowledge, skills and attitudes in the provision of care to patients in the final stage of terminal illness. Emphasis is on optimizing medication-related outcome in hospice patients through medication therapy management,

interprofessional collaboration, and patient/caregiver education. Direct patient care.

#### **5133. Professional Experience in Clinical Toxicology**

Four credits. Prerequisite: PHRX 5047 or PHRX 5065; open to students in the School of Pharmacy.

The student will apply knowledge, skills and attitudes to the provision of services to patients and caregivers requesting assistance in addressing both acute and chronic toxicity situations in various settings. Students will also participate in didactic sessions designed to increase their knowledge of toxicology. Non-direct patient care.

#### **5135. Professional Experience in Investigational Drug Service**

Four credits. Prerequisite: PHRX 5047 or PHRX 5065; open to students in the School of Pharmacy.

The student will apply knowledge, skills and attitudes to the provision of service in investigational drugs. Emphasis is on the process of randomization, patient selection and documentation of study procedures. Non-direct patient care.

#### **5136. Professional Experience in Drug Information**

Four credits. Prerequisite: PHRX 5047 or PHRX 5065; open to students in the School of Pharmacy.

The student will apply knowledge, skills and attitudes to the provision of drug information services in a variety of settings. Students will learn to follow site policies and procedures with respect to providing information subsequent to inquiries. Non-direct patient care.

#### **5137. Professional Experience in Pediatrics II**

Four credits. Prerequisite: PHRX 5047 or PHRX 5065; open to students in the School of Pharmacy.

The student will apply knowledge, skills and attitudes to the provision of care to pediatric patients in a unique setting. Emphasis is on continued development of optimizing medication-related outcomes in patients through medication therapy management, interprofessional collaboration, and may include patient/caregiver education. Direct patient care.

#### **5138. Professional Experience in Industry II**

Four credits. Prerequisite: PHRX 5047 or PHRX 5065; open to students in the School of Pharmacy.

The student will apply knowledge, skills and attitudes to the roles of pharmacists in the pharmaceutical industry. Non-direct patient care.

#### **5139. Professional Experience in a Professional Organization**

Four credits. Prerequisite: PHRX 5047 or PHRX 5065; open to students in the School of Pharmacy.

The student will apply knowledge, skills and attitudes to the provision of service to a professional organization. Emphasis is on the provision of advocacy, communication and support for organization members. Non-direct patient care.

#### **5140. Professional Experience at Food and Drug Administration (FDA)**

Four credits. Prerequisite: PHRX 5047 or PHRX 5065; open to students in the School of Pharmacy.

The student will apply knowledge, skills and attitudes in a variety of settings within the Food and Drug Administration while learning about the regulatory process. Non-direct patient care.

#### **5141. Professional Experience in Oncology II**

Four credits. Prerequisite: PHRX 5047 or PHRX 5065; open to students in the School of Pharmacy.

The student will apply knowledge, skills and attitudes to the provision of care to patients with cancer in a unique setting or patient population. Emphasis is on optimizing medication-related outcomes in patients through medication therapy management, interprofessional collaboration, and patient/caregiver education. Direct patient care.

#### **5143. Professional Experience in Psychiatry II**

Four credits. Prerequisite: PHRX 5047 or PHRX 5065; open to students in the School of Pharmacy.

The student will apply knowledge, skills and attitudes in the provision of patient care in a unique psychiatric setting. Emphasis is on continued development of optimizing medication-related outcomes in patients through medication therapy management, interprofessional collaboration, and patient/caregiver education. Direct patient contact.

#### **5146. Professional Experience in Managed Care II**

Four credits. Prerequisite: PHRX 5047 or PHRX 5065; open to students in the School of Pharmacy.

The student will apply knowledge, skills and attitudes to the practice of managed care pharmacy. Emphasis is on the development of strategies that optimize pharmacotherapy within the economic constraints of a managed care system. Non-direct patient care.

#### **5147. Professional Experience in International Pharmacy**

Four credits. Prerequisite: PHRX 5047 or PHRX 5065; open to students in the School of Pharmacy.

The student will experience pharmacy practice and healthcare systems in the host country. Experiences may include, but are not limited to, community-based clinics, inpatient settings and/or industry. Non-direct patient care.

#### **5149. Professional Experience in Critical Care II**

Four credits. Prerequisite: PHRX 5047 or PHRX 5065; open to students in the School of Pharmacy.

The student will apply knowledge, skills and attitudes to the provision of care in a unique critical care setting. Emphasis is on development of optimizing medication-related outcomes in patients through medication therapy management, interprofessional collaboration, and may include patient/caregiver education. Direct patient care.

#### **5150. Professional Experience in Pain Management**

Four credits. Prerequisite: PHRX 5047 or PHRX 5065; open to students in the School of Pharmacy.

The student will apply knowledge, skills and attitudes to the provision of care to patients with acute and/or chronic pain. Emphasis is on optimizing medication-related outcomes in patients through medication therapy management, interprofessional collaboration, and patient/caregiver education. Direct patient care.

#### **5152. Professional Experience in Patient Safety**

Four credits. Prerequisite: PHRX 5047 or PHRX 5065; open to students in the School of Pharmacy.

The student will apply knowledge, skills and attitudes to the provision of patient safety initiatives. Nondirect patient care.

**5153. Professional Experience in Academia**

Four credits. Prerequisite: PHRX 5047 or PHRX 5065; open to students in the School of Pharmacy.

The student will apply knowledge, skills and attitudes to the development of skills in teaching. Students will have exposure to the development of learning modules, lecture and small group discussions. Non-direct patient care.

**5154. Professional Experience in Organ Transplant**

Four credits. Prerequisite: PHRX 5047 or PHRX 5065; open to students in the School of Pharmacy.

The student will apply knowledge, skills and attitudes to the provision of care to patients with organ transplants. Emphasis is on optimizing medication-related outcomes in patients through medication therapy management, interprofessional collaboration, and patient/caregiver education. Direct patient care.

**5155. Professional Experience in International Pharmacy II**

Four credits. Prerequisite: PHRX 5047 or PHRX 5065; open to students in the School of Pharmacy.

The student will experience pharmacy practice and healthcare systems in the host country and compare them to those in the U.S. Experiences may include, but are not limited to, community-based clinics, inpatient settings and/or industry. Non-direct patient care.

**5157. Professional Experience in Clinical-based Community Practice**

Four credits. Prerequisite: PHRX 5047 or PHRX 5065; open to students in the School of Pharmacy.

The student will apply knowledge, skills and attitudes in the provision of patient care in a unique clinically-oriented community pharmacy setting. Direct patient care.

**5161. Professional Experience in Pharmacy Informatics**

Four credits. Prerequisite: PHRX 5047 or PHRX 5065; open to students in the School of Pharmacy.

Students apply knowledge, skills and attitudes to the integration of information systems into health care settings. Exposure to a variety of component parts of medication distribution automation, electronic documentation as well as data gathering and reporting tools embedded in pharmacy practice. Students experience data management issues embedded in contemporary pharmacy practice. Non-direct patient care.

**5164. Professional Experience in Infectious Disease II**

Four credits. Prerequisite: PHRX 5047 or PHRX 5065; open to students in the School of Pharmacy.

The student will apply knowledge, skills and attitudes to the provision of care to unique patients with infectious diseases. Emphasis is on optimizing medication-related outcomes in patients through medication therapy management, interprofessional collaboration, and patient/caregiver education. Direct patient contact.

**5165. Professional Experience in Management**

Four credits. Prerequisite: PHRX 5047 or PHRX 5065; open to students in the School of Pharmacy.

The student will apply knowledge, skills and attitudes to the development of management skills in a health care setting. Exposure to leadership,

business operations, policies and procedures and regulations. Non-direct patient care.

**5166. Professional Experience in Research I**

Four credits. Prerequisite: PHRX 5047 or PHRX 5065; open to students in the School of Pharmacy.

The student will apply knowledge, skills and attitudes in a research setting. Non-direct patient care.

**5167. Professional Experience in Urban Service**

Four credits. Prerequisite: PHRX 5047 or PHRX 5065; open to students in the School of Pharmacy.

The student will apply knowledge, skills and attitudes to the provision of care for urban, underserved patients. UST Pharmacy Scholars focus on teaching both patients and other health profession students regarding their role on the health care team. Direct patient care.

**5169. Professional Experience in Leadership**

Four credits. Prerequisite: PHRX 5047 or PHRX 5065; open to students in the School of Pharmacy.

The student will improve leadership skills through an understanding of leadership theory and interactions with leaders in various settings. Non-direct patient care.

**5170. Professional Experience in Medical Writing**

Four credits. Prerequisite: PHRX 5047 or PHRX 5065; open to students in the School of Pharmacy.

Practical experience producing medical writing tailored to a variety of healthcare settings, audiences and payers. Students market this writing, and may publish at least one credited piece. Non-direct patient care.

**5171. Professional Experience in Antimicrobial Stewardship**

Four credits. Prerequisite: PHRX 5047 or PHRX 5065; open to students in the School of Pharmacy.

The student will apply knowledge, skills and attitudes to the provision of antimicrobial stewardship activities. Emphasis is on optimizing medication-related outcomes in patients through medication therapy management and interprofessional collaboration. Non-direct patient care.

**5172. Professional Experience in Health System-based Clinical Practice**

Four credits. Prerequisite: PHRX 5047 or PHRX 5065; open to students in the School of Pharmacy.

The student will apply knowledge, skills and attitudes to the provision of clinical pharmacy services to patients in an inpatient or outpatient health system setting. Direct patient care.

**5173. Professional Experience Academic Leadership**

Four credits. Prerequisite: PHRX 5047 or PHRX 5065; open to students in the School of Pharmacy.

The student will experience academia and leadership opportunities. Experiences will provide opportunities to improve leadership, teaching, mentoring, and communication skills. Non-direct patient care.

**5195. Special Topics in Clinical Rotations**

Four credits. Prerequisite: PHRX 5047 or PHRX 5065; open to students in the School of Pharmacy. May be repeated for a total of 12 credits.

The student will apply knowledge, skills and attitudes in a unique professional experience

arranged in consultation with the Office of Experiential Education.

**5199. Professional Experience in Research II**

Four credits. Prerequisite: PHRX 5047 or PHRX 5065; open to students in the School of Pharmacy. May be repeated for credit.

The student will apply knowledge, skills and attitudes in a unique research setting.

**5260. P4 Professional Development I**

Zero credits. Prerequisite: Open to pharmacy students who have completed the P3 curriculum and are in their P4 year.

Provides students with access to school provided review materials to support preparations for licensure exams (NAPLEX and MPJE). Students will demonstrate review completion for various topics and board exam readiness. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

**5265. P4 Professional Development II**

Zero credits. Prerequisite: Open to pharmacy students who have completed the P3 curriculum and are in their P4 year.

Provides students with access to school provided review materials to support preparations for licensure exams (NAPLEX and MPJE). Students will demonstrate review completion for various topics and board exam readiness. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

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## Philosophy (PHIL)

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**1101. Problems of Philosophy**

Three credits.

Topics may include skepticism, proofs of God, knowledge of the external world, induction, free-will, the problem of evil, miracles, liberty and equality. CA 1.

**1102. Philosophy and Logic**

Three credits.

Techniques for evaluating inductive and deductive arguments; applications to specific arguments about philosophical topics, for example the mind-body problem or free will vs. determinism. CA 1.

**1103. Philosophical Classics**

Three credits.

Discussion of selections from such philosophers as Plato, Aristotle, Descartes, and Hume. CA 1.

**1104. Philosophy and Social Ethics**

Three credits.

Topics may include the nature of the good life, the relation between social morality and individual rights, and practical moral dilemmas. CA 1.

**1105. Philosophy and Religion**

Three credits.

Topics may include proofs of the existence of God, the relation of religious discourse to other types of discourse, and the nature of religious commitment. CA 1.

**1106. Non-western and Comparative Philosophy**

Three credits.

Classic non-Western texts on such problems as the nature of reality and of our knowledge of it, and



the proper requirements of social ethics, along with comparison to classic Western approaches to the same problems. CA 1. CA 4-INT.

### 1107. Philosophy and Gender

Three credits.

Topics concern social ethics and gender, such as gender equality and the impact of gender norms on individual freedom. Specific topics are examined in light of the intersections between gender and race, ethnicity, class, and sexual orientation. CA 1. CA 4.

### 1108E. Environmental Philosophy

Three credits.

Philosophical issues raised by humanity's interaction with its environment. Topics may include ethical and policy ramifications of the use of non-human animals for food, medicine, and scientific inquiry; whether the natural world has a status calling for its protection or preservation; obligations to future generations; environmental justice; and movements such as deep ecology, ecofeminism, and social ecology. CA 1.

### 1109. Global Existentialism

Three credits.

An exploration of existential philosophy from a global, multicultural perspective. Focus will be on existentialists from the Global South in conversation with those in the Global North. CA 1. CA 4-INT.

### 1165W. Philosophy and Literature

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Philosophical problems raised by, and illuminated in, major works of literature. CA 1.

### 1175. Ethical Issues in Health Care

Three credits.

Theories of ethics, with specific application to ethical issues in modern health care. CA 1.

### 2170W. Bioethics and Human Rights in Cross-Cultural Perspective

(Also offered as HRTS 2170W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to sophomores or higher.

Philosophical examination of the ethical and human rights implications of recent advances in the life and biomedical sciences from multiple religious and cultural perspectives. CA 1.

### 2205. Aesthetics

Three credits. Prerequisite: One three-credit course in Philosophy at the 1100 level.

The fundamentals of aesthetics, including an analysis of aesthetic experience and judgment, and a study of aesthetic types, such as the beautiful, tragic, comic and sublime. Recent systematic and experimental findings in relation to major theories of the aesthetic experience.

### 2208. Epistemology

Three credits. Prerequisite: One three-credit course in Philosophy at the 1100 level.

Theories of knowledge and justification. Topics may include skepticism, induction, confirmation, perception, memory, testimony, a priori knowledge.

### 2208W. Epistemology

Three credits. Prerequisite: One three-credit course in Philosophy at the 1100 level; ENGL 1007 or 1010 or 1011 or 2011.

Theories of knowledge and justification. Topics may include skepticism, induction, confirmation, perception, memory, testimony, a priori knowledge.

### 2210. Metaphysics

Three credits. Prerequisite: One three-credit course in Philosophy at the 1100 level.

Fundamental questions about the nature of things. Topics may include universals and particulars, parts and wholes, space and time, possibility and necessity, persistence and change, causation, persons, free will.

### 2210W. Metaphysics

Three credits. Prerequisite: One three-credit course in Philosophy at the 1100 level; ENGL 1007 or 1010 or 1011 or 2011.

Fundamental questions about the nature of things. Topics may include universals and particulars, parts and wholes, space and time, possibility and necessity, persistence and change, causation, persons, free will.

### 2211Q. Symbolic Logic I

Three credits. Prerequisite: At least one of LING 1010, POLS 1002, or one three-credit course in Philosophy at the 1100 level.

Systematic analysis of deductive validity; formal languages which mirror the logical structure of portions of English; semantic and syntactic methods of verifying relations of logical consequence for these languages.

### 2212. Philosophy of Science

Three credits. Prerequisite: One three-credit course in Philosophy at the 1100 level.

Issues concerning the nature and foundations of scientific knowledge, including, for example, issues about scientific objectivity and progress.

### 2212W. Philosophy of Science

Three credits. Prerequisite: One three-credit course in Philosophy at the 1100 level; ENGL 1007 or 1010 or 1011 or 2011.

Issues concerning the nature and foundations of scientific knowledge, including, for example, issues about scientific objectivity and progress.

### 2215. Ethics

Three credits. Prerequisite: One three-credit course in Philosophy at the 1100 level.

Judgments of good and evil, right and justice, the moral 'ought' and freedom; what do such judgments mean, is there any evidence for them, and can they be true?

### 2215W. Ethics

Three credits. Prerequisite: One three-credit course in Philosophy at the 1100 level; ENGL 1007 or 1010 or 1011 or 2011.

Judgments of good and evil, right and justice, the moral 'ought' and freedom; what do such judgments mean, is there any evidence for them, and can they be true?

### 2217. Social and Political Philosophy

Three credits. Prerequisite: One three-credit course in Philosophy at the 1100 level.

Conceptual, ontological, and normative issues in political life and thought; political obligation; collective responsibility; justice; liberty; equality; community; the nature of rights; the nature of law; the justification of punishment; related doctrines of classic and contemporary theorists such as Plato, Rousseau, John Rawls.

### 2221. Ancient Greek Philosophy

(Also offered as CAMS 3257.) Three credits. Prerequisite: One three-credit course in Philosophy at the 1100 level.

Greek philosophy from its origin in the Pre-Socratics through its influence on early Christianity. Readings from the works of Plato and Aristotle. May include related ancient philosophical traditions.

### 2221W. Ancient Greek Philosophy

(Also offered as CAMS 3257W.) Three credits. Prerequisite: One three-credit course in Philosophy at the 1100 level; ENGL 1007 or 1010 or 1011 or 2011.

Greek philosophy from its origin in the Pre-Socratics through its influence on early Christianity. Readings from the works of Plato and Aristotle. May include related ancient philosophical traditions.

### 2222. Early Modern European Philosophy

Three credits. Prerequisite: One three-credit course in Philosophy at the 1100 level.

Central philosophical issues as discussed by philosophers such as Descartes, Locke, Berkeley, Hume and Kant.

### 2222W. Early Modern European Philosophy

Three credits. Prerequisite: One three-credit course in Philosophy at the 1100 level; ENGL 1007 or 1010 or 1011 or 2011.

Central philosophical issues as discussed by philosophers such as Descartes, Locke, Berkeley, Hume and Kant.

### 2410. Know Thyself

Three credits. Prerequisite: One three-credit course in Philosophy at the 1100 level.

Nature, value and limitations of self-knowledge; introspection, unconscious phenomena, self-deception, affective forecasting, interaction of neurophysiological and psychological explanations of behavior. Western as well as non-Western (specifically Buddhist) perspectives on the self. Readings from classical and contemporary sources. CA 1.

### 3200. Philosophical Issues in Contemporary Life

Three credits. Prerequisite: One three-credit course in Philosophy at the 1100 level; open to juniors or higher. May be repeated for credit.

Philosophical dimensions of problems in contemporary life. Topics vary by semester.

### 3202. Data Ethics

Three credits. Prerequisite: One three-credit course in Philosophy at the 1100 level.

Ethical and epistemological questions encountered in collecting, interpreting, inferring from and acting upon data—including when these activities are automated or carried out on large observational data sets. Issues may include data privacy and ownership; informed consent; algorithmic bias, equity, and transparency; the theory-ladenness of data; the logic of scientific inference; corporate and institutional responsibility; and implications for democratic and other social values.

**3212E. Philosophy and Global Climate Change**

Three credits. Prerequisite: One three-credit course in Philosophy at the 1100-level.

Ethical, epistemological, and conceptual issues raised by global climate change. The nature of scientific inquiry; role of models in scientific explanation; sources of uncertainty in climate projections; objectivity and values in science; decision-making under risk and uncertainty; obligations to future generations; global justice and burden sharing; individual versus collective responsibility for carbon emissions; the ethics of geoengineering.

**3214. Symbolic Logic II**

Three credits. Prerequisite: PHIL 2211Q.

Logical concepts developed in Philosophy 2211 applied to the study of philosophical issues in the foundations of mathematics.

**3216E. Environmental Ethics**

Three credits. Prerequisite: One three-credit course in Philosophy at the 1100 level.

Ethical questions concerning human interaction with the natural world. Topics may include the moral standing of animals, plants, species, and ecosystems; the value of wilderness and biodiversity; obligations to future generations; environmental racism and justice; ecofeminism and deep ecology; and ethical dimensions of environmental policy.

**3216WE. Environmental Ethics**

Three credits. Prerequisite: One three-credit course in Philosophy at the 1100 level; ENGL 1007 or 1010 or 1011 or 2011.

Ethical questions concerning human interaction with the natural world. Topics may include the moral standing of animals, plants, species, and ecosystems; the value of wilderness and biodiversity; obligations to future generations; environmental racism and justice; ecofeminism and deep ecology; and ethical dimensions of environmental policy.

**3218. Feminist Theory**

(Also offered as WGSS 3218.) Three credits. Prerequisite: One three-credit course in Philosophy at the 1100-level or any three-credit 1000 or 2000-level WGSS course.

Philosophical issues in feminist theory. Topics may include the nature of gender difference, the injustice of male domination and its relation to other forms of domination, the social and political theory of women's equality in the home, in the workplace, and in politics.

**3219. Topics in Philosophy and Human Rights**

(Also offered as HRTS 3219.) Three credits. Prerequisite: One three credit course in Philosophy or instructor consent; open to juniors or higher. May be repeated for credit.

What are human rights? Why are they important? Topics may include the philosophical precursors of human rights, the nature and justification of human rights, or contemporary issues bearing on human rights.

**3219W. Topics in Philosophy and Human Rights**

(Also offered as HRTS 3219W.) Three credits. Prerequisite: One three-credit course in Philosophy or instructor consent; ENGL 1007 or 1010 or 1011

or 2011; open to juniors or higher. May be repeated for credit.

What are human rights? Why are they important? Topics may include the philosophical precursors of human rights, the nature and justification of human rights, or contemporary issues bearing on human rights.

**3220. Philosophical Foundations of Human Rights**

(Also offered as HRTS 3220.) Three credits. Prerequisite: One three-credit course in Philosophy at the 1100 level.

Ontology and epistemology of human rights investigated through contemporary and/or historical texts. CA 1.

**3220W. Philosophical Foundations of Human Rights**

(Also offered as HRTS 3220W.) Three credits. Prerequisite: One three-credit course in Philosophy at the 1100 level; ENGL 1007 or 1010 or 1011 or 2011.

Ontology and epistemology of human rights investigated through contemporary and/or historical texts. CA 1.

**3224. Nineteenth-Century Philosophy**

Three credits. Prerequisite: One from PHIL 1101, 1102, 1103, 1104, 1105, 1106 or 1107.

Readings from philosophers such as Kant, Hegel, Marx and Engels, Bentham, Mill Schopenhauer, Nietzsche, and Kierkegaard; topics such as the debate between individualism and collectivism in the nineteenth century.

**3225W. Analysis and Ordinary Language**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; At least one from PHIL 2210, 2221 or 2222.

The reaction, after Russell, against formal theories and the belief in an ideal language, and the turn to familiar common-sense "cases" and everyday language in judging philosophical claims. Russell, Moore, Wittgenstein, Ryle and Strawson.

**3226. Philosophy of Law**

Three credits. Prerequisite: One three-credit course in Philosophy at the 1100 level, which may be taken concurrently.

The nature of law; law's relation to morality; law's relation to social facts; the obligation to obey the law; interpreting texts; spheres of law; international law; the justification of state punishment; the good of law; related doctrines of contemporary theorists such as Herbert Hart and Ronald Dworkin.

**3228. American Philosophy**

Three credits. Prerequisite: One three-credit course in Philosophy at the 1100 level; open to juniors or higher.

Doctrines advanced by recent American philosophers.

**3231. Philosophy of Religion**

Three credits. Prerequisite: One three-credit course in Philosophy at the 1100 level.

Various religious absolutes, their meaning and validity, existentialism and religion, the post-modern religious quest.

**3241. Philosophy of Language**

Three credits. Prerequisite: At least one three-credit 2000-level or above course in Philosophy or Linguistics.

Philosophical issues raised by language. Topics may include the nature and functions of language; theories of meaning, reference, and truth; speech acts; the evolutionary origin of language; and language's relation to thought, gender, race, and politics.

**3247. Philosophy of Psychology**

Three credits. Prerequisite: PSYC 2500 or 3500 or 3550W or 3551W or 3552; one three-credit philosophy course or consent of instructor.

Conceptual issues in theoretical psychology. Topics may include computational models of mind, the language of thought, connectionism, neuropsychological deficits, and relations between psychological models and the brain.

**3247W. Philosophy of Psychology**

Three credits. Prerequisite: PSYC 2500 or 3500 or 3550W or 3551W or 3552; ENGL 1007 or 1010 or 1011 or 2011; one three-credit philosophy course or instructor consent.

Conceptual issues in theoretical psychology. Topics may include computational models of mind, the language of thought, connectionism, neuropsychological deficits, and relations between psychological models and the brain.

**3249W. Philosophy and Neuroscience**

Three credits. Prerequisite: One 2000 level or above, three credit course in PNB and one 2000 level or above, three credit course in PHIL or instructor's consent; ENGL 1007 or 1010 or 1011 or 2011.

Philosophical issues in neuroscience. Topics may include theories of brain function, localization of function, reductionism, neuropsychological deficits, computational models in neuroscience, connectionism, and evolution.

**3250. Philosophy of Mind**

Three credits. Prerequisite: At least one 2000 level, three credit philosophy course.

Contemporary issues in the philosophy of mind. Topics may include the nature of the mental; the mind-body problem, the analysis of sensory experience, the problem of intentionality, and psychological explanation.

**3250W. Philosophy of Mind**

Three credits. Prerequisite: At least one 2000 level or above, three credit, philosophy course or consent of instructor; ENGL 1007 or 1010 or 1011 or 2011.

Contemporary issues in the philosophy of mind. Topics may include the nature of the mental; the mind-body problem, the analysis of sensory experience, the problem of intentionality, and psychological explanation.

**3256. Philosophy of Perception**

Three credits. Prerequisite: PSYC 2501 or 3501 or 3550W or 3552; or one 2000-level or above, three-credit course in PHIL.

Conceptual problems in contemporary models of perception. Topics may include the nature of color perception, direct perception and its alternatives, computation and representation in perception, and the connections between perception and awareness.

**3256W. Philosophy of Perception**

Three credits. Prerequisite: PSYC 2501 or 3501 or 3550W or 3552; or one 2000-level or above, three-credit course in PHIL; and ENGL 1007 or 1010 or 1011 or 2011.

Conceptual problems in contemporary models of perception. Topics may include the nature of color perception, direct perception and its alternatives, computation and representation in perception, and the connections between perception and awareness.

**3261. Medieval Philosophy**

Three credits. Prerequisite: One three-credit course in Philosophy at the 1100 level; open to juniors or higher.

Readings from the principal philosophers between the fourth and fourteenth centuries.

**3261W. Medieval Philosophy**

Three credits. Prerequisite: One three-credit course in Philosophy at the 1100 level; ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

Readings from the principal philosophers between the fourth and fourteenth centuries.

**3263. Asian Philosophy**

Three credits. Prerequisite: One three-credit course in Philosophy at the 1100 level; open to juniors or higher.

The historical, religious, and philosophical development of Asian systems of thought.

**3264. Classical Chinese Philosophy and Culture**

Three credits. Prerequisite: One three-credit course in Philosophy at the 1100 level.

Classical Chinese philosophy, including such works as *The Analects of Confucius* and the works of Chuang Tzu, and their influence on Chinese culture.

**3295. Special Topics**

Variable (1-6) credits. Prerequisite: Prerequisites and recommended preparation vary. May be repeated for credit.

**3298. Variable Topics**

Three credits. Prerequisite: Prerequisites and recommended preparation vary. May be repeated for credit.

**3299. Independent Study**

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

Advanced and individual work.

**4293. Foreign Study**

Variable (1-6) credits. Prerequisite: Department consent. May be repeated for a total of 6 credits.

Special topics taken in a foreign study program. Consent of Department Head required, preferably prior to the student's departure.

**4297W. Senior Thesis in Philosophy**

Three credits. Prerequisite: Twelve credits in Philosophy at the 2000 level or above, three of which may be taken concurrently; ENGL 1007 or 1010 or 1011 or 2011.

Independent study authorization form required.

**4995. Special Topics**

Variable (1-6) credits. Prerequisite: Prerequisites and recommended preparation vary; Open only to juniors or higher. May be repeated for credit.

**4998. Variable Topics**

Three credits. Prerequisite: Prerequisites and recommended preparation vary; Open only to juniors or higher. May be repeated for credit.

**Physics (PHYS)****1010Q. Elements Of Physics**

Four credits. Prerequisite: Not open for credit to students who have passed PHYS 1201 or 1401 or 1501 or 1601.

Basic concepts and applications of physics for the non-science major. Scientific principles and quantitative relationships involving mechanics, energy, heat and temperature, waves, electricity and magnetism, and the theory of the atom are covered. A laboratory provides hands-on experience with the principles of physics. CA 3-LAB.

**1020Q. Introductory Astronomy**

Three credits. Prerequisite: Not open to students who have passed PHYS 1025.

A basic introductory astronomy course without laboratories, including principles of celestial coordinate systems and telescope design; applications of fundamental physical laws to the sun, planets, stars and galaxies; evolution of stars, galaxies and the universe; recent space probe results, modern cosmology, astrobiology. Night observing sessions are an integral part of the course. CA 3.

**1025Q. Introductory Astronomy with Laboratory**

Four credits. Prerequisite: Not open to students who have passed PHYS 1020.

A basic introductory astronomy course including principles of celestial coordinate systems and telescope design; applications of fundamental physical laws to the sun, planets, stars and galaxies; evolution of stars, galaxies and the universe; recent space probe results, modern cosmology, astrobiology. Basic quantitative laboratory techniques relevant to astronomy. Night observing sessions are an integral part of the course. CA 3-LAB.

**1030Q. Physics of the Environment**

Three credits.

Concepts of physics applied to current problems of the physical environment: energy, transportation, pollution. No previous knowledge of physics is assumed. Not applicable to any requirement that specifies a course in "general physics." CA 3.

**1035Q. Physics of the Environment with Laboratory**

Four credits. Prerequisite: Not open for credit to students who have passed PHYS 1030.

Concepts of physics applied to the physical environment, particularly to current problems related to energy, transportation, and pollution. These relationships will be further explored in the laboratory section. No previous knowledge of physics is assumed. CA 3-LAB.

**1040QE. Cosmic Origins of Life**

Three credits.

Principles of physics and quantitative reasoning applied to astrobiology, the search for extraterrestrial life, and cosmic, stellar, and atmospheric conditions for habitability. A systems

perspective on the impacts of human civilization on habitability. CA 3.

**1075Q. Physics of Music**

Four credits.

Basic principles of physics and scientific reasoning will be taught in the context of the production and perception of music, emphasizing the historic and scientific interplay between physics and music. Basic quantitative laboratories pertaining to sound, music, and waves. No previous knowledge of physics or music is assumed. CA 3-LAB.

**1201Q. General Physics I**

Four credits. Prerequisite: MATH 1060Q or a qualifying score equivalent to pre-Calculus on the math placement assessment ([placement.uconn.edu/mathematics-placement](http://placement.uconn.edu/mathematics-placement)). Not open for credit to students who have passed PHYS 1401Q, 1501Q, or 1601Q. May not be taken out of sequence after passing PHYS 1202Q.

A non-calculus based course introducing the laws of force and motion applied to mechanical phenomena. Concepts such as work, mechanical energy, linear and angular momentum, and energy conservation are explained. The laboratory offers fundamental training in precise measurements. CA 3-LAB.

**1202Q. General Physics II**

Four credits. Prerequisite: PHYS 1201Q. Not open for credit to students who have passed PHYS 1402Q, 1502Q, or 1602Q.

A non-calculus based course introducing the principles governing electromagnetic phenomena, including electromagnetic radiation and waves and electric circuits. The laboratory offers fundamental training in precise measurements. CA 3-LAB.

**1230. General Physics Problems**

Three credits. Prerequisite: PHYS 1202Q, and MATH 1122 or 1132Q, any of which may be taken concurrently. Not open for credit to students who have passed PHYS 1401Q, 1501Q or 1601Q.

Physics problems, emphasizing applications of calculus, dealing with topics in general physics. Intended for those students who have taken or are taking PHYS 1202Q and who desire to have a calculus-based physics sequence equivalent to PHYS 1401Q-1402Q or 1501Q-1502Q

**1300. Physics for the Pharmacy Profession**

Three credits. Prerequisite: MATH 1121Q or 1126Q, either of which may be taken concurrently, or MATH 1131Q or 1151Q. Not open to students who have passed PHYS 1230, 1401Q, 1402Q, 1501Q, 1502Q, 1601Q, or 1602Q.

Survey of the principles of physics and their application to the pharmaceutical sciences. Basic concepts of calculus are used. Examples from mechanics, electricity and magnetism, thermodynamics, fluids, waves, and atomic and nuclear physics.

**1401Q. General Physics with Calculus I**

Four credits. Recommended preparation: MATH 1121Q or 1131Q. Not open for credit to students who have passed PHYS 1501Q or 1601Q. May not be taken out of sequence after passing PHYS 1402Q. May be taken for not more than two credits, with the permission of the instructor, after passing PHYS 1201Q.

Quantitative study of the basic facts and principles of physics with an emphasis on mechanical phenomena. Concepts such as work, mechanical energy, linear and angular momentum, and energy conservation are explained. The laboratory offers fundamental training in physical measurements. Recommended for non-engineering students who desire to have a calculus-based physics sequence. It is also recommended for science majors for whom a one year introductory physics course is adequate. CA 3-LAB.

#### **1402Q. General Physics with Calculus II**

Four credits. Prerequisite: PHYS 1401Q. Recommended preparation: MATH 1122Q or 1132Q. Not open for credit to students who have passed PHYS 1502Q or 1602Q. May be taken for not more than two credits, with the permission of the instructor, by students who have passed PHYS 1202Q.

Quantitative study of the basic facts and principles of physics with an emphasis on electromagnetic phenomena, including electromagnetic radiation and waves and electric circuits. The laboratory offers fundamental training in physical measurements. Recommended for non-engineering students who desire to have a calculus-based physics sequence. It is also recommended for science majors for whom a one year introductory physics course is adequate. CA 3-LAB.

#### **1501Q. Physics for Engineers I**

Four credits. Recommended preparation: PHYS 1010Q or high school physics; CE 2110; MATH 2110Q or 2130Q, which may be taken concurrently. Not open for credit after passing PHYS 1401Q or 1601Q. May not be taken out of sequence after passing 1502Q. May be taken for not more than two credits, with the permission of the instructor, by students who have passed PHYS 1201Q.

Introduction to Newton's laws, their extensions and applications. Concepts such as work, mechanical energy, linear and angular momentum, and energy conservation are explained. Basic concepts of calculus are used. Recommended for prospective Engineering majors. CA 3-LAB.

#### **1502Q. Physics for Engineers II**

Four credits. Prerequisite: PHYS 1501Q. Not open to students who have passed PHYS 1402Q or 1602Q. May be taken for not more than two credits, with instructor's permission, by students who have passed PHYS 1202Q.

Introduction to principles of electromagnetism and Maxwell's equations, including electric circuits, electromagnetic wave propagation, optics, and other relevant applications to engineering. Basic concepts of calculus are used. Recommended for prospective Engineering majors. CA 3-LAB.

#### **1600Q. Introduction to Modern Physics**

Four credits. Recommended preparation: MATH 1060, which may be taken concurrently, or a qualifying score on the mathematics placement assessment.

Quantitative exploration of the structure of matter, including gas laws, electric and magnetic forces, the electron, x-rays, waves and lights, relativity, radioactivity, and spectra. This course is recommended for prospective Physics majors. CA 3-LAB.

#### **1601Q. Fundamentals of Physics I**

Four credits. Recommended Preparation: MATH 1121 or 1131 or 1151 (1151 is preferred for physics majors). Not open to students who have passed PHYS 1401 or 1501. May be taken for not more than 3 credits, with instructor's approval, by students who passed PHYS 1201.

Foundational principles of mechanics: kinematics, forces, energy, momentum, angular momentum, torque, gravitation, waves, harmonic motion and nonlinear dynamics. Basic concepts of calculus are used. Recommended for prospective Physics majors, this course is taught integrating theory, experimental activities, and collaborative problem solving in an active learning setting. CA 3-LAB.

#### **1602Q. Fundamentals of Physics II**

Four credits. Recommended preparation: PHYS 1601Q; MATH 1122Q or 1132Q or 1152Q (1152Q preferred for Physics majors). Not open for credit to students who have passed PHYS 1402Q or 1502Q. May be taken for not more than three credits, with instructor's permission, after passing PHYS 1202Q.

Foundational principles of electromagnetism: electrostatics, magnetostatics, electrodynamics, Maxwell's equations, electromagnetic wave propagation, and optics, including some of their relevant applications to physics. Basic concepts of calculus are used. Recommended for prospective Physics majors, this course is taught integrating theory, experimental activities, and collaborative problem solving in an active learning setting. CA 3-LAB.

#### **2200. Computational Physics**

Three credits. Prerequisite: PHYS 1230 or 1402Q or 1502Q or 1530 or 1602Q, any of which may be taken concurrently; MATH 2410Q, which may be taken concurrently.

A basic introduction to numerical and mathematical methods required for the solution of physics problems using currently available scientific software for computation and graphics.

#### **2300. The Development of Quantum Physics**

Three credits. Prerequisite: PHYS 1230 or 1402Q or 1502Q or 1530 or 1602Q, which may be taken concurrently; or PHYS 1202 with consent of instructor. May not be taken out of sequence after passing PHYS 3300, 3401, 4300, or 4900.

The inadequacies of classical physical concepts in the submicroscopic domain. The revision of physical principles that led to special relativity and modern quantum theory. Application to topics chosen from atomic and molecular physics, solid state physics, nuclear physics and elementary particle physics.

#### **2400. Mathematical Methods for the Physical Sciences**

Three credits. Prerequisite: PHYS 1230 or PHYS 1402Q or PHYS 1502Q or PHYS 1530 or PHYS 1602Q; and MATH 2110Q; either or both may be taken concurrently; or instructor consent.

Theoretical mathematical methods required for physical science courses.

#### **2501W. Advanced Undergraduate Laboratory**

Four credits. Prerequisite: PHYS 1201Q or 1401Q or 1501Q or 1601Q; ENGL 1007 or 1010 or 1011 or 2011.

Experiments in classical and/or quantum phenomena with an emphasis on acquiring, analyzing, and interpreting experimental data. Extensive writing in the style of experimental reports and/or journal articles.

#### **2701. Foundations of Modern Astrophysics**

Three credits. Prerequisite: PHYS 1401Q or 1501Q or 1601Q; MATH 1131Q (or 1151Q) and 1132Q (or 1152Q). Prerequisite or corequisite: PHYS 1402Q or 1502Q or 1602Q; MATH 2110Q. May not be taken out of sequence after passing PHYS 2702 or PHYS 4740.

The conceptual framework describing astronomical objects. Topics include orbits, light, and stars. Concepts of statistical mechanics, quantum mechanics, and relativity as needed for astrophysical topics.

#### **2702. Techniques of Modern Astrophysics**

Three credits. Prerequisite: PHYS 2701. May not be taken out of sequence after passing PHYS 4710, 4720, or 4740.

Observational astronomy and applications to astrophysical phenomena. Topics include telescopes and astronomical instrumentation, production of chemical elements and molecules, distance scales, black holes and compact objects, gravitational lensing, galaxy kinematics and structure, dark matter, dark energy, cosmic rays, gravitational waves, and Big Bang cosmology.

#### **3101. Mechanics I**

Three credits. Prerequisite: PHYS 1230 or 1402Q or 1502Q or 1530 or 1602Q; MATH 2110Q or 2130Q which may be taken concurrently.

Newton's Laws of motion applied to mass points, systems of particles, and rigid bodies.

#### **3102. Mechanics II**

Three credits. Prerequisite: MATH 2410Q or 2420Q; PHYS 3101 or CE 2120.

Further applications of Newton's Laws; continuous media; Lagrange's and Hamilton's formulation of dynamics.

#### **3150. Electronics**

Three credits. Prerequisite: PHYS 1230 or 1402Q or 1502Q or 1530 or 1602Q or instructor consent.

The principles of devices and their applications to instrumentation in science and engineering. Rectification, filtering, regulation, input and output impedance, basic transistor circuits, operational amplifiers, preamplifiers for photodiodes and other transducers, logic gates, and digital circuits.

#### **3201. Electricity and Magnetism I**

Three credits. Prerequisite: PHYS 1230 or 1402Q or 1502Q or 1530 or 1602Q or instructor's consent; MATH 2110Q and 2410Q, or MATH 2130Q and 2420Q.

Advanced theory and applications of electrostatics, magnetostatics, potentials, and electromagnetic fields in matter.

#### **3202. Electricity and Magnetism II**

Three credits. Prerequisite: PHYS 3201.

Advanced theory and applications of electromagnetic fields. Gauge transformations, electromagnetic waves and radiation, and relativistic corrections to electrodynamics.

#### **3300. Statistical and Thermal Physics**

Three credits. Prerequisite: PHYS 1230 or 1402Q or 1502Q or 1530 or 1602Q; PHYS 2300; MATH

2110Q and 2410Q, or MATH 2130Q and 2420Q. Recommended preparation: PHYS 3201 and 3401.

The laws of thermodynamics and their microscopic statistical basis; entropy, temperature, Boltzmann factor, chemical potential, Gibbs factor, and the distribution functions.

#### 3401. Quantum Mechanics I

Three credits. Prerequisite: PHYS 2300; MATH 2110 and 2410 or MATH 2130 and 2420.

Elementary Principles of quantum mechanics; solutions to the Schrödinger equation for bound states and scattering in one dimension; general solution for central forces in two and three dimensions, orbital angular momentum and spin, and other fundamental quantum mechanical principles.

#### 3402. Quantum Mechanics II

Three credits. Prerequisite: PHYS 3401.

Applications of quantum mechanics, useful approximation methods, the variational method, the WKB method, scattering and other advanced topics.

#### 3501. Modern Experimental Methods

Three credits. Prerequisite: PHYS 1202Q or 1402Q or 1502Q or 1602Q; and 2501W.

In-depth exploration of classical and quantum phenomena through advanced experimentation using contemporary methods.

#### 3989. Undergraduate Research

Variable (1-3) credits. Prerequisite: Instructor consent required. May be repeated for credit.

Introduction to original investigation performed by the student under the guidance of a faculty member. The student is required to submit a brief report at the end of each semester.

#### 4093. Foreign Study

Variable (1-3) credits. May be repeated for credit.

Special topics taken in a foreign study program. Consent of Department Head required, normally to be granted prior to the student's departure. May count toward the major with consent of the advisor.

#### 4095. Special Topics

Variable (1-3) credits. Prerequisite: Prerequisites and recommended preparation vary. May be repeated for credit.

#### 4096W. Research Thesis in Physics

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Research investigation for the advanced undergraduate. Research and writing of a Thesis are required. Final public presentation is recommended.

#### 4098. Variable Topics

Three credits. Prerequisite: Prerequisites and recommended preparation vary. May be repeated for credit.

#### 4099. Independent Study

Variable (1-3) credits. Prerequisite: Instructor consent required. May be repeated for credit.

#### 4100. Physics of the Earth's Interior

(Also offered as EARTH 4550.) Three credits. Prerequisite: PHYS 1230 or 1402Q or 1502Q or 1530 or 1602Q, any of which may be taken concurrently; MATH 1122Q or 1126Q or

1131Q any of which may be taken concurrently. Recommended preparation: MATH 1132Q.

The composition, structure, and dynamics of the Earth's core, mantle, and crust inferred from observations of seismology, geomagnetism, and heat flow. Formerly offered as GSCI 4550.

#### 4130. Fundamentals of Planetary Science

(Also offered as EARTH 4560.) Three credits. Prerequisite: PHYS 1230 or 1402Q or 1502Q or 1530 or 1602Q, any of which may be taken concurrently; MATH 1122 or 1126Q or 1131Q, any of which may be taken concurrently.

Evolution of the solar system, celestial mechanics, tidal friction, internal composition of planets, black-body radiation, planetary atmospheres. Formerly offered as GSCI 4560.

#### 4140. Principles of Lasers

Three credits. Prerequisite: PHYS 3202 and 3401. Recommended Preparation: PHYS 4150.

The physics of lasers, including optical pumping and stimulated emission, laser rate equations, optical resonators, Gaussian beam propagation, Q-switching, mode-locking and nonlinear optics. Applications to gas, solid-state and tunable laser systems.

#### 4150. Optics

Four credits. Prerequisite: PHYS 1230 or 1402Q or 1502Q or 1530 or 1602Q or instructor consent. Recommended preparation: PHYS 3103 or 3201.

An introduction to geometrical and physical optics. Thick lenses, stops, aberrations, interference, diffraction, polarization.

#### 4210. Introduction to Solid State Physics

Three credits. Prerequisite: PHYS 1230 or 1530 or 1402Q or 1502Q or 1602Q.

Crystal lattices, lattice waves, thermal and electronic properties, imperfections in solids.

#### 4350. Nuclei and Particles

Three credits. Prerequisite: PHYS 3401.

Properties of nuclei and particles, conserved quantities, isospin, quark model, Fermi gas model, electroweak interaction, high energy scattering.

#### 4710. Stars and Compact Objects

Three credits. Prerequisite: PHYS 2701 and 2702; MATH 2410Q.

The structure and evolution of stars. Gravitational collapse, hydrostatic equilibrium, novae and shocks, and compact objects with degenerate matter.

#### 4720. Galaxies and the Interstellar Medium

Three credits. Prerequisite: PHYS 2701 and 2702; MATH 2410Q. Recommended preparation: proficiency in calculus.

Galaxy formation and evolution in the hierarchical expanding Universe. Properties of the interstellar medium, including star formation and radiative transfer; stellar populations, structure, kinematics and dynamics of galaxies.

#### 4730. General Relativity and Cosmology

Three credits. Prerequisite: PHYS 2300, 3101, and 3201; or instructor consent.

Gravity and the problem of motion from the ancient Greeks to Newton to Einstein. Special relativity. General relativity. Curvature. Classic tests of general relativity. Gravitational waves. Black holes. Newtonian cosmology. Big Bang

theory. Inflation. Dark matter. Dark energy. Accelerating universe.

#### 4740. Advanced Methods in Astrophysics

Three credits. Prerequisite: PHYS 2701 and PHYS 2702.

Basic principles and techniques of observational and computational astrophysics. Statistical techniques for data analysis and interpretation of astronomical data. Data mining, visualization, and numerical techniques in simulations of astrophysical systems. Includes short research projects using data from observations and/or simulations.

#### 4900. Experimental Physics Design Laboratory

Three credits. Prerequisite: PHYS 2300 or 3101 or 3102; PHYS 3202; PHYS 3401, which may be taken concurrently; PHYS 2501W or 2502 or MSE 4003.

Experiments in modern and classical physics are independently designed, performed, and evaluated. Experiments are chosen from the areas of atomic, solid state and thermal physics, as well as from acoustics and optics. Computers are utilized for control of the experimental process, data acquisition and analysis. A written description of the proposed method must be submitted and approved before each experiment, and a subsequent written critical evaluation of each experiment is required.

### Physiology and Neurobiology (PNB)

#### 1000. Introduction to Physiology and Neurobiology

One credit. Prerequisite: Open to first-year students, others with consent of instructor.

An introduction for declared and prospective Physiology and Neurobiology majors. Introduces key discoveries, current research areas, and technological innovations in physiology and neurobiology, and develops familiarity with the PNB department. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

#### 1201. Learning by Experiencing and Applying Physiological Principles I

One credit.

Introduction to the principles governing gene organization, regulation of transcription, transcript processing, protein production, protein function, and outputs of physiological interest.

#### 2201. Learning by Experiencing and Applying Physiological Principles II

Two credits. Prerequisite: PNB 1201.

Exploration of the role that gene regulation, transcript processing, protein production, and protein function play in the physiology of limb development. Emphasis placed on understanding and communicating primary literature, and experimental systems used in model organisms.

#### 2250. Comparative Animal Physiology

Three credits. Prerequisite: BIOL 1107. Recommended preparation: BIOL 1108.

An introduction to comparative animal physiology, emphasizing the evolutionary impacts of diverse physical, chemical, and environmental factors on vertebrates and invertebrates.

**2264. Human Physiology and Anatomy**

Four credits. Prerequisite: BIOL 1107; CHEM 1122 or 1124Q or 1127Q. Not open to students who have passed PNB 2274. May not be taken out of sequence after passing PNB 2265. Repeat restrictions apply; see [advising.uconn.edu/repeat-policy](http://advising.uconn.edu/repeat-policy) for more information.

Fundamentals of human anatomy and physiology, for students in human health and human performance related majors. Topics covered include the musculoskeletal system, membrane potential, neurophysiology, the central nervous system, sensation, and the endocrine system. May not be counted toward the Biological Sciences or PNB majors.

**2265. Human Physiology and Anatomy**

Four credits. Prerequisite: PNB 2264. Not open to students who have passed PNB 2275. Repeat restrictions apply; see [advising.uconn.edu/repeat-policy](http://advising.uconn.edu/repeat-policy) for information.

Fundamentals of human anatomy and physiology, for students in human health and human performance related majors. Topics covered include the cardiovascular, immune, respiratory, digestive, renal, and reproductive systems. May not be counted toward the Biological Sciences or PNB majors.

**2274. Enhanced Human Physiology and Anatomy**

Four credits. Prerequisite: BIOL 1107; CHEM 1124Q or 1127Q. Not open for credit to students who have passed PNB 2264. May not be taken out of sequence after passing PNB 2275, 3264, or 4162. Repeat restrictions apply; see [advising.uconn.edu/repeat-policy](http://advising.uconn.edu/repeat-policy) for details.

Fundamentals of human physiology and anatomy enhanced through inquiry-based laboratories.

**2275. Enhanced Human Physiology and Anatomy**

Four credits. Prerequisite: PNB 2274. Not open to students who have passed PNB 2265. Must be taken after PNB 2274 to count for credit. Repeat restrictions apply; see [advising.uconn.edu/repeat-policy](http://advising.uconn.edu/repeat-policy) for information.

Fundamentals of human physiology and anatomy enhanced through inquiry-based laboratories.

**2774. Enhanced Human Physiology and Anatomy I**

Four credits. Prerequisite: BIOL 1107; CHEM 1122 or CHEM 1124Q or CHEM 1127Q. Not open for credit to students who have passed PNB 2264 or PNB 2274. May not be taken out of sequence after passing PNB 2775. Repeat restrictions apply; see [advising.uconn.edu/repeat-policy](http://advising.uconn.edu/repeat-policy) for details.

Fundamentals of human physiology and anatomy enhanced through discussion. A focus on fundamental cell and membrane physiology, as well as the musculoskeletal, nervous, and endocrine systems.

**2775. Enhanced Human Physiology and Anatomy II**

Four credits. Prerequisite: PNB 2774. Not open to students who have passed PNB 2265 or PNB 2275. Repeat restrictions apply; see [advising.uconn.edu/repeat-policy](http://advising.uconn.edu/repeat-policy) for information.

Fundamentals of human physiology and anatomy enhanced through discussion. A focus

on organ systems, including the cardiovascular, respiratory, lymphatic, digestive, renal, and reproductive systems.

**2776. Enhanced Human Physiology and Anatomy Laboratory**

Two credits. Prerequisite: NB 2775, which may be taken concurrently. Not open to students who have passed PNB 2264, PNB 2265, PNB 2274, or PNB 2275.

Fundamentals of human physiology and anatomy enhanced through inquiry-based laboratories.

**3120W. Public Communication of Physiology and Neurobiology**

Three credits. Prerequisite: One 2000-level course in PNB; ENGL 1007 or 1010 or 1011 or 2011; open only to Physiology and Neurobiology majors.

Strategies for effective public communication of science, focusing on accessibly conveying physiological concepts, and considering the role of life scientists as public communicators. Student work may include storytelling, blogging, data visualization, and videography.

**3178. Introduction to Drosophila Models in Physiology and Neurobiology Research**

Two credits. Prerequisite: PNB 2274 or 2774. Recommended Preparation: PNB 2275 or 2775 or PNB 2250.

Exploration of *Drosophila* as a model organism for addressing molecular, cellular, and anatomical research questions in Physiology and Neurobiology. Students will gain hands-on laboratory experience with fly husbandry, analysis of phenotypic markers, microdissection, microscopy, and behavioral assays such as mating, circadian rhythm, aggression, and learning. Open to all students meeting the prerequisites, no prior laboratory experience is necessary.

**3179. Molecular Physiology in Drosophila Models**

Two credits. Prerequisite: PNB 3178; Students with related research experience may enroll with instructor consent. Recommended Preparation: PNB 2275 or 2775 or 2250.

Molecular and cellular techniques used to answer physiology research questions in *Drosophila* models. Students will gain hands-on laboratory experience measuring lifespan, ovulation, fecundity, tissue remodeling, respiration rate, and metabolic parameters. Assays may include western blotting, immunoprecipitation, immunohistochemistry, spectroscopy, PCR, and mass spectrometry.

**3180. Field Study in Physiology and Neurobiology**

Variable (1-4) credits. May be repeated for a total of 6 credits.

Supervised field work at an off-campus research organization or business. Activities that meet objectives consistent with a major in Physiology and Neurobiology must be planned and agreed upon in advance by the job site supervisor, the faculty coordinator and the student. May be repeated for a total of up to 6 credits. One credit may be earned for each 42 hours of pre-approved activities up to a maximum of 4 credits. May be applied towards the major with permission of department head subject to the PNB major's 3-credit research group limitation. Students taking

this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

**3251. Biology of the Brain**

Three credits. Prerequisite: One 2000 level course in PNB or consent of instructor; open to juniors or higher. May not be taken out of sequence after passing PNB 3253W.

Brain functions, from molecular and cellular to overall central nervous system organization. Topics of current scientific interest.

**3252. Physiological Model Systems**

Three credits. Prerequisite: A 2000-level PNB course. Recommended preparation: Undergraduate class in basic comparative animal physiology such as BIOL 1108 or EEB 2214 or PNB 2250.

Comparative exploration of classic and emerging model organisms and their translational research applications towards human health and well-being. Environmental, ethical, and policy considerations relating to animal experimentation.

**3253W. Current Topics in Molecular and Developmental Neurobiology**

Three credits. Prerequisite: PNB 3251; ENGL 1007 or 1010 or 1011 or 2011; open to juniors and seniors only. Recommended preparation: PNB 2274 and 2275.

Current topics from primary literature. Molecular mechanisms of brain and nervous system development.

**3255. Human Neuroanatomy**

Two credits. Prerequisite: PNB 2264 or 2274; open to juniors or higher.

Anatomy of the human brain and spinal cord; emphasis on the structure and functions of major regions in the central nervous system.

**3260. Stem Cell Biology**

Three credits. Prerequisite: PNB 2250 or PNB 2274. Recommended preparation: MCB 2000 or MCB 2210 or MCB 2410, any of which may be taken concurrently.

Principles of stem cell biology and the use and applications of stem cells in research and therapy. Emphasis on molecular, cellular and physiological properties of stem cells, mechanisms of differentiation, use of recombinant DNA technology and application of stem cells in disease models.

**3262. Mammalian Endocrinology**

Two credits. Prerequisite: One 2000 level course in PNB or consent of instructor; open to juniors or higher.

Functions of hormones in mammalian physiology emphasizing humans.

**3263WQ. Investigations in Neurobiology**

Three credits. Prerequisite: PNB 2250 or PNB 2274-2275; ENGL 1007 or 1010 or 1011 or 2011 or 3800; open to juniors or higher.

Experimental investigations in neurobiology. Emphasis on designing and carrying out independent research projects, and on communicating the results.

**3264W. Molecular Principles of Physiology**

Four credits. Prerequisite: PNB 2274, MCB 2210 or 2410 or 3010; ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher; instructor consent required.

Case study of a disease: genetics and inheritance patterns; molecular defects, including transcription and post-transcription defects; physiological defects; therapeutic approaches.

### 3265. Comparative Endocrinology

Three credits. Prerequisite: A 2000-level course in PNB or instructor consent. Open to juniors or higher.

The evolution of hormonal signaling systems in invertebrates and vertebrates.

### 3270. Molecular Endocrinology

Three credits. Prerequisite: BIOL 1107; open to juniors or higher. Recommended preparation: PNB 3262.

Molecular mechanism(s) of hormone action in vertebrates and invertebrates. Molecular and genetic characterization of hormones, receptors, and signal transduction, and hormone actions at the molecular, cellular, and organismal levels. Includes student presentations on selected papers.

### 3275. Biology of Synaptic Transmission

Two credits. Prerequisite: One 2000-level course in PNB or instructor consent; open to juniors or higher. Not open to students who have taken PNB 3276. Recommended preparation: MCB 2000 or 3010.

Various neurotransmitter systems in the brain including anatomy, physiology, cell biology and biochemistry. Neurotransmitters, receptors and transporters at synapses. Synaptic signaling pathways and molecules. Meets during the first nine weeks of the semester.

### 3278. Patient and the Healer

Two credits. Prerequisite: Instructor consent required.

Introductory grounding and experience for students interested in the healing professions in how patients and families experience illness, and what it's like to be a professional health provider.

### 3293. Foreign Study

Variable (1-6) credits. Prerequisite: Open to juniors or higher. May be repeated for credit.

Special topics taken in a foreign study program. Consent of Department Head or Key Advisor required, normally to be granted prior to the student's departure. May count toward the major with consent of Department Head or Key Advisor.

### 3294. Undergraduate Seminar

Variable (1-6) credits. Prerequisite: Open to juniors or higher. May be repeated for credit.

### 3295. Special Topics

Variable (1-6) credits. Prerequisite: Prerequisites and recommended preparation vary; Open only to juniors or higher. May be repeated for credit.

### 3296. Undergraduate Research in Physiology and Neurobiology

Variable (1-4) credits. Prerequisite: Instructor consent required. May be repeated for credit.

Students may apply up to a maximum of three credits of PNB 3296 or PNB 4296 toward the credits-in-major requirement.

### 3298. Variable Topics

Three credits. Prerequisite: Prerequisites and recommended preparation vary by section; open to juniors or higher. May be repeated for credit.

### 3299. Independent Study

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

Designed for the advanced undergraduate student who desires to pursue a special problem as an introduction to independent investigation.

### 3340. Non-coding RNAs in Human Physiology and Disease

Two credits. Prerequisite: MCB 2400 or 2410; MCB 2000 or 3010; MCB 2210 or PNB 2275; open to juniors or higher.

Non-coding RNAs: discovery, major classes, regulatory pathways, physiology, disease, research methodology.

### 3350. Membrane Transport in Health and Disease

Three credits. Prerequisite: One 2000 level course in PNB or consent of instructor; open to juniors or higher.

Fundamental mechanisms by which water and small molecules are transported across biological membranes. Biophysical and biochemical analysis of transport by diffusion, osmosis, channels, carriers and pumps in health and disease.

### 3500. Cardiorespiratory Physiology

Two credits. Prerequisite: One 2000 level course in PNB or consent of instructor; open to juniors or higher.

Cellular and molecular mechanisms controlling cardiovascular and respiratory function in health and disease.

### 3700. Sensory Physiology

Three credits. Prerequisite: PNB 2274 or 3251 or instructor consent; open to juniors or higher.

Cellular and molecular mechanisms supporting the detection of sensory stimuli in vertebrates, invertebrates and other organisms. Detection of chemicals, touch, temperature, pain, sound, light, heat, magnetic fields, and electricity.

### 4296. Honors Undergraduate Research in Physiology and Neurobiology

Variable (1-3) credits. Prerequisite: Instructor consent. May be repeated for credit.

Students may apply up to a maximum of three credits of PNB 3296 or 4296 toward the credits-in-major requirement. Not restricted to students in the Honors program.

### 4297W. Senior Research Thesis in Physiology and Neurobiology

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011. Three credits of PNB 3299, which may be taken concurrently; open to juniors or higher. Open only with consent of instructor and departmental honors committee. Not limited to honors students.

Special research or independent investigation for advanced undergraduates. Involves research and writing a thesis.

### 4400. Biology of Nervous System Diseases

Three credits. Prerequisite: PNB 2274 or 3251; one course from MCB 2000, 2210, 2400, 2410, or 3010; or instructor consent.

Basic principles of genetics, molecular and cell biology, and physiology as applied to the mechanisms of disease and repair processes in the nervous system. Topics include established concepts and areas of current research on chronic

neurodegenerative, synaptic, and demyelinating disorders, acute trauma and cerebrovascular disorders, and plasticity and repair.

## Polish (PLSH)

### 1104. Intermediate Level II

Four credits. Prerequisite: PLSH 1103 or equivalent.

Instruction in speaking, understanding, reading and writing intermediate Polish.

### 1193. Foreign Study

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

### 3293. Foreign Study

Variable (1-6) credits. Prerequisite: Department consent required. May be repeated for credit.

### 3295. Special Topics

Variable (1-6) credits. Prerequisite: Open to juniors or higher. May be repeated for credit.

### 3298. Variable Topics

Three credits. May be repeated for credit.

### 3299. Independent Study

Variable (1-6) credits. Prerequisite: Open to juniors or higher. May be repeated for credit.

## Political Science (POLS)

### 1002. Introduction to Political Theory

Three credits.

Major themes of political theory such as justice, obligation, and equality, and their relevance to contemporary political concerns. CA 1.

### 1202. Introduction to Comparative Politics

Three credits.

A survey of institutions, politics, and ideologies in democratic and non-democratic states. CA 2. CA 4-INT.

### 1207. Introduction to Nonwestern Politics

Three credits.

A survey of institutions, ideologies, development strategies, and the political processes in nonwestern culture. CA 2. CA 4-INT.

### 1402. Introduction to International Relations

Three credits.

The nature and problems of international politics. CA 2. CA 4-INT.

### 1402W. Introduction to International Relations

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

The nature and problems of international politics. CA 2. CA 4-INT.

### 1602. Introduction to American Politics

Three credits.

Analysis of the organization and operation of the American political system. CA 2.

### 1602W. Introduction to American Politics

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Analysis of the organization and operation of the American political system. CA 2.

**1996. Introduction to Research**

Variable (1-4) credits. Prerequisite: Instructor consent.

Introduction to research and research methods in political science.

**2023. Political Theory in Film**

Three credits. Prerequisite: Open to sophomores or higher. Recommended preparation: POLS 1002.

Exploration of political theoretical questions through essays and films. CA 1. CA 4-INT.

**2023W. Political Theory in Film**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to sophomores or higher. Recommended preparation: POLS 1002.

Exploration of political theoretical questions through essays and films. CA 1. CA 4-INT.

**2062. Privacy in the Information Age**

Three credits.

Honors course providing a thematic overview of privacy from a variety of disciplinary perspectives. Public policy, legal and ethical debates surrounding privacy and the impact of technology and scientific advances on how privacy is conceptualized, valued, enacted, and protected.

**2062W. Privacy in the Information Age**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Provides a thematic overview of privacy from a variety of disciplinary perspectives. Public policy, legal and ethical debates surrounding privacy and the impact of technology and scientific advances on how privacy is conceptualized, valued, enacted, and protected.

**2072Q. Quantitative Analysis in Political Science**

Three credits. Recommended preparation: High School Algebra II and a mathematics course.

Explanation of the quantitative methods used in political science. Application of these methods for the analysis of substantive political questions.

**2073Q. Advanced Quantitative Methods in Political Science**

Three credits. Prerequisite: POLS 2072Q or STAT 1000Q or SOCI 3211Q or equivalent.

Explanation of advanced quantitative methods used in political science. Application of these methods and relevant statistical software for the analysis of substantive political questions.

**2221. Introduction to Government and Politics in the Middle East and North Africa**

Three credits. Recommended preparation: POLS 1202.

The politics of the contemporary Middle East. Topics may include state formation, authoritarianism, democratization, and the Arab Spring uprising. Taught in English. CA 2. CA 4-INT.

**2221W. Introduction to Government and Politics in the Middle East and North Africa**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011. Recommended preparation: POLS 1202.

The politics of the contemporary Middle East. Topics may include state formation, authoritarianism, democratization, and the Arab

Spring uprising. Taught in English. CA 2. CA 4-INT.

**2222. Political Institutions and Behavior in Western Europe**

Three credits.

Comparative analysis of the governments and politics of Western Europe.

**2222W. Political Institutions and Behavior in Western Europe**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Comparative analysis of the governments and politics of Western Europe.

**2450. Nuclear Security**

Three credits. Recommended preparation: POLS 1402. Not open for credit to students who have passed POLS 2998 when offered as "Nuclear Security."

The development of nuclear weapons and their consequences. Topics include the science and history of nuclear weapons, as well as nuclear proliferation, terrorism, and strategy.

**2460E. Maritime Politics**

(Also offered as MAST 2460E.) Three credits.

The political dimensions of the world's oceans. This course draws upon international relations theories to analyze states, international law, intergovernmental organizations, trade, and non-state actors with respect to the world's largest bodies of water. CA 2.

**2602W. Religion and Politics in America**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011. Not open for credit to students who have passed POLS 2998 when taught as Religion and Politics. Recommended preparation: POLS 1602.

The interaction and relationship between religion and politics in the U.S. political system. CA 4.

**2607. American Political Parties**

Three credits. Prerequisite: POLS 1602.

An analysis of the aims, organization, and growth of parties in the United States.

**2607W. American Political Parties**

Three credits. Prerequisite: POLS 1602; ENGL 1007 or 1010 or 1011 or 2011.

An analysis of the aims, organization, and growth of parties in the United States.

**2622. State and Local Government**

Three credits.

The practical working of democracy and the role of state and local governments.

**2803W. Legal Reasoning and Writing**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; Not open for credit to students who have passed POLS 2998W when offered as "Legal Reasoning and Writing."

Simulation of the "Moot Court" experience. Students will develop legal writing and oral argumentation skills in relation to hypothetical appellate cases about free speech, religion, rights of the accused, separation of powers, and equal protection claims.

**2807. Women and the Law**

(Also offered as WGSS 2807.) Three credits. Prerequisite: Not open for credit to students who

have passed POLS 2998/W when offered as "Women and the Law."

The development of constitutional and statutory standards for treatment of women under the law in the United States.

**2807W. Women and the Law**

(Also offered as WGSS 2807W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011. Not open for credit to students who have passed POLS 2998/W when offered as Women and the Law.

The development of constitutional and statutory standards for treatment of women under the law in the United States.

**2827W. Criminal Justice in Practice**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011. Not open for credit to students who have passed POLS 2998W when offered as Criminal Justice in Practice.

Exploration of the American Criminal Justice system through simulations, interactions with practitioners in the field, visits to institutions within the system, and service projects with organizations working within the system.

**2995. Special Topics in Political Issues**

Three credits. May be repeated for credit.

An exploration of political issues at the national and international levels.

**2996. Directed Research I**

Variable (1-4) credits. Prerequisite: Instructor consent. May be repeated for a total of 8 credits.

Faculty-directed investigation of a research topic in political science.

**2998. Variable Topics in Contemporary Political Issues**

Three credits. May be repeated for credit.

An exploration of contemporary political issues at the national and international levels.

**2998W. Variable Topics in Contemporary Political Issues**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011. May be repeated for credit.

An exploration of contemporary political issues at the national and international levels.

**3002. Classical and Medieval Political Theory**

Three credits. Prerequisite: Open to juniors or higher.

An examination of Greek, Roman and early Judeo-Christian political ideas and institutions, and their relevance to the present.

**3012. Modern Political Theory**

Three credits. Prerequisite: Open to juniors or higher.

Major political doctrines of the modern period up through the end of the 19th century, and their influence upon political movements and institutions as they are reflected in the democratic and nondemocratic forms of government.

**3012W. Modern Political Theory**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

Major political doctrines of the modern period up through the end of the 19th century, and their influence upon political movements and institutions as they are reflected in the democratic and nondemocratic forms of government.



**3017. Contemporary Political Theory**

Three credits. Prerequisite: Open to juniors or higher.

Major political writings from 1900 to the present.

**3019. Black Political Thought**

Three credits. Prerequisite: Open to juniors or higher; Recommended preparation: POLS 1002 and AFRA 2211.

Exploration of black U.S., Caribbean, and African political thought, with a focus on processes of and resistance to racialization, enslavement, and colonization.

**3019W. Black Political Thought**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011, open to juniors or higher. Recommended Preparation: POLS 1002 and AFRA 2211.

Exploration of black U.S., Caribbean, and African political thought, with a focus on processes of and resistance to racialization, enslavement, and colonization.

**3022W. Western Marxist Tradition**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

Exploration of the social and political theories of Marx and Engels, and of later interpretations and modifications of their ideas.

**3023. Politics and Literature**

Three credits. Prerequisite: Open to juniors or higher. Freshmen and sophomores by permission.

An examination of major works of literature that either describe governing systems and institutions, interpret political processes and clashes, or address perennial themes in political philosophy and theory. CA 2.

**3023W. Politics and Literature**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher, first year students and sophomores by permission.

An examination of major works of literature that either describe governing systems and institutions, interpret political processes and clashes, or address perennial themes in political philosophy and theory. CA 2.

**3025. Political Theory and Popular Music**

Three credits. Recommended Preparation: POLS 1002 or 3012/W.

Exploration of political theories and their relationships to contemporary popular musical genres including folk, hip-hop, pop, reggae, and rock. Students will conduct original analyses connecting political theories to contemporary popular music genres and artists.

**3027. Historical Women Political Thinkers**

(Also offered as WGSS 3027.) Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: POLS 1002. Not open to students who have passed POLS 2998W when offered as "Historical Women Political Thinkers."

Critical study of the writings of several historical women political thinkers.

**3027W. Historical Women Political Thinkers**

(Also offered as WGSS 3027W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011, open to juniors or higher. Recommended

preparation: POLS 1002. Not open to students who have passed POLS 2998W when offered as "Historical Women Political Thinkers."

Critical study of the writings of several historical women political thinkers.

**3030. Settler Colonialism/Indigenous Thought and Practice**

Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: POLS 1002. Not open to students who have passed POLS 2998W when offered as "Settler Colonialism/Indigenous Thought and Practice."

Exploration of political theoretical works engaging settler colonialism and historic and contemporary American indigenous thought and practice.

**3030W. Settler Colonialism/Indigenous Thought and Practice**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011, open to juniors or higher. Recommended preparation: POLS 1002. Not open to students who have passed POLS 2998W when offered as "Settler Colonialism/Indigenous Thought and Practice."

Exploration of political theoretical works engaging settler colonialism, and historic and contemporary American indigenous thought and practice.

**3032. American Political Thought and Ideology**

Three credits. Prerequisite: Open to juniors or higher.

American political thought from the colonial to the contemporary period. Political thought discussed as the ideological expression of the larger sociopolitical situation.

**3040. Power, Politics and Art**

Three credits. Prerequisite: Open to juniors or higher.

A study of power and politics through a survey of major political ideologies and their expression in art and architecture, in various past and present cultures, both as a means of political socialization and a tool of resistance and protest. CA 4-INT.

**3042. Theories of Human Rights**

(Also offered as HRTS 3042.) Three credits. Prerequisite: Open to juniors or higher.

Various theories of human rights, both historical and contemporary. Conceptual arguments both in favor and critical of the theory and practice of human rights will be considered, with literature taken primarily from philosophy and political theory.

**3062. Democratic Theory**

Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: POLS 1002, 3002 or 3012.

Survey of theories of democracy from classical times to the present; analysis of defenders and critics of democracy.

**3062W. Democratic Theory**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011. Recommended preparation: POLS 1002, 3002 or 3012.

Survey of theories of democracy from classical times to the present; analysis of defenders and critics of democracy.

**3072. Political Protest and Ideology**

Three credits. Prerequisite: Open to juniors or higher.

Variants of major ideologies such as liberalism, socialism, communism, anarchism, fascism, and feminism in their socio-historical context, as well as alternative visions from the Third World.

**3082. Critical Race Theory as Political Theory**

(Also offered as AMST 3082.) Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: POLS 1002.

Interdisciplinary scholarship on racial identity, legal decisions, and political action from the perspective of political science and political theory. Topics include interactions between states and social movements, the intersections of race, class, gender, and membership, and the problems with both post-racialism and identity politics.

**3202. Comparative Political Parties and Electoral Systems**

Three credits. Prerequisite: Open to juniors or higher.

A focus on political party and electoral systems around the world, including advanced industrial nations, transitional nations, and less developed nations. Issues such as the relationship between electoral and party systems, democratic reform, voting behavior, and organization of political parties are examined.

**3202W. Comparative Political Parties and Electoral Systems**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

A focus on political party and electoral systems around the world, including advanced industrial nations, transitional nations, and less developed nations. Issues such as the relationship between electoral and party systems, democratic reform, voting behavior, and organization of political parties are examined.

**3203. Environmental Policy and Institutions**

(Also offered as PP 3203.) Three credits. Prerequisite: Open to juniors or higher.

Development of environmental policies and institutions and their effects on the motivations and the actions of individuals and groups with implications for questions of equity, justice, and sustainability. Draws on approaches from comparative politics, public policy, and international relations.

**3205. Voting Behavior and Public Opinion Around the World**

Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: POLS 1202 or POLS 1207.

How voting behavior differs across countries. Topics may include turnout, class voting, the electoral role of religion, accountability for the economy, vote buying, ethnic politics, attitudes toward welfare, support for democracy, and anti-Americanism.

**3206. Comparative Political Economy**

Three credits. Prerequisite: Open to juniors or higher.

Introduction to overlapping themes in economics and political science including the substantive and empirical relationship between these two in advanced industrial democracies.

**3208. Politics of Oil**

Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: POLS 1202 or 1207.

Historical and contemporary role of oil in comparative politics and international relations. CA 2.

**3208W. Politics of Oil**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; Recommended preparation: POLS 1202 or 1207.

Historical and contemporary role of oil in comparative politics and international relations. CA 2.

**3209. Sustainable Energy in the 21st Century**

(Also offered as ENGR 3209 and HRTS 3209.) Three credits. Prerequisite: Open to juniors or higher.

Political, socioeconomic, environmental, science and engineering challenges of energy sources; comparison of feasibility and sustainability of energy policies around the world.

**3210. Ethnic Conflict and Democracy in Comparative Perspective**

Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: POLS 1202 or 1207.

Conflicts among ethno-national groups in democratic and democratizing states and conflict management strategies. Theoretical approaches to understanding origin-of-identity conflicts.

**3210W. Ethnic Conflict and Democracy in Comparative Perspective**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; Recommended preparation: POLS 1202 or 1207.

Conflicts among ethno-national groups in democratic and democratizing states and conflict management strategies. Theoretical approaches to understanding origin-of-identity conflicts.

**3211. Politics of Water**

Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: POLS 1202 or 1207.

The role of water in state building, state-society relations, and economic and political development. Draws on approaches from comparative politics and international relations. CA 2.

**3211W. Politics of Water**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher. Recommended preparation: POLS 1202 or 1207.

The role of water in state building, state-society relations, and economic and political development. Draws on approaches from comparative politics and international relations. CA 2.

**3212. Comparative Perspectives on Human Rights**

(Also offered as HRTS 3212.) Three credits. Prerequisite: Open to juniors or higher.

Cultural difference and human rights in areas of legal equality, women's rights, political violence, criminal justice, religious pluralism, global security, and race relations.

**3214. Comparative Social Policy**

Three credits. Prerequisite: POLS 1202 or 1207 or instructor consent; open to sophomores or higher.

Institutional structures of modern welfare states, including systems of social insurance, healthcare, and education. Assessment of leading political explanations for their growth and cross-national differences among them.

**3214W. Comparative Social Policy**

Three credits. Prerequisite: POLS 1202 or 1207 or instructor consent; ENGL 1007 or 1010 or 1011 or 2011; open to sophomores or higher. Recommended preparation: coursework in economics and sociology.

Institutional structures of modern welfare states, including systems of social insurance, healthcare, and education. Assessment of leading political explanations for their growth and cross-national differences among them.

**3216. Women in Political Development**

(Also offered as WGSS 3216.) Three credits. Prerequisite: Open to juniors or higher, others by consent.

How women and gender circumscribe political life and generate relationships of inequality and justice on a global scale. Topics may include conflict and security, development, human rights and legal systems, labor and migration, nation building, political economy, and transnational justice.

**3218. Indigenous Peoples' Politics and Rights**

Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: POLS 1202 or 1207.

Governments, political behavior, human rights and constitutional rights of indigenous peoples of North America and Latin America. Impact of international law and globalization on indigenous peoples.

**3218W. Indigenous Peoples' Politics and Rights**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011. Recommended preparation: POLS 1202 or 1207.

Governments, political behavior, human rights and constitutional rights of indigenous peoples of North America and Latin America. Impact of international law and globalization on indigenous peoples.

**3228. Politics of Russia and the Former Soviet Union**

Three credits. Prerequisite: Open to juniors or higher.

The social and political structure of the former Soviet Union, the causes and outcome of efforts to reform it, and the development of democratic politics in Russia and other former Soviet republics.

**3235. Latin American Politics**

Three credits. Prerequisite: Open to juniors or higher.

Theories and institutions of Latin American politics, with emphasis on issues of stability and change.

**3237. Democratic Culture and Citizenship in Latin America**

Three credits. Prerequisite: Open to juniors or higher.

The development of democratic attitudes, norms, and behavior in Latin America. CA 2.

**3237W. Democratic Culture and Citizenship in Latin America**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

The development of democratic attitudes, norms, and behavior in Latin America. CA 2.

**3239. Politics of the Environment and Development**

Three credits. Prerequisite: Open to juniors and higher. Recommended preparation: POLS 1202 or 1207.

Politics of the environment and development with a focus on environmental issues in developing countries.

**3239W. Politics of the Environment and Development**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors and higher. Recommended preparation: POLS 1202 or 1207.

Politics of the environment and development with a focus on environmental issues in developing countries.

**3240E. Environmental and Climate Justice**

Three credits. Prerequisite: Open to juniors or higher.

Introduction to major debates about environmental and climate justice and the related policies and programs. Implications for the ongoing efforts to promote environmental stewardship and the design of global, national, and subnational institutions of climate governance. CA 2.

**3245. Chinese Politics and Economy**

Three credits. Prerequisite: Open only to juniors or higher. Recommended preparation: a 1000-level course in Economics.

Chinese political structure and policymaking process, attempts at democratization, process and outcome of economic reforms, development challenges in contemporary China.

**3247. Gender and War**

(Also offered as WGSS 3247.) Three credits. Prerequisite: Open to juniors or higher.

Gender aspects of war. Masculinities and militaries; gender-based war violence; laws of war and post-war conditions for male and female soldiers and civilians.

**3249. Gender Politics and Islam**

(Also offered as WGSS 3249.) Three credits.

Construction of gender in Islamic texts and history, the religion's interaction with other patriarchal cultures and systems, western interventions and their impact, male leaders' reform efforts, women's movements.

**3250. The Political Economy of East Asia**

Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: 1000-level courses in political science and economics.

Economic, political, and social development of East Asia. CA 2.

**3250W. The Political Economy of East Asia**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher. Recommended preparation: 1000-level courses in political science and economics.

Economic, political, and social development of East Asia. CA 2.

**3252. Politics In Africa**

(Also offered as AFRA 3252.) Three credits. Prerequisite: Open to juniors or higher.

The political systems in contemporary Africa; the background of the slave trade, imperialism, colonialism, and the present concerns of nationalism, independence, economic development and military rule. Emphasis on sub-Saharan Africa.

**3255. Politics of South Africa**

Three credits. Prerequisite: Open to juniors or higher.

Internal development of the South African state and the external response to apartheid policies, with special attention to both white and African politics, U.S. policy, and other selected topics.

**3256. Politics and Human Rights in Global Supply Chains**

(Also offered as HRTS 3256.) Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: POLS 1202 and 1402 and POLS/HRTS 3212.

Political and human rights implications of regulating contemporary global supply chains: official regulatory frameworks; non-regulatory approaches to rule-making (such as voluntary corporate codes of conduct and industry standards); social responses to the dilemmas of “ethical” sourcing of goods and services.

**3256W. Politics and Human Rights in Global Supply Chains**

(Also offered as HRTS 3256W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011 or 3800, open to Political Science and Human Rights majors and minors; open to juniors or higher. Recommended preparation: POLS 1202, POLS 1402 and POLS/HRTS 3212.

Political and human rights implications of regulating contemporary global supply chains: official regulatory frameworks; non-regulatory approaches to rule-making (such as voluntary corporate codes of conduct and industry standards); social responses to the dilemmas of “ethical” sourcing of goods and services.

**3402. Contemporary International Politics**

Three credits. Prerequisite: Open to juniors or higher.

Problems in international relations with emphasis on changing characteristics of international politics.

**3406. Globalization and Political Change**

Three credits. Prerequisite: Open to juniors or higher.

Origins and contested definitions of globalization, and its impact on national, regional and international institutions and political processes. Designed for upper-level undergraduate students with a solid grounding in comparative politics and international relations.

**3406W. Globalization and Political Change**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

Origins and contested definitions of globalization, and its impact on national, regional and international institutions and political processes. Designed for upper-level undergraduate students with a solid grounding in comparative politics and international relations.

**3410. International Political Economy**

Three credits. Prerequisite: Open to juniors or higher.

Politics of international economic relations: trade, finance, foreign direct investment, aid.

**3412. Global Environmental Politics**

(Also offered as EVST 3412.) Three credits. Prerequisite: Open to juniors or higher.

Politics of how humans and natural systems interact. Managing the global environment, regulating resource commons, and coordinating to solve environmental problems.

**3413. International Security**

Three credits. Recommended preparation: POLS 1402.

Theory and practice of international security. Topics include why groups use terrorism, why states go to war, the emergence of humanitarian intervention, and the role of technology ranging from nuclear weapons to computer viruses. CA 2.

**3413W. International Security**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011. Recommended preparation: POLS 1402.

Theory and practice of international security. Topics include why groups use terrorism, why states go to war, the emergence of humanitarian intervention, and the role of technology ranging from nuclear weapons to computer viruses. CA 2.

**3414. National and International Security**

Three credits. Prerequisite: Open to juniors or higher.

Key American national security issues as integral parts of the larger problem of global security.

**3418. International Organizations and Law**

(Also offered as HRTS 3418.) Three credits. Prerequisite: Open to juniors or higher.

The role of intergovernmental and nongovernmental organizations and international law in world affairs with special attention to contemporary issues.

**3418W. International Organizations and Law**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

The role of intergovernmental and nongovernmental organizations and international law in world affairs with special attention to contemporary issues.

**3422. International Negotiation and Bargaining**

Three credits. Prerequisite: Open to juniors or higher.

A comparative study of foreign policy making. Use of computer-assisted simulation provides realistic experience in foreign policy decision making and international negotiation.

**3426. Politics, Propaganda, and Cinema**

Three credits. Prerequisite: Open to juniors or higher.

Lectures and films from several nations serve to illustrate techniques and effects of propaganda, analyzing the pervasive impact that propaganda has on our lives. The course concentrates on the World War II era.

**3428. The Politics of Torture**

(Also offered as HRTS 3428.) Three credits. Prerequisite: Open to juniors or higher.

Examination of the usage of torture by state and non-state actors. Questions include, “Why is torture perpetrated?” “What domestic and international legal frameworks and issues related to the use of torture?” “How effective are existing legal prohibitions and remedies?” “Who tortures?” and “How does torture affect transitional justice?”

**3429. Political Violence**

Three credits. Prerequisite: Open to Juniors or higher. Recommended preparation: POLS 1402.

Nature and origins of violence, including torture, genocide, terrorism, and civil war, on the part of individuals, non-state groups, and states.

**3429W. Political Violence**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors and above. Recommended preparation: POLS 1402.

Nature and origins of violence, including torture, genocide, terrorism, and civil war, on the part of individuals, non-state groups, and states.

**3430. Evaluating Human Rights Practices of Countries**

(Also offered as HRTS 3430.) Three credits. Prerequisite: Open to juniors or higher.

Examination of the ways in which governments, businesses, NGOs, IGOs, and scholars assess which human rights are being respected by governments of the world. Hands-on experience in rating the level of government respect for human rights in countries around the world.

**3432. American Diplomacy**

Three credits. Prerequisite: Open to juniors or higher.

A chronological examination of the foreign relations of the United States from 1776 to the first World War.

**3434. Honors Core: Excavating the International in Everyday Practices**

Three credits. Recommended Preparation: POLS 1402.

Examination of daily international practices utilizing an everyday objects lens, with attention to ethical implications for activism, change, and social justice.

**3434W. Honors Core: Excavating the International in Everyday Practices**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011. Recommended Preparation: POLS 1402.

Examination of daily international practices utilizing an everyday objects lens, with attention to ethical implications for activism, change, and social justice.

**3437. Recent American Diplomacy**

Three credits. Prerequisite: Open to juniors or higher.

The foreign relations of the United States from the first World War to the present.

**3438W. Writing Seminar in Recent American Diplomacy**

One credit. Prerequisite: POLS 3437, which may be taken concurrently; ENGL 1007 or 1010 or 1011 or 2011.

**3442. The Politics of American Foreign Policy**

Three credits. Prerequisite: Open to juniors or higher.

Instructions, forces and processes in the making of American foreign policy. Emphasis will be on contemporary issues.

**3447. American Diplomacy in the Middle East**

Three credits. Prerequisite: Open to juniors or higher.

The strategic, political, and economic interests that have shaped U.S. policy in the Middle East. U.S. responses to regional crises, peace efforts, arms transfers, covert operations and military intervention.

**3450. War and Technological Change**

Three credits. Recommended preparation: POLS 1402. Not open for credit to students who have passed POLS 2998 when offered as Technology and Security.

Exploration of how technological developments affect the causes, conduct, and outcomes of war.

**3457. Foreign Policies of the Russian Federation and the Former USSR**

Three credits. Prerequisite: Open to juniors or higher.

The Soviet Union's role in world affairs as background for studying the international consequences of the breakup of the USSR; the foreign policies of the former soviet republics among themselves, and of Russia and selected other republics.

**3462. International Relations of the Middle East**

Three credits. Prerequisite: Open to juniors or higher.

The foreign policies and security problems of Middle Eastern States; sources of regional conflict and competition - oil, water, borders, religion, ideology, alliances, geopolitics, refugees, and superpower intervention.

**3464. Arab-Israeli Conflict**

Three credits. Prerequisite: Open to juniors or higher.

Political relations between Arabs and Israelis with an emphasis on war and diplomacy.

**3464W. Arab-Israeli Conflict**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Political relations between Arabs and Israelis with an emphasis on war and diplomacy.

**3472. South Asia in World Politics**

Three credits. Prerequisite: Open to juniors or higher.

Relations among countries of South Asia and between this region and the rest of the world. Problems of development and security confronting South Asian countries. CA 4-INT.

**3472W. South Asia in World Politics**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

Relations among countries of South Asia and between this region and the rest of the world. Problems of development and security confronting South Asian countries. CA 4-INT.

**3476. World Political Leaders**

Three credits. Prerequisite: Open to juniors or higher.

Theory and practice of political leadership. Comparison of leaders in different political

systems. Leadership in foreign and domestic politics. Case studies of great leaders.

**3600. Making the Modern American Presidency**

Three credits. Prerequisite: Not open for credit to students who have passed POLS 2998 when taught as "Making the Modern American Presidency." Recommended preparation: POLS 1602.

Developments in the presidency from the constitutional era through President Hoover.

**3601. Modern American Presidency**

Three credits. Prerequisite: Not open for credit to students who have passed POLS 2998 when taught as Modern American Presidency. Recommended preparation: POLS 1602 and 3600.

Developments in the presidency from President Franklin Roosevelt to the present.

**3602. The Presidency and Congress**

Three credits. Prerequisite: Open to juniors or higher.

The contemporary Presidency and its interactions with the Congress in the formation of public policy.

**3603WQ. Congressional Apportionment and Redistricting**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011. Recommended preparation: POLS 1602; POLS 2072Q or STAT 1000Q or STAT 1100Q. Not open for credit to students who have passed POLS 2998W when offered as "Congressional Apportionment and Redistricting."

Empirical analyses and reporting of research on these fundamental democratic processes. CA 2.

**3604. Congress in Theory and Practice**

Three credits. Prerequisite: Open to juniors or higher.

In-depth analysis of the U.S. Congress, including representation, elections, policy formation, law making, and organization.

**3604W. Congress in Theory and Practice**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

In-depth analysis of the U.S. Congress, including representation, elections, policy formation, law making, and organization.

**3606. How to Fix an Election: The Politics of Election Administration in the United States**

Three credits. Prerequisite: POLS 1602.

An analysis of the politics of election administration. Topics include: the roles of state and local governments; the participation of candidates, political parties, and voters; convenience-voting options, new technologies, voter turnout, and voter errors; redistricting; voter suppression and voter fraud; and prospects for reform.

**3608. The Art, Science, and Business of Political Campaigns**

Three credits. Prerequisite: POLS 1602.

An analysis of strategy, communications, fundraising, and voter mobilization in contemporary political campaigns.

**3610. American Politics in Film**

Three credits. Prerequisite: POLS 1602.

An examination of films that describe the development of American political institutions, norms, and values; that portray the processes

exhibited in contemporary political institutions or the behaviors that characterize modern-day politicians; or that interpret recurring clashes in American politics. CA 2.

**3610W. American Politics in Film**

Three credits. Prerequisite: POLS 1602 and ENGL 1007 or 1010 or 1011 or 2011.

An examination of films that describe the development of American political institutions, norms, and values; that portray the processes exhibited in contemporary political institutions or the behaviors that characterize modern-day politicians; or that interpret recurring clashes in American politics. CA 2.

**3612. Electoral Behavior**

Three credits. Prerequisite: Open to juniors or higher.

Explaining elections and the basis for voters' decisions.

**3613. Congressional Elections**

Three credits. Prerequisite: Open to juniors or higher; freshmen and sophomores by permission. Recommended preparation: POLS 1602.

Campaign organization, strategy, and election outcomes in Congressional elections. Topics include candidates and nominations, the roles of political parties and interest groups, campaign communications, campaign finance, and electoral reform.

**3613W. Congressional Elections**

Three credits. Prerequisite: Open to juniors or higher; first year students and sophomores by permission; ENGL 1007 or 1010 or 1011 or 2011. Recommended preparation: POLS 1602.

Campaign organization, strategy, and election outcomes in Congressional elections. Topics include candidates and nominations, the roles of political parties and interest groups, campaign communications, campaign finance, and electoral reform.

**3615. Electoral Realignment**

Three credits. Prerequisite: Open to juniors or higher.

Theoretical and empirical examination of electoral realignment in the United States. CA 2.

**3615W. Electoral Realignment**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

Theoretical and empirical examination of electoral realignment in the United States. CA 2.

**3617. American Political Economy**

Three credits. Prerequisite: Open to juniors or higher.

Theoretical foundations of the American political economy. Examination of selected public policy issues, including interaction between economic factors and incentives, and democratic institutions and processes.

**3618. Politics of Inequality**

Three credits. Prerequisite: Open to juniors or higher.

Relationship between democracy and inequality. Economic inequality and its causes, poverty, public opinion, inequalities in political voice and representation, public policy, the role of money in politics.

**3622. American Political Leadership**

Three credits. Prerequisite: Open to juniors or higher.

Study of American political leadership as it relates to political culture, institutions and democratic principles.

**3625. Public Opinion**

(Also offered as PP 3030.) Three credits. Prerequisite: Open to juniors or higher.

Concepts, theories, structure, and substance of public opinion.

**3627. Connecticut State and Municipal Politics**

Three credits. Prerequisite: Open to juniors or higher.

An examination of contemporary Connecticut politics on the state and municipal levels.

**3632. Urban Politics**

(Also offered as URBN 3632.) Three credits. Prerequisite: Open to juniors or higher.

Political systems and problems confronting urban governments.

**3632W. Urban Politics**

(Also offered as URBN 3632W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

Political systems and problems confronting urban governments.

**3633. Race and Policy**

(Also offered as PP 3033 and AFRA 3033.) Three credits.

Examination of contemporary public policy through the lens of race.

**3642. African-American Politics**

(Also offered as AFRA 3642.) Three credits. Prerequisite: Open to juniors or higher.

Political behavior, theory, and ideology of African-Americans, with emphasis on contemporary U.S. politics. CA 4.

**3647. Black Leadership and Civil Rights**

(Also offered as AFRA 3647.) Three credits. Prerequisite: Open to juniors or higher.

Black leadership, emphasizing the principles, goals, and strategies used by African-American men and women to secure basic citizenship rights during the civil rights era.

**3652. Black Feminist Politics**

(Also offered as WGSS 3652 and AFRA 3652.) Three credits. Prerequisite: Open to juniors or higher.

An introduction to major philosophical and theoretical debates at the core of black feminist thought, emphasizing the ways in which interlocking systems of oppression uphold and sustain each other.

**3662. Latino Political Behavior**

(Also offered as LLAS 3270.) Three credits. Prerequisite: Open to juniors or higher.

Latino politics in the United States. Political histories of four different Latino populations: Mexican, Puerto Rican, Cuban and Central American. Different forms of political expressions, ranging from electoral behavior to political art. CA 4.

**3667. Puerto Rican Politics and Culture**

(Also offered as LLAS 3667.) Three credits. Prerequisite: Open to juniors or higher.

Legal and political history of the relationship between Puerto Rico and the United States with an emphasis on the question of United States empire and the politics of cultural resistance.

**3672. Women and Politics**

(Also offered as WGSS 3052.) Three credits. Prerequisite: Open to juniors or higher.

An introduction to feminist thought, the study of women as political actors, the feminist movement and several public policy issues affecting women.

**3710. Political Science Fiction**

Three credits.

International relations theory and speculative fiction as interpretations and interrogations of war, peace, politics, knowledge, and imagination.

**3720. Heroes and Villains in American Politics**

Three credits. Prerequisite: Open to juniors or higher.

An exploration of how conventional understandings of heroism and villainy influence American politics and, reciprocally, how reigning trends in American politics influence widely shared conceptions of heroism and villainy.

**3802. Constitutional Law**

Three credits. Prerequisite: Open to juniors or higher.

The role of the Supreme court in expounding and developing the United States Constitution. Topics include judicial review, separation of powers, federalism, and due process.

**3807. Constitutional Rights and Liberties**

(Also offered as HRTS 3807 and AMST 3807.) Three credits. Prerequisite: Open to juniors or higher.

The role of the Supreme Court in interpreting the Bill of Rights. Topics include freedoms of speech and religion, criminal due process, and equal protection.

**3812. Judiciary in the Political Process**

Three credits. Prerequisite: POLS 1602; open to juniors or higher.

The Supreme Court in the Political Process.

**3815. United States Constitutional Dictatorships**

Three credits.

An evaluation of America's founding Constitution as an anti-democratic text that can be interpreted to enable a dictatorship. Political theories and constitutional interpretations of democracy and dictatorship. Examination of case studies that document how dictatorial interpretations of the Constitution have been used to legitimate the oppression of various groups of people, including women and people of color.

**3817. Law and Society**

Three credits. Prerequisite: Open only to juniors or higher. When students intend to take several courses in the Judicial Process field, it is recommended that 3817 be taken first.

Leading schools of legal thought, fundamental principles and concepts of law, the basic framework of legal institutions, and judicial procedure. Particular attention is devoted to the general features of American law as it affects the citizen,

and primary emphasis is placed on the function of law as a medium for attaining a balance of social interests in a politically organized society.

**3822. Law and Popular Culture**

(Also offered as AMST 3822.) Three credits. Prerequisite: Open to juniors or higher.

Exploration of themes in the study of law and courts by contrasting scholarly work against representations of such themes in movies, televisions, and other media of popular culture.

**3822W. Law and Popular Culture**

(Also offered as AMST 3822W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

Exploration of themes in the study of law and courts by contrasting scholarly work against representations of such themes in movies, televisions, and other media of popular culture.

**3827. Politics of Crime and Justice**

Three credits. Prerequisite: Open to juniors or higher.

Criminal justice in the United States, with emphasis on the links between law, politics, and administration.

**3832. Maritime Law**

(Also offered as MAST 3832.) Three credits. Prerequisite: Open to juniors or higher.

International and domestic legal concepts concerning jurisdiction in a maritime setting.

**3834. Immigration and Transborder Politics**

(Also offered as LLAS 3271 and AMST 3271.) Three credits. Prerequisite: Open to juniors or higher.

U.S. immigration policy, trans-border politics, and the impact diasporas and ethnic lobbies have on U.S. foreign policy, with emphasis on Latino diasporas.

**3837. Civil Rights and Legal Mobilization**

Three credits. Prerequisite: Open to juniors or higher.

Strategies used by interest groups to achieve civil rights recognition through the legal system and legislative process.

**3837W. Civil Rights and Legal Mobilization**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

Strategies used by interest groups to achieve civil rights recognition through the legal system and legislative process.

**3842. Public Administration**

Three credits. Prerequisite: Open to juniors or higher.

The politics of public administration. Role of administrative agencies and officials in American national, state, and local governments.

**3847. The Policy-making Process**

Three credits. Prerequisite: Open to juniors or higher.

Introduction to the study of policy analysis. Consideration of description and prescriptive models of policy-making. Examination of several substantive areas of national policy in the United States.

**3850. Politics and Ethics**

Three credits. Prerequisite: Open to juniors or higher.

Relationship between power and ethics in political life. Examination of ethical perspectives on political decisions and issues.

**3857. Politics, Society, and Education Policy**

Three credits. Prerequisite: Open to juniors or higher.

Analysis of interactions among educational policy, politics, and other social forces. Insights and concerns from politics and other social sciences disciplines applied to different levels and types of schooling.

**3991. Supervised Field Work**

Variable (1-12) credits. Prerequisite: Department consent required. May be repeated for credit.

Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

**3993. Foreign Study**

Variable (1-15) credits. May be repeated for a total of 15 credits.

Special topics taken in a foreign study program. Consent of Department Head required, normally to be granted before the student's departure. May count toward the major with consent of the advisor.

**3995. Special Topics**

Variable (1-3) credits. Prerequisite: Prerequisites and recommended preparation vary by section; open to juniors or higher. May be repeated for credit.

**3996. Directed Research II**

Variable (1-4) credits. Prerequisite: Instructor consent. May be repeated for a total of 8 credits.

Faculty-directed investigation of a research topic in political science.

**3999. Independent Study**

Variable (1-6) credits. May be repeated for credit.

Open only with consent of instructor and department head.

**4894. Political Science Colloquium**

One credit. Prerequisite: Instructor consent. Recommended preparation: recommended for sophomore or junior Honors students. May be repeated for a total of 2 credits.

Faculty research presentations demonstrating current topics of investigation within the department, literature review skills, and research design techniques. Recommended for sophomore and junior Honors students who are beginning their thesis research. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

**4994. Senior Seminar**

Three credits. Prerequisite: POLS 4894; open only to juniors or higher; instructor consent required.

Required for students in the Honors Program. Weekly seminar on selected topics in political science. Students must complete this course prior to their final semester.

**4997W. Senior Thesis**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher. May be repeated for a total of 6 credits.

All honors students writing an honors thesis in Political Science must take this course in each of their last two semesters.

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**Portuguese (PORT)**


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**1101. Elementary Portuguese I**

Four credits.

Development of ability to communicate in Portuguese, orally and in writing, to satisfy basic survival needs within a cultural setting.

**1102. Elementary Portuguese II**

Four credits.

Development of ability to communicate in Portuguese, orally and in writing, to satisfy basic survival needs within a cultural setting.

**1103. Intermediate Portuguese I**

Four credits. Prerequisite: PORT 1102 or equivalent.

Further development of understanding, speaking, reading, and writing skills within a cultural setting. Readings to enhance cultural awareness of the Lusophone world.

**1104. Intermediate Portuguese II**

Four credits. Prerequisite: PORT 1103 or equivalent.

Further development of understanding, speaking, reading, and writing skills within a cultural setting. Readings to enhance cultural awareness of the Lusophone world.

**1193. Foreign Study**

Variable (1-6) credits. May be repeated for credit.

Special topics taken in a foreign study program. Consent of Department Head required, normally before the student's departure.

**3293. Foreign Study**

Variable (1-6) credits. May be repeated for credit.

Special topics taken in a foreign study program. Consent of Department Head required, normally to be granted prior to the student's departure. May count toward the major with consent of the advisor.

**3295. Special Topics**

Variable (1-6) credits. Prerequisite: Prerequisites and recommended preparation vary. May be repeated for credit.

Prerequisites and recommended preparation vary.

**3298. Variable Topics**

Three credits. Prerequisite: Prerequisites and recommended preparation vary. May be repeated for credit.

Prerequisites and recommended preparation vary.

**3299. Independent Study**

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

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**Psychological Sciences (PSYC)**


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**1100. General Psychology I**

Three credits.

Basic principles that underlie mental processes and behavior; research methodology, biopsychology, sensation, perception, learning,

memory and language. Ordinarily this course should be taken in the fall semester. CA 3.

**1101. General Psychology II**

Three credits. Prerequisite: PSYC 1100; PSYC 1101 & 1103 may not both be taken for credit.

Psychology as a social science. Research methodology, developmental, personality, clinical, abnormal and social psychology. CA 2.

**1103. General Psychology II (Enhanced)**

Four credits. Prerequisite: PSYC 1100; Not open for credit to students who have passed PSYC 1101. May not be taken concurrently with PSYC 1101.

Psychology as a social science. Research methodology, developmental, personality, clinical, abnormal and social psychology. Applications of theory, writing, and demonstrations during discussion periods. CA 2.

**2100Q. Principles of Research in Psychology**

Four credits. Prerequisite: PSYC 1100; PSYC 1101 or 1103; STAT 1000Q or 1100Q or Statistics Q 1000 level. May not be taken out of sequence after passing PSYC 3250, 3251, 3450, 3550, 3551, 3552, or 3899.

Design, analysis, and reporting of psychological research. Experimental and quasi-experimental designs, laboratory and correlational techniques, research ethics.

**2100WQ. Principles of Research in Psychology**

Four credits. Prerequisite: PSYC 1100; PSYC 1101 or 1103; STAT 1000Q or 1100Q or STAT Q 1000 level; ENGL 1007 or 1010 or 1011 or 2011. May not be taken out of sequence after passing PSYC 3250, 3251, 3450, 3550W, 3551W, or 3552.

Design, analysis, and reporting of psychological research. Experimental and quasi-experimental designs, laboratory and correlational techniques, research ethics.

**2101. Introduction to Multicultural Psychology**

Three credits. Prerequisite: PSYC 1100; PSYC 1101 or 1103.

General introduction to cross-cultural and multicultural issues and the role psychology has played in understanding the experiences of diverse groups. CA 4.

**2110. Psychology of Human Sexuality**

Three credits. Recommended preparation: PSYC 1100.

Sexuality from across psychological science, highlighting relevant theoretical perspectives, methodology, and empirical research.

**2200. Physiological Psychology**

Three credits. Prerequisite: BIOL 1102 or 1107 or PNB 2264-2265; PSYC 1100.

Physiological processes related to motivation, emotion, sensory processes, motor skills, learning, and psychiatric conditions.

**2201. Drugs And Behavior**

Three credits. Prerequisite: PSYC 1100 or BIOL 1107.

An overview of drug effects on chemical transmission in the nervous system, with an emphasis on the behavioral/psychological effects of drugs.

**2208. Sensory Systems Neuroscience**

Three credits. Prerequisite: PSYC 1100 or BIOL 1107 or BIOL 1108.

Cellular, circuit, and neural systems basis of sensation and perception including evolutionary and ecological differences among mammals.

**2209. Learning and Memory: From Brain to Behavior**

Three credits. Prerequisite: PSYC 1100 or BIOL 1107 or 1108. Recommended preparation: PSYC 2200.

Neurobiological basis of learning and memory, including topics in genetics, evolution and ethology.

**2300. Abnormal Psychology**

Three credits. Prerequisite: PSYC 1100; PSYC 1101 or 1103.

Nature of abnormal behavior, theories and data regarding symptoms, etiology, treatment and prevention of mental disorders.

**2300W. Abnormal Psychology**

Three credits. Prerequisite: PSYC 1100; PSYC 1101 or 1103; ENGL 1007 or 1010 or 1011 or 2011.

Nature of abnormal behavior, theories and data regarding symptoms, etiology, treatment and prevention of mental disorders.

**2301. The Study of Personality**

Three credits. Prerequisite: PSYC 1100; PSYC 1101 or 1103.

Theories, methods, and research in both clinical and experimental approaches to personality.

**2400. Developmental Psychology**

Three credits. Prerequisite: PSYC 1100; PSYC 1101 or 1103.

Social behavior, personality, perception, cognition, language, intelligence, learning, biobehavioral processes, and research methodology in developmental perspective.

**2500. Learning**

Three credits. Prerequisite: PSYC 1100; PSYC 1101 or 1103.

Learning and memory principles found in animal research and their relationship to human behavior. Human and other species' specific types of unique learning abilities.

**2501. Cognitive Psychology**

Three credits. Prerequisite: PSYC 1100; PSYC 1101 or 1103.

Different views of mental representation and processes involved in memory, language comprehension, perception, attention, and problem solving. Historical development of models in cognitive psychology.

**2502. Science of Learning and Art of Scientific Communication**

Three credits. Prerequisite: Instructor consent required. Not open for credit to students who have passed PSYC 3884 when offered as "Science of Learning and Art of Communication."

Lecture, discussion, and team-based presentations related to the principles of learning and the essentials of scientific communication.

**2600. Industrial/Organizational Psychology**

Three credits. Prerequisite: PSYC 1100; PSYC 1101 or 1103.

Applications of psychology in the workplace: Measurement, personnel decisions, performance appraisal, training, motivation, worker attitudes,

leadership, ergonomics and job design, workplace health and safety.

**2700. Social Psychology**

Three credits. Prerequisite: PSYC 1100; PSYC 1101 or 1103.

Attitudes, social cognition, social influence, interpersonal relations, group dynamics.

**2701. Social Psychology of Multiculturalism**

Three credits. Prerequisite: PSYC 1100; PSYC 1101 or 1103. Recommended preparation: PSYC 2700.

Introduction to theoretical perspectives and behavioral research that seek to explain the nature and mechanisms of intergroup relations and the psychology of culture, prejudice, and biased behavior. CA 4.

**3100. The History and Systems of Psychology**

Three credits. Prerequisite: PSYC 1100; PSYC 1101 or 1103; PSYC 2300 or PSYC 2300W or PSYC 2301 or PSYC 2400 or PSYC 2600 or PSYC 2700; PSYC 2200 or PSYC 2500 or PSYC 2501 or PSYC 3201 or PSYC 3500 or PSYC 3501.

Philosophical and scientific origins and major schools, including structuralism, functionalism, behaviorism, gestalt, and psychoanalysis.

**3100W. The History and Systems of Psychology**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; PSYC 1100; PSYC 1101 or 1103; PSYC 2300/W or 2301 or 2400 or 2600 or 2700; and PSYC 2200 or 2500 or 2501 or 3201 or 3500 or 3501.

Philosophical and scientific origins and major schools, including structuralism, functionalism, behaviorism, gestalt, and psychoanalysis.

**3101. Psychological Testing**

Three credits. Prerequisite: PSYC 2100Q.

Practical and theoretical interpretation of common personality, industrial, educational, cognitive, and attitude tests. Evaluating utility, test bias, and error. Using tests in clinical, educational, and workplace settings.

**3102. Psychology of Women**

(Also offered as WGSS 3102.) Three credits. Prerequisite: Three credits of 2000 or 3000 level psychology.

Gender roles, socialization, women and work, women's relationships, violence against women, and other topics. Theory and research. CA 4.

**3104E. Environmental Psychology**

Three credits. Prerequisite: PSYC 1100 and 1101 or 1103.

Reciprocal relationships between built and natural environments and human behavior.

**3105. Health Psychology**

Three credits. Prerequisite: PSYC 1100; PSYC 1101 or 1103.

The interface between psychology and health is examined using a biopsychosocial model. Topics include stress and coping, health promotion, adjustment to chronic illness, and the psychology of health behaviors

**3106. Black Psychology**

(Also offered as AFRA 3106.) Three credits. Prerequisite: PSYC 1100; PSYC 1101 or 1103.

Empirical and theoretical literature on psychological experiences of African Americans. Impact of race, culture, and ethnicity on psychological development. CA 4.

**3150. Laboratory in Health Psychology**

Three credits. Prerequisite: PSYC 3105.

Introduction to experimental design and research methods in health psychology. Includes a class research project.

**3200. Introduction to Behavioral Genetics**

Three credits. Prerequisite: PSYC 1100 or BIOL 1102, 1103, 1107 or 1108; open to juniors or higher.

Methods, concepts and findings of behavioral genetics in animals and humans.

**3200W. Introduction to Behavioral Genetics**

Three credits. Prerequisite: PSYC 1100; BIOL 1102 or both 1107 and 1108; ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

Methods, concepts and findings of behavioral genetics in animals and humans.

**3201. Animal Behavior**

(Also offered as EEB 3201.) Three credits. Prerequisite: BIOL 1102 or 1107; PSYC 1100.

Principles of animal behavior derived from a review of descriptive and analytic studies in laboratory and field. Sometimes offered in multimedia format.

**3241. Motivation and Emotion**

(Also offered as COMM 3241.) Three credits. Prerequisite: PSYC 1100, and 1101 or 1103; open to juniors or higher.

Cognition, brain mechanisms, biofeedback, aggression, sex, competence, social influence, and conformity.

**3250W. Laboratory in Animal Behavior and Learning**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; PSYC 2100Q; PSYC 2200 or 2500 or 3201.

A laboratory course to supplement PSYC 3201.

**3251. Laboratory in Physiological Psychology**

Three credits. Prerequisite: PSYC 2100Q; PSYC 2200, which may be taken concurrently.

Techniques employed in experimental investigation of the anatomical and physiological bases of behavior.

**3252. Drugs and Behavior Laboratory**

Three credits. Prerequisite: PSYC 2100Q and 2201.

Techniques employed in the experimental investigation of drug action. Laboratory exercises illustrate behavioral and neural effects of various psychoactive pharmacological agents such as stimulants, antipsychotics, antidepressants, antiparkinsonian drugs, anxiolytics, sedative/hypnotics.

**3253. Sensory Neuroscience Laboratory**

Three credits. Prerequisite: PSYC 2100Q and 3501.

Techniques employed in the experimental investigation of sensory neuroscience. Laboratory exercises in psychophysics and assessment of human and animal sensory abilities. Elementary computer programming is used to synthesize and process sound files and analyze psychophysics

data. A one-hour lecture and two two-hour labs each week.

### **3270. Current Topics in Behavioral Neuroscience**

Three credits. Prerequisite: Instructor consent required. May be repeated for credit.

Selected topics vary with each offering (e.g., The Neurobiology of Memory and Decision-Making, Sensory Coding and Decoding, Animal Models of Basal Ganglia Dysfunction, Animal Models of Developmental Disorders).

### **3300. Abnormal Child Psychology**

Three credits. Prerequisite: PSYC 2400.

Theory, research, treatment, and prevention in developmental psychopathology from infancy through adolescence.

### **3301. Introduction to Clinical Psychology**

Three credits. Prerequisite: PSYC 2300.

History of clinical psychology as a profession; graduate training and ethical responsibilities; assessment and treatment of psychological disorders; and clinical sub-specialties.

### **3302W. Autism and Developmental Disorders**

Three credits. Prerequisite: PSYC 2300; PSYC 2400; ENGL 1007 or 1010 or 1011 or 2011.

Identification, treatment, education, and support of individuals with developmental concerns, particularly autism spectrum disorders.

### **3350W. Laboratory in Personality**

Three credits. Prerequisite: PSYC 2100 or STAT 1100Q; PSYC 2301; ENGL 1007 or 1010 or 1011 or 2011.

Experimental design and methodology in personality research, followed by a class project written individually by each student.

### **3370W. Current Topics in Clinical Psychology**

Three credits. Prerequisite: PSYC 2300 or 3750; ENGL 1007 or 1010 or 1011 or 2011. May be repeated for credit.

### **3400. Theories in Developmental Psychology**

Three credits. Prerequisite: PSYC 2400.

Historical and contemporary theories of development. Includes Piaget, Vygotsky, Freud, Erikson, social-learning theory, ethological theory, and information-processing theory.

### **3405. Social Development**

Three credits. Prerequisite: PSYC 1100, 1101 or 1103; and PSYC 2400 or HDFS 2100.

Social development in infancy, childhood, and adolescence. Theoretical approaches and practical applications. Special emphasis on critically evaluating empirical research.

### **3440. Developmental Cognitive Neuroscience**

Three credits. Prerequisite: Open to juniors or higher.

Survey of current research and methods in developmental cognitive neuroscience, an interdisciplinary scientific field at the boundaries of neuroscience, developmental psychology, and cognitive science.

### **3450W. Laboratory in Developmental Psychology**

Four credits. Prerequisite: PSYC 2100Q and 2400; ENGL 1007 or 1010 or 1011 or 2011.

The techniques necessary for performing psychological research on young children; advanced topics.

### **3470. Current Topics in Developmental Psychology**

Three credits. Prerequisite: PSYC 2400. May be repeated for credit.

Selected topics (e.g., infant development, peer relations, cognitive development, and developmental psychobiology) that may vary with each offering.

### **3470W. Current Topics in Developmental Psychology**

Three credits. Prerequisite: PSYC 2400; ENGL 1010, 1011 or 2011. May be repeated for credit.

Selected topics (e.g., infant development, peer relations, cognitive development, and developmental psychobiology) that may vary with each offering.

### **3500. The Psychology of Language**

Three credits. Prerequisite: PSYC 1100; PSYC 1101 or 1103.

Those aspects of language that make it a uniquely efficient vehicle for communication and thought.

### **3501. Sensation and Perception**

Three credits. Prerequisite: PSYC 1100; PSYC 1101 or 1103.

Sensory and perceptual processes in vision, hearing, touch, taste, and smell.

### **3502. Psychology of Consciousness**

Three credits. Prerequisite: PSYC 1100.

The role of consciousness in human cognition is examined by comparing the conscious and unconscious operation of mental faculties including perception, memory, learning, and thought.

### **3503. Computer Modeling of Cognitive Processes**

Three credits. Prerequisite: PSYC 2501 or 3501.

Symbolic and connectionist approaches to modelling vision, problem solving, planning, deduction, language understanding, learning, and memory.

### **3550W. Laboratory in Cognition**

Three credits. Prerequisite: PSYC 2100Q; PSYC 2500 or 2501, which may be taken concurrently; ENGL 1007 or 1010 or 1011 or 2011.

Selected experiments from the following topics: memory processes, categorization, language comprehension and problem solving.

### **3551W. Psycholinguistics Laboratory**

Three credits. Prerequisite: PSYC 2100Q; ENGL 1007 or 1010 or 1011 or 2011. Recommended preparation: PSYC 2501 or 3500, which may be taken concurrently.

Introduction to the experimental study of language understanding and use. Topics selected from among speech perception, word recognition, sentence processing, language production, and corpus phenomena.

### **3552. Laboratory in Sensation and Perception**

Three credits. Prerequisite: PSYC 2100Q; PSYC 3501, which may be taken concurrently.

Techniques for the study of sensory capacities and perceptual processes.

### **3600. Social-Organizational Psychology**

Three credits. Prerequisite: PSYC 2600. Recommended Preparation: PSYC 2700.

Social psychological phenomena in the workplace. Social perceptions, personality, stress, work-related attitudes, motivation, team decision-making, and effectiveness, leadership and influence, organizational culture.

### **3601. Human Factors Design**

Three credits. Prerequisite: PSYC 1100.

Application of information about human abilities and limitations to the design of systems, products, tools, computer interfaces, tasks, jobs, and environments for safe, comfortable and effective human use.

### **3644. Occupational Health Psychology**

Three credits. Prerequisite: PSYC 1101 or 1103; and PSYC 2600 or consent of instructor.

Models, research methods, and research-to-practice applications in the interdisciplinary field of occupational health psychology, and how these are used to enhance the safety, health and well-being of workers in all occupations and to create healthier workplaces and organizations.

### **3670. Current Topics in Industrial/Organizational Psychology**

Three credits. Prerequisite: PSYC 2600 or 3601 or instructor consent. May be repeated for credit.

### **3670W. Current Topics in Industrial/Organizational Psychology**

Three credits. Prerequisite: PSYC 2600 or 3601 or instructor consent; ENGL 1007 or 1010 or 1011 or 2011. May be repeated for credit.

### **3750. Laboratory in Social Psychology**

Three credits. Prerequisite: PSYC 2100 or STAT 1100Q; PSYC 2700.

Methods and techniques of research in social psychology. Supervised research investigations.

### **3750W. Laboratory in Social Psychology**

Three credits. Prerequisite: PSYC 2100 or STAT 1100Q; PSYC 2700; ENGL 1007 or 1010 or 1011 or 2011.

Methods and techniques of research in social psychology. Supervised research investigations.

### **3770. Current Topics in Social Psychology**

Three credits. Prerequisite: PSYC 2700. May be repeated for credit.

Selected topics (e.g., social influence, person perception, pro-social behavior) vary with each offering.

### **3770W. Current Topics in Social Psychology**

Three credits. Prerequisite: PSYC 2700; ENGL 1007 or 1010 or 1011 or 2011. May be repeated for credit.

Selected topics (e.g., social influence, person perception, pro-social behavior) vary with each offering.

### **3771. Prejudice and Conflict**

Three credits. Prerequisite: PSYC 1101 or 1103.

Overview of the psychological bases of prejudice and conflict in individuals and society.

### **3880. Field Experience**

Variable (1-6) credits. Prerequisite: PSYC 1100; PSYC 1101 or 1103. May be repeated for credit.



Supervised field work in clinical, community, or organizational settings. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory.)

### 3883. Foreign Study

Variable (1-6) credits. May be repeated for credit.

Special topics taken in a foreign study program. Consent of Department Head or advisor may be required prior to the student's departure.

### 3884. Seminar in Psychology

Three credits. Prerequisite: PSYC 1100; PSYC 1101 or 1103. May be repeated for credit.

Recent developments in psychology. Topics vary with each offering.

### 3885. Special Topics

Variable (1-6) credits. Prerequisite: Prerequisites and recommended preparation vary. May be repeated for credit.

### 3889. Undergraduate Research

Variable (1-6) credits. Recommended Preparation: PSYC 2100. May be repeated for credit.

Participant activities related to research.

### 3899. Independent Study

Variable (1-6) credits. Prerequisite: PSYC 2100Q. May be repeated for credit.

Students are expected to develop their own plan for a research project, conduct the research, and write-up this research, consulting periodically with a faculty member.

### 4197W. Senior Thesis in Psychology

Three credits. Prerequisite: Three credits of PSYC 3889 or 3899; ENGL 1007 or 1010 or 1011 or 2011; open only to Honors students with consent of instructor and Department Head.

Hours by arrangement.

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## Public Health (PUBH)

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### 1001. Introduction to Public Health

Three credits.

A basic foundation in public health principles and practices. Individual and group field assignments required. CA 2.

### 3001. Introduction to Epidemiology

Three credits. Prerequisite: Instructor consent required.

Provides overview of epidemiological concepts and methods for examining the distribution and causes of health and illness across populations. Stresses the application of epidemiology in advancing health research, disease prevention efforts, and medical care delivery. Primarily suited for, but not limited to, juniors and seniors interested in public health.

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## Public Policy (PP)

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### 1001. Introduction to Public Policy

Three credits.

Public policy history and institutions, government administration and systems, policy analysis, contemporary policy issues, polling and influences on policy making. CA 2.

### 2100. Survey Research Methods

(Also offered as URBN 2100.) Three credits.

Theory and practice of surveys, including overall project design, questionnaire development, sampling, methods of data collection and data analysis.

### 3001. Public Policy

Three credits.

The public policy process in the United States and frameworks for understanding and evaluating contemporary policy problems.

### 3010. Public Policy Research Methods I

Three credits. Prerequisite: May not be taken out of sequence after passing PP 3011.

Research design for policy analysis, impact analysis, implementation analysis, program evaluation.

### 3011Q. Public Policy Research Methods II

Three credits. Prerequisite: PP 3010; STAT 1000Q or 1100Q; or consent of instructor.

Data analysis for program evaluation, public policy and management research including data description, probability theory, statistical inference, multiple regression and time series analysis.

### 3020. Cases in Public Policy

Three credits.

Exploration of policy analysis using case studies on various contemporary policy topics.

### 3020W. Cases in Public Policy

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Exploration of policy analysis using case studies on various contemporary policy topics.

### 3030. Public Opinion

(Also offered as POLS 3625.) Three credits. Prerequisite: Open to juniors or higher.

Concepts, theories, structure, and substance of public opinion.

### 3031. Public Administration in Theory and Practice

Three credits.

Overview of public administration theory, systems and practices as they have developed in the United States. Explores the roles of public officials in the context of a pluralistic democratic society.

### 3032. Budgeting in Public Service Organizations

Three credits.

Introduction to the policy and management issues surrounding how governments budget and spend the money they raise.

### 3033. Race and Policy

(Also offered as AFRA 3033 and POLS 3633.) Three credits.

Examination of contemporary public policy through the lens of race.

### 3082. Practicum in Public Policy

Three credits.

Policy workshop on the practical application of making public policy.

### 3091. Internship

Variable (1-12) credits. Prerequisite: Department consent required.

### 3098. Public Policy Issues

Three credits. May be repeated for credit.

An exploration of fundamental issues in public policy, public management and public opinion.

### 3099. Independent Study

Variable (1-9) credits. Prerequisite: Instructor consent required. May be repeated for credit.

### 3203. Environmental Policy and Institutions

(Also offered as POLS 3203.) Three credits. Prerequisite: Open to juniors or higher.

Development of environmental policies and institutions and their effects on the motivations and the actions of individuals and groups with implications for questions of equity, justice, and sustainability. Draws on approaches from comparative politics, public policy, and international relations.

### 4031. Financial Management for Public and Nonprofit Organizations

Three credits. Prerequisite: Open to juniors or higher, others by consent.

Management of financial resources in public service organizations. Topics include variance analysis, cost analysis, public sector and nonprofit accounting, financial statement analysis, and forecasting.

### 4032. Capital Financing and Budgeting

Three credits. Prerequisite: Open to juniors or higher, others by consent.

An examination of the municipal bond market, capital budgeting techniques, and related public policy issues.

### 4033. State and Local Fiscal Problems

Three credits.

Analytical tools and concepts to evaluate policies related to government revenues, the delivery of public services, and intergovernmental relations.

### 4034. Social Policy

Three credits. Prerequisite: Open to juniors or higher, others by consent.

Examination of the concepts and principles of public policy analysis, with applications to important social issues.

### 4095. Special Topics

Variable (1-6) credits. Prerequisite: Prerequisites and recommended preparation vary. May be repeated for credit.

Credits and hours by arrangement.

### 4346. Child and Family Policy

Three credits. Prerequisite: Open to juniors or higher, others by consent.

Theory and practice of child and family policy. Topics may include marriage and divorce, fertility, employment, and human capital.

### 4365. Human Resource Management

Three credits. Prerequisite: Open to juniors or higher, others by consent.

The structures, processes, and principles of human resource management in public service and examination of contemporary human resource policies and challenges.

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## Russian (RUSS)

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### 1193. Foreign Study

Variable (1-6) credits. May be repeated for credit.

Consent of Department Head required, normally before the student's departure.

### 3293. Foreign Study

Variable (1-6) credits. May be repeated for credit.

Special topics taken in a foreign study program. Consent of Department Head required, normally to be granted prior to the student's departure.

### 3295. Special Topics

Variable (1-6) credits. Prerequisite: Prerequisites and recommended preparation vary. May be repeated for credit.

### 3298. Variable Topics

Three credits. Prerequisite: Prerequisites and recommended preparation vary. May be repeated for credit.

### 3299. Independent Study

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

## Science (SCI)

### 1150. Unifying Concepts in Biology, Chemistry and Physics

Four credits. Prerequisite: A mathematics course.

A laboratory course introducing unifying concepts from biology, chemistry, and physics and their application to daily life. Includes examination of the scientific process and current scientific ideas.

### 1193. Foreign Study

Variable (1-6) credits. May be repeated for credit.

Special topics taken in a foreign study program. Consent of the program director normally before the student's departure to study abroad. How credits are used to be determined by the College Dean and/or Advisor.

### 2206. History of Science

(Also offered as HIST 2206.) Three credits.

Development of modern science and technology in relation to culture, politics, and social issues. CA 1.

## Social Work (SOWK)

### 3000. The Social Work Profession and Practice

Three credits. Prerequisite: Open only to Bachelor of Social Work students.

Overview of the social work profession and generalist social work practice at micro, mezzo and macro levels.

### 3100. Human Behavior and Social Environment I

Three credits. Prerequisite: Open only to Bachelor of Social Work students.

Examines theories of human behavior in the social environment from a "person-in-environment" approach. Focuses macro contextual factors that shape human experience.

### 3101. Human Behavior and Social Environment II

Three credits. Prerequisite: Open only to Bachelor of Social Work students.

Examines theories of human behavior of individuals, families, communities, groups, and organizations and lifespan development. Students complete shadowing requirement for an additional credit.

### 3200. Social Welfare Policy and Services

Three credits. Prerequisite: Open only to Bachelor of Social Work students.

Provides an overview of social welfare and social policy in the United States and the emergence of the social work profession in a historical perspective.

### 3201. Advocacy for Social Policy Change

Three credits. Prerequisite: Open only to Bachelor of Social Work students.

Provides a basis to understand the process of social policy development and conceptual frameworks for social policy analysis. Engage in policy practice to address social and economic well-being.

### 3250. Understanding Social Justice and Diversity through Intergroup Dialogue

Three credits. Prerequisite: Open only to Bachelor of Social Work students.

Examines the mechanisms of human oppression on various levels and focuses on engaging diversity and differences in social work practice and advancing human rights and social and economic justice. Students participate in intergroup dialogue.

### 3350. Research Methods for Social Work Practice

Three credits. Prerequisite: Open only to Bachelor of Social Work students.

Introduces students to basic concepts and procedures of social work research. Includes research design, ethics, and culturally sensitive research practice.

### 3501. Social Work Practice with Individuals and Families

Three credits. Prerequisite: Open only to Bachelor of Social Work students.

Develops generalist social work practice knowledge, values, and skills from a strengths-based, empowerment model at the micro level. Prepares students to practice with individuals and families from differing backgrounds.

### 3502. Social Work Practice with Groups

Three credits. Prerequisite: Open only to Bachelor of Social Work students.

Focuses on the mezzo-level of social work practice, primarily formal groups. Theory, knowledge, and analyses of group dynamics and the development of effective group work skills are emphasized.

### 3503. Social Work Practice with Communities and Organizations

Three credits. Prerequisite: Open only to Bachelor of Social Work students.

Prepares students to work with organizations and communities. Practice skills are developed that promote social work ethics and values, including advancing human rights and social, economic, and environmental justice.

### 3700. Field Education I

Three credits. Prerequisite: Open only to Bachelor of Social Work students. Corequisite: SOWK 3800.

Students will be placed in field units in the community. They will engage in 200 hours of supervised field experience in generalist social work practice in the fall semester of their senior year. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

### 3701. Field Education II

Three credits. Prerequisite: Open only to Bachelor of Social Work students. Corequisite: SOWK 3801.

Students continue their field placement in a field unit in the community. They will engage in 200 hours of supervised field experience in generalist social work practice in the spring semester of their senior year. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

### 3800. Field Seminar I

Three credits. Prerequisite: Open only to Bachelor of Social Work students.

Concurrent with their field placement, students attend field seminar led by their faculty advisor. Focus on critical thinking and integrating field practice experiences with theories and evidence-based research, the development of professional identity, self-reflection, cultural competence, and identifying ethical issues.

### 3801. Field Seminar II

Three credits. Prerequisite: Open only to Bachelor of Social Work students.

Concurrent with their field placement, students attend field seminar led by their faculty advisor. Focus on critical thinking and integrating field practice experiences with theories and evidence-based research, further development of professional identity, self-reflection, problem solving ethical issues, and cultural competence.

### 3993. Foreign Study

Variable (1-15) credits. Prerequisite: Consent of BSW Director required, normally to be granted prior to the student's departure. Open only to BSW students. May be repeated for credit.

Special topics may be taken in a foreign study program. May count for elective credit. May count toward the major with consent of the advisor.

### 3995. Special Topics in Social Work

Variable (1-6) credits. Prerequisite: Prerequisites and recommended preparation vary; open only to BSW students. May be repeated for credit.

May count for elective credit.

### 3998. Variable Topics in Social Work

Variable (1-6) credits. Prerequisite: Prerequisites and recommended preparation vary; open only to BSW students. May be repeated for credit.

May count for elective credit.

### 3999. Independent Study

Variable (1-6) credits. Prerequisite: Open only with consent of instructor; open only to BSW students. May be repeated for credit.

### 4100W. Senior Seminar in Social Work

Four credits. Prerequisite: Open only to Bachelor of Social Work students.

Capstone course integrating and analyzing social work theory and practice through research, writing, and discussion of advanced texts.

## Sociology (SOCI)

### 1001. Introduction to Sociology

Three credits. Prerequisite: May not be taken out of sequence after passing SOCI 3203.

Modern society and its social organization, institutions, communities, groups, and social roles:

the socialization of individuals, family, gender, race and ethnicity, religion, social class, crime and deviance, population, cities, political economy, and social change. CA 2.

#### **1001W. Introduction to Sociology**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011. Cannot be taken for credit after passing SOCI 3203.

Modern society and its social organization, institutions, communities, groups, and social roles: the socialization of individuals, family, gender, race and ethnicity, religion, social class, crime and deviance, population, cities, political economy, and social change. CA 2.

#### **1251. Social Problems**

Three credits.

An examination of how institutional and organizational features of societies generate contemporary social problems, public policies for their alleviation, and questions of ethics and social justice. Topics may include substance use and misuse, mental illness, crime, social inequality, racism, gender disparities, climate change, and human rights. CA 2. CA 4.

#### **1251W. Social Problems**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

An examination of how institutional and organizational features of societies generate contemporary social problems, public policies for their alleviation, and questions of ethics and social justice. Topics may include substance use and misuse, mental illness, crime, social inequality, racism, gender disparities, climate change, and human rights. CA 2. CA 4.

#### **1501. Race, Class, and Gender**

Three credits.

Race, class, and gender, as they structure identities, opportunities, and social outcomes. CA 2. CA 4.

#### **1501W. Race, Class, and Gender**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Race, class, and gender, as they structure identities, opportunities, and social outcomes. CA 2. CA 4.

#### **1701. Society in Global Perspective**

Three credits.

Economic, political, social and cultural processes in globalization. The world economy, the autonomy of nation-states, the role of the media, and the social and environmental problems of societies in a world context. CA 2. CA 4-INT.

#### **1701W. Society in Global Perspective**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Economic, political, social, and cultural processes in globalization. The world economy, the autonomy of nation-states, the role of the media, and the social and environmental problems of societies in a world context. CA 2. CA 4-INT.

#### **1993. Foreign Study**

Variable (1-15) credits. Prerequisite: Department consent required. May be repeated for credit.

Special topics taken in an Education Abroad program.

#### **1996. Introduction to Research**

Three credits. Prerequisite: Instructor consent required.

Introduction to conducting sociological research.

#### **2101. Sports and Society**

Three credits.

Sports as an institution and its impact on society. Gender, race, and class inequality in sports. Cultural, economic, political, and legal influences on sports at the professional, intercollegiate, scholastic, and recreational levels.

#### **2110. Sociology of Education**

Three credits.

Education and society: primary schools through universities as agencies for social selection and socialization. Formerly offered as SOCI 3471.

#### **2110W. Sociology of Education**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Education and society: primary schools through universities as agencies for social selection and socialization. Formerly offered as SOCI 3471W.

#### **2198. Topics in the Sociology of Culture**

Three credits. May be repeated for a total of 9 credits.

A variable topics course focusing on issues in the sociology of culture. Specific topics may include: production of culture and the culture industry, popular culture, the sociology of the arts, cultural representation of deviance and social problems, women and culture, film and the developing world, material culture, and cultural constructions of social inequality. Formerly offered as SOCI 3271.

#### **2198W. Topics in the Sociology of Culture**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011. May be repeated for a total of 9 credits.

A variable topics course focusing on issues in the sociology of culture. Specific topics may include production of culture and the culture industry, popular culture, the sociology of the arts, cultural representation of deviance and social problems, women and culture, film and the developing world, material culture, and cultural constructions of social inequality.

#### **2200. Introducing India: Diversity and Dynamism**

(Also offered as AAAS 2200.) Three credits. Recommended preparation: One introductory AAAS or SOCI course.

An introduction to the historical, political, social, economic, and cultural diversity of India. Topics may include: cultural diversity in languages, religions, and regions; socio-political challenges; power relations that construct patterns of privilege and marginalization; and contemporary human rights issues.

#### **2200W. Introducing India: Diversity and Dynamism**

(Also offered as AAAS 2200W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011. Recommended preparation: One introductory AAAS or SOCI course.

An introduction to the historical, political, social, economic, and cultural diversity of India. Topics may include: cultural diversity in languages, religions, and regions; socio-political challenges;

power relations that construct patterns of privilege and marginalization; and contemporary human rights issues.

#### **2210. Sociological Perspectives on Asian American Women**

(Also offered as AAAS 2210.) Three credits.

An overview of social structures, inter-group relations, and women's rights, focusing on the experience of Asian American women. Formerly offered as AAAS/SOCI 3221. CA 4.

#### **2210W. Sociological Perspectives on Asian American Women**

(Also offered as AAAS 2210W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

An overview of social structures, inter-group relations, and women's rights, focusing on the experience of Asian American women. CA 4.

#### **2220. Asian Indian Women: Activism and Social Change in India and the United States**

(Also offered as AAAS 2220 and HRTS 2220.) Three credits.

How gender, class, and ethnicity/race structure everyday lives of Asian Indian women in both India and the United States. Formerly offered as AAAS/SOCI 3222/HRTS 3573.

#### **2220W. Asian Indian Women: Activism and Social Change in India and the United States**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

How gender, class, and ethnicity/race structure everyday lives of Asian Indian women in both India and the United States.

#### **2240. Sociology of Race and Religion**

Three credits.

An introduction to the sociological study of race and religion. Centers on the social constructionist approach to race and religion within the context of North America. Topics may include the Black Church, segregation, theologies of liberation, immigration, identity formation, "ethnic" religion, urban vs. rural practices of religion, diversity, racism, and social change.

#### **2240W. Sociology of Race and Religion**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

An introduction to the sociological study of race and religion. Centers on the social constructionist approach to race and religion within the context of North America. Topics may include the Black Church, segregation, theologies of liberation, immigration, identity formation, "ethnic" religion, urban vs. rural practices of religion, diversity, racism, and social change.

#### **2250. Racial Disparities in Health**

(Also offered as AFRA 2250.) Three credits.

Social determinants of health. Racial differences in health outcomes. Social, economic, and political structures and their impacts on health organization and inequalities in care delivery. Patient-provider interactions; meanings of illness. CA 2.

#### **2260. Science, Medicine, and Race**

Three credits. Recommended preparation: SOCI 1001.

An introduction to science, medicine, and the construct of race. Employs a variety of scholarly

literatures but centers on the social constructionist approach to race. Topics may include colonialism, eugenics, and Darwinism; notions of biology and species; the causes and consequences of health inequities across the color-line; genetic and genomic research; and DNA and ancestry testing.

### **2270. Society and the Individual**

Three credits. Prerequisite: Open to sophomores or higher.

Modern social systems and the behavior, psychological organization, and development of individuals. Formerly offered as SOCI 3351.

### **2270W. Society and the Individual**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to sophomores or higher.

Modern social systems and the behavior, psychological organization, and development of individuals. Formerly offered as SOCI 3351W.

### **2271. The Social Construction of Happiness**

Three credits.

Happiness as a social construction that shapes and is shaped by human societies and their social structures and processes. The social causes, nature, and consequences of the pursuit of happiness as a socially defined and organized phenomenon.

### **2275. Social Well-Being**

Three credits.

Socially-embedded facets of well-being. Definitions and levels of well-being; relationship of well-being to social situations, social interactions, and social institutions.

### **2275W. Social Well-Being**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Socially-embedded facets of well-being. Definitions and levels of well-being; relationship of well-being to social situations, social interactions, and social institutions.

### **2280. Sociology of Mental Illness**

Three credits. Prerequisite: Open to sophomores or higher.

Theories and research in the sociology of mental health; emphasis on how sociologists analyze mental illness, the social and structural causes of mental illness, and the social and institutional responses to people experiencing mental illness. Formerly offered as SOCI 3457.

### **2280W. Sociology of Mental Illness**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to sophomores or higher.

Theories and research in the sociology of mental health; emphasis on how sociologists analyze mental illness, the social and structural causes of mental illness, and the social and institutional responses to people experiencing mental illness. Formerly offered as SOCI 3457W.

### **2301. Criminology**

Three credits.

Theories and research on crime, victimization, social control, and the extent and patterns of criminal behavior.

### **2301W. Criminology**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Theories and research on crime, victimization, social control, and the extent and patterns of criminal behavior.

### **2305. Deviant Behavior**

Three credits.

How society defines a behavior as deviant, how and why members of society react to those who act this way, why people engage in deviant behavior, their experiences when labeled as deviants, and how they manage the stigma. May consider extreme body modification, drug abuse, mental illness, prostitution, suicide, and unconventional beliefs within the above context.

### **2305W. Deviant Behavior**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

How society defines a behavior as deviant, how and why members of society react to those who act this way, why people engage in deviant behavior, their experiences when labeled as deviants, and how they manage the stigma. May consider extreme body modification, drug abuse, mental illness, prostitution, suicide, and unconventional beliefs within the above context.

### **2310. Introduction to Criminal Justice**

Three credits.

The criminal justice system from a sociological perspective, including crime, police and law enforcement, courts and adjudication, corrections and juvenile justice. CA 2. CA 4.

### **2315. Guns and Society**

Three credits.

The history, culture, and politics of guns in the U.S. and the social problem of gun violence through a sociological lens. Topics may include the symbolic meaning of guns, the Second Amendment, different types of gun violence, and approaches to reducing various forms of gun violence such as suicide, mass shootings, and everyday gun violence.

### **2320. Drugs and Society**

Three credits.

Drug taking as a social problem, the "war on drugs," drug education, treatment and prevention approaches, the illegal drug market. Formerly offered as SOCI 3307.

### **2320W. Drugs and Society**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Drug taking as a social problem, the "war on drugs," drug education, treatment and prevention approaches, the illegal drug market. Formerly offered as SOCI 3307W.

### **2325. Juvenile Delinquency**

Three credits.

An overview of sociological theory and research on juvenile delinquency and the juvenile justice system. Formerly offered as SOCI 3315.

### **2325W. Juvenile Delinquency**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

An overview of sociological theory and research on juvenile delinquency and the juvenile justice system. Formerly offered as SOCI 3315W.

### **2411. Work and Occupations**

Three credits.

Occupations, jobs, careers, and the professions, and their effects on the division of labor, on the workplace, and on individuals in the labor force.

### **2461. Race, Gender, and U.S. Health Care**

(Also offered as AFRA 2461.) Three credits. Recommended preparation: AFRA/SOCI 1001.

Factors of race and gender at work in U.S. health care. Focus on African Americans and Black immigrants as care recipients and care providers in health care institutions. CA 2. CA 4.

### **2501. Sociology of Intolerance and Injustice**

Three credits.

Sociological concepts of intolerance and injustice and how they affect members of marginalized groups; case studies may consider social class, race/ethnicity, gender, sexuality, age, religion, and disability. CA 4.

### **2501W. Sociology of Intolerance and Injustice**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Sociological concepts of intolerance and injustice and how they affect members of marginalized groups; case studies may consider social class, race/ethnicity, gender, sexuality, age, religion, and disability. CA 4.

### **2503. Prejudice and Discrimination**

Three credits.

Sources and consequences of racial and ethnic prejudice and discrimination. CA 4.

### **2503W. Prejudice and Discrimination**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Sources and consequences of racial and ethnic prejudice and discrimination. CA 4.

### **2509. Sociology of Anti-Semitism**

Three credits. Prerequisite: Open to sophomores or higher.

Sources and consequences of anti-Semitism in society. CA 4-INT.

### **2509W. Sociology of Anti-Semitism**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to sophomores or higher.

Sources and consequences of anti-Semitism in society. CA 4-INT.

### **2510. Ethnicity and Race**

(Also offered as AFRA 2510.) Three credits.

Ethnic groups, their interrelations, assimilation, and pluralism. Culture, and identity that arise from differences in race, religion, nationality, region, and language. Formerly offered as AFRA/SOCI 3501.

### **2510W. Ethnicity and Race**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Ethnic groups, their interrelations, assimilation, and pluralism. Culture, and identity that arise from differences in race, religion, nationality, region, and language. Formerly offered as SOCI 3501W.

### **2520. White Racism**

(Also offered as HRTS 2520 and AFRA 2520.) Three credits.

The origin, nature, and consequences of white racism as a central and enduring social principle around which the United States and other modern

societies are structured and evolve. Formerly offered as AFRA/HRTS/SOCI 3505. CA 4.

### 2530. African Americans and Social Protest

(Also offered as HRTS 2530 and AFRA 2530.) Three credits.

Social and economic-justice movements, from the beginning of the Civil Rights movement to the present. Formerly offered as AFRA/HRTS/SOCI 3825.

### 2651. Sociology of the Family

Three credits.

The American family, its changing forms and values, and the social conditions influencing it: mate selection, marital adjustment, the responsibilities and opportunities of parenthood, and resolving family crises. CA 4.

### 2651W. Sociology of the Family

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

The American family, its changing forms and values, and the social conditions influencing it: mate selection, marital adjustment, the responsibilities and opportunities of parenthood and resolving family crises. CA 4.

### 2655. Sociology of Carework

Three credits.

Organization of carework, both nurturing and social reproduction, including activities essential for daily living; meanings and complexity of carework in varied contexts, for diverse populations, and through different working conditions; alternative ways of organizing carework infrastructure.

### 2655W. Sociology of Carework

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Organization of carework, both nurturing and social reproduction, including activities essential for daily living; meanings and complexity of carework in varied contexts, for diverse populations, and through different working conditions; alternative ways of organizing carework infrastructure.

### 2660. Sociology of Health

Three credits.

Social factors related to health, illness, and health-care systems. Formerly offered as SOCI 3451.

### 2660W. Sociology of Health

Three credits. Prerequisite: ENGL 1010 or 1011 or 2011 or 3800.

Social factors related to health, illness, and health-care systems. Formerly offered as SOCI 3451W.

### 2670. Sociology of Religion

Three credits. Prerequisite: Open to sophomores or higher.

Religion in social context: differences of church, denomination, sect, and cult; religious culture, organization, and ideology. Formerly offered as SOCI 3521.

### 2670W. Sociology of Religion

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to sophomores or higher.

Religion in social context: differences of church, denomination, sect, and cult; religious culture, organization, and ideology. Formerly offered as SOCI 3521W.

### 2680. Sociology of Sexualities

(Also offered as WGSS 2680.) Three credits.

Explores the social organization, construction, and politics of sexualities, particular focus on lesbian, gay, bisexual, transgender, and queer experiences and the intersection of sexualities, gender, race, and class. Formerly offered as SOCI/WGSS 3621. CA 4.

### 2680W. Sociology of Sexualities

(Also offered as WGSS 2680W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Explores the social organization, construction, and politics of sexualities, particular focus on lesbian, gay, bisexual, transgender, and queer experiences and the intersection of sexualities, gender, race, and class. Formerly offered as SOCI/WGSS 3621W. CA 4.

### 2701E. Sustainable Societies

Three credits.

Sociological perspectives on the concepts of sustainability, focusing on issues of climate change mitigation and adaptation, including questions of social transitions based on concepts of social justice, biomimicry, permaculture and the future of life on earth. CA 2.

### 2705E. Sociology of Food

Three credits. Prerequisite: Not open for credit to students who have passed SOCI 3271 when offered either as Food or as Sustainability.

Social factors shaping the industrial food system, as well as a social analysis of viable alternatives. CA 2.

### 2707. Energy, Environment, and Society

Three credits.

Sociological perspectives on energy production, distribution and consumption, technology transitions, and energy inequalities. Formerly offered as SOCI 3407.

### 2707W. Energy, Environment, and Society

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Sociological perspectives on energy production, distribution and consumption, technology transitions, and energy inequalities. Formerly offered as SOCI 3407W.

### 2709E. Society and Climate Change

Three credits. Prerequisite: Not open for credit to students who have passed SOCI 3271 when offered as Society and Climate Change.

Sociological perspectives on the social, economic, political, and environmental causes and consequences of anthropogenic global climate change. CA 2.

### 2709WE. Society and Climate Change

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011. Not open for credit to students who have passed SOCI 3271 when offered as Society and Climate Change.

Sociological perspectives on the social, economic, political, and environmental causes and consequences of anthropogenic global climate change. CA 2.

### 2720E. Environmental Racism, Colonialism and Justice

Three credits.

Examination of environmental racism and colonialism alongside movements toward

liberation and justice; emphasis on environmental justice as theory, practice, narratives, and collective actions.

### 2720WE. Environmental Racism, Colonialism and Justice

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Examination of environmental racism and colonialism alongside movements toward liberation and justice; emphasis on environmental justice as theory, practice, narratives, and collective actions.

### 2800. Human Rights in the United States

(Also offered as HRTS 2800.) Three credits.

Sociological analyses of human rights issues in the United States, including economic, racial, and gender justice; prisoners' rights and capital punishment; the role of the United States in international human rights agreements and treaties; and struggles on behalf of human rights. Formerly offered as HRTS/SOCI 3831.

### 2800W. Human Rights in the United States

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Sociological analyses of human rights issues in the United States, including economic, racial, and gender justice; prisoners' rights and capital punishment; the role of the United States in international human rights agreements and treaties; and struggles on behalf of human rights.

### 2820. Sociological Perspectives on Poverty

Three credits. Prerequisite: Open to sophomores or higher.

The causes, conditions, and possible remedies for poverty. Topics may include historical, cultural, structural, social, political, racial, and spatial/geographical forces, lived experiences of the poor, and the impact of poverty on communities. Formerly offered as SOCI 3429.

### 2820W. Sociological Perspectives on Poverty

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to sophomores or higher.

The causes, conditions, and possible remedies for poverty. Topics may include historical, cultural, structural, social, political, racial, and spatial/geographical forces, lived experiences of the poor, and the impact of poverty on communities. Formerly offered as SOCI 3429W.

### 2827. Revolutionary Social Movements Around the World

Three credits.

Lectures and documentary films on the Russian, Chinese, Vietnamese, Cuban and Nicaraguan revolutions and movements in South Africa and the Middle East.

### 2827W. Revolutionary Social Movements Around the World

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Lectures and documentary films on the Russian, Chinese, Vietnamese, Cuban and Nicaraguan revolutions and movements in South Africa and the Middle East.

### 2830. Class, Power, and Inequality

(Also offered as HRTS 2830.) Three credits.

Inequality and its consequences in contemporary societies. Formerly offered as HRTS/SOCI 3421.

**2830W. Class, Power, and Inequality**

(Also offered as HRTS 2830W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Inequality and its consequences in contemporary societies. Formerly offered as SOCI 3421W.

**2835. Social Movements and Social Change**

Three credits.

Revolutionary, reform, reactionary, religious, communal, and escapist movements. Formerly offered as SOCI 3821.

**2835W. Social Movements and Social Change**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Revolutionary, reform, reactionary, religious, communal, and escapist movements. Formerly offered as SOCI 3821W.

**2841. Public Opinion and Mass Communication**

Three credits. Prerequisite: Open to sophomores or higher.

Contemporary public opinion and ideology, the process and effects of mass communication, and the measurement of public opinion.

**2841W. Public Opinion and Mass Communication**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to sophomores or higher.

Contemporary public opinion and ideology, the process and effects of mass communication, and the measurement of public opinion.

**2845. Sociology of Global Human Rights**

(Also offered as HRTS 2845.) Three credits.

Comparative approach to the study of human rights in the United States and elsewhere around the world from a sociological perspective. Formerly offered as HRTS/SOCI 3837.

**2845W. Sociology of Global Human Rights**

(Also offered as HRTS 2845W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Comparative approach to the study of human rights in the United States and around the world from a sociological perspective. Formerly offered as HRTS/SOCI 3837W.

**2898. Topics in Sociology and Human Rights**

(Also offered as HRTS 2898.) Three credits. May be repeated for a total of 6 credits.

Variable topics covering theoretical and empirical examination of social, political, economic, legal, and/or cultural issues of human rights from a sociological perspective. Formerly offered as HRTS/SOCI 3833.

**2901. Urban Sociology**

(Also offered as URBN 2901.) Three credits.

Social and physical organization of cities and suburbs. Formerly offered as URBN 3275 and 3901/SOCI 3901.

**2901W. Urban Sociology**

(Also offered as URBN 2901W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Social and physical organization of cities and suburbs. Formerly offered as URBN 3275W and 3901W/SOCI 3901W.

**2907. City Life**

Three credits.

Ways of life in large cities and suburbs and the culture of modernism.

**2907W. City Life**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Ways of life in large cities and suburbs and the culture of modernism.

**2993. Foreign Study**

Variable (1-15) credits. Prerequisite: Department consent required. May be repeated for credit.

Special topics taken in an Education Abroad program.

**2995. Special Topics**

Variable (1-3) credits. May be repeated for credit.

Topics vary by semester.

**2996. Directed Research I**

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for a total of 6 credits.

Provides students an opportunity to conduct research with a faculty member or graduate student.

**2998. Variable Topics**

Variable (1-3) credits. Prerequisite: Open to sophomores or higher. May be repeated for credit.

Topics vary by semester. Formerly offered as SOCI 3998.

**3201. Methods of Social Research**

Three credits. Prerequisite: SOCI 1001, 1251 or 1501 or 1701; open to sophomores or higher. May not be taken out of sequence after passing SOCI 3203, 3211 or 3213.

Quantitative and qualitative methods used in sociological research: designs for gathering data, problems of measurement, and techniques of data analysis. Lectures and laboratory work. Majors in sociology should take this required course in their junior year.

**3211Q. Quantitative Methods in Social Research**

Four credits. Prerequisite: SOCI 3201 and either STAT 1000Q or 1100Q; or instructor consent; open to sophomores or higher.

Practical work in the design and execution of research, hypothesis testing, data analysis, and interpretations.

**3251. Social Theory**

Three credits. Prerequisite: SOCI 1001, 1251, 1501, or 1701; open to sophomores or higher.

Overview of classic and contemporary sociological theories, and how these theories help explain current society and shape contemporary sociological research.

**3251W. Social Theory**

Three credits. Prerequisite: SOCI 1001, 1251, or 1501; ENGL 1007 or 1010 or 1011 or 2011; open to sophomores or higher.

Overview of classic and contemporary sociological theories, and how these theories help explain current society and shape contemporary sociological research.

**3317. Women and Crime**

(Also offered as WGSS 3317.) Three credits. Prerequisite: Open to juniors or higher.

Women as offenders, victims and practitioners in the criminal justice system.

**3317W. Women and Crime**

(Also offered as WGSS 3317W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

Women as offenders, victims and practitioners in the criminal justice system.

**3401. Social Organization**

Three credits. Prerequisite: Open to juniors or higher.

Social structure, processes, and social change in institutions such as the family, education, religion, economy, and polity.

**3401W. Social Organization**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

Social structure, processes, and social change in institutions such as the family, education, religion, economy, and polity.

**3425. Social Welfare and Social Work**

Three credits. Prerequisite: Open to sophomores or higher.

Social welfare needs and programs; introduction to social work as a professional service.

**3453. Women and Health**

(Also offered as WGSS 3453.) Three credits. Prerequisite: Open to sophomores or higher.

Social factors shaping women's health, health care, and their roles as health-care providers.

**3453W. Women and Health**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to sophomores or higher.

Social factors shaping women's health, health care, and their roles as health-care providers.

**3459. Aging and Society**

Three credits. Prerequisite: Open to sophomores or higher.

Sociological perspectives on the process of aging and the elderly population, including kinship relations, work and leisure, mental and emotional health issues, and policy issues that address the elderly. CA 2.

**3459W. Aging and Society**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to sophomores or higher.

Sociological perspectives on the process of aging and the elderly population, including kinship relations, work and leisure, mental and emotional health issues, and policy issues that address the elderly. CA 2.

**3507. Race and Reproduction**

Three credits. Prerequisite: Open to sophomores or higher.

The social construction, organization, and politics of race and reproduction in the United States.

**3525. Latino Sociology**

(Also offered as LLAS 3525.) Three credits.

The economic, social, political, and cultural experiences of Latinos in the United States. CA 2. CA 4.

**3525W. Latino Sociology**

(Also offered as LLAS 3525W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

The economic, social, political, and cultural experiences of Latinos in the United States. CA 2. CA 4.

### 3601. Sociology of Gender

Three credits. Prerequisite: Open to sophomores or higher.

Processes contributing to social construction of gender; theories used to explain the system of inequality in the United States with particular attention to the intersection of gender, race, ethnicity, sexuality, and class; how men and women are differentially constituted in the family, in education, work, politics, and language. CA 4.

### 3601W. Sociology of Gender

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to sophomores or higher.

Processes contributing to social construction of gender; theories used to explain the system of inequality in the United States with particular attention to the intersection of gender, race, ethnicity, sexuality, and class; how men and women are differentially constituted in the family, in education, work, politics, and language. CA 4.

### 3801. Political Sociology

Three credits. Prerequisite: Open to sophomores or higher.

Social analysis of power, democracy and voting, society and the state, and political economy.

### 3801W. Political Sociology

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to sophomores or higher.

Social analysis of power, democracy and voting, society and the state, and political economy.

### 3823. The Sociology of Law: Global and Comparative Perspectives

Three credits. Prerequisite: Open to sophomores or higher.

The relationship between law and social change cross-nationally, including dispute processing in kinship societies, the impact of Western law on Third World countries, legal strategies that challenge inequality based on class, race, sex, religion, and sexuality, and the impact of international human rights treaties on inequality. CA 2. CA 4-INT.

### 3823W. The Sociology of Law: Global and Comparative Perspectives

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to sophomores or higher.

The relationship between law and social change cross-nationally, including dispute processing in kinship societies, the impact of Western law on Third World countries, legal strategies that challenge inequality based on class, race, sex, religion, and sexuality, and the impact of international human rights treaties on inequality. CA 2. CA 4-INT.

### 3835. Refugees and Humanitarianism

(Also offered as HRTS 3835.) Three credits.

Social and political challenges of living as a refugee and working in humanitarian settings with a focus on refugee camps, institutional development of the UN High Commissioner for Refugees, and alternative approaches to refuge.

### 3835W. Refugees and Humanitarianism

(Also offered as HRTS 3835W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Recommended preparation: POLS 1007/HRTS 1007.

Social and political challenges of living as a refugee and working in humanitarian settings. Refugee camps, the institutional development of the UN High Commissioner for Refugees, and alternative approaches to sanctuary.

### 3903. Urban Problems

(Also offered as URBN 3276.) Three credits. Prerequisite: Open to juniors or higher.

Social problems of American cities and suburbs, with emphasis on policy issues.

### 3903W. Urban Problems

(Also offered as URBN 3276W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

Social problems of American cities and suburbs with emphasis on policy issues.

### 3911. Communities

Three credits. Prerequisite: One introductory level sociology course or instructor consent; open to juniors or higher.

Sociological analysis of processes and structures of various kinds of communities.

### 3971. Population

Three credits. Prerequisite: Open to sophomores or higher.

Size, growth, composition and distribution of population; social factors in population change.

### 3971W. Population

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

Size, growth, composition and distribution of population; social factors in population change.

### 3990. Internship: Field Experience

Variable (1-6) credits. Prerequisite: Must be taken with SOCI 3991 concurrently unless continuing an internship already initiated; open to juniors or higher. May be repeated for a total of 6 credits.

Supervised field experience. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory). Hours by arrangement. 42 hours per semester per credit. Repeatable to a maximum of six credits.

### 3991. Internship: Research Paper

Variable (1-2) credits. Prerequisite: Must be taken with SOCI 3990; open to juniors or higher. May be repeated to a maximum of three credits including SOCI 3991W which may be taken only once. May be repeated for credit.

Research paper based on Field Experience.

### 3991W. Internship: Research Paper

Variable (1-2) credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; must be taken with SOCI 3990; open to juniors or higher. May not be repeated.

Research paper based on Field Experience. May not be repeated.

### 3993. Foreign Study

Variable (1-6) credits. Prerequisite: Open to juniors or higher. May be repeated for credit.

Special topics in a foreign-study program. Consent of Department Head required, preferably prior to the student's departure.

### 3995. Special Topics

Variable (1-6) credits. Prerequisite: Open to sophomores or higher. May be repeated for credit.

Topics vary by semester.

### 3996W. Senior Thesis in Sociology

Three credits. Prerequisite: Fifteen credits in sociology; ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

### 3999. Independent Study

Variable (1-6) credits. Prerequisite: Open to juniors or higher. May be repeated for credit.

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## Spanish (SPAN)

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### 1001. Elementary Spanish I

Four credits. Prerequisite: Not open to students who have had three or more years of high school Spanish. May not be taken out of sequence after passing SPAN 1002, 1003 or 1004, or any 2000 level or above course taught in Spanish.

Elementary level communication skills in Spanish focusing on expressing likes, dislikes, personal information. Introduction to the cultures of the Spanish-speaking world. Course for students who have never studied Spanish.

### 1002. Elementary Spanish II

Four credits. Prerequisite: SPAN 1001. May not be taken out of sequence after passing SPAN 1003 or 1004. May not be taken for credit after passing any 2000-level or above course taught in Spanish, or three or more years of high school Spanish.

Advanced beginner level Spanish course with further development of communication skills in Spanish. Focus on expressing events in the past and the future. Further exploration of cultural diversity in the Spanish-speaking world.

### 1003. Intermediate Spanish I

Four credits. Prerequisite: SPAN 1002 or two years of high school Spanish. May not be taken out of sequence after passing SPAN 1004. May not be taken for credit after passing any 2000-level or above course taught in Spanish, or three or more years of high school Spanish.

Basic intermediate level Spanish course with further development of uncomplicated communicative tasks. Focus on expressing subjectivity, opinions and arguments. Detailed analysis of Spanish speaking countries and societies.

### 1004. Intermediate Spanish II

Four credits. Prerequisite: SPAN 1003. Cannot be taken for credit after any 2000 level or above courses taught in Spanish.

Intensive practice in communicative skills in all modes of communication. Course provides a cultural context in order to ease communicating in Spanish. Topics include analysis of short films and texts. Students elaborate complex arguments and connect them to their own experience at an intermediate high level.

### 1006. Spanish for Reading Knowledge

Three credits. Prerequisite: Open only to seniors and graduate students. Not open for credit to undergraduates who have had SPAN 1001, 1002.

Basic Spanish grammar and intensive practice in reading expository prose in a variety of subjects, for use as a research tool and in preparation for

the Ph.D. reading examination. May not be used to meet the undergraduate foreign language requirement or as a prerequisite for other Spanish courses.

**1007. Major Works of Hispanic Literature in Translation**

Three credits.

A study of major works selected from the best of Spanish and Spanish-American literature. A knowledge of Spanish is not required. CA 1. CA 4-INT.

**1008. Christians, Muslims and Jews in Medieval Spain**

Three credits.

Contacts, conflicts and coexistence among the diverse cultures and traditions of medieval Spain: Christian Hispania, Muslim al-Andalus, and Jewish Sefarad. Taught in English. CA 1. CA 4-INT.

**1009. Latino Literature, Culture, and Society**

(Also offered as LLAS 1009.) Three credits.

Critical approaches to Latinos/as and cultural representation, production, and agency, as impacted by globalization and local dynamics. Will engage the value and function of race, gender and sexuality in popular culture, literature, film, music, digital culture, visual arts, and urban culture. Taught in English. Knowledge of Spanish is not required. CA 1. CA 4.

**1009W. Latino Literature, Culture, and Society**

(Also offered as LLAS 1009W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Critical approaches to Latinos/as and cultural representation, production, and agency, as impacted by globalization and local dynamics. Will engage the value and function of race, gender and sexuality in popular culture, literature, film, music, digital culture, visual arts, and urban culture. Taught in English. Knowledge of Spanish is not required. CA 1. CA 4.

**1010. Contemporary Spanish Culture and Society through Film**

Three credits.

Critical approaches to Spanish culture and society from the early 20th century to the present as portrayed in Spanish film. Introduction to filmic textual analysis and film history. Discussion of topics such as the avant-garde, social art, revolutionary movements, civil war, exile, Francoism, democratic transition, peripheral nationalisms, immigration, cultural diversity, postmodernity, globalization. Taught in English; Spanish not required; does not fulfill foreign language requirement. CA 1. CA 4-INT.

**1020. Intersections of Art, Fashion, Film, and Music in Modern Spain**

Three credits.

Critical overview of the works of Spanish film directors, artists, and designers and the struggle to define modern Spain. Topics may include personal and collective identity, national unity and diversity, youth culture in Spain and in the U.S., high versus low culture, the local and the global. CA 1. CA 4-INT.

**1030. Religion in Latin America: A Historical Survey**

Three credits.

An interdisciplinary introduction to the study of religion in Latin America from pre-Columbian times to the present. Topics include: religion and social organization; material culture, ritual and society; European expansion and Christianity; processes of religious conversion; religion and globalization. Taught in English. CA 1. CA 4-INT.

**1193. Foreign Study**

Variable (1-6) credits. May be repeated for credit.

Special topics taken in a foreign study program. Consent of Department Head required, normally before the student's departure.

**3101. Spanish for Engineering I**

One credit. Prerequisite: SPAN 1002 or equivalent; open to sophomore or higher dual-degree Spanish and Engineering students. Not open for credit to students who have passed SPAN 3171.

This course provides dual-degree Spanish and Engineering students with the technical and scientific vocabulary needed to discuss a wide variety of topics in engineering.

**3102. Spanish for Engineering II**

One credit. Prerequisite: SPAN 3101 or instructor consent; open to sophomore or higher dual-degree Spanish and Engineering students. Not open for credit to students who have passed SPAN 3171. Recommended preparation: SPAN 1003 or equivalent.

This course provides dual-degree Engineering and Spanish students more advanced vocabulary, methods, and field-specific knowledge. Students will learn to describe scientific processes, to follow scientific presentations in Spanish, and to create preparation and evaluation materials for these presentations.

**3103. Spanish for Engineering III**

One credit. Prerequisite: SPAN 3101 or instructor consent; open only to dual-degree Spanish and Engineering students. Not open for credit to students who have passed SPAN 3171. Recommended preparation: SPAN 1003 or equivalent.

This course provides dual-degree Engineering and Spanish students more advanced vocabulary, methods, and field-specific knowledge. Students will learn to describe scientific processes, to follow presentations in Spanish, and to do research to create preparation materials for their interviews with engineers. Students will also learn practical job-seeking skills, including the cultural norms for CVs, job letters, and interviews.

**3170. Business Spanish**

Three credits. Prerequisite: SPAN 1004 or instructor consent.

Introduction to commercial terminology in Spanish. Designed to meet the needs of students desiring to use Spanish as a tool for industry or commerce.

**3171. Spanish for Engineers**

Three credits. Prerequisite: SPAN 1004, or 3+ years of Spanish in high school.

Introduction to Spanish in the fields of engineering. Preparation for the engineering and industrial job market in the Hispanic world. Designed to meet the needs of students desiring to use Spanish as a tool for industry or commerce.

**3172. Spanish for the Health Professions**

Three credits. Prerequisite: SPAN 1004 or three or more years of Spanish in high school.

Introduction to medical terminology and language uses in Spanish for students desiring to use Spanish in the health professions. Intercultural preparation to work with patients of Latino and Hispanic origin.

**3177. Composition and Reading for Speakers of Spanish**

Three credits. Prerequisite: Instructor consent required.

Grammar, written composition, and readings for speakers of Spanish with little or no formal training. Emphasis is on Puerto Rican literature.

**3178. Intermediate Spanish Composition**

Three credits. Prerequisite: SPAN 1004 or three or more years of Spanish in high school.

Provides a thorough review of grammar and methodical practice in composition leading to command of practical idioms and vocabulary.

**3179. Spanish Conversation: Cultural Topics**

Three credits. Recommended preparation: SPAN 3178 or instructor consent.

In-depth development of speaking skills through cultural readings, group discussions and oral presentations on selected topics concerning the Spanish-speaking world.

**3200. Spanish Civilization to the Modern Period**

Three credits. Recommended preparation: SPAN 3178 or instructor consent.

An interdisciplinary course analyzing the politics, social structures, and cultural life of Spain from its beginnings to the start of the nineteenth century.

**3201. Ibero-American Civilization and Culture**

Three credits. Recommended preparation: SPAN 3178 or instructor consent.

History of the major social, intellectual, and artistic trends of Spanish-speaking America.

**3204. Language and Culture of U.S. Hispanics**

Three credits. Prerequisite: SPAN 1004 or instructor consent.

Comparison of linguistic, historical and cultural backgrounds of various Hispanic groups in the U.S. through fiction, non-fiction, films, music, and guest speakers.

**3205. Contemporary Spanish America**

Three credits. Recommended preparation: SPAN 3178 or instructor consent.

An interdisciplinary course concerned with present-day cultural, social, and political structures of Spanish America. Revolutionary and counter-revolutionary ideas in contemporary society and the struggle for social, political and economic stability.

**3206. Contemporary Spain**

Three credits. Recommended preparation: SPAN 3178 or instructor consent.

An interdisciplinary course analyzing the politics, social structures and cultural life in Spain today. Spain in relation to Western Europe and the community of nations.

**3207. Women's Studies in Spanish**

Three credits. Recommended preparation: SPAN 3178 or instructor consent.



Women in Spanish and Ibero-American literature. Women's writings. The development of Spanish and Ibero-American feminism. Contemporary issues concerning women in the Spanish-speaking world.

### **3208. Issues in Hispanic Thought**

Three credits. Recommended preparation: SPAN 3178 or instructor consent. May be repeated for credit.

Selection for study of a major world issue debated in the Iberian Peninsula or in Ibero-America by great thinkers. A history of the issue, taking into account international cultural contexts.

### **3214. Topics in Hispanic Cultures**

Three credits. Recommended Preparation: five semesters of college Spanish. May be repeated for credit.

Selected topics. Cross-disciplinary approach to the study of Peninsular and Hispanic American cultures: the colonial heritage in Latin America; intellectual traditions and national identities; cultural production under military regimes; and experience of exiles; among possible topics.

### **3230. Introduction to Literary Study**

Three credits. Recommended preparation: SPAN 3178 or instructor consent.

Introduction to literary analysis through a variety of critical approaches: readings in poetry, drama, and prose fiction with explanation of terms useful to the study of literature.

### **3231. Great Works of Spanish Literature from its Origins to the Golden Age**

Three credits. Recommended preparation: SPAN 3178 or instructor consent.

The study of selected poems, plays, fables and novels reflecting the development of Spanish society from feudalism to world empire.

### **3232. Literature of Crisis in Modern Spain**

Three credits. Recommended preparation: SPAN 3178 or instructor consent.

The study of selected poems, plays, short fiction, and novels reflecting the clash between tradition and progress in nineteenth- and twentieth-century Spain. CA 1.

### **3233. Spanish-American Literature: The Formative Years**

Three credits. Recommended preparation: SPAN 3178 or instructor consent.

The emergence of the New World in the chronicles of the conquest and colonization of Spanish America. Selected texts from "barroco de Indias" (Sor Juana Inés de la Cruz), and from the period of political independence. The coming of age of Spanish-American literature with the pioneer texts of José Martí and the first "Modernismo".

### **3234. Great Works of Modern Spanish-American Literature**

Three credits. Recommended preparation: SPAN 3178 or instructor consent.

Study of the most significant texts of "Modernismo" with focus on Rubén Darío. The "avant-garde" in Spanish America. The narrative of the "boom" and its impact on present-day literature.

### **3240W. Advanced Spanish Composition**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011. Recommended preparation: SPAN 3178.

Treatment of the finer points of Spanish grammar. Exercises in translation and free composition. Stylistic analysis of texts chosen from Spanish or Latin American authors, newspapers, and magazines.

### **3241. Spanish Phonetics**

Three credits. Recommended preparation: SPAN 3178 or instructor consent.

A study of the sounds of the language and drills to improve pronunciation. Recommended for all majors and for those who expect to teach Spanish.

### **3242. Spanish Communicative Grammar**

Three credits. Prerequisite: SPAN 3178.

Grammar in context. Linguistic awareness. Culture in relation to grammar. Focus on language knowledge and language use.

### **3250. Film in Spain and Latin America**

Three credits.

Film language and genre in Spanish and Latin American cinema. Taught in English. CA 1. CA 4-INT.

### **3251. Latin American Film**

Three credits. Recommended preparation: SPAN 3178 or instructor consent.

Offers insights into Latin American cinema and video production. Provides tools for analyzing film and its expression of socio-political and aesthetic debates in the continent.

### **3252. Spanish Film**

Three credits. Recommended preparation: SPAN 3178 or instructor consent.

Class explores the way film has expressed debates over Spanish identity and history, including the role of film under Franco, in the new democratic Spain, and as part of a postmodern Europe.

### **3254. Special Topics in Latin American National Cinemas**

Three credits. May be repeated for a total of 6 credits.

Selected Latin American national cinema. Focus on identity, aesthetics, and history. Taught in English.

### **3260. Studies in Spanish-American Literature**

Three credits. Recommended Preparation: SPAN 3201 May be repeated for a total of 6 credits.

Readings and discussions of specific aspects of Spanish-American literature. Consult department for particulars each year.

### **3261. Old Spanish Language and Literature**

Three credits. Prerequisite: SPAN 3231.

Linguistic and literary analysis of Medieval and Renaissance Spanish texts.

### **3262. Studies in Spanish Golden Age Literature**

Three credits. Recommended Preparation: SPAN 3200. May be repeated for a total of 6 credits.

Readings and discussions of specific aspects of Golden Age literature. Consult department for particulars each year.

### **3263. Studies in Spanish Literature of the Eighteenth and Nineteenth Centuries**

Three credits. Recommended Preparation: SPAN 3200. May be repeated for a total of 6 credits.

Readings and discussions of specific aspects of the literature of the period. Consult department for particulars each year.

### **3264. Studies in Spanish Literature of the Twentieth Century**

Three credits. Recommended Preparation: SPAN 3200. May be repeated for a total of 6 credits.

Readings and discussions of specific aspects of the literature of the period. Consult department for particulars each year.

### **3265. Literature of Puerto Rico and the Spanish Caribbean**

(Also offered as LLAS 3265.) Three credits. Recommended preparation: SPAN 3178 or instructor consent.

Readings and discussions of major authors and works of the Spanish Caribbean with special emphasis on Puerto Rico.

### **3266. Spanish-American Fiction**

Three credits. Recommended Preparation: SPAN 3201

Lectures, readings and reports on the development of the Spanish-American novel and short story.

### **3267W. The Spanish-American Short Story**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011. Recommended preparation: SPAN 3178. May be repeated for credit.

Readings of major authors and works with special emphasis on the development of the short story since the nineteenth century and on its relations to other short narrative forms (such as the fable, the cuadro de costumbres, or the tradición) as well as to significant moments of Spanish-American social history. CA 1.

### **3281. Spanish Internship**

Variable (1-6) credits. Prerequisite: Department consent required.

Use of linguistic and cultural skills in Spanish in a professional training context such as an internship or in industry in a Spanish-speaking country. Requires contract agreed to in advance by student, internship field supervisor, and program director, detailing expectations for the credits earned. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

### **3293. Foreign Study**

Variable (1-7) credits. May be repeated for credit.

Special topics taken in a foreign study program. May count toward the major with consent of the advisor. Consent of Department Head required, normally to be granted prior to the student's departure. May count toward the major with consent of the advisor.

### **3295. Special Topics**

Variable (1-6) credits. Prerequisite: Prerequisites and recommended preparation vary. May be repeated for credit.

### **3298. Variable Topics**

Three credits. Prerequisite: Prerequisites and recommended preparation vary. May be repeated for credit.

Prerequisites and recommended preparation vary.

### 3299. Independent Study

Variable (1-6) credits. Prerequisite: Open to juniors or higher. May be repeated for credit.

### 4200W. Senior Seminar for Spanish Majors: Selected Topics in Hispanic Literature

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher. May be repeated for a total of 9 credits.

Topics focused on a particular area of Spanish or Latin American literature, culture or linguistics.

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## Speech, Language and Hearing Science (SLHS)

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### 1150. Introduction to Communication Disorders

Three credits.

Introduction to normal communicative processes and to disorders of communication. CA 2. CA 4.

### 1150W. Introduction to Communication Disorders

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Introduction to normal communicative processes and to disorders of communication. CA 2. CA 4.

### 2156Q. Speech and Hearing Science

Three credits. Prerequisite: Open to sophomores or higher. Recommended preparation: MATH 1060 or the equivalent. Not open to students who have passed CDIS 1155Q or SLHS 3247.

Fundamentals of acoustics specifically oriented to voice, speech production, and hearing. Human response to sound and its measurement. Introduction to acoustic instrumentation and software used in communication sciences. Examples of concepts to be covered include frequency, intensity, decibels, filters, pitch, loudness, formants, critical bands, and masking.

### 2203. Anatomy and Physiology of Speech, Hearing, and Swallowing

Three credits. Prerequisite: Open to soph or higher. No open for credit for students who have passed SLHS 3247.

Anatomical, neurological and physiological principles fundamental to the understanding of speech, hearing, and swallowing.

### 2204. Speech and Language Acquisition

Three credits. Prerequisite: Open to sophomores or higher.

How children learn their first language, the effects of language on their thinking and behavior.

### 3247. Introduction to Phonetic Principles

Three credits. Prerequisite: SLHS 2156 and 2203; open to juniors or higher.

The analysis of speech through the application of phonetic theory.

### 3248. Introduction to Audiology

Three credits. Prerequisite: SLHS 2156 and 2203; open to juniors or higher.

An introduction to the nature, causation, assessment and management of hearing impairment and the principles and techniques of public school conservation programs.

### 3293. Foreign Study

Variable (1-6) credits. Prerequisite: Open to juniors or higher. May be repeated for credit.

Special topics taken in foreign study program. Consent of Department Head required, normally granted prior to the student's departure. May count toward the major with consent of the advisor.

### 3295. Special Topics

Variable (1-6) credits. Prerequisite: Prerequisites and recommended preparation vary by section; open to juniors or higher. May be repeated for credit.

### 3298. Variable Topics

Three credits. Prerequisite: Prerequisites and recommended preparation vary by section; open to juniors or higher. May be repeated for credit.

### 3299. Independent Study

Variable (1-6) credits. Prerequisite: Open to juniors or higher. May be repeated for credit.

The course, for superior students, includes independent reading, periodic conferences, and such other work as desired by the instructor.

### 4123. Bilingualism in Typical and Atypical Populations: Language and Cognition

Three credits. Prerequisite: Instructor consent, open to juniors or higher. Recommended preparation: basic phonetic principles or phonology courses, language development and language disorders.

Biological and cognitive factors associated with language acquisition, cognitive reserve, Developmental Language Disorders in bilinguals. Emphasis on diagnosis, cognitive factors in language selection, and differences in reading opaque vs. transparent languages.

### 4245. Neuroscience of Cognitive and Communication Disorders

Three credits. Prerequisite: SLHS 2203 and 2204; open to juniors or higher. May not be taken out of sequence after passing SLHS 4335.

Anatomy and physiology of the central nervous system. Brain mechanisms that underlie speech, language, hearing, and cognition. Neurogenic communication disorders.

### 4245W. Neuroscience of Cognitive and Communication Disorders

Four credits. Prerequisite: SLHS 2203 and 2204; ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher. May not be taken out of sequence after passing SLHS 4335.

Anatomy and physiology of the central nervous system. Brain mechanisms that underlie speech, language, hearing, and cognition. Neurogenic communication disorders.

### 4249. Introduction to Aural Rehabilitation

Three credits. Prerequisite: SLHS 3248; open to juniors or higher.

An introduction to the effects of hearing impairment on communication. Communication strategies for adults and children with impaired hearing are discussed.

### 4249W. Introduction to Aural Rehabilitation

Four credits. Prerequisite: SLHS 3248; ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

An introduction to the effects of hearing impairment on communication. Communication

strategies for adults and children with impaired hearing are discussed.

### 4251. Introduction to Articulation, Voice, and Fluency Disorders

Three credits. Prerequisite: SLHS 2156, 2203, 2204, and 3247; open to juniors and higher. May not be taken out of sequence after passing SLHS 4335.

Communication problems resulting from disorders of speech, voice, and fluency. Assessment and management strategies in settings including public schools, hospitals, and rehabilitation centers.

### 4254. Introduction to Language Disorders in Children

Three credits. Prerequisite: SLHS 2204; open to juniors or higher.

Development, measurement, and function of language in children. Emphasis on child language disorders and their causes. Assessment and management strategies in settings including public schools and private clinics.

### 4254W. Introduction to Language Disorders in Children

Four credits. Prerequisite: SLHS 2204; ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher. Not open for credit for students who have passed CDIS 4253.

Development, measurement, and function of language in children. Emphasis on child language disorders and their causes. Assessment and management strategies in settings including public schools and private clinics.

### 4296W. Senior Thesis

Variable (1-6) credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to junior or higher Honors students.

Preparation of a thesis and its presentation to the department.

### 4335. Introduction to Clinical Methods in Speech-Language Pathology

Three credits. Prerequisite: SLHS 4245 and 4251; open to juniors or higher.

Clinical methods of treatment in speech-language pathology. Professional interaction, development of client-focused treatment goals, construction of lesson plans, collection and analysis of client data, and daily SOAP note documentation.

### 4376. Language Impairments and Literacy

Three credits. Prerequisite: SLHS 2204, SLHS 3247, and SLHS 4254.

A research seminar covering the theories, assessment, and treatment of children with reading disabilities from a language-based perspective.

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## Statistical Data Science and Analysis (DSDA)

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### 4815. Applied Data Analysis Capstone

Three credits. Prerequisite: STAT 3255. Not open for credit for students in the Bachelor of Science in Statistical Data Science program.

Development and execution of student-led research projects: Problem formulation; integration of statistics, computing, and domain knowledge; collaboration; communication; reproducibility; project management.

## Statistics (STAT)

### 1000Q. Introduction to Statistics I

Four credits. Prerequisite: Students can receive no more than four credits from STAT 1000Q and 1100Q. Students who have passed a 2000-level or above STAT course or who are taking such a course concurrently cannot take 1000-level STAT courses.

A standard approach to statistical analysis primarily for students of business and economics; elementary probability, sampling distributions, normal theory estimation and hypothesis testing, regression and correlation, exploratory data analysis. Learning to do statistical analysis on a personal computer is an integral part of the course.

### 1100Q. Elementary Concepts of Statistics

Four credits. Prerequisite: Students can receive no more than four credits from STAT 1000Q and 1100Q. Students who have passed a 2000-level or above STAT course or who are taking such a course concurrently cannot take 1000-level STAT courses.

Standard and nonparametric approaches to statistical analysis; exploratory data analysis, elementary probability, sampling distributions, estimation and hypothesis testing, one- and two-sample procedures, regression and correlation. Learning to do statistical analysis on a personal computer is an integral part of the course.

### 2215Q. Introduction to Statistics II

Three credits. Prerequisite: STAT 1000Q or 1100Q.

Analysis of variance, multiple regression, chi-square tests, and non-parametric procedures.

### 2255. Statistical Programming

Three credits. Prerequisite: MATH 1132Q, or instructor consent.

Introduction to statistical programming via Python including data types, control flow, object-oriented programming, and graphical user interface-driven applications such as Jupyter notebooks. Emphasis on algorithmic thinking, efficient implementation of different data structures, control and data abstraction, file processing, and data analysis and visualization.

### 3005. Biostatistics for Health Professions

(Also offered as AH 3005.) Three credits. Prerequisite: A course in pre-calculus or higher; STAT 1000Q or 1100Q or higher. Open to CAHNR students and Statistics majors, juniors or higher; others with instructor consent.

Introduction to biostatistical techniques, concepts, and reasoning using in a broad range of biomedical and public health related scenarios. Specific topics include description of data, statistical hypothesis testing and its application to group comparisons, and tools for modeling different type of data, including categorical, and time-event, data. Emphasis on the distinction of these methods, their implementation using statistical software, and the interpretation of results applied to health sciences research questions and variables.

### 3025Q. Statistical Methods

Three credits. Prerequisite: MATH 1132Q or 1152Q; students may not receive more than three credits from STAT 3025 and 3345. May not be taken out of sequence after passing STAT 3445, 4190, or 4625.

Basic probability distributions, point and interval estimation, tests of hypotheses, correlation and regression, analysis of variance, experimental design, non-parametric procedures.

### 3115Q. Analysis of Experiments

Three credits. Prerequisite: STAT 2215Q or 3025Q or instructor consent. Not open for credit to students who have passed STAT 3215Q or 5315.

Straight-line regression, multiple regression, regression diagnostics, transformations, dummy variables, one-way and two-way analysis of variance, analysis of covariance, stepwise regression.

### 3215Q. Applied Linear Regression in Data Science

Three credits. Prerequisite: STAT 2215Q or 3025Q or instructor consent. Not open for credit to students who have passed STAT 3115Q or 5315.

Applied multiple linear regression analysis in data science, with an emphasis on modern statistical regression methods: simple linear regression and correlation analysis, multiple linear regression, analysis of variance, goodness of fit, comparing regression models through partial and sequential F tests, dummy variables, regression assumptions and diagnostics, model selection and penalized regression, prediction and model validation, principles of design of experiments, one-way and two-way analysis of variance.

### 3255. Introduction to Data Science

Three credits. Prerequisite: STAT 2255 and 3115Q or 3215Q or instructor consent.

Introduction to data science for effectively storing, processing, analyzing and making inferences from data. Topics include project management, data preparation, data visualization, statistical models, machine learning, distributed computing, and ethics.

### 3345Q. Probability Models for Engineers

Three credits. Prerequisite: MATH 2110Q or 2130Q. Students may not receive more than three credits from STAT 3025Q and 3345Q, or from STAT 3345Q and 3375Q.

Probability set functions, random variables, expectations, moment generating functions, discrete and continuous random variables, joint and conditional distributions, multinomial distribution, bivariate normal distribution, functions of random variables, central limit theorems, computer simulation of probability models.

### 3375Q. Introduction to Mathematical Statistics I

Three credits. Prerequisite: A grade of C+ or better in MATH 2110Q or 2130Q. Not open for credit to students who have passed STAT 3345Q or 5585. May not be taken out of sequence after passing STAT 3445Q.

The mathematical theory underlying statistical methods. Probability spaces, distributions in one and several dimensions, generating functions, and limit theorems.

### 3445. Introduction to Mathematical Statistics II

Three credits. Prerequisite: STAT 3375Q. Not open for credit to students who have passed STAT 5685. May not be taken out of sequence after passing STAT 4875.

Sampling distributions and parameter estimation. Neyman-Pearson theory of hypothesis testing, correlation, regression, analysis of variance.

### 3494W. Undergraduate Seminar

One credit. Prerequisite: STAT 2215Q or 3115Q; STAT 3025Q or 3375Q; ENGL 1007 or 1010 or 1011 or 2011.

The student will attend 6-8 seminars per semester, and choose one statistical topic to investigate in detail. The student will write a well-revised, comprehensive paper on this topic, including a literature review, description of technical details, and a summary and discussion.

### 3515Q. Design of Experiments

Three credits. Prerequisite: STAT 2215Q or 3025Q or instructor consent. Credits may not be received for both STAT 3515Q and BIST/STAT 5515.

Methods of designing experiments utilizing regression analysis and the analysis of variance.

### 3675Q. Statistical Computing

Four credits. Prerequisite: STAT 3025Q or 3375Q. Recommended preparation: an applied statistics course.

Introduction to computing for statistical problems; obtaining features of distributions, fitting models and implementing inference (obtaining confidence intervals and running hypothesis tests); simulation-based approaches and basic numerical methods. One hour per week devoted to computing and programming skills.

### 3965. Elementary Stochastic Processes

(Also offered as MATH 3170.) Three credits. Prerequisite: STAT 3025Q or 3345Q or 3375Q or MATH 3160.

Conditional distributions, discrete and continuous time Markov chains, limit theorems for Markov chains, random walks, Poisson processes, compound and marked Poisson processes, and Brownian motion. Selected applications from actuarial science, biology, engineering, or finance.

### 4185. Special Topics

Variable (1-6) credits. Prerequisite: Prerequisites and recommended preparation vary. May be repeated for credit.

### 4188. Variable Topics

Three credits. Prerequisite: Prerequisites and recommended preparation vary. May be repeated for credit.

### 4190. Field Study Internship

Variable (1-3) credits. Prerequisite: Completion with a grade of 'C' or better in STAT 3025Q or 3375Q, and STAT 3115Q or 3215Q or 3515Q. Completion of first year-sophomore general CLAS requirements. May be repeated for credit.

Supervised field work relevant to some area of Statistics or Data Science with a regional industry, government agency, or non-profit organization. Evaluated by the field supervisor and by the instructor (based on a detailed written report submitted by the student). Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

### 4255. Introduction to Statistical Learning

Three credits. Prerequisite: STAT 3115Q or 3215Q or instructor consent. Recommended preparation: Background in computer programming is preferred, but not required.

Modern statistical learning methods arising frequently in data science and machine learning with real-world applications: linear and logistic regression, generalized additive models, decision trees, boosting, support vector machines, and neural networks (deep learning).

#### 4299. Independent Study

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

#### 4389. Undergraduate Research

Three credits. Prerequisite: Instructor consent required. May be repeated for credit.

Supervised research in probability or statistics. A final written report and oral presentation are required.

#### 4475. Statistical Quality Control and Reliability

Three credits. Prerequisite: STAT 3445.

Development of control charts, acceptance sampling and process capability indices, reliability modeling, regression models for reliability data, and proportional hazards models for survival data.

#### 4525. Sampling Theory

Three credits. Prerequisite: STAT 3445.

Sampling and nonsampling error, bias, sampling design, simple random sampling, sampling with unequal probabilities, stratified sampling, optimum allocation, proportional allocation, ratio estimators, regression estimators, super population approaches, inferences in finite populations.

#### 4625. Introduction to Biostatistics

Three credits. Prerequisite: STAT 3025Q.

Rates and proportions, sensitivity, specificity, two-way tables, odds ratios, relative risk, ordered and non-ordered classifications, trends, case-control studies, elements of regression including logistic and Poisson, additivity and interaction, combination of studies and meta-analysis.

#### 4675. Probability and Statistics Problems

Variable (1-2) credits. Prerequisite: MATH 3160; STAT 3375. Not open to students who have passed MATH 3660.

Designed to help students prepare for the second actuarial examination.

#### 4825. Applied Time Series

Three credits. Prerequisite: STAT 3445.

Introduction to prediction using time-series regression methods with non-seasonal and seasonal data. Smoothing methods for forecasting. Modeling and forecasting using univariate, autoregressive, moving average models.

#### 4845. Applied Spatio-Temporal Statistics

Three credits. Prerequisite: STAT 3445; STAT 3215Q or 3675Q or instructor consent. Recommended preparation: Experience with R.

Applied statistical methodology and computing for spatio-temporal data, including visualization, models, and inferences. Extreme value analysis in spatio-temporal contexts. Focus on models that account for spatio-temporal dependence and inferences that provide appropriate uncertainty measures, with applications to real-world problems using open-source software.

#### 4875. Nonparametric Methods

Three credits. Prerequisite: STAT 3445.

Basic ideas, the empirical distribution function and its applications, uses of order statistics, one-

two- and c-sample problems, rank correlation, efficiency.

#### 4915. Data Science in Action

Three credits. Prerequisite: STAT 3255; STAT 3025Q or 3375Q or instructor consent. Corequisite: STAT 4916W.

Capstone course in data science. Real-world statistical data science in practice: problem formulation; integration of statistics, computing, and domain knowledge; collaboration; communication; reproducibility; project management.

#### 4916W. Writing in Data Science

One credit. Prerequisite: STAT 3255, 3025Q, or 3375Q or instructor consent; ENGL 1007 or 1010 or 1011 or 2011. Corequisite: STAT 4915 must be taken concurrently with STAT 4916W or instructor consent.

The course is a companion course to STAT 4915, which must be taken concurrently. Students will write a well-revised and comprehensive paper on their STAT 4915 course project, including literature review, description of technical details, reproducible statistical and data scientific analyses, and discussion of results.

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### Sustainable Plant and Soil Systems (SPSS)

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#### 1060. The Great American Lawn: History, Culture, and Sustainability

Three credits.

Examination of the health, social, cultural, and environmental impacts of the largest irrigated crop in the U.S. CA 2. CA 3.

#### 1100. Turfgrass Management

Three credits. Prerequisite: May not be taken out of sequence after passing SPSS 3150.

An overview of turfgrass adaptation, selection, and management. Topics include turfgrass growth, physiology, soil interactions, establishment, and maintenance. Cultural system practices for lawns, golf courses, athletic fields, and other turf areas. Turfgrass pest management practices for weeds, insects, and diseases. Taught with SAPL 110.

#### 1110. Fundamentals of Horticulture

Three credits.

Science and practice of horticultural plant propagation and culture. Basic concepts of plant structure, growth and function. Integrated pest management. Impact of new technology. Horticulture and the environment.

#### 1115. Turfgrass Management Lab

One credit. Prerequisite: SPSS 1100, which may be taken concurrently.

Grass establishment, grass identification, athletic field turfgrass playability evaluations, soil testing, turfgrass pest identification, turfgrass pest monitoring techniques, and fertilizer spreader and sprayer calibration.

#### 1120. Introduction to Plant Science

Four credits.

Basic concepts of plant anatomy and physiology in production of agricultural and horticultural crops. Developmental stages of crop plants from seed through vegetative growth and flowering to harvest. Included topics are mineral nutrition,

water relations, photosynthesis, respiration, reproduction, tropisms, climate effects, and breeding and development of improved crop plants. Relationships between the physiology of plants and crop production practices. Taught with SAPL 120.

#### 1125. Insects, Food and Culture

Three credits.

Introduction to the fascinating world of insects and their ubiquitous interactions with people. Role of insects in food and fiber production; insects as food; impact of insects on human health, commerce and history; and insects as inspiration sources for art, music, film and literature around the world. CA 4-INT.

#### 1150. Agricultural Technology and Society

Three credits.

Development of agricultural systems and technologies and their influence on societies. Topics include plant and animal domestication, food and industrial crops and centers of production, environmental issues, and agricultural ethics. CA 3.

#### 1300. Introduction to Soil Science

Three credits. Prerequisite: Not open to students who have passed SPSS 2120.

Physical and chemical properties of soils; nature and use of fertilizer and liming materials; management of soils for crop production including soil testing, tillage, fertilization practices, and conservation practices. Taught with SAPL 300.

#### 2100E. Environmental Sustainability of Food Production in Developed Countries

Three credits.

Foundations of modern food production systems that produce the majority of calories consumed in North America and other developed countries. Benefits and environmental risks associated with modern food production systems. Alternative food production systems and sustainability. Local food production and food security. Food production and climate change.

#### 2110W. Sustainable Plant Pest Management Communication

One credit. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open only to Sustainable Plant and Soil Systems, Horticulture, or Turfgrass Science majors.

Communication of the impacts, economic importance, identification, and sustainable management of new and emerging plant pests, such as insects, mites, weeds/invasive plants, and diseases of food and non-food (ornamental) crops, in agricultural and landscape settings. Connections with UConn Extension and real-world pest occurrences will be incorporated.

#### 2120. Environmental Soil Science

Three credits. Prerequisite: CHEM 1122 or CHEM 1124Q or CHEM 1127Q or CHEM 1137Q or CHEM 1147Q. May not be taken out of sequence after passing SPSS 3620.

Introduction to the physical, chemical and biological properties of soils. The relationship between soils and the growth of higher plants. Impact of soils on environmental quality. CA 3.

#### 2125. Soils Lab

One credit. Prerequisite: SPSS 2120, which may be taken concurrently.

Basic laboratory analysis of the physical and chemical properties of soil. Includes weekend field trips.

### **2130. Introduction to the Horticulture of Cannabis**

Three credits. Recommended preparation: SPSS 1120 or BIO 1110. Not open for credit to students who have passed SPSS 3995 when offered as "Horticulture of Cannabis" or "Horticulture of Cannabis: From Seed to Harvest."

Fundamentals of the production cycle of Cannabis including horticultural management, identification of crop issues, elite feminized seed production, seed propagation, vegetative propagation, pruning, training, optimization of cannabinoid content, and post-harvest handling. Overviews of Cannabis business operations worldwide and in Connecticut, exploring lab testing procedures, cannabidiol extraction technologies, the Connecticut medical marijuana program, and government regulation of the industry. Taught with SAPL 130.

### **2210. Golf Course Management**

Three credits.

Cultural management techniques including soil aeration, topdressing, mowing, thatch removal, grass or species selection, fertilization, irrigation and management of personnel, pests, equipment and inventory. Field trips required. Taught with SAPL 210.

### **2430. Herbaceous Ornamental Plants**

Three credits. Prerequisite: Not open for credit to graduate students.

Identification, nomenclature, cultural requirements and landscape uses of herbaceous perennials, ornamental grasses, ferns, annuals and bulbs. Study of live plants is required. Taught with SAPL 430.

### **2500E. Principles and Concepts of Agroecology**

Three credits. Recommended preparation: introductory course in plant biology, plant ecology, or environmental science. Not open for credit to students who have passed PLSC 3995 when offered as Agroecology.

Application of ecological processes to modern agricultural production practices. Soil quality and maintenance of soil health and productivity. Ecological management of soils, crops, and livestock systems. Sustainability and enhancement of ecological services within agroecosystems. Taught with SAPL 500.

### **2520. Floral Art**

Two credits. Prerequisite: May not be taken out of sequence after passing SPSS 3530 or HORT 3530.

The study of flower arrangement as an art form with emphasis on historical background, artistic principles, color harmony and care of perishable media. Individual expression is encouraged in the creation of floral composition. Taught with SAPL 520.

### **2560W. Written Communications in Horticulture**

One credit. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open only to Sustainable Plant and Soil Systems, Horticulture, or Turfgrass Science majors.

Writing as a component of communicating facts and opinions in the theory and practice of Horticulture. Assignments will reflect forms of writing commonly encountered by professional horticulturists, including descriptive brochures, articles for mass media, extension bulletins, and technical manuals.

### **3081. Summer Internship Experience**

Zero credits. May be repeated.

Provides opportunity for students to gain practical experience, knowledge, and professional skills in a work environment related to employment and careers in plant science or landscape architecture. Students work with instructor and internship supervisor to develop a learning contract and plan of work to ensure meaningful and educational tasks and experiences. Students taking this course will be assigned a grade of S (satisfactory) or U (unsatisfactory).

### **3090. Field Study of U.S. Food Production Systems**

Two credits. Prerequisite: SPSS 3094.

Visits to and discussions with farmers of agronomic, vegetable, fruit and livestock production systems in the Northeastern US, the Corn Belt and the High Plains. Visits to agricultural research stations for discussions with scientists and educators, and visits to agricultural infrastructure sites such as retail fertilizer dealerships, granaries, and post production facilities such as juice factories or flour mills will also be included.

### **3094. Seminar in U.S. Food Production Systems**

One credit. Prerequisite: May not be taken out of sequence after passing SPSS 3090 or PLSC 3090.

Discussion of the complex issues surrounding the economic, agronomic and environmental performance of food production systems in the United States.

### **3150. Advanced Turfgrass Management**

Three credits. Prerequisite: SPSS 1100. Corequisite: SPSS 2120.

Effects of environmental stresses and turfgrass management practices on growth, development, and physiology of turfgrasses. Implementation of proper management practices to promote optimal turfgrass health under stress conditions.

### **3210. Molecular Laboratory Technology**

Three credits. Prerequisite: BIOL 1107 or 1108 or 1110 or equivalent.

Laboratory technologies for identification and characterization of molecules important for molecular biology research, genetic manipulation and disease diagnosis. Labs will provide hands-on experience performing basic molecular biology techniques, lectures will cover theoretical basis and application.

### **3230. Biotechnology - Science, Application, Impact, Perception**

Three credits.

Scientific, legal, and ethical aspects of Biotechnology application in agriculture, health medicine, forensics, and the environment. Designed for students with diverse departmental affiliations.

### **3245. Plant Breeding and Biotechnology**

Three credits. Prerequisite: One of BIOL 1102, 1108, or 1110; or MCB 2410; or SPSS (or PLSC)

3210, 3230, or 4210. Not open to students who have passed SPSS 3240.

Principles and applications, economic, social and environmental impacts, advantages, potentials and limitations of major traditional and modern plant breeding technologies including crossing/hybridization, mutagenesis, genetic engineering and genome editing.

### **3255. Modern and Traditional Plant Breeding Techniques**

Three credits. Prerequisite: One of BIOL 1102, 1108, or 1110; or MCB 2410; or SPSS 3210 (PLSC 3210), 3230 (PLSC 3230), 3245, or 4210 (PLSC 4210). Not open to students who have passed PLSC 3250.

Hands-on experiments for traditional and modern plant breeding techniques, including artificial crossing/hybridization, polyploidy induction, plant tissue culture and transgenic plant production, and radiation- and genome editing-mediated mutagenesis.

### **3300. Principles of Turfgrass Irrigation Systems**

Three credits. Prerequisite: Not open for credit to graduate students.

Turfgrass irrigation systems, principles of hydraulics, irrigation components, design, installation and repair. Students will design irrigation systems for various turf areas. Field trips and fieldwork will be required. Taught with SAPL 230.

### **3400. Professional Development for Turfgrass Industries**

Two credits. Prerequisite: Not open for credit to graduate students.

Topics include human resource information, communication skills, turfgrass pesticide laws and compliance, labor laws and compliance, bid specifications, resume writing, interviewing, golf course management structures, business ethics, and benefits of professional association membership. Guest lecturers include industry professionals and representatives. Taught with SAPL 240.

### **3410. Woody Plants: Common Trees, Shrubs and Vines**

Three credits. Recommended preparation: BIOL 1110.

Taxonomy, identification, ornamental characteristics, cultural requirements and landscape use of deciduous and evergreen woody plants most often utilized in landscapes of the northeastern United States and similar environs. Taught with SAPL 410.

### **3420. Soil Chemistry Components**

Four credits. Prerequisite: CHEM 1124Q or 1127Q or 1137Q or 1147Q. Recommended preparation: SPSS 2120 and 2125.

Basic concepts of the physical chemistry of soil constituents. Topics include soil atmospheres, soil solutions, soil organic matter, soil mineralogy, and surface characteristics and analysis. Lab exercises on a personal computer are an integral part of the course.

### **3440. Small Fruit Production**

Three credits. Prerequisite: Not open for credit to graduate students.

The commercial production of small fruits and grapes in the Northeast and Mid-Atlantic regions including varieties, fruit-growing systems and

pruning, site requirements, harvesting methods, post-harvest requirements, marketing, pest complexes and IPM strategies of the major berry crops.

### **3530. Advanced Floral Design**

Two credits. Prerequisite: SPSS 2520; not open for credit to graduate students.

In depth study of post-harvest requirements for specialized floral crops. Exposure to novel floral materials with an emphasis on special events and wedding designs. Mass marketing, retail price structuring and mass-production concepts are covered. Taught jointly with SAPL 530.

### **3540. Garden Center Management**

Three credits. Prerequisite: Not open for credit to graduate students.

Fundamentals related to horticultural specialty businesses with particular emphasis on the retail and contracting areas. Specialty and mass merchandising firms are considered and compared. Taught with SAPL 540.

### **3550. Urban Plant Systems Construction and Maintenance**

Three credits. Recommended preparation: BIOL 1110; SPSS 2430, 3410.

Technical information on the effective construction and maintenance of planted systems. Structural and functional components of plant systems. Provision of ecosystem services. Overviews of a wide spectrum of planted systems including streetscaping, green roofs and green walls, rain gardens and bioretention, and phytoremediation systems. Techniques of soil modification. Plant selection. Establishment and maintenance of woody and herbaceous plants: planting, preservation, pruning, mulching, irrigation, and fertilization.

### **3560. Indoor Plants and Interiorscaping**

Three credits.

Taxonomy, identification, ornamental characteristics, cultural requirements and use of tropical plants. Principles of interiorscaping in the home, office, public buildings, and related locations. Taught with SAPL 560.

### **3610. Organic and Sustainable Vegetable Production**

Four credits. Prerequisite: Not open for credit to graduate students.

Fundamentals of soil management and crop plant husbandry as applied to vegetable production. Horticultural principles of crop growth. Focus is on sustainable and organic practices. Field laboratory will consist of required trips (some outside designated laboratory time) during the early part of the semester to organic and conventional farms. Taught with SAPL 620.

### **3620. Soil Fertility**

Three credits. Prerequisite: SPSS 2120.

Factors governing nutrient uptake by plants, fate of nutrients applied to soils, principles and practices in the manufacture and use of fertilizers for crop production, laboratory and greenhouse studies of soil and plant response to applied nutrients.

### **3640. Plant Propagation**

Three credits. Prerequisite: Not open for credit to graduate students.

Theory and practice in sexual and asexual propagation of horticultural plants, emphasizing

the anatomical, physiological, and ecological principles involved. Laboratories provide practical experience with seeds, division, cuttings, budding, grafting, layering and tissue culture. Taught with SAPL 640.

### **3660. Nursery Production**

Three credits.

Principles of field and container production of nursery stock. Emphasis on production practices for woody nursery stock from propagule to sale. Taught with SAPL 660.

### **3660W. Nursery Production**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Principles of field and container production of nursery stock. Emphasis on production practices for woody nursery stock from propagule to sale. Major writing assignment required.

### **3670. Greenhouse Technology and Operations**

Three credits. Prerequisite: SPSS 1120.

Introduction to greenhouse crop management with emphasis on structures, environmental control systems, and management techniques used to control crop response.

### **3675. Greenhouse Technology and Operations Laboratory**

One credit. Prerequisite: SPSS 3670, which may be taken concurrently.

Greenhouse crop production techniques and methodologies. Follows a travel-course format, in which students participate in regularly scheduled field trips to commercial greenhouse operation in CT and neighboring states. Students will make observations on the mechanical systems, management considerations, and crop production practices employed by commercial businesses.

### **3680. Advanced Cannabis Horticulture: Cannabis Production**

Three credits. Prerequisite: SPSS 2130 or instructor consent. Not open to students who have completed SPSS 3995 when offered as Advanced Cannabis Horticulture.

Advanced concepts of Cannabis production, management, processing and product development that build upon SPSS 2130. Students will choose highly focused study of either indoor controlled environment production or outdoor cultivation of Cannabis for part of the course. Taught with SAPL 680.

### **3720. Golf Course Design**

Two credits. Prerequisite: Not open for credit to graduate students.

Introduction to golf course design theory, planning, and layout. Putting green and tee construction methods. Turfgrass species and cultivar selection for the golf course. Guest presentations by designers and golf course superintendents. Field trips required. Taught with SAPL 720.

### **3740. Landscape Construction**

Three credits.

Principles and techniques used to build landscape structures including patios, walls, walkways, water features and green roofs.

### **3800. Turfgrass Pests and Control**

Three credits. Prerequisite: Not open for credit to graduate students.

Turfgrass weed, insect, disease and vertebrate identification and control. Emphasis on biological controls and IPM. Field trips required. Taught with SAPL 800.

### **3810. Fundamentals of Plant Pathology**

Three credits. Prerequisite: BIOL 1108 or 1110; open to juniors or higher.

Causal agents, nature and dynamics of plant disease. Pathogen biology, factors influencing disease development, diagnosis of diseases, and principles of plant disease control with emphasis on major diseases of crop, horticultural and turfgrass systems.

### **3820. Ecology and Control of Weeds**

Three credits. Prerequisite: BIOL 1108 or 1110; or SPSS 1120.

Weed origin and classification. Losses caused by weeds. Weed competition. Weed seed production, dormancy and germination. Cultural, mechanical, biological and chemical control methods. Weed identification.

### **3830. Horticultural Entomology**

Three credits.

Identification and management of insects pests found in food crops, ornamental plants and turfgrass. Biology of key pests and their damage symptoms, monitoring and management tactics will be covered along with identification and use of beneficial insects employed in pest management.

### **3840. Integrated Pest Management**

Three credits. Prerequisite: Not open for credit to graduate students.

Principles of integrated pest management covering insect, disease, and weed problems in agronomic crops, vegetables, fruits, turfgrass, ornamentals, and greenhouse production. Environmental impacts and pest control strategies will be covered. Taught with SAPL 840.

### **3990. Field Study Internship**

Variable (1-6) credits. Prerequisite: Open only to juniors and seniors who have demonstrated professional potential as identified by their advisor. May be repeated for a total of 6 credits.

Students will work with professionals in an area of research or management. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory.) This course may be repeated provided that the sum total of credits earned does not exceed six credits.

### **3995. Special Topics**

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

Topics and credits to be published prior to the registration period preceding the semester offerings.

### **3999. Independent Study**

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

Students are expected to submit written reports.

### **4210. Plant Physiology: How Plants Work**

Three credits. Prerequisite: BIOL 1108 or 1110; CHEM 1122 or 1124Q or 1127Q or 1137Q or 1147Q; open to juniors or higher.

Principles of plant physiology and gene expression from the cell to the whole plant level. Emphasis on plant cell structure, water movement, transport systems, photosynthesis,

respiration, phytohormone signals and responses to environmental stresses.

#### 4420. Soil Chemistry Processes

Three credits. Prerequisite: CHEM 1128Q. Recommended preparation: SPSS 2120 and 2125.

Physical chemical characteristics of soil minerals and soil organic matter, and their reactivity with compounds present in the aqueous and vapor phase. Topics include: redox reactions, adsorption and desorption measurements, electrokinetics, adsorption modeling, and basic principles of soil modification and remediation practices.

#### 4650. Plant Tissue Culture

Three credits. Prerequisite: CHEM 1122 or 1124Q or 1127Q.

In vitro techniques for plant propagation, biotechnology and research. Media preparation, aseptic micropropagation techniques including meristem culture, direct and indirect-organogenesis and embryogenesis, embryo rescue, somaclonal variation, and pathogen indexing.

#### 4994. Seminar

One credit. Prerequisite: Instructor consent required. May be repeated for credit.

Professional presentations of current topics in Plant Science.

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### Translation Studies (TRST)

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#### 3010. Translating Literature: Practice and Theory

Three credits. Prerequisite: Working knowledge of a language other than English required.

Introduction to theoretical aspects of literary translation. Translation of a diverse array of literary texts into English.

#### 3011. The Art of Literary Translation

Three credits. Prerequisite: Working knowledge of a language other than English required.

Introduction to the practical aspects of literary translation with a focus on translating different types of literary texts into English. Working knowledge of a language other than English required.

#### 3100. Editing and Publishing International Literature

Three credits. Prerequisite: Instructor consent, open to sophomores or higher. May be repeated for a total of 6 credits.

Practicum in editing publications of international literature in translation, culminating in the production and publication of the All Translation anthology.

#### 3195. Special Topics in Translation Studies

Three credits. Prerequisite: Open to sophomores or higher. May be repeated for a total of 6 credits.

Prerequisites and recommended preparation vary.

#### 3290. Field Study

Variable (1-3) credits. Prerequisite: Instructor consent required. May be repeated for a total of 6 credits.

A practical learning experience, working in an environment that fosters ASL communication and a deeper appreciation and understanding of the Deaf community. Field study placements are

arranged or approved by the ASL Coordinator or course instructor.

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### University (UNIV)

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#### 1730. Holster Research Proposal Development

One credit.

Developing research ideas into fundable, discipline-appropriate research applications. Topics may include drafting and revision of statements; meeting compliance requirements; budgeting; completing a literature review; creating a timeline; and practicing interview skills. Culminates in proposal for Holster Scholars Program. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

#### 1784. First-Year Honors Seminar

One credit. Prerequisite: Open only to Honors students. Must be a First-year student.

An overview of some aspects of university education. Designed to help students set learning goals to be achieved during the baccalaureate experience.

#### 1800. FYE University Learning Skills

One credit. Prerequisite: Open to First-Year or Sophomore students only.

An overview of the university experience with a focus on acquiring learning skills and understanding resources available for academic success.

#### 1810. FYE Learning Community Seminar

One credit. Prerequisite: Open to First-Year or Sophomore students only. May be repeated for a total of 3 credits.

An overview of topics relevant to the theme of the Learning Community.

#### 1820. First Year Seminar

One credit. Prerequisite: Open to First-Year or Sophomore students only. May be repeated for credit.

Guided research or reading, discussion, and writing on topics of professional interest to the instructor. Course materials promote independent learning and active engagement in the academic life of the university.

#### 1840. Learning Community Service-Learning

One credit. Prerequisite: Instructor consent required. May be repeated for a total of 4 credits.

Activities, discussions, and critical reflections related to service-learning, community engagement, and/or experiential learning activities specific to the theme of a learning community. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory). This course may be repeated for a total of four semesters with change of activity and/or skill level.

#### 1981. Documented Internship Experience

Zero credits. May be repeated once.

Supervised fieldwork of 8-10 hours per week for 8-12 weeks for a minimum of 80 hours at the internship site. Evaluations by the field supervisor and the course instructor. Students must have a minimum GPA of 2.0. Students must secure a satisfactory internship position prior to the end of the second week of the semester. May be repeated one time, with permission. Students taking

this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

#### 1983. International Study

Variable (1-17) credits. May be repeated for a total of 17 credits.

Course work undertaken within approved Education Abroad programs. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

#### 1985. Special Topics

Variable (1-6) credits. May be repeated for credit.

Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

#### 1991. Supervised Internship Experience

One credit. May be repeated for a total of 2 credits.

Supervised fieldwork of six to eight hours per week (for a minimum of 80 hours) for 8-10 weeks, relevant to major and/or career goals. Mid semester and final evaluations are prepared by the field supervisor and the course instructor. May be repeated one time, with permission. Open to matriculated undergraduates only. Students must have a minimum GPA of 2.0. Students must secure a satisfactory internship position prior to the end of the second week of the semester of enrollment in this course. This course does not fill any general education or major requirements. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

#### 1993. International Study

Variable (1-17) credits. Prerequisite: Instructor consent required. May be repeated for a total of 17 credits.

Course work undertaken within approved Study Abroad programs. May be repeated for credit to a maximum of 17 credits.

#### 1995. Special Topics

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

May be repeated with a change in topic.

#### 1999. Independent Study

Variable (1-6) credits. Prerequisite: Open to First-Year or Sophomore students only. May be repeated for credit.

#### 2100. Preparation for STEM Academic Research

One credit. Prerequisite: Instructor consent required.

Preparation for STEM (science, technology, engineering, and mathematics) undergraduate research projects and academic research assignments to prepare for graduate school.

#### 2230. The PA2SS Program, Mentoring African American Students

One credit. Prerequisite: Open to sophomores or higher. May be repeated for a total of 4 credits.

Successful mentoring strategies and strategies for effective communication and discourse. Students will learn about and recognize the consequences of stereotype threat and will develop proficiency in mentoring African American college students to become lifelong learners.

#### 2300. Tutoring Principles for Quantitative Learning

One credit. Prerequisite: Instructor consent required.

An interdisciplinary introduction to peer-to-peer tutoring in quantitative courses. Readings on individualized learning assistance and adapting instruction to different learning styles. Training in techniques to guide peers towards becoming independent learners with higher levels of reasoning and assessment of knowledge in quantitative disciplines. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

#### **2500. Gender, Sexuality and Community**

Three credits. Prerequisite: Open to sophomores or higher.

Weekly lecture and discussion series with guest scholars, community activists, and educators from assorted disciplines. Critical investigation and exploration of interrelationships of gender, sexuality and community.

#### **2600. Individualized Study Across Academic Disciplines**

One credit. Prerequisite: Instructor consent required.

Introduction to disciplinarity, multidisciplinary, and interdisciplinarity. Recommended for students exploring an application to the Individualized Major Program.

#### **2983. International Study**

Variable (1-17) credits. May be repeated for a total of 17 credits.

Course work undertaken within approved Education Abroad programs. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

#### **2993. International Study**

Variable (1-17) credits. May be repeated for a total of 17 credits.

Course work undertaken within approved Education Abroad programs.

#### **3080. Peer Mentor Leadership Development Course**

Three credits. Prerequisite: Open only with consent of instructor, open to sophomores or higher. May be repeated for a total of 6 credits.

Focus on personal growth and leadership development to foster empowerment of self and others through peer mentoring. Students will explore social, cultural, personal, and academic issues that affect first-year students, in particular first-generation college students from underrepresented populations. Some topics covered are empathy, MBTI, effective communications, the transition to college, growth mindset, cultural diversity, and self-awareness.

#### **3088. Variable Topics**

Variable (1-6) credits. May be repeated for a total of 6 credits.

Current and emerging local/global topics of general interest to the university community. Open to all students. May be repeated for credit with a change in topic. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

#### **3098. Variable Topics**

Variable (1-6) credits. May be repeated for a total of 6 credits.

Current and emerging local/global topics of general interest to the university community. Open to all students.

#### **3784. Interdisciplinary Honors Seminar**

Three credits. Prerequisite: Instructor consent required. May be repeated for credit.

An interdisciplinary seminar designed for honors students and open to other qualified students. Topics vary from semester to semester. May be repeated for credit with change of topic. Sponsored by the Honors Program.

#### **3792. International Healthcare Practicum**

One credit. Prerequisite: PNB 3278 or equivalent clinical experience, instructor consent required. Not open for credit to students who have passed UNIV 3995 when taught as "Health Care Internship with Atlantis Project."

Supervised clinical observation in a variety of healthcare specialties, with additional academic work in international and global health. Part of Education Abroad program. Location varies.

#### **3820. Learning Community Advanced Seminar**

One credit. Prerequisite: Open to sophomores, juniors, or seniors in learning communities. May be repeated for a total of 3 credits.

A variable topics course designed to help students engage with the advanced academic and enrichment opportunities unique to their learning community. This course is only open to sophomores, juniors, or seniors in learning communities.

#### **3985. Special Topics**

Variable (1-6) credits. May be repeated for credit.

Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

#### **3991. Interdisciplinary Internship Field Experience**

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

Repeatable to a maximum of 12 credits. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

#### **3993. International Study**

Variable (1-17) credits. Prerequisite: Instructor consent required. May be repeated for a total of 17 credits.

Course work undertaken within approved Study Abroad programs. May be repeated for credit (to a maximum of 17).

#### **3995. Special Topics**

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

With a change in topic; may be repeated for credit.

#### **3999. Independent Study**

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

May be repeated for credit.

#### **4600W. Capstone Course**

Three credits. Prerequisite: Consent required by instructor and the Individualized Major Program Director; ENGL 1007 or 1010 or 1011 or 2011; senior standing with an approved individualized major plan of study; and an approved placement, research or project.

All students with an approved individualized major plan of study who are not earning a double major nor have another capstone course on their plan of study must register for this course during their last academic year. Students will integrate

their interdisciplinary major through a capstone paper.

#### **4697W. Senior Thesis**

Variable (3-6) credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; senior standing with an approved individualized major plan of study; consent required by instructor and the Individualized Major Program director.

All honors students writing a thesis for their individualized major plan of study must register for this course during their last academic year. Students must present their thesis to the Individualized Major Program. Students must have obtained a thesis advisor and have an approved thesis topic before registration.

#### **4800. Senior Year Experience**

One credit. Prerequisite: Open to seniors only.

An overview of the transition to life beyond the University with a focus on life skill awareness and development including financial literacy, career readiness, and reflection on the meaning and value of the undergraduate experience. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

#### **4820. SYE Seminars**

One credit. Prerequisite: Open only to seniors; instructor consent required.

An overview of the transition to life beyond the University with a focus on life skill awareness and development including financial literacy, career readiness, and reflection on the meaning and value of the undergraduate experience. Each section will be open to select populations based on major or other affiliation and will have unique elements within assignments or in-class activities that are related to the specific entity. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

#### **4840. Senior Year Experience**

One credit. Prerequisite: Open only to seniors.

An overview of the transition to life beyond the University with a focus on life skill awareness and development including financial literacy, career readiness, and reflection on the meaning and value of the undergraduate experience. Each section will be open to select populations based on major or other affiliation and will have unique elements within assignments or in-class activities that are related to the specific entity. Assignments will be graded with a rubric for a letter grade.

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### **Urban and Community Studies (URBN)**

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#### **1200. Global Urbanization**

(Also offered as GEOG 1200.) Three credits.

A broad discussion of the role and structure of cities around the world from the first cities to contemporary times. Special emphasis will be placed on the mechanisms by which cities and ideas about them have been diffused from one place to another and on the changing forces that have shaped cities over time and across space. CA 1. CA 4-INT.

#### **1300. Exploring Your Community**

Three credits.

Various aspects of urban and community life emphasizing the interplay of social justice,



diversity, individual and social well being. Explores theories, concepts, and methods in community studies. May contain a service learning component. CA 2. CA 4.

**1300W. Exploring Your Community**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Various aspects of urban and community life emphasizing the interplay of social justice, diversity, individual and social well being. Explores theories, concepts, and methods in community studies. May contain a service learning component. CA 2. CA 4.

**1400. Site and Sound: Understanding Cities Through Popular Music**

Three credits.

Examination of urban issues and trends like race, gender, class, sexuality, place attachment, politics, economics, environmentalism, and social activism by interpreting the lyrics and videos of popular music. CA 2. CA 4.

**1400W. Site and Sound: Understanding Cities Through Popular Music**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Examination of urban issues and trends like race, gender, class, sexuality, place attachment, politics, economics, environmentalism, and social activism by interpreting the lyrics and videos of popular music. CA 2. CA 4.

**1600. Cities of Imagination**

Three credits.

Introduction to planned cities. Topics may include concepts in urban planning, past and present planned cities, considerations of ethics and inclusion in planning. CA 2.

**2000. Introduction to Urban and Community Studies**

Three credits.

Introduction to the analysis of urban development with particular stress on those problems pertinent to the American central city.

**2000W. Introduction to Urban and Community Studies**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Introduction to the analysis of urban development with particular stress on those problems pertinent to the American central city.

**2100. Survey Research Methods**

(Also offered as PP 2100.) Three credits.

Theory and practice of surveys, including overall project design, questionnaire development, sampling, methods of data collection and data analysis.

**2301Q. Research Methods and Analysis in Urban and Community Studies**

Three credits. Prerequisite: STAT 1000 or 1100. Open to sophomores or higher.

Introduction to research methods and analysis techniques useful in understanding urban issues and assessing public and non-profit social programs.

**2302. Qualitative Methods in Urban and Community Studies**

Three credits. Prerequisite: Open to sophomores or higher.

An introduction to qualitative methods used in urban social research. Interdisciplinary techniques for data collection and analysis, including visual and narrative analysis, participant observation, interviewing, and archival research.

**2400. City and Community in Film**

(Also offered as AMST 2400.) Three credits.

Aesthetics, history, and contemporary relevance of American films that feature the urban, suburban, and/or small town landscape as a major "character" shaping plot and story. Films read closely as texts that make meaning through a range of tools, including narrative, mise-en-scene, editing, camera work, and genre conventions. CA 1.

**2541. The History of Urban America**

(Also offered as HIST 2541.) Three credits.

The development of Urban America with emphasis on social, political, physical, and environmental change in the industrial city. Formerly offered as URBN 3541 and HIST 3541.

**2541W. The History of Urban America**

(Also offered as HIST 2541W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

The development of Urban America with emphasis on social, political, physical, and environmental change in the industrial city. Formerly offered as URBN 3541W and HIST 3541W.

**2650. History of Urban Latin America**

(Also offered as HIST 2650.) Three credits. Prerequisite: Not open to students who have passed HIST 3095 when taught as Latin American Urban History.

The development of Latin American cities with emphasis on social, political, physical and environmental change, from Spanish conquest to present. Formerly offered as HIST/URBN 3650. CA 1.

**2901. Urban Sociology**

(Also offered as SOCI 2901.) Three credits.

Social and physical organization of cities and suburbs. Formerly offered as URBN 3275 and 3901/SOCI 3901.

**2901W. Urban Sociology**

(Also offered as SOCI 2901W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Social and physical organization of cities and suburbs. Formerly offered as URBN 3275W and 3901W/SOCI 3901W.

**3200. Urban Geography**

(Also offered as GEOG 3200.) Three credits.

Analysis of the growth, distribution, and functional patterns within and among Western cities. Application of urban geographical concepts to city planning problems.

**3200W. Urban Geography**

(Also offered as GEOG 3200W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Analysis of the growth, distribution, and functional patterns within and among Western cities. Application of urban geographical concepts to city planning problems.

**3210. Urban Anthropology**

Three credits.

A general course on urbanization, emphasizing contrasts between "developed" and "developing" countries. Formerly offered as URBN 3000.

**3276. Urban Problems**

(Also offered as SOCI 3903.) Three credits. Prerequisite: Open to juniors or higher.

Social problems of American cities and suburbs, with emphasis on policy issues.

**3276W. Urban Problems**

(Also offered as SOCI 3903W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

Social problems of American cities and suburbs with emphasis on policy issues.

**3400E. Urban Parks and Sustainability**

Three credits.

Historical and contemporary analysis of park issues related to the social, ecological, and economic sustainability of cities, such as the racial politics of park advocacy, the changing social practices of park use, the privatization of public space, urban resilience and green infrastructure, and the relationship between parks, gentrification, and urban sustainability. CA 2.

**3439. Urban and Regional Economics**

(Also offered as ECON 3439.) Three credits. Prerequisite: ECON 2201 or 2211Q. Recommended preparation: ECON 1200 or 1202; MATH 1071 or 1110 or 1121 or 1131 or 1151.

Economic problems of cities and regions: urban markets for land, labor, and housing; location decisions of businesses and households; metropolitan transportation problems; urban/suburban fiscal relations; urban and regional environmental quality; and the economics of crime.

**3632. Urban Politics**

(Also offered as POLS 3632.) Three credits. Prerequisite: Open to juniors or higher.

Political systems and problems confronting urban governments.

**3632W. Urban Politics**

(Also offered as POLS 3632W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

Political systems and problems confronting urban governments.

**3981. Internship in Urban Studies: Seminar**

Variable (1-3) credits. Prerequisite: Must be taken concurrently with URBN 3991. May be repeated for a total of 6 credits.

Description, analysis, and evaluation of the fieldwork portion (URBN 3991) of the internship. Written reports are required.

**3991. Internship in Urban Studies: Field Study**

Variable (1-3) credits. Prerequisite: Must be taken concurrently with URBN 3981. May be repeated for a total of 6 credits.

A fieldwork internship program under the direction and supervision of a faculty member affiliated with the Urban Studies faculty. Hours by arrangement with hosting agency, 42 hours per semester per credit. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

**3993. Foreign Study**

Variable (1-6) credits. Prerequisite: Open to juniors or higher. May be repeated for credit.

Special topics in a foreign-study program. Consent of Department Head required, preferably prior to the student's departure.

**3995. Special Topics**

Variable (1-6) credits. Prerequisite: Prerequisites and recommended preparation vary. May be repeated for credit.

**3998. Variable Topics**

Three credits. Prerequisite: Prerequisites and recommended preparation vary. May be repeated for credit.

**4000. Understanding Your Community**

Three credits. Prerequisite: URBN 2000; open to Urban and Community Studies majors in their senior year only. May be repeated for credit.

Examination of an urban area or local community. Production of a detailed case study including historical perspective, analysis of issues and stakeholders, evaluation of internal strengths and weaknesses as well as external threats and opportunities. Proposal of strategies for addressing problems and advancing equity, growth, and development.

**4497W. Senior Thesis**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Research and writing of an urban and/or community focused thesis. Students must have a thesis advisor and an approved thesis topic.

**4999. Independent Study**

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

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## Vietnamese (VIET)

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**1193. Foreign Study**

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

**3293. Foreign Study**

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

**3295. Special Topics**

Variable (1-6) credits. May be repeated for credit. Prerequisites and recommended preparation vary.

**3299. Independent Study**

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

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## Women's, Gender, and Sexuality Studies (WGSS)

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**1105. Gender and Sexuality in Everyday Life**

Three credits.

How gender, sex, and sexuality are woven into systems of difference and stratification that shape everyday life. Examines these processes in the family, education, work, and politics with sensitivity to the diversity of individual experiences across class, racial ethnic groups, cultures, and regions. Provides experience in introductory research methods to analyze the social construction

and structural organization of gender and sexuality. CA 2. CA 4.

**1121. Women in History**

(Also offered as HIST 1203.) Three credits.

The historical roots of challenges faced by contemporary women as revealed in the Western and/or non-Western experience: the political, economic, legal, religious, intellectual and family life of women. CA 1. CA 4.

**1170. Women's Contemporary Writing in the Arab World**

(Also offered as ARIS 1170.) Three credits.

An exploration of feminist texts, literary texts, and popular fiction. Topics may include: the role of women's writing from the nineteenth century to the present in public life; women's writing in social and political movements such as the Arab Spring; the intersectionality of class, race, gender, and nation in Arabic literature; and the unique challenges faced by Arab women writers. Taught in English. CA 1. CA 4-INT.

**1170W. Women's Contemporary Writing in the Arab World**

(Also offered as ARIS 1170W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

An exploration of feminist texts, literary texts, and popular fiction. Topics may include: the role of women's writing from the nineteenth century to the present in public life; women's writing in social and political movements such as the Arab Spring; the intersectionality of class, race, gender, and nation in Arabic literature; and the unique challenges faced by Arab women writers. Taught in English. CA 1. CA 4-INT.

**1193. International Study**

Variable (1-6) credits. May be repeated for a total of 12 credits.

Consent of program director required, normally before the student's departure.

**2105. Gender and Science**

Three credits. Prerequisite: Open to sophomores or higher.

The historical, sociological, economic, and political processes that shape the ways that gender, race, class, sexuality and nation intersect with science, medicine and technology. CA 4-INT.

**2105W. Gender and Science**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to sophomores or higher.

The historical, sociological, economic, and political processes that shape the ways that gender, race, class, sexuality and nation intersect with science, medicine and technology. CA 4-INT.

**2124. Gender and Globalization**

Three credits.

Construction and reproduction of gender inequality and the gendered nature of global structures and processes. Key topics include women's rights as human rights; women's work; gender, development, and the global economy; migration; religious fundamentalism; reproduction, health, and HIV/AIDS; education; violence against women; and gender, war, and peace advocacy. CA 2. CA 4-INT.

**2204. Feminisms and the Arts**

Three credits.

Interdisciplinary exploration of drama, the visual arts, music, literature, social action art, and/or film through feminist, queer, and trans theory and criticism. Formerly offered as WGSS 1104. CA 1. CA 4.

**2217. Women, Gender and Film**

Three credits.

Examines intersectional identities of gender, race, and sexuality depicted in film through feminist analysis. CA 1. CA 4.

**2217W. Women, Gender and Film**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Examines intersectional identities of gender, race, and sexuality depicted in film through feminist analysis. CA 1. CA 4.

**2250. Critical Approaches to Women's, Gender, and Sexuality Studies**

Three credits.

Theories, practice, and methodologies of the Women's, Gender, and Sexualities Studies interdisciplinary.

**2255. LGBTQ Sexualities, Activism, and Globalization**

Three credits. Prerequisite: Open to sophomores or higher.

Globalization of LGBTQ identities, cultures and social movement activism, and cultures from a transnational perspective; use, role, and impact of digital media. CA 4-INT.

**2255W. LGBTQ Sexualities, Activism, and Globalization**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to sophomores or higher.

Globalization of LGBTQ identities, cultures and social movement activism, and cultures from a transnational perspective; use, role, and impact of digital media. CA 4-INT.

**2263. Women, Gender, and Violence**

(Also offered as HRTS 2263.) Three credits. Prerequisite: Open to sophomores or higher. Recommended preparation: Any 1000 or 2000 level WGSS course.

Discussion of various forms of gendered violence in the United States and in a global context. Physical, sexual, emotional and structural violence; social, political and personal meanings of gendered violence; special emphasis on women.

**2267. Women and Poverty**

Three credits. Prerequisite: Open to sophomores and higher. Recommended preparation: Any 1000-level WGSS course.

Exploration of poverty and gender inequality within the frameworks of the global political economy in select countries. Impact of race, class, and gender differences on policy.

**2622. History of Gender and Sexuality in Latin America and the Caribbean**

(Also offered as HIST 2622, LLAS 2622, and AFRA 2622.) Three credits.

Topics may include: empire and colonialism/anti-colonialism; slavery, science, and the state; cultural practices and institutions; feminisms and masculinities; law and public policies; immigration; forms of labor and political mobilization; sex and reproduction; and human rights from historical

perspective. Formerly offered as AFRA/HIST/LLAS/WGSS 3622.

### **2680. Sociology of Sexualities**

(Also offered as SOCI 2680.) Three credits.

Explores the social organization, construction, and politics of sexualities, particular focus on lesbian, gay, bisexual, transgender, and queer experiences and the intersection of sexualities, gender, race, and class. Formerly offered as SOCI/WGSS 3621. CA 4.

### **2680W. Sociology of Sexualities**

(Also offered as SOCI 2680W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Explores the social organization, construction, and politics of sexualities, particular focus on lesbian, gay, bisexual, transgender, and queer experiences and the intersection of sexualities, gender, race, and class. Formerly offered as SOCI/WGSS 3621W. CA 4.

### **2807. Women and the Law**

(Also offered as POLS 2807.) Three credits. Prerequisite: Not open for credit to students who have passed POLS 2998/W when offered as "Women and the Law."

The development of constitutional and statutory standards for treatment of women under the law in the United States.

### **2807W. Women and the Law**

(Also offered as POLS 2807W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011. Not open for credit to students who have passed POLS 2998/W when offered as Women and the Law.

The development of constitutional and statutory standards for treatment of women under the law in the United States.

### **3027. Historical Women Political Thinkers**

(Also offered as POLS 3027.) Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: POLS 1002. Not open to students who have passed POLS 2998W when offered as "Historical Women Political Thinkers."

Critical study of the writings of several historical women political thinkers.

### **3027W. Historical Women Political Thinkers**

(Also offered as POLS 3027W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011, open to juniors or higher. Recommended preparation: POLS 1002. Not open to students who have passed POLS 2998W when offered as "Historical Women Political Thinkers."

Critical study of the writings of several historical women political thinkers.

### **3042. Baseball and Society: Politics, Economics, Race and Gender**

(Also offered as HDFS 3042, AFRA 3042, and AMST 3042.) Three credits. Prerequisite: Open to juniors or higher.

Baseball in historical, political, sociological, and economic contexts. Topics may include: impact on individuals and families; racial discrimination and integration; labor relations; urbanization; roles of women; treatment of gay athletes; and implications of performance-enhancing drugs.

### **3052. Women and Politics**

(Also offered as POLS 3672.) Three credits. Prerequisite: Open to juniors or higher.

An introduction to feminist thought, the study of women as political actors, the feminist movement and several public policy issues affecting women.

### **3102. Psychology of Women**

(Also offered as PSYC 3102.) Three credits. Prerequisite: Three credits of 2000 or 3000 level psychology.

Gender roles, socialization, women and work, women's relationships, violence against women, and other topics. Theory and research. CA 4.

### **3105. The Politics of Reproduction**

Three credits. Prerequisite: Open to juniors or higher; sophomores by consent of instructor. Recommended preparation: any 1000 or 2000-level WGSS course.

National and transnational politics of reproduction including: contraception, sexuality education, abortion, childbirth, surrogacy, adoption, health care policy and funding.

### **3105W. The Politics of Reproduction**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher; sophomores by consent of instructor. Recommended preparation: any 1000 or 2000-level WGSS course.

National and transnational politics of reproduction including: contraception, sexuality education, abortion, childbirth, surrogacy, adoption, health care policy and funding.

### **3210. Gender and Communication**

(Also offered as COMM 3210.) Three credits. Prerequisite: COMM 1000 or instructor consent. Recommended preparation: COMM 2200.

Differences in male/female communication, and an examination of cultural assumptions regarding gender in the communication process. Critically analyze the theory, politics and practice of communication and gender. Formerly offered as COMM 3450/WGSS 3268.

### **3216. Women in Political Development**

(Also offered as POLS 3216.) Three credits. Prerequisite: Open to juniors or higher, others by consent.

How women and gender circumscribe political life and generate relationships of inequality and justice on a global scale. Topics may include conflict and security, development, human rights and legal systems, labor and migration, nation building, political economy, and transnational justice.

### **3218. Feminist Theory**

(Also offered as PHIL 3218.) Three credits. Prerequisite: One three-credit course in Philosophy at the 1100-level or any three-credit 1000 or 2000-level WGSS course.

Philosophical issues in feminist theory. Topics may include the nature of gender difference, the injustice of male domination and its relation to other forms of domination, the social and political theory of women's equality in the home, in the workplace, and in politics.

### **3247. Gender and War**

(Also offered as POLS 3247.) Three credits. Prerequisite: Open to juniors or higher.

Gender aspects of war. Masculinities and militaries; gender-based war violence; laws of war and post-war conditions for male and female soldiers and civilians.

### **3249. Gender Politics and Islam**

(Also offered as POLS 3249.) Three credits.

Construction of gender in Islamic texts and history, the religion's interaction with other patriarchal cultures and systems, western interventions and their impact, male leaders' reform efforts, women's movements.

### **3252. Genders and Sexualities**

Three credits.

Intersectional examination of diverse constructions of gender and sexuality. Focused exploration of selected topics.

### **3253. Gender Representations in U.S. Popular Culture**

Three credits.

Forces in the U.S. that shape and reshape gender in popular culture. CA 2.

### **3253W. Gender Representations in U.S. Popular Culture**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Forces in the U.S. that shape and reshape gender in popular culture. CA 2.

### **3254. Women and Gender in the Deaf World**

(Also offered as ASLN 3254.) Three credits. Prerequisite: One of WGSS 1104, 1105, or 2124.

The roles of women inside and outside the Deaf world. How language and cultural barriers perpetuate the roles defined for and by d/Deaf women within Deaf and hearing societies.

### **3255. Sexual Citizenship**

Three credits.

Sexuality as a significant axis of citizenship. How sexual citizenship differs in national, historical, and international contexts. How its different constructions influence such issues as welfare, adoption, marriage, and immigration. CA 4-INT.

### **3255W. Sexual Citizenship**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Sexuality as a significant axis of citizenship. How sexual citizenship differs in national, historical, and international contexts. How its different constructions influence such issues as welfare, adoption, marriage, and immigration. CA 4-INT.

### **3256. Feminist, Queer, and Trans Theories**

Three credits. Recommended preparation: WGSS 2250. Not open to students who have passed WGSS 3995 when offered as "Introduction to Queer Studies."

Exploration of foundational and current critical theory in feminist, queer, and trans studies. Emphasis on the shared historical development of, transnational and intersectional approaches in, as well as controversies within and between these theoretical perspectives. Among diverse approaches to be considered are major feminist, queer, and trans revisions of critical race, psychoanalytic, Marxist, Foucauldian, indigenous and postcolonial theories. Formerly offered as WGSS 2253.

### **3257. Feminist Disability Studies**

Three credits. Prerequisite: Open to juniors or higher; sophomores by consent of instructor.

Recommended preparation: Any 1000 or 2000-level WGSS course.

Social, historical, cultural, and political constructions of the intersecting categories of gender and disability. Through a wide variety of texts and cultural examples, exploration of how disability is gendered, gender is disabled, and both are interwoven by race, ethnicity, class, nationality, sexuality, and subcultures.

### **3257W. Feminist Disability Studies**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher; sophomores by consent of instructor. Recommended preparation: any 1000 or 2000-level WGSS course.

Social, historical, cultural, and political constructions of the intersecting categories of gender and disability. Through a wide variety of texts and cultural examples, exploration of how disability is gendered, gender is disabled, and both are interwoven by race, ethnicity, class, nationality, sexuality, and subcultures.

### **3258. Latina Narrative**

(Also offered as LLAS 3230.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Feminist topics in contemporary Latina literature and cultural studies.

### **3259. Fictions of Latino Masculinity**

(Also offered as LLAS 3231.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Topics in Latino literature and cultural studies with an emphasis on masculinity and male authors.

### **3260. Latinas and Media**

(Also offered as LLAS 3264 and COMM 3321.) Three credits. Prerequisite: Open to juniors or higher.

The role of ethnicity and race in women's lives. Special attention to communication research on ethnic and racial minority women. CA 4.

### **3264. Gender in the Workplace**

Three credits. Prerequisite: Any 1000 or 2000 level WGSS course.

Examination of the gendered dimensions of migration and labor in the global economy and its impact on workers in the US and select other countries.

### **3265W. Producing Critical Feminist Scholarship**

Three credits. Prerequisite: WGSS 2250; ENGL 1007 or 1010 or 1011 or 2011.

Exploration of the theoretical underpinnings of diverse critical scholarship used by WGSS researchers and the significance of praxis for fostering knowledge production in this interdisciplinary and transnational field. Ethical dilemmas faced by feminist, critical race, queer and trans scholars and other critical scholars, activists, artists, and policy makers. Experiential opportunities in designing and producing WGSS scholarship.

### **3269. Gender, Sexuality, and Social Movements**

Three credits. Recommended preparation: Any 1000 or 2000 level WGSS course.

Examination of social movements as related to intersections of gender, race, sexuality, disability, class, nationality, ethnicity. May include related topics such as capitalism, democracy, globalization,

economic justice, the environment, health, sexual freedom.

### **3269W. Gender, Sexuality, and Social Movements**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011. Recommended preparation: Any 1000 or 2000 level WGSS course.

Examination of social movements as related to intersections of gender, race, sexuality, disability, class, nationality, ethnicity. May include related topics such as capitalism, democracy, globalization, economic justice, the environment, health, sexual freedom.

### **3270. Masculinities**

Three credits. Prerequisite: Open to juniors or higher; sophomores by consent of instructor. Recommended preparation: Any 1000-level or 2000-level WGSS course.

Social construction of masculinity and how maleness is gendered. Examination of the multiple forms of masculinity as influenced by differences in social and cultural expressions of gender, race, ethnicity, class, nationality, sexuality, disability and subcultures.

### **3270W. Masculinities**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher; sophomores by consent of instructor. Recommended preparation: Any 1000 or 2000-level WGSS course.

Social construction of masculinity and how maleness is gendered. Examination of the multiple forms of masculinity as influenced by differences in social and cultural expressions of gender, race, ethnicity, class, nationality, sexuality, disability and subcultures.

### **3271. Seminar on Rape Education and Awareness I**

One credit.

Explores issues of sexual violence and trains those enrolled to facilitate rape awareness workshops for the campus community. Students are required to attend an intensive two-day training program and participate in weekly seminars.

### **3272. Seminar on Rape Education and Awareness II**

One credit. Prerequisite: WGSS 3271.

Further explores broader issues of sexual violence and continues to train those enrolled to facilitate rape awareness workshops for the campus community. Students are required to participate in weekly seminars and facilitate rape awareness workshops.

### **3277. Issues in Human Sexuality**

(Also offered as HDFS 3277.) Three credits. Prerequisite: Open to juniors or higher.

Contemporary issues concerning human sexuality; impact upon individuals and family units.

### **3317. Women and Crime**

(Also offered as SOCI 3317.) Three credits. Prerequisite: Open to juniors or higher.

Women as offenders, victims and practitioners in the criminal justice system.

### **3317W. Women and Crime**

(Also offered as SOCI 3317W.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; open to juniors or higher.

Women as offenders, victims and practitioners in the criminal justice system.

### **3350. Anthropological Perspectives on Women**

(Also offered as ANTH 3350.) Three credits.

Major conceptual and historical problems in the study of gender in anthropology. Women's roles in different historical and contemporary settings, and new understandings of family, kinship, power, and cultural ideologies.

### **3369. Gender, Justice, and Hashtags**

Three credits. Recommended Preparation: Any 1000 or 2000-level WGSS course.

Examination of gender and social media activism across digital platforms and historical and geographic contexts with a focus on race and gender equality, social justice, and human rights. Topics may include the creation of publics and feminist counterpublics, disinformation, globalization, trolling, gender-based violence, and gender/racial bias in artificial intelligence.

### **3402. Women in the Bible**

(Also offered as ANTH 3402.) Three credits.

An introduction to Biblical interpretation from a feminist perspective, examining how women are represented in the Hebrew Scriptures and the New Testament. Issues of authorship, translation, point of view, cultural context and language.

### **3403. Women and Religion**

(Also offered as ANTH 3403.) Three credits.

Gender issues in the world's religions. Survey of women's theological standing, ritual activities and participation in a cross-cultural sample of religions, both monotheistic and polytheistic.

### **3416. Gender and Sexuality in Modern Europe**

(Also offered as HIST 3416.) Three credits.

The construction of gender difference and ideas about sexuality in western Europe since 1789. Masculinity and femininity; sexuality, identity and the state; European power and personhood in global context.

### **3445. Economic Foundations of Gender Inequality**

(Also offered as HRTS 3445.) Three credits. Prerequisite: Not open to students who have passed or are taking ECON 2445.

Economic approaches to gender inequality in political representation, economic opportunities, access to education, and health.

### **3453. Women and Health**

(Also offered as SOCI 3453.) Three credits. Prerequisite: Open to sophomores or higher.

Social factors shaping women's health, health care, and their roles as health-care providers.

### **3560. Constructions of Race, Gender, and Sexuality in U.S. History**

(Also offered as HIST 3560.) Three credits. Prerequisite: Not open for credit to students who have passed HIST 3095 when taught as Constructions of Race, Gender, and Sexuality in U.S. History.

Examination of historical development, interconnections, and complexities of conceptions

of race, gender, and sexuality in U.S. from European conquest to the present.

**3561. History of Women and Gender in the U.S. to 1850**

(Also offered as HIST 3561.) Three credits.

Gender ideologies of indigenous and settler cultures, changing conditions of women's and men's lives as the U.S. became a nation, while emphasizing intersections with ethnicity, race, class, religion, and region.

**3562. History of Women and Gender in the United States, 1850-Present**

(Also offered as HIST 3562.) Three credits.

History of gender and the lives and cultural representations of women in the U.S., emphasizing intersections with race, sexuality, class, region, and nation.

**3609. Women's Literature**

(Also offered as ENGL 3609.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Works written by women from different countries and centuries. CA 4.

**3611. Women's Literature 1900 to the Present**

(Also offered as ENGL 3611.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Modern and contemporary works written by women from different countries. CA 4.

**3613. LGBTQ+ Literature**

(Also offered as ENGL 3613.) Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Literature focusing on gender and sexual diversity across cultural contexts. Experiences of, for example, lesbian, gay, bisexual, transgender, intersex, queer, hijra, and two-spirit people. CA 4.

**3652. Black Feminist Politics**

(Also offered as POLS 3652 and AFRA 3652.) Three credits. Prerequisite: Open to juniors or higher.

An introduction to major philosophical and theoretical debates at the core of black feminist thought, emphasizing the ways in which interlocking systems of oppression uphold and sustain each other.

**3675. Latina History and Biography**

(Also offered as HIST 3675 and LLAS 3675.) Three credits.

Examination of the history of Latinas in the US with a focus on women, gender, and sexuality. Students will consider how historians use oral histories, life histories, memoirs, biographies, and testimonials as sources to restore Latinas to histories from which they were previously omitted. CA 1. CA 4.

**3718. Feminism and Science Fiction**

Three credits.

Feminist approaches to science fiction. Human and non-human embodiments - humans, aliens, and cyborgs - and the social issues their interactions raise: reproduction and colonization; racial, sexual, and gender apartheid; "human" rights and the rule of law. CA 4.

**3718W. Feminism and Science Fiction**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011.

Feminist approaches to science fiction. Human and non-human embodiments - humans, aliens,

and cyborgs - and the social issues their interactions raise: reproduction and colonization; racial, sexual, and gender apartheid; "human" rights and the rule of law. CA 4.

**3891. Internship Program**

Variable (1-9) credits. Prerequisite: One WGSS course. May be repeated for a total of 9 credits.

A field placement in an organization related to the student's major field of study. Work is overseen by the field work supervisor and the Women's, Gender, and Sexuality Studies Internship Coordinator.

**3894. Internship Seminar**

Three credits. Prerequisite: Department consent required.

A weekly seminar on women and work in which students integrate their field experience with readings, class discussion and guest lecturers.

**3993. International Study**

Variable (1-6) credits. May be repeated for credit.

Consent of program director required, normally before the student's departure. May count toward the major with consent of the director.

**3995. Special Topics**

Variable (1-6) credits. Prerequisite: Prerequisites and recommended preparation vary. May be repeated for credit.

**3998. Variable Topics**

Three credits. Prerequisite: Prerequisites and recommended preparation vary. May be repeated for credit.

**3999. Independent Study**

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

**4100. Experiential/Service Learning Seminar**

(Also offered as AAAS 4100, AFRA 4100, and LLAS 4100.) Four credits.

Interdisciplinary examination of the history of social justice organizing in the U.S.; theories, strategies, and practice of community organizing movements such as those for immigration, environmental, reproductive, and racial justice. Includes practice in community organizing and political advocacy.

**4994W. Senior Seminar**

Three credits. Prerequisite: ENGL 1007 or 1010 or 1011 or 2011; WGSS 2250; Open to Women's, Gender, and Sexuality Studies majors only. Open to seniors; juniors by consent of instructor. Recommended preparation: WGSS 3265W.

Examination of the application of feminist, queer, and trans theories and praxis within institutions and organizations. Discussion of the challenges and contradictions of institutionalization and professionalization of feminist, queer, and trans studies inside and outside of academia. Application of coursework and related experiences as well as exploration of professional career opportunities.

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**Agricultural and Resource Economics (RH) (SARE)**

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**450. Principles of Applied and Resource Economics**

Three credits.

An introduction to microeconomic analysis with applications to food, nutrition, health, natural resources, and the environment. Topics include consumer and firm behavior, supply, demand, markets, and economic policy. Taught with ARE 1150.

**460. Fundamentals of Accounting and Management for the Agribusiness Firm**

Three credits.

An analysis of basic business principles, fundamentals and concepts for business entrepreneurs.

**495. Special Topics**

(Also offered as SANR 495.) Variable (1-3) credits. Prerequisite: Instructor consent required. May be repeated for credit.

Total credits allowed toward graduation requirements are restricted as outlined in Ratcliffe Hicks section.

**699. Independent Study**

(Also offered as SANR 699.) Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

An independent study project is mutually arranged between a student and an instructor. Total credits allowed toward graduation requirements are restricted as outlined in Ratcliffe Hicks section.

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**Agriculture (RH) (SAAG)**

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**101. Tech Prep**

Variable (1-12) credits. Prerequisite: Open only to students enrolled in the Agricultural Education Tech program. May be repeated for a total of 12 credits.

Topics and credits are established through pre-approved articulation agreements. Open only to students enrolled in the Agricultural Education Tech program. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

**250. First Year Student Seminar**

One credit.

Designed to assist incoming students in adjusting to college and improving their academic performance. First year students will learn about university resources and facilities, and strategies relating to study skills, problem solving, time management, and setting and achieving academic and personal goals. Field trips may be required.

**316. Introduction to Agricultural Mechanics and Safety**

Two credits.

This is an introductory level class which will explore basic small internal combustion engines, tractor and chainsaw operations and safety. Safety, use of shop tools, processes, and procedures around agricultural machinery and equipment will be emphasized.

**350. Hispanic Culture and Communication in Agriculture**

Three credits.

Covers everyday conversations in Latin American Spanish needed at the workplace in agriculture and natural resources. It aims at emphasizing dialogues, commands and directions to improve the relationship and understanding of workers and employers in several fields of

agriculture. Course prepares students in landscape, horticulture, animal science and agriculture economics with basic communication skills in Spanish and familiarizes students with Latin American cultural traditions. Taught with AGNR 3350. Not intended for students with advanced Spanish language skills.

#### 495. Special Topics

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

#### 681. Internship

Zero credits. Prerequisite: Open to students who have earned a minimum of 24 credits and instructor consent. May be repeated.

Practical experience, knowledge, and professional skills in a work environment related to careers in agriculture, health and the environment. Students make arrangements with an instructor and worksite supervisor, develop a plan and learning agreement for meaningful and educational tasks and experiences, and submit written reports and related documentation at the conclusion of the internship. Students taking this course will be assigned a grade of S (satisfactory) or U (unsatisfactory).

#### 693. Foreign Study

Variable (1-6) credits. May be repeated for credit.

Courses taken in agriculture, natural resources, and related areas as part of approved Education Abroad programs. Credits and topics must be approved by department head and director of Ratcliffe Hicks School of Agriculture.

#### 699. Independent Study

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

An independent study project is mutually arranged between a student and an instructor. Course may be repeated for credit. Total credits allowed toward graduation requirements are restricted as outlined in the Ratcliffe Hicks section of the Undergraduate Catalog.

### Animal Science (RH) (SAAS)

#### 101. Introduction to Animal Science

Three credits. Prerequisite: Not open to students in an undergraduate program.

The biological, physical and social factors that influence animal production and utilization. Taught with ANSC 1001.

#### 111. Anatomy and Physiology of Domestic Animals

Three credits.

A study of the anatomy and physiology of the animal body including characteristics that impact animal production systems. The physiology of reproduction and digestion will receive emphasis. Management practices and techniques used to maximize production efficiency will be included.

#### 112. Anatomy and Physiology of Domestic Animals

Three credits. Prerequisite: SAAS 111.

A study of the anatomy and physiology of the animal body including characteristics that impact animal production systems. The physiology of reproduction and digestion will receive emphasis.

Management practices and techniques used to maximize production efficiency will be included.

#### 113. Principles of Animal Nutrition and Feeding

Three credits.

Focuses on digestive anatomy of various species and the classes of nutrients including their digestion, metabolism and sources. Nutrient requirements and feeding standards for various classes of livestock for reproduction, lactation, growth, work and maintenance are included as well as companion animals, exotics and aquatics. Classes of feedstuffs, their characteristics and proper utilization will be discussed. Attention will also be given to characteristics of common feedstuffs and to formulating rations and nutritional programs for animal enterprise. Taught with ANSC 1111.

#### 121. Animal Breeding and Genetics

Three credits.

The principles of genetics, chemistry of nucleic acids, replication, transcription, translation and regulation of genes, population and quantitative genetics, and modern molecular genetics approaches as tools for breeding, and improving livestock production.

#### 202. Behavior and Training of Domestic Animals

Three credits. Recommended preparation: SAAS 101.

Application of behavior of cattle, horses, sheep, goats, swine, companion animals and poultry to their management, training and welfare. Basic principles of genetics and physiology of behavior, perception, training, learning, motivation, and stress with consideration of integrated behavioral management and animal welfare. Students must have access to an animal that they can train throughout the semester. Taught concurrently with ANSC 1602.

#### 243. Animal Products

Three credits.

An introduction to meat, dairy and poultry products. Issues concerning regulatory standards, nutritive value, safety and quality assessment will be emphasized. Laboratories will emphasize the production and processing of these animal food products. Taught with ANSC 3343.

#### 251. Horse Science

Three credits.

Includes horse types and breeds and their nutrition, breeding, evaluation, behavior, care and management with attention given to detailed studies of the problems and practices of horse production and use. Taught with ANSC 2251.

#### 252. Management of the Horse Breeding Farm

Three credits. Prerequisite: SAAS 251.

Designed to develop technical and managerial skills necessary for operating horse farms. Programs for herd health, hoof care, nutrition, breeding, foaling and record keeping will be included.

#### 254. Horse Selection and Evaluation

Two credits. Prerequisite: Instructor consent required.

Comparative evaluation, classification and selection of horses according to conformation, breed characteristics and performance. Judging

skills including justification of placing through presentation of oral reasons will be developed. Field trips required. Taught with ANSC 3454.

#### 255. Foundations of Training

Two credits.

Fundamental ground work and training techniques used when working with young horses. Prior working experience with horses is highly recommended.

#### 257. Methods of Equitation Instruction

Two credits. Prerequisite: Instructor consent required.

The techniques and procedures of teaching equitation including the theories of riding and teaching methods. Practice teaching will be required under the supervision of the instructor. Taught with ANSC 4457.

#### 261. Dairy Herd Management

Three credits.

Management of dairy cattle including milking procedures, sanitation, selection, nutrition, reproduction, physiology and anatomy of milk secretion and record keeping. Field trip required. Taught with ANSC 3261.

#### 262. Applied Dairy Herd Management

Three credits.

The organization and management of dairy farms with emphasis upon business and economic decision making. Management programs in the areas of nutrition, disease control, waste management, selection, reproduction and milking will be evaluated. Field trips are required.

#### 271. Introduction to Poultry Industry

Three credits.

A practical application of scientific principles in the poultry industry. It will include classification, selection methods, breeding, incubation and chick development, brooding, nutrient requirements, processing and management practices.

#### 272. Sustainable Animal Management

Three credits.

An introduction to sustainable agriculture, as related to alternative farm animal production. Basic economics will be discussed in preparation for the creation of a farm business plan. Laboratory/discussion periods will include student presentations and hands-on activities. Field trips required.

#### 273. Livestock Production

Four credits.

Biological and economic aspects of beef, sheep, and swine production. Field trips required. Taught with ANSC 3273.

#### 274. Livestock and Carcass Evaluation

Two credits.

Classification, form to function relationships, grades and value differences of livestock are included. Objective and subjective methods of appraisal are used to evaluate beef cattle, sheep and swine. Taught with ANSC 3674.

#### 275. Advanced Animal and Product Evaluation

One credit. Prerequisite: Instructor consent required. May be repeated for a total of 2 credits.

Intensive training in the evaluation of selected species of farm animals or their products. Type standards and the relation of anatomical features to

physiological function are emphasized. Evaluation skills including justification of decisions will be developed. Students enrolled in this course will have the option to participate on intercollegiate animal and product evaluation teams. Field trips are required, some of which may occur prior to the start of the semester. Taught with ANSC 3675.

### 276. Introduction to Companion Animals

Three credits.

Basic concepts of the nutrition, physiology, health and management of companion animals. Taught with ANSC 1676.

### 290. Animal Science Field Excursions

One credit. Prerequisite: Instructor consent required.

A multiple day field trip format. Students in this course will travel with the instructor to visit and tour agri-businesses that represent commercial aspects of different animal science activities. Students will interview agri-business personnel and gain an understanding of how agricultural principles are applied in the field. Each student must submit a formal written report for evaluation and meet all other course requirements as specified by the instructor. Field trip is required. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

### 291. Professional Internship

Variable (1-6) credits.

Open only for third semester students with consent of instructor and Department Head. Total credits allowed toward graduation requirements are restricted as outlined in Ratcliffe Hicks section. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

### 294. Career Paths in the Animal Sciences

One credit.

A discussion of current employment opportunities in animal agriculture. In addition, students will prepare resumes and give oral presentations.

### 295. Special Topics

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

Total credits allowed toward graduation requirements are restricted as outlined in Ratcliffe Hicks section. Contact Department Main Office for list of current topics and instructors.

### 298. Variable Topics

Variable (1-6) credits. Prerequisite: Instructor consent. May be repeated for credit.

Contact Department Main Office for list of current topics and instructors.

### 299. Independent Study

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

An independent study project is mutually arranged between a student and an instructor. Students are advised to read the Ratcliffe Hicks regulation limiting the number of credits which may be applied to the minimum graduation requirements. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

### 358. Management Skills and Practices - Horses

One credit. May be repeated for a total of 2 credits.

Practical experience in common management practices is offered by working in the University facilities under supervision. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

### 363. Management Skills and Practices - Dairy Cattle I

One credit. Prerequisite: May not be taken out of sequence after passing SAAS 364.

Practical experience in common management practices is offered by working in the University facilities under supervision. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

### 364. Management Skills and Practices - Dairy Cattle II

One credit. Prerequisite: SAAS 363.

Continued practical experience in common management practices is offered by working in the University facilities under supervision. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

### 373. Management Skills and Practices - Livestock

One credit. May be repeated for a total of 2 credits.

Practical experience in common management practices is offered by working with livestock species in the University facilities under supervisor. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

### 375. Management Skills and Practices - Poultry

One credit. Prerequisite: Open only to students in the Ratcliffe Hicks School of Agriculture. Instructor consent required. May be repeated for credit.

Practical experience in common management practices is offered by working in the University facilities under supervision. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

### 420. Little I Training Assistant

One credit. Prerequisite: Instructor consent.

Livestock animal handling, training, fitting, and showing techniques for Introduction to Animal Science students at weekly practices.

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## Natural Resources and the Environment (RH) (SANR)

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### 215. Dendrology

Three credits. Recommended preparation: SAPL 120 and SAPL 300.

Identification, taxonomic classification, silvics, and distribution of trees and woody shrubs of the United States with emphasis upon Northeastern species. Focus is on field-based identification skills in natural forest, woodland and shrubland settings. Lab sessions take place primarily outdoors. Field trips are planned. Taught with NRE 2415.

### 255. Forest Ecology

Three credits. Recommended preparation: SANR 215.

Forest structure and functional processes and their relation to physical environment (light, temperature, water, soil); the influence of time (succession, disturbance, stand dynamics) and space (landscape ecology, ecosystem

management). Laboratory will be in the field or computer lab. Taught with NRE 2455.

### 310. Introduction to Wildlife Management

Three credits.

Basic wildlife techniques including habitat evaluation and identification signs. Emphasis will be placed on keeping a wildlife field journal. Field exercises and laboratory provide an opportunity to use and evaluate techniques for wildlife management.

### 325. Fundamentals of Arboriculture

Three credits. Prerequisite: SANR 215, which may be taken concurrently.

Theory, science, and practice of evaluating, growing, managing and safe removal of trees within or in close proximity to built environments. Laboratories are field-based and will take place in outdoor conditions. Taught with NRE 3425.

### 425. Urban and Community Forestry

Three credits. Recommended preparation: SANR 215 and 325.

The theory, science and practice of evaluating and managing urban trees and forest resources, recognizing urban forest resources as part of socio-ecological-economic systems.

### 495. Special Topics

(Also offered as SARE 495.) Variable (1-3) credits. Prerequisite: Instructor consent required. May be repeated for credit.

Total credits allowed toward graduation requirements are restricted as outlined in Ratcliffe Hicks section.

### 699. Independent Study

(Also offered as SARE 699.) Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

An independent study project is mutually arranged between a student and an instructor. Total credits allowed toward graduation requirements are restricted as outlined in Ratcliffe Hicks section.

### 991. Field Study Internship

Variable (1-6) credits. Prerequisite: Instructor consent.

Designed to acquaint students through actual work experience with their career field of interest beyond those available on campus. The student, intern supervisor, and faculty member offering the course will develop and sign a learning contract prior the start of the internship. Both the intern supervisor and student will provide evaluations at the end of the internship to the faculty member. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

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## Pathobiology (RH) (SAPB)

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### 301. Health and Disease Management of Animals

Three credits. Prerequisite: SAAS 111 and 112 and a college course in biology.

Designed for students who plan to own and work with domestic animals. Its purpose is to develop student competence in disease management and to foster an intelligent working relationship with their veterinarian. The course will cover a systematic relationship of infectious and noninfectious

diseases of domestic animals from the standpoint of economic and public health.

#### 495. Special Topics

Variable (1-2) credits. Prerequisite: Instructor consent required. May be repeated for credit.

Total credits allowed toward graduation requirements are restricted as outlined in Ratcliffe Hicks Section.

#### 699. Independent Study

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

An independent study project is mutually arranged between a student and an instructor. Students are advised to read the Ratcliffe Hicks School regulation limiting the number of credits which may be applied toward graduation.

### Plant Science (RH) (SAPL)

#### 101. Environmental Sustainability of Food Production in Developed Countries

Three credits.

Foundations of modern systems that produce the majority of food calories consumed in North America and other developed countries. Benefits and environmental risks associated with modern food production systems. Alternative food production systems and sustainability. Local food production and food security. Food production and climate change.

#### 110. Turfgrass Management

Three credits. Prerequisite: May not be taken out of sequence after passing SAPL 315.

An overview of turfgrass adaptation, selection, and management. Topics include turfgrass growth, physiology, soil interactions, establishment, and maintenance. Cultural system practices for lawns, golf courses, athletic fields, and other turf areas. Turfgrass pest management practices for weeds, insects and diseases.

#### 115. Turfgrass Management Laboratory

One credit. Prerequisite: SAPL 110, which may be taken concurrently.

Grass establishment, grass identification, athletic field turfgrass playability evaluations, soil testing, turfgrass pest identification, turfgrass pest monitoring techniques and fertilizer spreader and sprayer calibration.

#### 120. Introduction to Plant Science

Four credits.

A general course designed to give students a broad view of the field of horticulture as well as a working knowledge of the fundamentals of plant growth.

#### 130. Introduction to the Horticulture of Cannabis

Three credits. Recommended preparation: SAPL 120.

Fundamentals of the production cycle of Cannabis including horticultural management, identification of crop issues, elite feminized seed production, seed propagation, vegetative propagation, pruning, training, optimization of cannabinoid content and post-harvest handling. Overviews of Cannabis business operations worldwide and in Connecticut, exploring lab testing procedures, cannabidiol extraction technologies,

the Connecticut medical marijuana program and government regulation of the industry. Taught with SPSS 2130.

#### 160. The Great American Lawn: History, Culture and Sustainability

Three credits.

The largest irrigated crop in the U.S. is located right outside your window. Examines the health, social, cultural, and environmental impacts of one of America's greatest obsessions. Taught with SPSS 1060.

#### 210. Golf Course Management

Three credits.

Discussion of the specialized field of golf course management. Topics: cultural techniques including soil aeration, topdressing, mowing, and thatch removal; grass or species selection, fertilization, irrigation, personnel, golf course pest management and equipment and inventory management. Field trips required.

#### 220. Athletic Field Management

Three credits.

Management strategies associated with heavily used athletic fields. Sport specific focus on mowing, fertilization, irrigation, core cultivation, overseeding, and pest control. Areas of emphasis will include: playing surface renovation, optimizing wear tolerance, maximizing turfgrass recovery, traffic management, and game day preparations.

#### 230. Principles of Turfgrass Irrigation Systems

Three credits.

Turfgrass irrigation systems, principles of hydraulics, irrigation components, design, installation and repair. Students will design irrigation systems for various turf areas. Field trips and fieldwork will be required. Taught with SPSS 3300.

#### 240. Professional Development for Turfgrass Industries

Two credits.

Topics include human resource information, communication skills, turfgrass pesticide laws and compliance, labor laws and compliance, bid specifications, resume writing, interviewing, golf course management structures, business ethics, and benefits of professional association membership. Guest lecturers include industry professionals and representatives. Taught with SPSS 3400.

#### 250. Turfgrass Evaluation and Management Skills

One credit. Prerequisite: Instructor consent required. May be repeated for a total of 4 credits.

Turfgrass species identification, growth and development, soils and fertility, pest management, and operations management. Participants in intercollegiate Turf Bowl competitions may be selected from this course.

#### 300. Introduction to Soil Science

Three credits. Prerequisite: May not be taken out of sequence after passing SAPL 315.

Physical and chemical properties of soils; nature and use of fertilizer and lime materials; management of soils for crop production including soil testing, tillage and fertilization practices, and conservation practices.

#### 315. Advanced Turfgrass Management

Three credits. Prerequisite: SAPL 110 and 300.

Effects of environmental stresses and turfgrass management practices on growth, development and physiology of turfgrasses. Implementation of proper management practices to promote optimal turfgrass health under stress conditions. Taught with SPSS 3150.

#### 410. Woody Plants: Common Trees, Shrubs and Vines

Three credits. Prerequisite: SAPL 120.

Taxonomy, identification, ornamental characteristics, cultural requirements and landscape use of deciduous and evergreen woody plants most often utilized in landscapes of the northeastern United States and similar environs.

#### 430. Herbaceous Ornamental Plants

Three credits.

Identification, nomenclature, cultural requirements and landscape uses of herbaceous perennials, ornamental grasses, ferns, annuals and bulbs. Study of live plants is required.

#### 440. Small Fruit Production

Three credits.

The commercial production of small fruits and grapes in the Northeast and Mid-Atlantic regions including varieties, fruit-growing systems and pruning, site requirements, harvesting methods, post-harvest requirements, marketing, pest complexes and IPM strategies of the major berry crops.

#### 482. Horticulture Production Practicum - Nursery

Variable (1-6) credits. Prerequisite: SAPL 660.

Students will be responsible for planning, producing, and marketing a nursery crop. Students may use private facilities or the Ratcliffe Hicks C.R. Burr Teaching Nursery. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

#### 500. Principles and Concepts of Agroecology

Three credits.

Application of ecological processes to modern agricultural production practices. Crops and their environment. Soil quality and maintenance of soil productivity. Sustainability of agroecosystems.

#### 520. Floral Art

Two credits.

The study of flower arrangement as an art form with emphasis on historical background, artistic principles, color harmony, and care of perishable media. Individual expression is encouraged in the creation of floral composition.

#### 530. Advanced Floral Design

Two credits. Prerequisite: SAPL 520.

In-depth study of post-harvest requirements for specialized floral crops. Exposure to novel floral materials with an emphasis on special events and wedding designs. Mass marketing, retail price structuring and mass-production concepts are covered.

#### 540. Garden Center Management

Three credits.

Techniques and concepts essential in managing and operating a garden center. Topics include goal setting, retailing, finance, business planning and pricing.



**550. Urban Plant Systems: Construction and Maintenance**

Three credits. Recommended preparation: SAPL 120,410,430. Not open for credit to students who have passed SAPL 740.

Technical information on the effective construction and maintenance of planted systems. Structural and functional components of plant systems. Provision of ecosystem services. Overviews of a wide spectrum of planted systems including streetscaping, green roofs and green walls, rain gardens and bioretention, and phytoremediation systems. Techniques of soil modification. Plant selection. Establishment and maintenance of woody and herbaceous plants: planting, preservation, pruning, mulching, irrigation, and fertilization. Taught with SPSS 3550.

**560. Indoor Plants and Interiorscaping**

Three credits.

Taxonomy, identification, ornamental characteristics, cultural requirements and use of tropical plants. Principles of interiorscaping in the home, office, public buildings, and related locations.

**620. Vegetable Production**

Four credits.

Fundamentals of soil management and crop plant husbandry as applied to commercial vegetable production and home gardening. Horticultural principles of crop growth. Focus is on sustainable practices. Field laboratory will consist of field trips (some outside designated laboratory time) during the early part of the semester to organic and conventional farms to observe production and marketing practices. Field trips required.

**640. Plant Propagation**

Three credits.

Theory and practice in sexual and asexual propagation of horticultural plants, emphasizing the anatomical, physiological, and ecological principles involved. Laboratories provide practical experience with seeds, division, cuttings, budding, grafting, layering and tissue culture.

**660. Nursery Production**

Three credits.

Principles of field and container production of nursery stock. Emphasis on production practices for woody nursery stock from propagation to sales.

**670. Greenhouse Technology and Operations**

Three credits. Prerequisite: SAPL 120.

Introduction to greenhouse crop management with emphasis on structures, environmental control systems, and management techniques used to control crop response.

**675. Greenhouse Management Field Study**

One credit. Prerequisite: SAPL 670, which may be taken concurrently.

Students will be introduced to greenhouse crop production techniques and methodologies. Course follows a travel-course format, in which students participate in regularly scheduled field trips to commercial greenhouse operations in Connecticut and neighboring states. Students will make observations on the mechanical systems, management considerations, and crop production practices employed by commercial businesses.

**680. Advanced Cannabis Horticulture**

Three credits. Prerequisite: SAPL 130 or SPSS 2130 or permission of instructor. Not open to students who have completed SPSS 3995 or SAPL 995 when offered as Advanced Cannabis Horticulture.

Advanced concepts of Cannabis production, management, processing and product development that build upon SAPL 130. Students will choose highly focused study of either indoor controlled environment production or outdoor cultivation of Cannabis for part of the course. Taught with SPSS 3680.

**682. Horticulture Production Practicum - Vegetables**

Variable (1-6) credits. Prerequisite: SAPL 620.

Students will be responsible for planning, producing, and marketing a vegetable crop on a commercial scale. Requires the availability of private production facilities. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

**720. Golf Course Design**

Two credits.

Introduction to golf course design theory, planning, and layout. Putting green and tee construction methods. Turfgrass species and cultivar selection for the golf course. Expertise and experience of departmental faculty and staff, independent and commercial consultants and designers, and golf course superintendents will be utilized. Field trips required.

**740. Landscape Construction**

Three credits.

Principles and techniques used to build landscape structures including patios, walls, walkways, water features and green roofs.

**800. Turfgrass Pests and Control**

Three credits.

Turfgrass weed, insect, disease and vertebrate identification and control. Emphasis on biological controls and IPM. Field trips required.

**810. Plant Pest Control**

Three credits.

A practical survey of practices used for insect, disease and weed pests of turf, flowers, shrubs, trees and food crops. Consideration will be given to quarantine, mechanical, biological and chemical means of control. Field trips may be required.

**840. Integrated Pest Management**

Three credits. Prerequisite: SAPL 800 or 810.

Principles of integrated pest management covering insect, disease, and weed problems with emphasis on turfgrass, ornamentals, and greenhouse production. Environmental impacts and pest control strategies will be covered.

**991. Internship**

Variable (1-6) credits. May be repeated for a total of 6 credits.

Students will work with professionals in an area of their interest. Written reports, daily logs, and/or evaluations by professional supervisors may be required. Open to qualified students with consent of advisor and Department Head.

**995. Special Topics**

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

Total credits allowed toward graduation requirements are restricted as outlined in Ratcliffe Hicks Section.

**999. Independent Study**

Variable (1-6) credits. Prerequisite: Instructor consent required. May be repeated for credit.

An independent study project is mutually arranged between a student and an instructor. Total credits allowed toward graduation requirements are restricted as outlined in the Ratcliffe Hicks section of the Undergraduate Catalog.