

University of Connecticut Undergraduate Catalog 2008 - 2009

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Introduction

This is an exciting time to be a UConn student. Your University is in the midst of the most profound transformation in our history, advancing from a position of regional prominence to one of national and international standing. Ranked the top public university in New England for eight consecutive years by *US News and World Report*, the University of Connecticut is quickly becoming one of the nation's outstanding public universities.

The University of Connecticut combines the wide range of courses and majors of a great research university with the individual academic opportunities and advising that help make a large university feel personal and welcoming to each undergraduate. While offering dozens of exciting and intriguing majors, we also provide many opportunities for individualized research, honors work, independent study, and internships. In order to make the most of the challenges each student's transition from high school to university, we have increased our number of academic advisers and continually enhance our one-credit First-Year Experience course. We value diversity, of backgrounds, programs of study, and individual interests as demonstrated by the tremendous variety of courses in our acclaimed program of General Education. In our classrooms, students can experience the latest in teaching technology, but, more importantly, they will find prominent research faculty who are also committed to helping each student learn, using methods both new and time-tested. Our residence halls can also be sites for individual learning through living learning communities such as Global House and Women in Math, Science, and Engineering. Although the UConn campuses offer a wealth of opportunities for individual intellectual development, we also want our undergraduates to grow beyond the campus. Through our Developing Global Citizens Initiative, our students can find numerous courses and study abroad programs that will help make them world citizens.

Due to the most ambitious publicly financed university building program in the country, "a building boom that would be the envy of most university presidents," according to the *New York Times*, the University of Connecticut is renewing, rebuilding, and enhancing facilities through UCONN 2000 and 21st Century UConn, an unprecedented \$2.3 billion 20-year investment in the University's infrastructure. Classrooms and laboratories are being built and renovated at a remarkable rate, placing UConn's physical plant among the very best in American higher education. New facilities on our main campus such as the Information Technologies Engineering Building, School of Business, and the Agricultural Biotechnology Laboratory employ state-of-the-art technology that has been leveraged to recruit faculty and secure significant research funding. The cutting-edge downtown campuses in Stamford and Waterbury, as well as the construction of new facilities at Avery Point, Greater Hartford, and Torrington, demonstrate our commitment to attracting the best students to the University's diverse statewide campuses.

What remains constant at the University's core is its steadfast commitment to enriching the quality of student life. Students living in our residence halls benefit from facilities that represent the latest innovations nationally in university housing communities. All students can connect to a powerful network providing electronic access to information, encompassing library resources, connections to faculty and computer technical assistance, and online registration, transcripts, and course materials. The recently renovated Wilbur Cross Building is a one-stop service center that allows students to conduct virtually all their University business quickly and efficiently, including applying for financial aid, paying bills, obtaining a UConn ID, and securing a room or meal plan. One of the most people-friendly initiatives of UCONN 2000 has been the creation of a more walkable, vehicle-free pedestrian core at our Storrs campus, featuring brick plazas and pathways that are conducive for meeting, exchanging ideas, and enjoying University life. The new Student Union, at the heart of the campus in Storrs, includes a food court, 500-seat theater, many meeting and activity spaces, and ballroom. Student clubs and organizations proliferate, and there is truly something for each individual.

Uniquely positioned to serve the needs of its home state, the nation, and the world, a strong UConn provides a unique education for each undergraduate. UConn students mature as individuals into distinctive leadership and service roles. Our distinguished alumni occupy senior positions in both the public and private sectors, in government as well as hospitals and pharmacies, in laboratories and major corporations; they work on farmlands and fishing boats, in courtrooms and classrooms, and even in outer space. Our current students and our alumni attest to the value and prestige of a UConn degree that unites all the opportunities of a large research university with a commitment to the interests, talents, and needs of each individual student.

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 Association of Schools and Colleges

Affirmative Action Policy

University of Connecticut policy prohibits discrimination in education, employment, and in the provision of services on the basis of race, religion, sex, age, marital status, national origin, ancestry, sexual orientation, disabled veteran status, physical or mental disability, mental retardation, and other specifically covered mental disabilities.

Calendar

Summer Session 2008

<http://intersession.uconn.edu/summer/>

Fall Semester 2008

Mon.	Aug. 25	Fall semester begins
Mon.	Sept. 1	Labor Day – No classes
Tues.	Sept. 2	Last day to file petitions for course credit by examination
Mon.	Sept. 8	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 (See chart under <i>Adding and Dropping Courses</i>)
		Add/Drop via Student Administration System closes
		Last day to place courses on Pass/Fail
Mon.	Sept. 15	Last day for students to make up Incomplete or Absence grades
Tues.-Mon.	Sept. 16-22	Examinations for course credit by examination
Tues.	Sept. 23	Dean’s signature required to add courses
Fri.	Oct. 3	Mid-semester progress reports due students from faculty
Mon.	Oct. 27	Registration for the Spring 2009 semester via Student Administration System begins
Mon.	Oct. 27	Last day to drop a course
		Last day to convert courses on Pass/Fail option to letter grade
Sun.	Nov. 23	Thanksgiving recess begins
Sat.	Nov. 29	Thanksgiving recess ends
Fri.	Dec. 5	Last day of fall semester classes
Mon.	Dec. 8	Final examinations begin
Sat.	Dec. 13	Final examinations end
Sun.	Dec. 14	Undergraduate commencement ceremony

Winter Intersession 2008

<http://www.wintersession.uconn.edu/winter/>

Spring Semester 2009

Tues.	Jan. 20	Spring semester begins
Mon.	Jan. 26	Last day to file petitions for course credit by examination
Mon.	Feb. 2	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 (See chart under <i>Adding and Dropping Courses</i>)
		Add/Drop via Student Administration System closes
		Last day to place courses on Pass/Fail
Mon.	Feb. 9	Last day for students to make up Incomplete or Absence grades
Tues.-Mon.	Feb. 10-16	Examinations for course credit by examination
Tue.	Feb. 17	Dean’s signature required to add courses
Fri.	Feb. 27	Mid-semester progress reports due students from faculty
Sun.	Mar. 8	Spring recess begins
Sat.	Mar. 14	Spring recess ends
Mon.	Mar. 23	Registration for the Fall 2009 semester via Student Administration System begins
Sat.	Mar. 28	Emergency closing class make up date
Mon.	Mar. 30	Last day to drop a course
		Last day to convert courses on Pass/Fail option to letter grade
Fri.	May 1	Last day of spring semester classes
Mon.	May 4	Final examinations begin
Sat.	May 9	Final examinations end
Sun.	May 10	Undergraduate commencement ceremony

Faculty are urged to try not to schedule exams on significant religious holidays, such as Rosh Hashanah, Sept. 29-Oct 1; Yom Kippur, Oct 9; Eid Al-fitr, Oct. 1; Eid Al-adha, Dec. 8; Passover, April 8-15; Good Friday, April 10.

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
 Associate of Applied Science¹

Majors

College of Agriculture and Natural Resources

Agriculture and Natural Resources
 Allied Health Sciences
 Animal Science
 Cytotechnology
 Diagnostic Genetic Sciences
 Dietetics
 Environmental Science
 Horticulture
 Individualized Major
 Landscape Architecture
 Medical Technology
 Natural Resources
 Nutritional Sciences
 Pathobiology
 Resource Economics
 Turfgrass and Soil Science

School of Business

Accounting
 Business and Technology
 Finance
 Health Care Management
 Management
 Management and Engineering for Manufacturing²
 Management Information Systems
 Marketing
 Real Estate/Urban Economics
 Risk Management and Insurance

Center for Continuing Studies

Individualized Major

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 Manufacturing²
 Materials Science and Engineering
 Mechanical Engineering

School of Fine Arts

Acting
 Art
 Art History
 Design and Technical Theatre
 General Program in Music
 Music
 Puppetry
 Theatre Studies

College of Liberal Arts and Sciences

American Studies
 Anthropology
 Applied Mathematical Sciences
 Biological Sciences
 Chemistry
 Classics and Ancient Mediterranean Studies
 Coastal Studies
 Cognitive Science
 Communication Sciences
 Ecology and Evolutionary Biology
 Economics
 Engineering Physics
 English
 Environmental Science
 French
 Geography
 Geology and Geophysics
 German
 History
 Human Development and Family Studies
 Individualized Major
 Italian Literary and Cultural Studies
 Journalism
 Latin American Studies
 Linguistics/Philosophy
 Linguistics/Psychology
 Maritime Studies
 Mathematics
 Mathematics/Actuarial Science
 Mathematics/Statistics
 Molecular and Cell Biology
 Philosophy
 Physics
 Physiology and Neurobiology
 Political Science
 Psychology
 Sociology
 Spanish
 Statistics
 Structural Biology and Biophysics
 Urban and Community Studies
 Women's Studies

¹ Awarded for successful completion of 2-year program in Ratcliffe Hicks School of Agriculture.

² 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.

Neag School of Education

Agricultural Education
 Athletic Training
 Elementary Education
 English
 Exercise Science
 Foreign Languages
 History and Social Studies
 Mathematics
 Music Education
 Natural Sciences
 Pre Physical Therapy
 Social Science of Sports and Leisure
 Special Education

School of Nursing

Nursing

School of Pharmacy

Doctor of Pharmacy
 Pharmacy Studies

Ratcliffe Hicks School of Agriculture

Animal Science
 Ornamental Horticulture and Turfgrass Management

Minors

African American Studies
 African Studies
 Agribusiness Management
 American Studies
 Animal Science
 Anthropology
 Aquaculture
 Aquaculture Business Management
 Art History
 Asian American Studies
 Bioinformatics
 Biological Sciences
 Biomedical Engineering
 Business
 Chemistry
 Classics and Ancient Mediterranean Studies
 Cognitive Science
 Communication Processes
 Criminal Justice
 Dairy Management
 Diversity Studies in American Culture
 Ecology and Evolutionary Biology
 Economics
 English
 Entrepreneurship
 Environmental Economics and Policy
 Environmental Engineering
 Environmental Studies
 Equine Business Management
 European Studies
 Film Studies
 Food Science
 French
 Geographic Information Science
 Geography
 Geology and Geophysics
 German
 Gerontology
 History
 Human Rights
 India Studies

Information Technology
 International Studies
 Italian Cultural Studies
 Italian Literary Studies
 Judaic Studies
 Landscape Design
 Latin American Studies
 Latino Studies
 Linguistics
 Marine Biology
 Maritime Archaeology
 Materials Science and Engineering
 Mathematics
 Middle Eastern Studies
 Molecular and Cell Biology
 Music
 Native American Studies
 Neuroscience
 Nutrition for Exercise and Sport
 Oceanography
 Ornamental Horticulture
 Philosophy
 Physics
 Physiology and Neurobiology
 Political Science
 Psychology
 Public Policy
 Religion
 Slavic and East European Studies
 Sociology
 Spanish
 Sport Nutrition
 Statistics
 Theatre Production
 Theatre Studies
 Therapeutic Horsemanship Education
 Turfgrass Management
 Urban and Community Studies
 Wildlife Conservation
 Women's Studies

University Structure

The University includes the following schools, colleges, departments and campuses:

College of Agriculture and Natural Resources

Agricultural and Resource Economics
Allied Health Sciences
Animal Science
Natural Resources Management and Engineering
Nutritional Sciences
Pathobiology and Veterinary Science
Plant Science

School of Business

Accounting
Finance
Management
Marketing
Operations and Information Management

Center for Continuing Studies

General Studies

School of Dental Medicine

School of Engineering

Biomedical Engineering
Chemical, Materials and Biomolecular Engineering
Civil and Environmental Engineering
Computer Science and Engineering
Electrical and Computer Engineering
Mechanical Engineering

School of Fine Arts

Art and Art History
Dramatic Arts
Music

Graduate School

School of Law

College of Liberal Arts and Sciences

Anthropology
Chemistry
Communication Sciences
Ecology and Evolutionary Biology
Economics
English
Geography
Geology and Geophysics
History
Human Development and Family Studies
Journalism
Linguistics
Marine Sciences
Mathematics
Modern and Classical Languages
Molecular and Cell Biology
Philosophy
Physics
Physiology and Neurobiology
Political Science
Psychology
Sociology
Statistics

Neag School of Education

Curriculum and Instruction
Educational Kinesiology
Educational Leadership
Educational Psychology
Physical Therapy

School of Medicine

School of Nursing

School of Pharmacy

Pharmaceutical Sciences and Pharmacy Practice

Ratcliffe Hicks School of Agriculture

School of Social Work

Regional Campuses

Avery Point
Hartford
Stamford
Torrington
Waterbury

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: www.admissions.uconn.edu, e-mail: beahusky@uconn.edu.

Lee H. Melvin, *Director of Undergraduate Admissions*

The University of Connecticut subscribes to the Statement of Principles of Good Practice 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.

Freshman Admission

A freshman 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 an appropriate 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 freshman 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 or our website, www.admissions.uconn.edu, for more detailed information regarding requirements and application deadlines.

Admission with Advanced Standing

Advanced Placement and Credit (AP)

See “Academic Regulations” section of this Catalog.

University of Connecticut Early College Experience

The UConn Early College Experience Program (ECE) was formerly known as the University of Connecticut High School Cooperative Program. Over one hundred and twenty UConn ECE partner high schools across Connecticut offer UConn courses through this concurrent enrollment agreement with the University. The courses are taught by high school instructors certified by UConn faculty as adjunct professors. UConn ECE students are non-degree University students, with official transcripts. After students accept admission to the University, their non-degree transcripts are brought into their undergraduate career degree-seeking transcripts. UConn ECE courses are overseen by faculty representatives from the participating departments on campus, in accordance with national accreditation standards established by NACEP, the National Alliance of Concurrent Enrollment Partnerships. For further information, please contact UConn Early College Experience, Office of Educational Partnerships, University of Connecticut, 368 Fairfield Road, Unit 2171, Storrs, CT 06269-2171, 860-486-1045, or visit the program website at www.ece.uconn.edu.

Deferred Enrollment for Freshmen

The Office of Undergraduate Admissions offers a one year deferred enrollment to students who have applied, been accepted as freshmen, and have paid the \$150 acceptance fee. This policy benefits that student who desires to attend the University but who, for various reasons, wishes to postpone enrollment. An approved deferral guarantees admission for either of the subsequent two semesters. During the deferred period, a student may not enroll in 12 or more credits at another institution. Requests for deferral must be in writing and should be received at the Office of Undergraduate Admissions no later than August 1 (fall semester) or December 1 (spring semester). Transfer students are not eligible for deferred enrollment.

Required Courses for Freshman Admission

	English	Math	Foreign Language	Lab Science	Social Science	Other	Total
College of Agriculture & Natural Resources	4	3 ^a	2 ^b	2 ^a	2	3	16
College of Liberal Arts	4	3 ^a	2 ^b	2	2	3	16
School of Business	4	3 ^a	2 ^b	2	2	3	16
School of Education (Junior - Senior)	4	3	2 ^b	2	2	3	16
School of Engineering	4	3 ^{1/2} ^a	2 ^b	2 ^d	2 ^{1/2}	2 ^{1/2}	16
School of Fine Arts ^e	4	3	2 ^b	2	2	3	16
School of Nursing	4	3	2 ^b	2 ^f	2	3	16
School of Pharmacy (Junior - Senior)	4	3 ^a	2 ^b	2 ^c	2	3	16
Ratcliffe Hicks School of Agriculture ^g (Two Year Associate Degree)	4	3	0 ^h	2	2	5	16

^a Recommend 4 years

^b Strongly recommend 3 years of a single foreign language (See Note 1, below)

^c Recommend 3 years

^d Chemistry or Physics required; Both recommended

^e Music, Acting, and Puppetry majors *require* auditions; Art majors require a portfolio; and Design Technical Theatre and Theatre Studies majors *require* an interview

^f Chemistry and Physics required

^g College preparatory level courses are recommended but not required for Ratcliffe Hicks admission.

^h Foreign language not required for admission or graduation from Ratcliffe Hicks; however, foreign language will be required for students who transfer into the baccalaureate program.

Note: 1. Completing three years of a single foreign language in high school meets the graduation requirement for all the University’s Schools and Colleges.
2. See the sections on the Department of Allied Health Sciences in the College of Agriculture and Natural Resources, and the Schools of Education, Nursing, and Pharmacy for information about their admission requirements and application procedures.

Transfer Admission

A transfer student is one who has enrolled at an accredited post secondary institution 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, whether or not credit is desired
- Official high school transcript or official GED
- SAT or ACT scores (Waived if student is 25 or older or has completed three full-time semesters at the time of application)
- Personal essay
- Application fee (non-refundable)

Please refer to the Transfer Admission website, www.transfer.uconn.edu for more detailed information regarding requirements and application deadlines.

Priority in admission to the Storrs Campus is given to those 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.

Transfer students deficient in any of the minimum admission requirements (see Freshman Admission) will be eligible for consideration at a freshman or sophomore level only if the following conditions are met:

- (a) 24 full-time transferable semester hours in challenging, academic course work completed;
- (b) a minimum of 2.7 cumulative grade point average (4.0 scale), for unrestricted programs only.

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.

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 African-American, Puerto Rican, Hispanic, Asian, Native American and other underrepresented students to attend this institution. Questions should be directed to the Undergraduate Admissions Office, 2131 Hillside Road, Unit 3088, Storrs, CT 06269-3088 or email beahusky@uconn.edu.

The facilities of the H. Fred Simons African-American Cultural Center, Asian American Cultural Center, Puerto Rican/Latin American Cultural Center, and the International Center are available to all students interested in developing and promoting an understanding of various cultures.

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. International students who are interested in transferring from another college or university can only apply for the fall semester. Prospective students may submit correspondence to University of Connecticut, Office of Undergraduate Admissions, 2131 Hillside Road, Unit 3088, Storrs, CT 06269-3088 U.S.A. or email beahusky@uconn.edu. More information about admissions required documents can be found at <http://www.admissions.uconn.edu/apply/international.php>

Students with Disabilities

The University of Connecticut is committed to achieving equal educational opportunity 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 <http://www.csd.uconn.edu>.

Services for Students with Disabilities

Through the integration of teaching, research and service, it is the mission of the University of Connecticut to provide an outstanding educational experience for each student. The mission of the Center for Students with Disabilities (CSD) is to enhance this experience for students with disabilities. Our goal is to ensure a comprehensively accessible university experience where individuals with disabilities have the same access to programs, opportunities, and activities as all others. The Center is also committed to promoting access and awareness as a resource to all members of the community. While complying with the letter of the law, the CSD also embraces its spirit by providing services to all students with permanent or temporary disabilities to ensure that all University programs and activities are accessible. Accommodations are determined on an individualized basis and may include:

- Alternate formats for printed materials
- Assistive technology
- Computer-assisted real time translation (CART)
- Laboratory assistants
- Notetaking assistance
- Oral and sign language interpreters
- Priority registration
- Reduced course loads
- Testing accommodations
- Housing accommodations

Additional services may include:

- Academic advising and registration assistance
- Academic skills counseling
- Accessible van service
- Personal assistant referral and training
- Pre-admission counseling and new student orientation
- Referral and liaison services to agencies such as the Commission on the Deaf and Hearing Impaired, Bureau of Rehabilitation Services, Board of Education Services for the blind, as well as Recordings for the Blind and Dyslexic
- Information and referral source to all University and community programs and services

For more information, contact Donna M. Korbel, Director, CSD, Room 201, Wilbur Cross Building, Unit 4174, Storrs, Connecticut 06269-4174; Voice (860) 486-2020, TDD (860) 486-2077, Fax (860) 486-4412.

Early Admission Program for High School Juniors

Each year, the University of Connecticut admits a limited number of high school juniors who show unusual promise of success at college work. Such students must meet the following requirements:

1. Secondary school principals must certify that applicants possess outstanding scholastic ability. While no specific rules guide the principal's judgment, the University, nevertheless, emphasizes that it expects to admit under this program only students who are unusual intellectual leaders and who will be Honors Program students at the University after admission. The principal must indicate that each applicant is of sufficient maturity and stability to make that applicant a reasonable scholastic risk compared with the average preparatory school graduate.
2. Each applicant shall have completed a minimum of fourteen college preparatory units in an approved high school. The preparatory units should ordinarily include at least three units of English, three of mathematics, two (preferably 3) of a single foreign language, two of a laboratory science, two of social studies (including one year of U. S. history), and two of other course work.
3. Each applicant must show outstanding ability by performance on either the SAT or ACT.

Adult Students

The University especially encourages application from adults who wish to enroll in university-level classes and earn a baccalaureate degree for personal enrichment, employment opportunity, and/or skill development. Adult students apply as freshmen or transfers and enroll on either a part-time or full-time basis at any of the six 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 Hartford, Groton, Stamford, Torrington, or Waterbury. The Regional Campuses offer evening courses at all locations, are within easy commuting distance, and provide a quality university 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. 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, contact the University of Connecticut Office of Admissions. Regional Student Program information is also available at www.nebhe.org from the New England Board of Higher Education, 45 Temple Place, Boston, MA 02111 (617) 357-9620, e-mail: tuitionbreak@nebhe.org.

University of Connecticut Programs Available to New England Residents at Reduced Tuition

Programs	Eligible State Residents
College of Agriculture & Natural Resources	
* Cytotechnology	RI, VT
* Diagnostic Genetic Sciences	ME, MA, NH, RI, VT
* Dietetics	ME, VT
Landscape Architecture	ME, NH, VT
Pathobiology	ME, MA, RI, VT
Turfgrass and Soil Science	ME, NH, VT
School of Business	
* Health Care Management	ME, MA, RI
Management and Engineering for Manufacturing	ME, MA, NH
* Risk Management and Insurance	ME, MA, NH, RI, VT
* Real Estate & Urban Economic Studies	ME, MA, NH, RI, VT
College of Liberal Arts and Sciences	
Actuarial Science	ME, MA, RI, VT
Structural Biology and Biophysics	MA, RI, VT
Classics and Ancient Mediterranean Studies	ME
Coastal Studies	ME, MA, NH, RI, VT
Geology and Geophysics	ME, MA, RI
Italian Literary and Cultural Studies	ME, NH, VT
Latin American Studies	ME, NH
Maritime Studies	ME, MA, NH, RI, VT
Physiology and Neurobiology	ME, MA, NH, RI
Statistics	MA, RI
School of Engineering	
Biomedical Engineering	ME, MA, NH, VT
Chemical Engineering	VT
Engineering Physics	RI, VT
Management and Engineering for Manufacturing	ME, MA, NH
Materials Science Engineering	ME, MA, NH, RI, VT
School of Fine Arts	
Acting	ME, MA, NH, VT
Puppetry	ME, MA, NH, RI, VT
Technical Theater	ME, NH, VT
* School of Pharmacy	
Pharmacy	ME, MA, NH, VT

* Cytotechnology, Diagnostic Genetic Sciences, Dietetics, Health Care Management, Risk Management and Insurance, Real Estate and Urban Economics and the School of Pharmacy are Junior - Senior level. Students enter these programs at the Junior level. Freshman and sophomore years are not offered at reduced tuition. Note: Students are not being accepted into the Cytotechnology program at this time.

Associate Degree Programs

Ratcliffe Hicks School of Agriculture

Animal Science ¹	ME, RI, VT
Ornamental Horticulture and Turfgrass Management	ME, NH, RI
¹ Equine and Dairy/Livestock options	

Center for Continuing Studies

Bachelor of General Studies

The Bachelor of General Studies (BGS) program is a junior-senior year university degree program administered by the Center for Continuing Studies. Applicants to the program must have earned an associate's degree or completed at least the first two years of college (i.e., 60 semester credits) at a regionally accredited institution. In addition, applicants must complete special application procedures that include an individual interview and a written statement of educational objective. BGS students do not have traditional majors. Admission to the program is determined by several factors including, but not limited to, an assessment of the student's prior education, educational goals, and the ability of the University to assist the individual. 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 TOEFL scores. A score of 213 on the computer-based exam or 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. Further information can be obtained from the BGS Counselor at any University campus by calling one of the following:

Avery Point (860) 405-9190

Stamford (203) 251-8550

Storrs (860) 486-4670

Torrington (860) 626-6801

Waterbury (203) 236-9932

West Hartford (860) 570-9191

Non-Degree Study

The Non-Degree Study Program of the University of Connecticut enables qualified individuals to register in regular credit courses for academic credit without being admitted to an undergraduate or graduate degree program.

Non-degree students often are individuals taking credit courses prior to applying for admission to one of the University's schools or colleges. They may also be students from other universities or colleges taking credit courses at the University of Connecticut for transfer back to their own institutions. Or they may be individuals taking credit courses for personal or professional reasons.

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 may register in 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 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 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 2.5 may petition for a change of classification from non-degree student status to regular status as a student seeking a bachelor's degree. This application for degree seeking status must be made to and processed by the Transfer Admissions Office to ensure that all students are officially matriculated into the University. 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 the 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 6 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. Note that a former degree student who has been academically dismissed from the University or who has been suspended needs special written permission to register — even as a non-degree student. Consult the appropriate semester course schedule for more detailed instructions on this regulation.

For further information on non-degree study at any campus of the University of Connecticut or on how to register as a non-degree student, contact the University of Connecticut, Non-Degree Study Program, One Bishop Circle, Unit 4056-C, Storrs, CT 06269-4056, Telephone: (860) 486-4670, Fax: (860) 486-3845, E-mail: conted3@uconnvm.uconn.edu

Senior Citizen Audits

Individuals 62 years of age or older may attend undergraduate credit classes on a not-for-academic/audit basis as the instructor permits. An auditing senior may participate in the course only as the instructor permits. The instructor may disenroll 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 Continuing Studies Center. Forms must be completed and returned with a nominal fee to the Continuing Studies Center registration staff. Identification is required at time of registration.

Fees and Expenses Information

Bursars Office:

<http://www.bursar.uconn.edu/>

Guide to Admissions Information on the Internet

Undergraduate Admissions:

<http://www.admissions.uconn.edu>

Center for Continuing Studies:

<http://www.continuingstudies.uconn.edu>

Fees and Expenses

The schedule of fees which follows, as reported by the Bursar's Office, is comprehensive and is expected to prevail during the 2008-2009 academic year, but the Board of Trustees and the Board of Governors for Higher Education reserve the right, at any time, to authorize changes. Revisions in the State budget may force fee changes. Information on the fees applicable to the courses offered through the Center for Continuing Studies is available in their publications.

Application Fee

A fee of \$70 must accompany the application for admission to any undergraduate school or college of the University for full-time study. The application fee is not refundable and may not be applied to other charges.

Acceptance Fee

A freshman student entering the University in the fall semester must make a nonrefundable payment of \$150 by May 1. This payment will apply toward the University fee bill. Failure to remit payment will result in cancellation of admission. The new freshman student is encouraged to make payment as soon as the student's intention to accept admission is firm.

A transfer or readmitted student entering the University in the fall semester, and a freshman, transfer or readmitted student entering in the spring semester must make a nonrefundable payment of \$150 within fifteen days of receiving notice of admission. This payment will apply toward the University fee bill. Failure to remit payment by the prescribed date will result in cancellation of admission.

Students are not required to pay a housing deposit to select a room for the 2008-2009 academic year. A student who selects a room, may cancel that assignment without penalty before June 1, 2008. A student who retains his/her Storrs enrollment but cancels his/her housing from June 1-30, 2008 will be responsible for 25% of the fall semester room fee. A student who cancels from July 1-31, 2008 will be responsible for 50% of the fall semester room fee. A student who cancels after July 31, 2008 shall be responsible for 100% of the fall semester room fee.

General University Fee

Students on the Storrs campus pay a general University fee of \$744 each semester. Students at the regional campuses pay a general University fee each semester of \$47 at Avery Point, Hartford, Stamford, and Waterbury; students at Torrington pay a general University fee of \$31 each semester. Payment of fees is made at each campus location.

The general University fee is prorated for part-time Storrs undergraduate students who initially register for less than full time.

Continuous Registration Fee

A nonrefundable fee of \$45 per semester will be charged to Bachelor of General Studies students, Cooperative Education students, and Study Abroad students.

Tuition

All students are subject to a tuition charge in addition to the other fees charged Connecticut and out-of-State students. Students classified as full-time Connecticut students pay tuition of \$3,600 per semester. Students classified as full-time out-of-State students pay tuition of \$10,956 per semester. Full-time students eligible for the New England Regional Student Program pay tuition of \$6,300 per semester.

Tuition is prorated for part-time undergraduate students who initially register for less than full time.

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. Veterans should contact the Veterans Center in the Wilbur Cross Building, Room 221, (860) 486-2442, for an application for the tuition waiver. Please see *Veterans Administration Educational Assistance and Training Waiver* located in the Financial Aid section of this *Catalog* for other veterans benefits information; (3) for any person 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.

Audit Fee

Auditors pay the regular fee (no additional fee for students registered for full time).

Senior Citizens Audit Fee

All persons 62 years of age or older who audit undergraduate courses on a space-available, not for credit basis, pay a fee of \$15 per semester. Instructor consent is required for all audits.

Deposit Account

A deposit of \$50 must be maintained by all students. This deposit less deductions for breakage, fines, health service, and any other outstanding charges, will be refunded to students graduating or officially withdrawing from the University.

Cooperative Bookstore Account

A one-time refundable Cooperative Bookstore payment of \$25 is required for all undergraduate and graduate students, with the exception of: Health Center students in Farmington; M.B.A. students at Hartford and Stamford; students registered solely for summer sessions; non-degree students; and students engaged exclusively in non-credit extension work.

When a student graduates or officially withdraws from the University the \$25 Cooperative Bookstore Account, less the share of any cooperative loss or plus the share of cooperative gain, will be refunded.

The Daily Campus Fee

All undergraduate students at Storrs pay a fee of \$7 each semester for the support of the student newspaper.

Student Union Fee

All undergraduate students at Storrs pay a fee of \$23 each semester to cover the cost of the student activities program administered by the Student Union Board of Governors.

Student Union Building Fee

All students at Storrs pay a fee of \$13 each semester for the additional financing needed to fully fund the Student Union renovation and expansion project.

WHUS Fee

All undergraduate students at Storrs pay a fee of \$9 each semester for the support of the student radio station.

Student Government Fee

All undergraduate students at Storrs pay a fee of \$43 each semester for the support of student governmental activities and the student yearbook. A fee is charged each semester for support of student government to all regional campus students: Avery Point, \$35; Hartford, \$30; Stamford, \$40; Torrington, \$35; Waterbury, \$35.

Student Transit Fee

All students at Storrs pay a fee of \$35 each semester for the support of the bus service on campus.

UCTV Fee

All undergraduate students at Storrs pay a fee of \$5 each semester for the support of the University television training program.

Residence Hall Fee

The standard fee for an undergraduate assignment to a double room in a University residence hall is \$2,545 per semester. It covers occupancy while classes are in session, excluding recess periods.

Board Fee

All students living in undergraduate residences are required to pay for one of the meal plans offered by Dining Services. The cost will be determined by which plan is chosen.

Please visit our website (www.dining.uconn.edu/dds/) to see the current plans. Meal plans are in effect the Friday evening (Convocation Dinner) for first year students and families. 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, the UCuisine or the individual dining centers for variations to this basic schedule.

Commuters can purchase blocks of 25 meals, or meal plan points. In addition, they are welcome on an a-la-carte basis using cash or 'Husky Bucks' at retail outlets in several locations throughout campus and the Student Union.

Infrastructure Maintenance Fee

All students are subject to an infrastructure maintenance fee of \$190 each semester for the support of operating and maintenance costs related to UConn 2000 projects.

Payment of Fees

Collection of all fees is handled by the Office of the University Bursar. The fall semester fee bill is payable prior to August 1, 2008; the spring semester is payable prior to January 8, 2009. Partial payment of fees will not be accepted. Failure to make payment on time will result in cancellation of the privileges accorded a student, including registration and residence hall assignment. Registration is not complete nor is the residence hall assignment confirmed in any semester until all the fees for the semester have been paid.

A student who retains his/her Storrs campus enrollment but cancels his/her housing before June 1, 2008 will not be obligated to pay any part of the fall semester room fee. A student who cancels his/her housing from June 1 - 30, 2008 will be responsible for 25% of the fall semester room fee. A student who cancels from July 1 - 31, 2008 will be responsible for 50% of the fall semester room fee. A student who cancels after July 31, 2008 shall be responsible for 100% of the fall semester room fee.

It is each student's 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.

There is a \$25 charge on any check which is returned by the bank for any reason.

Late Payment Fee

The payment of the fee bill is due in full prior to August 1 (fall semester) and January 8 (spring semester). A late payment fee of \$50 is payable by all undergraduate students whose tuition and fees are not paid in full on the published due date. 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.

Refunds for Cancellations and Withdrawals

All undergraduate students who withdraw from the University for any reason must secure from the Dean of Students' Office written acknowledgement of their withdrawal, and arrange with that department the details of their leaving.

No refunds are made unless this procedure is followed. See the section on Withdrawal and Cancellation, and Leave of Absence for further comment.

The University grants a full refund of advanced fees to any student academically dismissed. In certain other instances, including illness, adjustments to the following schedule of refunds can be made at the discretion of the staff in the Dean of Students Office.

Where notice of cancellation is received through the first day of classes of a

semester, full refund (less the nonrefundable acceptance fee) is made if fees have been paid in full.

Students who applied for and were assigned to on-campus housing but withdraw from the University will be given 24 hours from the effective withdrawal date to officially check-out of their residential assignment. After this 24 hour period students will be charged a daily housing rate until the date official check-out has been processed.

Refundable Fees

General University fee	Tuition
Applied Music	Board fees
Deposit Account balance	Cooperative Bookstore Account balance
Student Union fee	Infrastructure Maintenance fee
Student Government fee	<i>Daily Campus</i> fee
UCTV fee	Student Transit fee
Residence Hall fee	

Nonrefundable Fees

Acceptance fee
Late Payment fee
Continuous Registration fee

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

(a) Remainder of the 1st calendar week	90%
(b) 2nd week	60%
(c) 3rd and 4th week	50%
(d) 5th week through 8th week	25%

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

In addition, there will be a pro-rata policy in effect for those students leaving the university who have accepted Title IV funds. This is a new requirement from the federal government. These funds include Pell Grant, Opportunity Grant, Perkins Loan, and subsidized, unsubsidized and Plus Loans.

This policy determines the amount of federal funds that a student is entitled to use by calculating the number of days attended divided by the number of days of the semester and multiplying this percentage times the funds received. The amount the student is not entitled to keep is then returned to the proper program(s).

Because of the new rules, the student may be required to repay part of the loans prior to the 6-month grace period.

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. Should the student's card become lost or destroyed, a replacement will be issued at a fee of \$15.

Allied Health Sciences Department Student Materials Fees

All undergraduate students pay two one-time fees for each of their first two semesters enrolled in the Department for laboratory supplies and consumables. The current fee is \$50 per semester (lifetime total of \$100 per student per degree).

Course Fees

Extra fees may be applied to courses. Those costs may be found in the descriptions of courses listed in the "Directory of Courses" section of this *Catalog*. The fees serve as a guide, but are subject to change.

School of Business Laptop Fee

A fee is charged for all School of Business students at the Storrs Campus for leasing an appropriate notebook computer with related hardware and software. The fee is charged in each of the four semesters during the junior and senior years. This fee is adjusted each semester based on the computer model used. The maximum fee is \$550 per semester.

Drama Fee

A fee is charged for Dramatic Arts students in B.F.A. and M.F.A. Design and Technology, B.F.A., M.A., and M.F.A. Puppetry, and B.A. Theatre Studies majors for consumable products. The current fee is \$60 for each semester.

Landscape Architecture Fee

A fee is charged for students majoring in Landscape Architecture beginning upon completion of the introductory courses (LAND 2110 and 2210; typically in the 2nd semester of the sophomore year), and continuing through the junior and senior years of the program. The fee covers the cost of a leased computer, specialized software, fieldtrip transportation and limited printing costs. This fee is adjusted each semester based on the computer model used and software costs. The maximum fee is \$700 per semester.

Neag School of Education Fee

A technology fee is charged for all Neag School of Education teacher preparation students. The fee includes the use of a laptop computer and related hardware and software. The fee is charged each semester the student is in the program. The fee per semester is currently \$470 for IB/M Program and \$800 for IB/M Music Education students.

School of Pharmacy Fee

Students will be charged a \$10 per semester fee to cover the cost of malpractice insurance. For students participating in the Pharmacist Immunization Certificate Program there is a \$95 materials fee.

Course Credit By Examination Fee

The fee for the examination is \$10 a course payable at the Business Office. Course Credit by Examination specifications may be found under "Academic Regulations."

Student Liability Insurance

Liability insurance is required of all students enrolled in a clinical program. These students will be billed by the University the additional expense of such coverage.

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 486-0745 or go to this URL: <http://www.shs.uconn.edu> for further information.

Study Abroad Supplemental Health Insurance

Students choosing to study abroad through the University's Office of Study 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 following website: www.studyabroad.uconn.edu.

(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 Parking Fees

Student parking fees are assessed to 5th 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.

Summer Sessions Fees and Expenses

The University fee for each summer session is equal to the preceding academic year in-state tuition. For further details, refer to <http://www.continuingstudies.uconn.edu>. In addition, there is a one-time non-refundable summer enrollment fee of \$45 for University of Connecticut degree students and \$65 for all others. Additionally, students at the Storrs campus pay a student activity fee of \$16 per summer session.

University of Connecticut Information on the Web

The University's main page is located at:

<http://www.uconn.edu>

Specific information can be found at the following sites:

Bursar

<http://www.bursar.uconn.edu/>

International Students

http://www.uconn.edu/international_students/

Residential Life

<http://www.reslife.uconn.edu>

Dining Services

<http://www.dining.uconn.edu/dds/>

Parking Services

<http://web.uconn.edu/parking/>

Student Health Services

<http://www.shs.uconn.edu>

Financial Aid

The primary purpose of student financial aid is to provide assistance to students who otherwise would be unable to pursue their education. The basic philosophy of student financial aid is that the primary responsibility lies with the parents (of dependent students) and the student to pay for higher education expenses, to the extent they are able, as determined by the federal methodology.

How to Apply for Financial Aid

Application for all need-based financial aid programs begins with submission of the FAFSA. Complete the **Free Application for Federal Student Aid on the Web (FAFSA)**. The FAFSA is available online at: <http://www.fafsa.ed.gov>. The online form is easy to use, and helps applicants to avoid making common errors. UConn uses only the FAFSA for the awarding of federal, state, and University funds.

Submit the FAFSA early enough after January 1 so that it is received at the federal processor by the required application deadline of March 1. Applications not received and logged into the federal processor by March 1 will be considered late. **Do not wait for final income tax figures. Use estimated figures if necessary to ensure “on-time” application status.** If requested, be prepared to send copies of federal tax returns and W2's for yourself and your parents to the Office of Student Financial Aid Services.

Read the FAFSA instructions carefully and answer all questions. The following field information is required for the University of Connecticut.

Federal School Code: 00141700
 Name of College: University of Connecticut
 College, Street Address and City: Storrs
 State: CT

If you have any question regarding your FAFSA, or if you wish to obtain additional information regarding eligibility requirements, please contact the U.S. Department of Education at 1-800-433-3243.

Award Notification

The Office of Student Financial Aid Services' sends correspondence to students via their University HuskyMail account directing them to access the PeopleSoft Student Administration System to review their award notification. Students will access the “Finances” link to complete tasks such as the following:

- Review and/or complete required documentation
- Review and/or update student status
- Accept or decline financial aid awards
- Report outside awards
- Review changes to financial aid awards
- Choose a Federal Stafford Loan lender
- Complete required loan documents

Verification

Verification is the federal process requiring the comparison of data reported on the FAFSA with income tax returns and other required documents. The Office of Student Financial Aid Services will notify you if you have been selected to submit income documentation. Students/families are encouraged to fax documents to (860) 486-6629.

Satisfactory Academic Progress (SAP) Guidelines

SAP is the University policy based on federal regulations which requires that all aid applicants maintain a designated grade point average (GPA) and satisfactorily complete a percentage of the number of credit hours attempted in each award year. A complete text of this policy is available at www.financialaid.uconn.edu.

For More Information

An excellent, detailed source of information regarding federal aid programs and the financial aid process is the Student Financial Aid Information Guide, which contains pertinent information specific to UConn's financial aid programs. All financial aid applicants are encouraged to review this guide, as well as other valuable financial aid information available online at www.financialaid.uconn.edu.

Student Financial Aid Services

Financial Aid

<http://www.financialaid.uconn.edu>

Student Employment

<http://studentjobs.uconn.edu/>

Veterans

<http://veterans.uconn.edu/>

General Information

Dean of Students Office

<http://www.dosa.uconn.edu/>

Library Services

<http://www.lib.uconn.edu/>

Student Activities and Union Programs

<http://www.saup.uconn.edu/>

Athletics

<http://www.uconnhuskies.com/>

Recreational Services

<http://web.uconn.edu/recreation/>

General Information

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. The deans of the schools and colleges assign advisors to help students meet their academic goals and complete degree requirements. Although the advisor is responsible for making appropriate academic recommendations, students are responsible for their own academic progress.

Meeting regularly with an advisor helps students anticipate and solve problems before they become serious. Advising includes:

- Describing the goals of higher education, the aims of disciplinary and interdisciplinary study, and the reasons for academic requirements including minimum scholastic standards;
- Describing registration procedures, courses, faculty interests, educational opportunities and degree programs;
- Helping the student plan semester by semester registration including tentative and final plans of study;
- Referring the student to appropriate sources for information and specialized services.

Students and advisors should know the academic requirements published in the University *Catalog* and departmental plans of study.

Before registering, students consult with their advisors. The University tries to meet the students' requests where course selections conform with University rules and where resources permit.

Undergraduate Advisory Centers

School/College/Center, Contact Person, Location

Academic Center for Exploratory Students, Donna Hryn, *Center for Undergraduate Education, Room 111*

Agriculture and Natural Resources, Pat Jepson, *W. B. Young Building, Room 211*

Business, Janice Clark, *School of Business, Room 121*

Continuing Studies, Laurel Rabschutz, *Bishop Center*

Education, Ann Traynor, *Gentry Building, Room 128*

Engineering, Brian Schwarz, *Engineering II Building, Room 304*

Fine Arts, Eva Gorbants, *Fine Arts Building, Room 202*

Liberal Arts and Sciences, Katrina Higgins, *CLAS ASC Building, 423 Whitney Road*

Nursing, John McNulty, *Storrs Hall, Rooms 102 and 103*

Pharmacy, Andrea Hubbard, *Pharmacy/Biology Building, Room 351*

Ratcliffe Hicks, Pat Jepson, *W. B. Young Building, Room 211*

Academic Center for Exploratory Students. The Academic Center for Exploratory Students (ACES) is the University of Connecticut's academic advising program for students who want to explore the University's academic opportunities before deciding on a field of study and for students who must complete specific requirements before applying to a University program. The goal of the Academic Center for Exploratory Students is to help students declare an appropriate major as early as possible in their academic career. Each student in ACES is assigned to an academic advisor. All ACES students are required to attend individual advising appointments during their first year and are strongly encouraged to continue meeting with their ACES advisor until they declare a major and begin working with a faculty advisor. The advising relationship pro-

vides students with the opportunity to identify their interests and strengths, articulate their academic goals, and develop a plan to achieve their goals. Advisors in ACES provide high-quality advising, assist students with the transition to the University, and strive to ensure that both students and academic programs reach their full potential.

Career Services. Career Services assists students in identifying strengths, interests, and special talents, all of which are important in identifying career goals. Establishing goals provides a focus for both career and academic planning. Through internship and cooperative education opportunities, students are encouraged to continue their education and prepare for either employment or graduate school opportunities.

Center for Academic Programs. The Center for Academic Programs (CAP) increases access to higher education for high-potential students who come from underrepresented ethnic or economic backgrounds and/or are first-generation college students. CAP prepares students for successful entry into, retention in, and graduation from a post-secondary educational institution through its four constituent programs: Educational Talent Search, Gear Up and Upward Bound provide programming to increase middle and high school students' college access and retention; and Student Support Services provides programming to facilitate students' retention in and graduation from the University of Connecticut. CAP designs and implements these programs in accordance with guidelines set forth by its funding bodies, including the University, the U.S. Department of Education, Connecticut Department of Higher Education and other programs which promote educational opportunity for all. Questions should be directed to Maria D. Martinez, Director of the Center for Academic Programs at Maria.D.Martinez@uconn.edu

Center for Students with Disabilities. The Center for Students with Disabilities (CSD) offers comprehensive services. Please refer to "Students with Disabilities" in the "Admissions" section of this *Undergraduate Catalog*.

Counseling Program for Intercollegiate Athletes. Student athletes commit a large percentage of their personal time to University-sponsored athletic activities. For this reason, the University recognizes the need for a support program to assist student athletes in achieving their academic goals. Counselors meet regularly with student athletes and also serve as liaison between a student's academic advisor, coach, and academic support personnel. Tutors and study hall are provided as required.

Dean of Students Office. The Dean of Students (DOS) Office serves in the capacity of chief advocate for students and administrator of student policy and student status changes. The DOS Office seeks to promote positive growth experiences for students through the development of leadership, dispute resolution, and self-advocacy skills. The DOS Office also functions in a leadership role in building community around campus and in establishing expectations of student conduct. As part of its expanded role, the DOS Office will enhance the student experience and address issues of retention through ongoing assessment, analysis, interpretation, and response to changing student needs. Perhaps most importantly, the DOS Office has established itself as "the place to go when you don't know where else to go."

Engineering Diversity Program. The Engineering Diversity Program (EDP) provides academic support and outreach activities designed to increase the number of African-American, Hispanic, Native American, Puerto Rican and women engineering students.

Bridge is a free summer program designed to prepare talented underrepresented populations and women for the first-year experience as an engineering student.

Project Elevate provides group study sessions and supplemental instruction for freshmen and sophomores by utilizing undergraduate and graduate peer tutors and facilitators.

Pre-engineering is a pre-college Saturday morning engineering enrichment opportunity for 7th, 8th, and 9th grade students.

Multiply your Options is a one-day conference designed to introduce mathematics, science and engineering careers and female role models who have chosen these careers to middle school girls.

Faculty of the Future provides financial support to encourage undergraduate engineering students to pursue graduate school by connecting them to research opportunities.

First Year Experience. The First Year Experience offers opportunities for new students who are (a) looking for a way to get a head start on academic success, (b) seeking support to explore specific academic interests while still meeting core curriculum requirements or (c) having difficulty making the transition to a university setting, overwhelmed by a large campus or, academically challenged and possibly on academic probation.

Knowing the “smart” way to approach academic and personal challenges can make a big difference in the undergraduate experience at a university. FYE University Learning Skills (ULS) (INTD 1800), a one-credit seminar, brings students together weekly to interact and adjust to the new expectations they will be facing at UConn. A team of faculty, professional staff, and advanced undergraduate students who know their way around have designed each ULS. New students learn about University resources and facilities, enhance their academic and interpersonal skills, and work on time management issues. In addition, students will get to know a faculty member, a professional staff person, and an advanced undergraduate to whom they can turn for advice and support in the future.

FYE Faculty-Student Seminars (INTD 1820) which meet for one hour per week, involve guided research, writing, and provide plenty of opportunity for participation. The faculty who teach the seminars enjoy working closely with students and help participants enhance their ability to engage actively in the academic life of the University and to learn independently.

Learning Resource Center. This center, located on level one of Homer Babbidge Library, provides support for Storrs and Regional Campus students with academic information technology. Their help desk is staffed by Student Educational Technology Assistants (SETAs) who are trained to offer basic support for campus academic information technologies. They help students with HuskyCT, E-portfolio, Huskymail, PeopleSoft’s Student Administration module and the Computer Technology Competency general education requirements. For more information please see: <http://lrc.uconn.edu>.

Office of National Scholarships. The Office of National Scholarships (ONS) recruits and mentors high-achieving students to compete for prestigious national and international scholarships, including the Rhodes, Marshall, Goldwater, and Udall scholarships. The ONS raises student and faculty awareness of scholarship opportunities, networks with faculty members to identify promising prospects, and works with qualified and committed individuals in the process of preparing their submissions. Interested students should learn about these scholarships as early as possible in their UConn careers, because competitive applications require consistent leadership experience, community engagement, or research involvement throughout students’ undergraduate careers. Interested students should visit the web site for more details: <http://www.ons.uconn.edu>.

Pre-College Enrichment Program (PCEP). PCEP provides support to pre-college students who wish to pursue careers in the medical sciences. PCEP is a six-week, pre-collegiate summer residential experience, designed to increase the number of underrepresented students enrolled in medical, dental, biomedical sciences, allied health, nursing, and pharmacy programs. During their college tenure, students continually engage in counseling, advisement, and tutoring through the Student Support Services program. The goal of this program is to expose students to the different aspects of the medical profession by building academic strength through an extensive introduction to college-level mathematics and chemistry with seminars related to the health professions and clinical experiences at the UConn Health Center. Questions should be directed to Bidya Ranjeet, Director of Student Support Services at Bidya.Ranjeet@UConn.edu.

Quantitative Learning Center. The Q Center offers peer tutoring for lower-level mathematics, statistics, physics and chemistry and is staffed by undergraduate and graduate tutors. No appointment necessary. Tutoring is free and available throughout the semester Sunday through Thursday in the Homer Babbidge Library (Level 1), and the NW Dining Hall. For tutoring hours and locations, as well as online resources and workshop offerings, visit the Q Center’s website at <http://qcenter.uconn.edu> or call 486-1961.

Student Health Services. The Department of Health Services provides primary level health care (medical and mental health). Treatment for non-life threatening conditions is available. Because of certain limitations, some medical and mental health problems may be referred elsewhere for diagnosis and/or treatment. Services include infirmary (inpatient) and outpatient medical care rendered by physicians, Registered Nurses and Nurse Practitioners. Women’s Clinic and assault crisis services are available. Other services include laboratory, x-ray, allergy clinic, pharmacy, HIV testing, nutritional services and health promotion. Mental Health/Counseling services include evaluation, crisis in-

tervention, medication and individual and group therapy sessions provided by clinical therapists and psychiatrists. Services are available to all properly registered Storrs students who have paid the General University Fee or who pay fees for credit bearing courses through the Center for Continuing Studies and present a valid student ID card.

Health Services requires the submission of health history forms and enforces mandated immunization and tuberculosis testing requirements. All full-time undergraduates are also required to submit information attesting to health insurance coverage via an on-line submission process. Those who fail to submit this information may be charged and automatically enrolled in the university sponsored plan.

Health Services is open seven days a week (24 hours on weekdays) and provides a telephone Advice Nurse/Mental Health service on weekend nights when the building is closed. Further information is available at (860) 486-4700 or www.shs.uconn.edu.

Student Success (Institute for Student Success). To facilitate the development and success of each student, the ISS provides specialized assistance designed to help students enhance their abilities to succeed academically. Some students who enter the university face a greater challenge of successfully negotiating the academically rigorous demands of this institution than others. UConn isn’t just harder than high school, it’s fundamentally different. For that reason, academic success requires students to make major adjustments in their study-related skills, strategies, and attitudes. Students are taught techniques which help them to better prepare for and take examinations, improve memory and concentration, motivation, reading and writing skills, and how to manage stress.

Student Support Services. Student Support Services (SSS) increases access to higher education for high-potential students who come from underrepresented ethnic or economic backgrounds and/or are first-generation college students. SSS provides programming to facilitate students’ retention in and graduation from the University of Connecticut. The SSS program has an academic year component and a pre-collegiate six-week summer program. During the six-week program, students are required to take University courses for which they earn college credits, such as English, Math, and Sociology. Students continually engage in counseling, advisement, tutoring, and student success seminars throughout their tenure at UConn. Questions should be directed to Bidya Ranjeet, Director of Student Support Services at Bidya.Ranjeet@uconn.edu.

Office of Study Abroad. The Office of Study Abroad is responsible for developing and administering academic programs abroad and in the United States. The Office of Study Abroad offers more than 200 programs for students across the curriculum in over 65 countries. The University of Connecticut offers year-long, semester, summer and winter intersession programs. It also offers programs that include internships, service learning opportunities, field research, enrollment at foreign universities, and specialized courses for U.S. students.

Students who enroll in an approved study abroad program continue to earn University of Connecticut credits that satisfy graduation requirements. Many study abroad courses count towards major and general education requirements. The Study Abroad Office works closely with academic departments throughout the University to ensure approval of the courses. While away, students remain registered at the University of Connecticut and are therefore eligible for their normal financial aid.

The Office of Study Abroad assists students with each stage of the application process. It also makes every effort to ensure a safe and secure experience.

The Writing Center. At the University Writing Center, UConn students find a welcoming place to work on their academic writing. Talented graduate and undergraduate tutors from several different fields of study offer free, one-to-one tutorials. Students can drop by locations in CLAS, CUE or Babbidge Library, or make an appointment using our online scheduling system. More information is available at writingcenter.uconn.edu.

UConn American English Language Institute (UCAELI). UCAELI offers a full service intensive English program for students of English as a second language. Courses are designed to prepare students for academic work and professional pursuits. Fifteen- week sessions are offered each fall and spring and four and eight week sessions are offered in the summer. A TOEFL preparation course is offered each session as is the Institution TOEFL exam. An English Proficiency Certificate, accepted by the Admissions Office in lieu of the TOEFL score of 550, can be issued to qualified students. The majority of students in the program study full-time (22 hours per week); however, individual courses are

also open to UCONN degree-seeking students. With permission, advanced students may elect to take UCONN credit-bearing courses in combination with their UCAELI courses. Evening English courses focusing on Pronunciation, Academic Writing and Communication are also offered several times a year. Tutoring and customized courses can be arranged.

UConn Connects. The UConn Connects Program, one of the most successful student support programs at the University, serves undergraduate students who are on academic probation. By matching each student with a facilitator (recruited from the ranks of student, faculty, and staff), the program helps students locate and utilize the resources, skills, and personnel who can help transform academic struggle into academic success. Through mutually agreed upon meetings, students and their facilitators work on time management, study skills, and a wide range of other issues crucial to academic achievement at the University. Facilitators are kept abreast of program offerings, tutoring assistance, and other resources of value to their students.

The Office of Undergraduate Research (OUR) provides research-related opportunities and information to students interested in engaging in independent or collaborative research with faculty members and research professionals. Research is defined very broadly by the Office of Undergraduate Research so that it includes scholarship and creative work. The OUR helps students find research opportunities with UConn faculty in virtually every discipline offered by the University. Interested students may begin an undergraduate research experience as early as their first year on campus. Funding for student research and scholarship is also provided by the OUR through two grant competitions. The Summer Undergraduate Research Fund (SURF) funds student research projects occurring during the summer months. The OUR also sponsors and coordinates *Frontiers in Undergraduate Research*, the annual spring poster exhibition that showcases students' accomplishments and productivity as researchers. The Office of Undergraduate Research promotes student opportunities for scholarship beyond UConn through listings of internships, summer research placements, and funding sources on its website. For more information, please visit the website at <http://www.our.uconn.edu/>.

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 on the Registrar's website at: <http://www.registrar.uconn.edu/ferpa.html> and sends notification to students via e-mail.

Graduation Rate. The Student Right to Know Act 1990 requires each institution to make available the graduation rates, within six years, of entering freshmen classes. For the University of Connecticut Fall 2001 entering freshmen, the graduation rates by the summer of 2007 were: entered at Storrs is 74%; entered at a regional campus 46%. 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 can request official transcripts of their academic records by writing to the University of Connecticut, Office of the Registrar, Wilbur Cross Building, Unit 4077T, Storrs, CT 06269-4077. Requests can also be faxed to the Registrar at (860) 486-0062. All requests should include full name, date of birth, Student Administration System USER ID (if known), dates of attendance, complete and accurate addresses of transcript recipients including ZIP codes, and the requester's address, telephone number, and e-mail address in the event that there is a problem with the request. **All requests, including faxes and email attachments must be signed.** Students can also request official transcripts through the Student Administration System.

Request forms can be completed at the Office of the Registrar in the Wilbur Cross Building and submitted for processing. These forms are also available at the regional campus registrars' offices for mailing or faxing to the University Registrar at Storrs.

Students can request that their transcripts be sent to themselves. Note, however, that such transcripts are stamped "issued to student in a sealed envelope" and the envelope bears a similar stamp and a signature. Students are advised that some recipients will not accept transcripts that have not been sent directly to them.

For Priority/Express mail service, the request must be accompanied by a pre-paid and pre-addressed envelope(s). Carriers available are U.S. Postal Service, FedEx, DHL and UPS. All arrangements must be made by the requestor.

There are other restrictions to this service. Official transcripts may be withheld if financial or other obligations to the University remain unmet. Since official transcripts are issued on security paper they **cannot be faxed**. Requests are processed in the order in which they are received in one to five business days. The University cannot honor telephone or ordinary e-mail requests for transcripts.

There is no service fee for Official Transcripts.

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 the unique USER ID 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.

Student Identification

Student Administration System. Prior to first registration for classes, each student is assigned a randomly selected, unique USER ID number to be used to gain access to the Student Administration System. An initial password is also assigned which must then be changed to another number of the student's own selection. The USER ID and password become important tools to be used to register for classes, obtain grade transcripts and schedules, and change contact information. Questions regarding USER ID and password for this system should be referred to the Office of the Registrar.

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. The One Card Office, the Bursar, and the Registrar are all located in the Wilbur Cross Building.

Net ID. Web CT and University e-mail require the use of a Net identification number and a password that are unique to those systems. These numbers are not the same as those used for the Student Administration System.

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. Name changes require official documentation. Changes made by the Registrar's staff will update the information that appears on the University website's Directory of students' names and addresses.

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

Office of the Registrar Website

<http://www.registrar.uconn.edu>

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 for all Baccalaureates

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

Residence Requirement. The University requires that all students complete the last two semesters of their work at the University of Connecticut, but the school or college may require the student to complete more work at the University. Waivers require the permission of the department head, the academic dean and the Vice Provost for Undergraduate Education.

Credits earned "in residence" include all University of Connecticut credits, without regard to the campus or where the student lives. Whereas credits from other institutions may count toward the degree, graduating students must have earned at least 30 degree credits in residence.

Students may not take courses from other institutions during the last two semesters unless: 1) they have completed acceptable academic work in the armed services (the Transfer Admissions Office must receive the transcript within two years of the student's discharge); 2) in the judgment of the department head, academic dean and Provost, work at another institution will enrich their program; 3) personal reasons compel them to leave the University for all or part of the final year (they must have permission to take courses elsewhere from the department head, academic dean and Vice Provost for Undergraduate Education).

Students wanting to transfer credits from another school in the final two years should discuss their plans with their advisor. They should note the residence requirements in their school or college and get permission in advance from any others who may be involved in the transfer.

General Education Requirements

The University Senate enacted these requirements to ensure that all University of Connecticut undergraduate students become articulate and acquire intellectual breadth and versatility, critical judgment, moral sensitivity, awareness of their era and society, consciousness of the diversity of human culture and experience, and a working understanding of the processes by which they can continue to acquire and use knowledge. It is vital to the accomplishment of the University's mission that a balance between professional and general education be established and maintained in which each is complementary to and compatible with the other.

* 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 Academic Regulations when the requirements and choices duplicate those listed here.

Content Areas

There are four Content Areas:

One – Arts and Humanities. Six credits.

Two – Social Sciences. Six credits.

Three – Science and Technology. Six to seven credits.

Four – Diversity and Multiculturalism. Six credits.

The courses fulfilling the Content Areas One, Two and Three requirements must be drawn from at least six different subjects as designated by the subject letter code (e.g., ANTH or PVS). The courses within each of these content areas must be from two different subjects. Content area courses may be counted toward the major.**

Normally, the six credits required as a minimum for each Content Area will be met by two three-credit courses. However, in Content Area One, one-credit performance courses may be included. Students may use no more than three credits of such courses to meet the requirement.

In Content Area Three, one of the courses must be a laboratory course of four or more credits. However, this laboratory requirement is waived for students who have passed a hands-on laboratory science 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 (International courses).

One, and only one, Content Area Four course may also serve as a Content Area One, Content Area Two, or Content Area Three requirement.

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.

AFAM/FINA 1100	Afrocentric Perspectives in the Arts
ANTH 1001W	Anthropology through Film
ANTH 3401	World Religions
ARAB 1121	Traditional Arab Literatures, Cultures, and Civilizations
ARAB 1122	Modern Arabic Culture
ART 1000	Art Appreciation
ARTH 1128	Introduction to Western Art II: The Renaissance to the Present, a World Perspective
ARTH 1137	Introduction to Art History I
ARTH 1138	Introduction to Art History II
ARTH 1141	Introduction to Latin American Art
ARTH 1162	Introduction to Architecture
AASI 3201	Introduction to Asian American Studies
AASI/HIST 3531	Japanese Americans and World War II
CHIN 1121	Traditional Chinese Culture
CHIN 1122	Modern Chinese Culture
CAMS 1101	Greek Civilization
CAMS 1102	Roman Civilization
CAMS 1103	Classical Mythology
CLCS 1101	Classics of World Literature I
CLCS 1102	Classics of World Literature II
CLCS 1103W	Languages and Cultures
CLCS 1110	Introduction to Film Studies
DRAM 1101	Introduction to the Theatre
DRAM 1110	Introduction to Film
ECON 2101/W	Economic History of Europe
ECON 2102/W	Economic History of the United States
ENGL 1101/W	Classical and Medieval Western Literature
ENGL 1103/W	Renaissance and Modern Western Literature
ENGL 1503	Introduction to Shakespeare
ENGL 1616/W	Major Works of English and American Literature
ENGL 1640W	Literature and the Creative Process
ENGL 2100	British Literature I
ENGL 2101	British Literature II
ENGL 2274W	Disability in American Literature and Culture
ENGL 2401	Poetry
ENGL 2405	Drama
ENGL 2407	The Short Story

* Undergraduate students with Bachelor's degree from regionally accredited institutions 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.

** A student will be permitted to use two courses from the same department within Content Areas One through Three if one of those courses is cross-listed in another subject letter code not otherwise used to meet this requirement.

FREN	1169	Studies in the French-Speaking World
FREN	1171	French Cinema
FREN	1176	Literatures and Cultures of the Postcolonial Francophone World
FREN	1177	Magicians, Witches, Wizards: Parallel Beliefs and Popular Culture in France
FREN	3210	French Art and Civilization
FREN	3211	Contemporary France
FREN	3218	Francophone Studies
FREN	3224	Issues in Cultural Studies, the Media, and the Social Sciences
FREN	3230	The Middle Ages: Myths and Legends
FREN	3234	Romanticism, Realism, Fin de Siecle: 19th-Century Literature
FREN	3235	French Modernity
FREN	3261W	From the Holy Grail to the Revolution: Introduction to Literature
FREN	3262W	From the Romantics to the Moderns: Introduction to Literature
FREN	3267/ W	Grammar and Culture
FREN	3268/W	Grammar and Composition
FREN	3270W	French Literature and Civilization in English
GEOG/URBN	1200	The City in the Western Tradition
GERM	1140W	German Literature in English
GERM	1169	Contemporary Germany in Europe
GERM	1171	The German Film
GERM	1175	Human Rights and German Culture
GERM	3251	German Culture and Civilization
GERM	3252W	Studies in Early German Literature
GERM	3253W	Studies in German Literature Around 1800
GERM	3254W	Studies in 19th Century German Literature
GERM	3255/W	Studies in 20th Century Literature
GERM	3258	Germans in Africa, Blacks in German-Speaking Countries. Colonial and Postcolonial Perspectives
GERM	3261W	German Film and Culture
GERM	3264W	German Cinema in Cross-Cultural Perspective
HEB/JUDS	1103	Literature and Civilization of the Jewish People
HIST	1100/W	The Historian as Detective
HIST	1201	Modern World History
HIST/WS	1203/1121	Women in History
HIST	1206	Living through War in World History since 1500
HIST	1300	Western Traditions Before 1500
HIST	1400	Modern Western Traditions
HIST	1501/W	United States History to 1877
HIST	1502/W	United States History Since 1877
HIST	1800	The Roots of Traditional Asia
HIST	1805	East Asian History Through Hanzi Characters
HIST/SCI	2206	History of Science
HIST	2401/W	Europe in the 19th Century
HIST	2402/W	Europe in the 20th Century
HIST/LAMS	3609	Latin America in the National Period
HIST/LAMS	3635	Mexico in the Nineteenth and Twentieth Centuries
HIST/LAMS/PRLS	3660W	History of Migration in Las Americas
HIST	3674/PRLS 3220	History of Latino/as in the United States
HIST	3705	The Modern Middle East from 1700 to the Present
HRTS/PHIL	2170W	Bioethics and Human Rights in Cross-Cultural Perspective
INTD	1700	Honors Core: Walden, A History
INTD	3260	The Bible
ILCS	1101	The Italian Renaissance
ILCS	1149	Cinema and Society in Contemporary Italy
ILCS	1158	Italian American Experience in Literature and Film
ILCS	1160	Culture of Fascist Italy
ILCS	1170	Introducing Italy through Its Regions
ILCS	3255W	Dante's Divine Comedy In English Translation
ILCS	3258/W	Cinematic Representations of Italian Americans
ILCS	3260W	Italian Cinema
LING	1010	Language and Mind
MUSI	1001	Music Appreciation
MUSI	1002	Sing and Shout! The History of America in Song
MUSI	1004	Non-Western Music
MUSI	1005	Honors Core: Music and Nature, Music and the Environment
MUSI	1021	Introduction to Music History I
MUSI	1022	Introduction to Music History II
MUSI	1112	University Symphony Orchestra
PHIL	1101	Problems of Philosophy

PHIL	1102	Philosophy and Logic
PHIL	1103	Philosophical Classics
PHIL	1104	Philosophy and Social Ethics
PHIL	1105/W	Philosophy and Religion
PHIL	1106	Non-Western and Comparative Philosophy
PHIL	1107	Philosophy and Gender
PHIL	1165W	Philosophy and Literature
PHIL	1175	Ethical Issues in Health Care
POLS	1002	Introduction to Political Theory
SPAN	1007	Major Works of Hispanic Literature in Translation
SPAN	1008	Christians, Muslims and Jews in Medieval Spain
SPAN	3250	Film in Spain and Latin America
SPAN	3232	Literature of Crisis in Modern Spain
WS	1104	Feminisms and the Arts

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.

AFAM/ANTH	3152	Race, Ethnicity, and Nationalism
ARE	1110	Population, Food and the Environment
ARE	1150	Principles of Agricultural and Resource Economics
ANTH	1000/W	Other People's Worlds
ANTH	1500	Great Discoveries in Archaeology
ANTH	1006	Introduction to Anthropology
ANTH	2000/W	Social Anthropology
COMM	1000	The Process of Communication
CDIS	1150	Introduction to Communication Disorders
ECON	1000	Essentials of Economics
ECON	1107	Honors Core: Economics, Nature, and the Environment
ECON	1108	Game Theory in the Natural and Social Sciences
ECON	1200	Principles of Economics
ECON	1201	Principles of Microeconomics
ECON	1202	Principles of Macroeconomics
GEOG	1000	Introduction to Geography
GEOG	1100	Globalization
GEOG	1700	World Regional Geography
GEOG	2100	Economic Geography
HDFS	1060	Close Relationships Across the Lifespan
HDFS	1070	Individual and Family Development
HRTS/POLS	1007	Introduction to Human Rights
INTD	1500	Alcohol and Drugs on Campus: Exploring the College Culture
LAMS	1190/W	Perspectives on Latin America
LING	1020	Language and Environment
LING	1030	The Diversity of Languages
LING	2850	Introduction to Sociolinguistics of the Deaf Community
LING	3610W	Language and Culture
POLS	1202/W	Introduction to Comparative Politics
POLS	1207	Introduction to Non-Western Politics
POLS	1402/W	Introduction to International Relations
POLS	1602/W	Introduction to American Politics
POLS	3237/W	Democratic Culture and Citizenship in Latin America
PSYC	1101	General Psychology II
PSYC	1103	General Psychology II (Enhanced)
PP	1001	Introduction to Public Policy
SOCI	1001/W	Introduction to Sociology
SOCI	1251/W	Social Problems
SOCI	1501/W	Race, Class and Gender
URBN	1300W	Exploring Your Community
WS	1105	Gender in Everyday Life
WS	1124	Gender in Global Perspective

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.

ANSC/NUSC 1645	The Science of Food
BME/CSE/MCB 1401	Honors Core: Computational Molecular Biology
CHEM 1101	Chemistry for an Informed Electorate
COGS 2201	Foundations of Cognitive Science
EEB 2202	Evolution and Human Diversity
ECE 1001	A Survey of Modern Electronic Technology
GEOG 2300	Introduction to Physical Geography
GEOL 1010	Age of the Dinosaurs
GEOL 1051	Earth and Life through Time*
LING 2010Q	The Science of Linguistics
MARN 1001	The Sea Around Us
MARN 1002	Introduction to Oceanography
MATH 1050Q	Mathematical Modeling in the Environment
NRME 1000	Environmental Science
NUSC 1165	Fundamentals of Nutrition
PHAR 1000	Drugs: Actions and Impact on Health and Society
PHAR 1001	Toxic Chemicals and Health
PHYS 1020Q	Introductory Astronomy
PHYS 1030Q	Physics of the Environment
PLSC 1150	Agricultural Technology and Society
PSYC 1100	General Psychology I
SCI 1051	Geoscience through American Studies

Content Area 3 - Laboratory Courses

BIOL 1102	Foundations of Biology
BIOL 1103	The Biology of Human Health and Disease
BIOL 1107	Principles of Biology
BIOL 1108	Principles of Biology
BIOL 1110	Introduction to Botany
CHEM 1122	Chemical Principles and Applications
CHEM 1124Q	Fundamentals of General Chemistry I
CHEM 1127Q	General Chemistry
CHEM 1128Q	General Chemistry
CHEM 1137Q	Enhanced General Chemistry
CHEM 1138Q	Enhanced General Chemistry
CHEM 1147Q	Honors General Chemistry
CHEM 1148Q	Honors General Chemistry
GEOG 1302	GIS Modeling of Environmental Change
GEOL 1050	Earth and Life through Time with Laboratory
MARN 1003	Introduction to Oceanography with Laboratory
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
PHYS 1202Q	General Physics
PHYS 1401Q	General Physics with Calculus
PHYS 1402Q	General Physics with Calculus
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.

*Students who complete both GEOL 1051 and 1052 may request GEOL 1051 be converted from a CA 3 Non-laboratory to a CA 3 Laboratory course.

AFAM/FINA 1100	Afrocentric Perspectives in the Arts
AFAM/PSYC 3106/W	Black Psychology
AFAM/ENGL 3214W	Black American Writers I
AFAM/DRAM 3131/W	African-American Theatre
AFAM/ANTH 3152	Race, Ethnicity, Nationalism
AFAM/HRTS/SOCI 3505	White Racism
AFAM/POLS 3642	African-American Politics
AMST 1201/ENGL 1201/HIST 1503	Introduction to American Studies
ANTH 2000/W	Social Anthropology
ANTH 3150	Migration
ANTH 3202W	Illness and Curing
ANTH 3902	North American Prehistory
ANTH 3904/W	Ethnohistory of Native New England
AASI 3201	Introduction to Asian American Studies
AASI/ENGL 3212	Asian American Literature
AASI 3215	Critical Health Issues of Asian Americans
AASI 3221/HRTS 3571/SOCI 3221	Sociological Perspectives on Asian American Women
AASI/HIST 3531	Japanese Americans and World War II
COMM 3321/PRLS 3264/WS 3260	Latinas and Media
CDIS 1150	Introduction to Communication Disorders
DRAM 3130	Women in Theatre
ENGL 1601W	Race, Gender, and the Culture Industry
ENGL 2274W	Disability in American Literature and Culture
ENGL 3210	Native American Literature
ENGL 3214/W	Black American Writers I
ENGL 3218/W	Ethnic Literatures of the United States
ENGL 3605/PRLS 3232	Latina/o Literature
ENGL 3609	Women in Literature
ENGL 3613	Introduction to LGBT Literature
HEB/JUDS 1103	Literature and Civilization of the Jewish People
HIST 1203/WS 1121	Women in History
HIST 3204/W	Science and Social Issues In the Modern World
HIST 3570	American Indian History
HIST/LAMS/PRLS 3660W	History of Migration in <i>Las Américas</i>
HIST 3674/PRLS 3220	History of Latinos/as in the United States
HDFS 2001	Diversity Issues in Human Development and Family Studies
HDFS 3261	Men and Masculinity: A Social Psychological Perspective
INTD 2245	Introduction to Diversity Studies in American Culture
INTD 3584	Seminar in Urban Problems
ILCS 1158	Italian American Experience in Literature and Film
ILCS 3258/W	Cinematic Representations of Italian Americans
LING 1030	The Diversity of Languages
LING 2850	Introduction to Sociolinguistics of the Deaf Community
MUSI 1002	Sing and Shout! The History of America in Song
NURS 1175W	End of Life: A Multicultural Experience
PHIL 1107	Philosophy and Gender
POLS 3662/PRLS 3270	Latino Political Behavior
PSYC 2101	Introduction to Multicultural Psychology
PSYC 2701	Social Psychology of Multiculturalism
PSYC/WS 3102/W	Psychology of Women
PRLS 3210	Contemporary Issues in Latino Studies
SOCI 1501/W	Race, Class and Gender
SOCI/WS 3621/W	Sociology of Sexualities
URBN 1300W	Exploring Your Community
WS 1104	Feminisms and the Arts
WS 1105	Gender in Everyday Life

Content Area 4 - International

ANTH 1000/W	Other People's Worlds
ANTH 1001W	Anthropology through Film
ANTH 1006	Introduction to Anthropology
ANTH 1500	Great Discoveries in Archaeology
ANTH/HRTS 3028	Indigenous Rights and Aboriginal Australia
ANTH 3030	Peoples of the Pacific Islands
ANTH/HRTS 3153W	Human Rights in Democratizing Countries
ANTH 3401	World Religions
ANTH 3504	New World Prehistory
ARAB 1121	Traditional Arab Literatures, Cultures, and Civilizations
ARAB 1122	Modern Arabic Culture

ARTH	1128	Introduction to Western Art II: The Renaissance to the Present, a World Perspective
ARTH	1141	Introduction to Latin American Art
AASI	3216	Asian Medical Systems
CHIN	1121	Traditional Chinese Culture
CHIN	1122	Modern Chinese Culture
CLCS	1101	Classics of World Literature I
CLCS	1102	Classics of World Literature II
CLCS	1103W	Languages and Cultures
EEB	2202	Evolution and Human Diversity
EEB 3307/NRME 3305		African Field Ecology and Renewable Resources Management
ECON	2104/W	Economic History of the Middle East
ENGL	1301	Major Works of Eastern Literature
ENGL	2301/W	World Literature in English
ENGL	3120	Early and Modern Irish Literature
ENGL	3122	Contemporary Irish Literature
ENGL	3318	Literature and Culture of the Third World
FREN	1169	Studies in the French-Speaking World
FREN	1171	French Cinema
FREN	1176	Literatures and Cultures of the Postcolonial Francophone World
FREN	1177	Magicians, Witches, Wizards: Parallel Beliefs and Popular Culture in France
FREN	3211	Contemporary France
FREN	3218	Francophone Studies
FREN	3224	Issues in Cultural Studies, the Media, and the Social Sciences
GEOG	1100	Globalization
GEOG	1700	World Regional Geography
GERM	1169	Contemporary Germany in Europe
GERM	1171	The German Film
GERM	1175	Human Rights and German Culture
GERM	3251	German Culture and Civilization
GERM	3258	Germans in Africa, Blacks in German-Speaking Countries. Colonial and Postcolonial Perspective
GERM	3261W	German Film and Culture
HIST	1206	Living through War in History since 1500
HIST	1800	The Roots of Traditional Asia
HIST	1805	East Asian History Through Hanzi Characters
HIST/LAMS 3609		Latin America in the National Period
HIST/LAMS 3635		Mexico in the Nineteenth and Twentieth Centuries
HIST	3705	The Modern Middle East from 1700 to the Present
HRTS/POLS 1007		Introduction to Human Rights
INTD	1660W	Ports of Passage
ILCS	1149	Cinema and Society in Contemporary Italy
ILCS	1160	Culture of Fascist Italy
ILCS	3260W	Italian Cinema
LAMS	1190/W	Perspectives on Latin America
LING	1020	Language and Environment
LING	3610W	Language and Culture
MUSI	1004	Non- Western Music
MUSI	3421W	Music in World Cultures
NUSC	1167	Food, Culture and Society
PHIL	1106	Non-Western and Comparative Philosophy
PLSC	1125	Insects, Food and Culture
POLS	1202/W	Introduction to Comparative Politics
POLS	1207	Introduction to Non-Western Politics
POLS	1402/W	Introduction to International Relations
SPAN	1007	Major Works of Hispanic Literature in Translation
SPAN	1008	Christians, Muslims and Jews in Medieval Spain
SPAN	3250	Film in Spain and Latin America
WS	1124	Gender in Global Perspective
WS	3255W	Sexual Citizenship

Competencies

University of Connecticut undergraduates need to demonstrate competency in five fundamental areas – computer technology, information literacy, quantitative skills, second language proficiency and writing. The development of these competencies involves two parts: one establishing entry-level expectations and the second establishing graduation expectations. The entry-level expectations apply to all incoming students. The exit expectations may vary for different major fields of study.

Computer Technology Competency

Entering students are expected to have the basic computer technology skills required to begin university study. Students should take online assessments of knowledge and competency and utilize available workshops/online tutorials to make up any gaps. Each major has established expectations for the computer technology competencies of its graduates and built the development of these into the major curriculum. Further details are given under the description of each major elsewhere in this catalog.

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 freshmen as an integral part of ENGL 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. Alternatively, students may take MATH 1010: *Basic Algebra with Applications* (a course that does not carry credit toward graduation.) 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

A student meets the minimum requirement if admitted to the University with three years of a single foreign language in high school, or the equivalent. 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 1010 or 1011. Students passing ENGL 3800 are considered to have met the ENGL 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: English 1011 or 1011 is a prerequisite to all writing-intensive courses.)

Additional Requirements

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 Undergraduate Education must approve it. Transfer students wanting exemptions or substitutions should request them of their academic dean as they enroll.

Graduation

Tentative and Final Plans of Study

Except for students in the Schools of Nursing and Pharmacy and for students in the College of Agriculture and Natural Resources' Department of Allied Health Sciences, 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 should file the tentative Plan of Study as soon as possible.

Students must submit a *final* Plan of Study form during the first four weeks of the semester in which the student expects to graduate. The major advisor and the department head must sign the form before the Registrar receives it. The signatures indicate that the advisor and department head believe that the program meets degree requirements. The student's program is still subject to audit by the degree auditor to insure the student has met all requirements. The degree auditor will notify the student if a problem is discovered with the final Plan of Study.

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. Additional information pertinent to graduation is available through the Steps to a Successful Graduation website: <http://web.uconn.edu/registraroffice/graduati.html>. 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, (4) receive information about and tickets for the Commencement ceremony.

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 and December, and August 24. Candidates meeting the requirements before the conferral date and needing verification may ask for a "Completion Letter" from the Office of the Registrar.

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.

Commencement. The University has two Commencement Days each year, in May, following the Spring Semester, and in December, following the Fall Semester. Students who are candidates for May or the following August may participate in the May Commencement. Students who are candidates for December and those who will complete their requirements in the following January may participate in the December Commencement.

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.

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. 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 specifically stated otherwise

in a major or minor. Substitutions are not possible for required courses in a minor. 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*.

Additional Degree. Students may pursue an additional baccalaureate, either wholly or partly, concurrently or after receiving another degree. The student must complete an Additional Degree Petition, which requires the consent signature of the dean of each school or college in which the student will be enrolled. Students may get Additional Degree Petitions from the offices of deans or from the Registrar.

The student must meet all requirements for each degree. The two degrees require at least 30 degree credits more than the degree with the higher minimum-credit requirement. For example, Engineering degrees require at least 126 credits while Arts and Sciences degrees require at least 120 credits. The Engineering degree has the higher minimum-credit requirement, so the total is 126 + 30, or 156. (If the student pursues a third degree, the two additional degrees require at least 60 degree credits more than the degree with the highest minimum-credit requirement.) At least 30 of the additional credits must be 2000-level courses, or above, in the additional degree major or closely related fields and must be completed with a grade point average of at least 2.0. The requirement of 30 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.

Some schools and colleges offer double majors. The Additional Degree should not be confused with a double major.

Course Information

Course Numbers. Course numbers show the level of the material presented. The University's course numbering system changed with the 2008-2009 Catalog. 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. (Formerly numbered 0-99.)
- 1000-1999 introductory courses, usually with no prerequisites, primarily intended for Freshmen and Sophomores. (Formerly numbered 100-199.)
- 2000-2999 courses, usually with no more than one prerequisite, primarily intended for Sophomores. (Formerly numbered 100-199 and 200-299 "open to Sophomores".)
- 3000-3999 advanced undergraduate courses primarily intended for Juniors and Seniors. (Formerly numbered 200-299.)
- 4000-4999 advanced undergraduate courses primarily intended for Seniors. (Formerly numbered 200-299.)
- 5000-5999 entry-level and intermediate Graduate courses. (Formerly numbered 300-399.)
- 6000-6999 advanced Graduate courses. (Formerly numbered 400-499.)
- 7000-7999 Law School courses. (Formerly numbered 500-999.)

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.

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

Course Renumbering

Lists of all undergraduate courses by old to new and new to old:

<http://web.uconn.edu/courserenumbering/>

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.

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.

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

- MATH 1010
- Only 6 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 Modern and Classical 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.

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.

Earning Course Credits by Examination. The student should obtain a *Petition for Course Credit by Examination* from the Office of the Registrar, 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.

Students may not earn credits by examination for any course they have failed, by examination or otherwise.

Students may not 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.

Students may not earn by examination more than one-fourth of the credits required for the degree.

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, Greater Hartford, Stamford, Storrs, Torrington and Waterbury. However, students must be registered for the majority of their credits at their home campus. The home campus is the

College Board AP Examination Transfer Guidelines

AP Exam	Score	UConn Course Equivalent Granted	Credits Granted
Art			
Drawing	4, 5	ART/Studio 1000-level	3
2-D Design	4, 5	ART/Studio 1000-level	3
3-D Design	4, 5	ART/Studio 1000-level	3
Art History	4, 5	ARTH 1137 and 1138	6
Biology	4, 5	BIOL 1107 and 1108	8
Chemistry	4, 5	CHEM 1127Q and 1128Q	8
Computer Science	4, 5	CSE 1000 level	3
Economics			
Macroeconomics	4, 5	ECON 1202	3
Microeconomics	4, 5	ECON 1201	3
English Language* or English Literature*	4, 5	ENGL 1004	4
Environmental Science	4, 5	NRME 1000	3
French Language	4, 5	FREN 3267	3
French Literature	4, 5	French Literature 2000-level	3
Human Geography	4, 5	GEOG 1000	3
German Language	3	Placement into 2000-level courses	No credit
	4, 5	GERM 3233 and 3234	6
Comparative Government & Politics	4, 5	POLS 1202	3
U.S. Government & Politics	4, 5	POLS 1602	3
American History	4, 5	HIST 1502	3
European History	4, 5	HIST 1400	3
World History	4, 5	HIST 1201	3
Latin Literature	4, 5	CAMS 2000-level	3
Latin - Vergil	4, 5	CAMS 2000-level	3
Math AB	4, 5	MATH 1131Q	4
Math BC	3	MATH 1131Q	4
Math BC	4, 5	MATH 1131Q and 1132Q	8
Music	3	Music Theory 1000-level	3
Music	4, 5	Music Theory 1000-level	6
Physics B**	4, 5	PHYS 1201Q and 1202Q	8
Physics C Elec&Magnet**	4, 5	PHYS 1502Q	4
Physics C Mechanics* **	4, 5	PHYS 1501Q	4
Psychology	4, 5	PSYC 1100 and 1101	6
Spanish Language	4, 5	SPAN 3178	3
Spanish Literature	4, 5	Spanish Literature 2000-level	3
Statistics	4, 5	Statistics Q 1000-level	3

* The AP Examination in English Language or English Literature does not fulfill the University of Connecticut Writing Competency requirement.

** Students earning a score of 4 in Physics B or Physics C must consult with a designated department member to determine if credit will be allowed.

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 College Board AP Examination Transfer Guidelines above.

campus to which the student was admitted unless an authorized campus change has taken place.

Immunization Requirement. The University Division of Health Services sends health report forms to entering students. Their physicians must sign these forms signifying that the student is free from active tuberculosis and immunized against rubella and measles. Students must complete the forms and return them directly to the University Health Services before registering.

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 have the permission of the Dean of Students 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.

Adding or Dropping Courses. Registration information can be found on the website of the Office of the Registrar at <http://www.registrar.uconn.edu>. Students must consult with their academic advisor prior to adding or dropping courses.

A student may add and drop courses from the time that registration opens through the second week of the semester without special permission. Courses dropped during this period are not recorded on the student's record.

During the third and fourth weeks of the semester, a student may add courses through the Office of the Registrar with consent of the student's course instructor, advisor, and the head of the department offering the course. After the fourth week of the semester, the permission of the student's dean is also required.

If a student drops a course after the second week of the semester, a "W" for withdrawal is recorded on the transcript. From the third through the ninth week of the semester, a student must obtain the advisor's signature to drop one course. To drop more than one course during that period, a student must obtain both the advisor's and the dean's signature.

To drop a course after the ninth week, the student needs the advisor's recommendation and the permission of the dean of his or her school or college. The dean only grants permission to drop a course after the ninth week for extenuating circumstances beyond the student's control. Exceptions are not made for the student's poor academic performance.

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

Consent courses. For consent courses, students must get the required consent(s) before adding the course. (See course descriptions)

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, then notify the Registrar. 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.

Undergraduate Schedule Revision Regulations - Adding Classes

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

Undergraduate Schedule Revision Regulations - Dropping Classes

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 ninth weeks of classes	Advisor with "W" grade	Advisor and Dean with "W" grade
After the ninth week	DEAN Exceptions made only for extenuating circumstances	

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

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. 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). After the second week of classes, adjustments to a student's schedule must be filed with the Registrar. To drop more than one course during the third through the ninth week, simultaneously or cumulatively, requires the dean's signature as well as the advisor's. No student is permitted to drop a course after the ninth week of classes unless the dean makes an exception. Exceptions are made only for extenuating circumstances beyond the student's control.

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 5th 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

In all schools and colleges, except Engineering, Fine Arts, and Pharmacy, a freshman 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.

For five or six-week Summer Session, the maximum is 8 credits.
For three-week terms, the maximum is 4 credits.

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 AUD.

All students planning to audit a course must get an Audit Card from the Registrar, 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 AUD marks on their academic records. 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.

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 so 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 class 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.

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. The student must complete an Independent Study Authorization Form, have it signed and deliver it to the Registrar. 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.

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 memo, class list or grade sheet.

Denial of Space for Non-Attendance. Instructors may deny an enrolled student a place in a classroom when the student attends no class nor laboratory during the first two weeks of the semester. When the instructor denies a student a place in the classroom, the student is still enrolled in the course. Students who continue to absent themselves from class without dropping or withdrawing from the course risk failing the course.

Grading

Grades, Grade Points, Credits, and Skills

Explanation	Final Grades	Grade Points	Course Credit	Skill
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@	na	yes	no
Pass/Fail Failure	F@	na	no	no
Satisfactory	S	na	yes	no
Unsatisfactory	U	na	no	no
Audit	Aud	na	no	no
Withdrawal	W	na	no	no
Continuing Registration	na	na	na	na
Undergraduate Marks: Relation of marks, points, course credits, and fulfillment of skill requirement.				

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, that 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.

Temporary Marks of I and X. An I or X means the student has not earned course credit at the end of the semester and may be subject to scholastic probation or dismissal.

I (incomplete): The instructor reports an I if the completed work is passing and the instructor decides that, due to unusual circumstances, the student cannot complete the course assignments. If the student completes the work by the end of the third week of the next semester, the instructor will send the Registrar a grade for the course. Otherwise, the Registrar will convert the I to I F. Effective with spring 2004 classes, upon successful completion of a course, the I on the academic record is replaced by the permanent letter grade. If the instructor does not submit a grade the Registrar will change the grade to I F or I U.

X (absent from the final examination): The instructor reports an X only when a student missed the final examination and when passing it with a high mark could have given the student a passing grade for the course. If the student would have failed the course regardless of the grade on the final examination, the student will receive an F. If the instructor reports an X and the Dean of Students Office excuses the absence, the instructor will give the student another opportunity to take the examination. The absence must be due to sickness or other unavoidable causes. The instructor must give the examination before the end of the third week of the next, registered semester. If by the end of the third week of the next semester the instructor does not send a grade to the Registrar, the Registrar will change the X to X F or X U.

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

Other Temporary Marks. The letters N, and Y are temporary marks posted on a student's academic record when the instructor has not reported a final grade.

- N: recorded when no grade is reported for a student who has been registered in a course section; usually indicates a registration problem.
- Y: recorded when course does not end at conclusion of semester or summer session. This mark may be assigned only to courses the Senate Curricula and Courses Committee specifically approves. It is not intended as an alternative to the I or X.

N, X, and Y temporary marks are replaced on the academic record by the actual grade when submitted by the instructor. An N mark which remains unresolved will become NF and be computed as an F at the end of the third week of the next semester. If no grade is submitted for a mark of X, the mark will automatically revert to a grade of F or U and will be shown as X F or X U.

Temporary marks I, X, N, Y do not prevent the calculation of either the semester or the cumulative grade point average.

Temporary marks 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. See section on Scholastic Standards.

S and U. In a few courses, with the permission of the Senate Committee, Scholastic Standards, the instructor grades everyone in the course either S (satisfactory) or U (unsatisfactory). As these grades have no grade points they do not affect grade-point averages. Courses graded S/U may not be used to satisfy the General Education Requirements.

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.

Students who have earned at least 24 credits and are not on scholastic probation may place three courses, for no more than 12 credits, on Pass/Fail. Students may not place more than one course each semester on Pass/Fail, nor more than one during the summer, regardless of the number of summer sessions attended.

Students place courses on Pass/Fail, or remove them from Pass/Fail, at the Office of the Registrar. The examining, grading and reporting do not differ from that of other students. The Registrar enters P@ if the instructor submits a passing grade and F@ if the student fails. Students must place courses on Pass/Fail during the first two weeks of the semester or the first week of the summer session. If a student, having placed a course on Pass/Fail, decides to remove it from Pass/Fail, the student must do so by the ninth week of the semester or the fourth week of summer session.

Restrictions on Pass/Fail Courses. Courses placed on Pass/Fail do not 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.

Non-degree students must have the approval of the Director of the Center for Continuing Studies to place a course on Pass/Fail. The Director grants permission only in extenuating circumstances.

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.
4. In the School of Engineering, no course taken on Pass/Fail may be counted for credit toward graduation.
5. 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.
6. In the Ratcliffe Hicks School of Agriculture students may only place one course on the Pass/Fail option.

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. Without special permission from the dean, the instructors of Undergraduate courses must give a written examination at the end of the semester. Independent study courses, seminars, practicums, laboratory and similar courses do not require final examinations if the instructor had approval from the dean before the semester began. Instructors may give seniors oral final examinations. Instructors of courses numbered 5000 and above give written final examinations at their discretion.

Instructors determine the weight assigned to the final examination in computing the final grade.

Final Examinations for Courses Given at Non-standard Times. In undergraduate courses scheduled by arrangement or at non-standard times, final examinations must be given during the same scheduled week as courses scheduled at standard times. Instructors of graduate courses scheduled by arrangement may schedule the final examination during the final examination period, provided (1) space is available, (2) no student will have a conflict and (3) no student has more than two examinations in one day.

Absences from Final Examinations. If, due to extenuating circumstances, a student cannot take a final examination as announced in the Final Examination Schedule, the student must ask permission from the Dean of Students Office to reschedule the examination. When the student has permission to reschedule, the instructor will schedule it at a time agreeable to both. A student whose absence from a final examination is not excused in this way shall receive no credit for this examination. A student whose absence is excused by the Dean of Students shall have an opportunity to take an examination without penalty. (See X under Grading System.)

Rescheduling Final Examinations. Students should check their final examination schedule to see if they have either: a) four examinations in two consecutive calendar days, b) three examinations in one calendar day, or c) three examinations in consecutive time-blocks spanning parts of two consecutive days. If any of the above apply, they may request the Dean of Students Office to rearrange their schedule. The Dean of Students Office will select one of the examinations for rescheduling and notify the instructor, usually with a letter given to the student.

Grade Reports. Instructors of 1000 and 2000-level courses notify the Registrar by the end of the sixth week of the semester of students who appear to be in danger of earning D, F, U or N grades. 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. These reports are not part of the permanent record. 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.

At the end of each semester, students may view their grades on the Student Administration System at <https://student.studentadmin.uconn.edu>.

Changes of Course Grades. Grades are part of the student's permanent record. Therefore they are not changed for reasons unrelated to course requirements or quality of work. An instructor may neither accept additional work nor give additional examinations once the grade in the course has been submitted. Nevertheless, there can be situations in which course grades may and ought to be changed. These comprise computational errors, clerical errors, and the discovery of overlooked components in a student's body of work. In cases when the instructor of record concludes that a course grade ought to be changed, he or she determines a corrected grade and initiates the grade change process. The grade change must be approved by the head of the department offering the course (in departmentalized schools or colleges) and the dean of the school or college in which the course is taught in order to monitor grade changes and ensure that they are based only on the considerations mentioned above. If a grade change is approved, the dean will notify the instructor, student, and registrar in writing.

Appeals of Assigned Course Grades. A student who believes that an error in grading has occurred and wishes to request a review by the instructor of record must do so within six months of the course grade having been posted. If the instructor of record cannot be contacted, the student should contact the Department Head. If the instructor agrees that a change is justified, the instructor will initiate the grade change according to the procedure described above. Individual schools and colleges may have more stringent requirements.

If a student requests a review of a course grade and the instructor believes that the original grade is correct, the student may appeal the decision to the head of the department in which the course is taught within 30 days. The department head will seek input from the instructor and the student. If this process results in agreement by the instructor that a grade change is justified, the instructor will initiate the grade change. If the instructor and the department head 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 may request, within 10 days, through the dean of the school or college in which the course is taught, a review by the Faculty Grade Change Review Panel. If the department head thinks that a grade change is justified but the instructor does not agree, the department head shall request, through the dean of the school or college in which the course is taught, a review by a Faculty Grade Change Review Panel.

The Faculty Grade Change Review Panel is composed of three full-time faculty members appointed by the dean of the school or college in which the course is taught. The panel convenes a hearing within 10 working days of notification of a case. Both the appealing student and the course instructor should be present at the hearing. The student is afforded an opportunity to state the grounds on which he or she is appealing the grade. The instructor is afforded the opportunity to document the basis on which the grade was awarded. Both parties may present supporting evidence and/or request testimony of others. The panel may also request input from the department head. The Review panel 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. If the panel recommends a grade change, it sends the Registrar a change of grade request signed by all the members of the Review Panel. The decision of the Faculty Review Panel shall be considered final.

Scholastic Standards

Traditional	Semester Standing	Earned Credits
Freshman	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)

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 freshman, sophomore, junior, senior. However, semester standing may be related to these traditional terms as indicated below.

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 below have been earned.

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 fewer than a full-time course load per semester can be determined eligible for Dean's List status. The Office for Students with Disabilities will notify the Registrar each semester regarding students who are eligible.

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.

Dismissal. A student who fails to meet these minimum scholastic standards for two consecutively registered semesters 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 Office for Undergraduate Education 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 the Director of Continuing Studies, who will inform the dean of the student's previous school or college about the decision made.

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.

Supplementary Scholastic Standards. In addition to the minimum scholastic standards described above and applicable to all University students several of the schools have supplementary requirements as follows:

1. The College of Agriculture and Natural Resources, 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. Students must maintain a minimum semester grade point average of a 2.2. Students must maintain a minimum cumulative grade point average of a 2.2. Students must maintain a minimum *major* grade point average of a 2.2.

The *Cytotechnology Major GPA* includes all courses offered with the following departmental designations: Allied Health; Cytotechnology; Diagnostic Genetic Sciences; Medical Laboratory Sciences; and Medical Technology.

The *Diagnostic Genetic Sciences Major GPA* includes all courses offered with the following departmental designations: Allied Health; Diagnostic Genetic Sciences; Medical Laboratory Sciences; and the following Molecular and Cell Biology courses MCB 2410, 2210 and 2610.

The *Dietetics Major GPA* includes all courses offered with the following departmental designations: Allied Health; Dietetics; and the following Nutritional Sciences courses: NUSC 2200, 3233, 3234 and 3235.

The *Medical Technology Major GPA* includes all courses offered with the following departmental designations: Allied Health; Medical Technology; and Medical Laboratory Sciences.

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. 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).

2. Students admitted to the School of Business must earn a 2.7 cumulative grade point average by the end of the term in which they earn a minimum of 24 calculable credits of graded coursework at the University of Connecticut and a 2.82 cumulative grade point average

by the end of the following fulltime equivalent term to be guaranteed continuation in the School. Students must also earn a minimum of a 2.9 cumulative grade point average in all freshman through sophomore year courses in order to be guaranteed continuation to the junior year in the School of Business. Normally the 2.9 cumulative grade point average review will take place at the end of a student's fourth term/when a student has completed 60 credits. Students who have not maintained an average of 15 credits per term may be reviewed after earning 54 credits, just prior to when they are eligible to take 3000-4000 level courses. Additionally, students must show substantial progress toward meeting the freshman-sophomore course requirements, especially those courses that are prerequisites for the 3000/4000 level business courses (ENGL 1010 or 1011, ACCT 2001, MATH 1070Q and 1071Q, ECON 1201 and 1202, or 1200, STAT 1000 or 1100 and must successfully complete these courses by the end of their 4th term (60 credits). Transfer students are reviewed under the above standards based on total credit standing, including transfer credits. However non University of Connecticut grades are not considered when computing the GPA so transfer students may be reviewed with fewer than 24 credits taken at the University of Connecticut. All course grades, including those of repeated courses, are considered in the above grade point average calculations.

Students accepted to the School of Business must maintain a minimum at least a 2.0 in their term grade point average, their cumulative grade point average and all School of Business courses. The GPA calculation will include all courses for which the students have been registered including repeat forgiveness courses and Business courses taken on pass/fail. Students who fail to maintain the minimum grade point average in any of these areas or fail to complete specified courses as noted above are subject to dismissal from the School of Business. Students conditionally admitted to the School on the basis of successful completion of courses for which they have indicated they were registered must pass all those courses by the end of that term and meet the 2.0 grade point average for the semester, cumulative, and business courses or be subject to having their acceptance rescinded.

3. The School of Engineering requires a cumulative grade point average of at least 2.0 in all courses in Mathematics, Physics, Chemistry and Engineering applicable toward the degree in order for a student to be admitted to the junior year in his/her selected major.
4. Fine Arts students (with the exception of Art History and Theatre Studies majors) must enroll in a minimum of six credits in major department courses (Art and Art History, Dramatic Arts, or Music) each semester of full-time study unless an exception is granted by the Director of Advising of the school. Students who fail to comply with the minimum credit requirement are subject to dismissal from the school.
5. A student in the School of Nursing must have a grade of C or better in the following courses: BIOL 1107; CHEM 1122; MCB 2400 or 2410; PNB 2264, 2265; MATH 1020Q, 1030Q, or 1040Q; STAT 1000Q or 1100Q; PSYC 1100; SOCI 1001; HDFS 1070; PHIL 1101-1106; NURS 1110, 1130, 3100, 3110, 3120, 3130. 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, 3230, or 3292. 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.

6. Admission to the School of Pharmacy professional program is competitive, with strong emphasis on the cumulative grade point average in BIOL 1107, MCB 2000 and 2610; CHEM 1127Q, 1128Q, 2443 and 2444; MATH 1131, and PHYS 1300, or their equivalent, with no grade less than C. Thereafter, students are subject to dismissal if there is more than one semester in which they earn a semester grade point average (GPA), a cumulative GPA or a Pharmacy GPA below 2.0. A cumulative grade point average of 2.0 or above in all required Pharmacy courses is required to enroll in clinical clerkships/rotations; a cumulative grade point average of 2.0 or above in all Pharmacy/University courses is required for graduation.
7. Students in the Ratcliffe Hicks School of Agriculture are eligible for dismissal if their first semester grade point average is less than 1.2.

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 an Assistant to the Dean of Students, 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 final examinations officially begin. (See the University Calendar for dates.) Students who officially withdraw will not receive credits, or "F's" 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. It is understood that when such permission is sought the Dean 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.

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. 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.

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

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 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 and frequently a representative of the student's school or college. Leaves are granted only to students in good academic standing, 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.

Readmission. A student seeking readmission to the University must apply to the Dean of Students Office. Applications for readmission are accepted beginning February 15th and ending on July 1st for the fall semester, and beginning September 15th and ending on December 1st for the spring semester. 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.

Disciplinary Suspension or Expulsion

Disciplinary 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 return. Conditions for readmission may be specified. A student who is on suspension is prohibited from participating in any University activity or program. The student may not enter University premises or University-related premises without securing prior approval from the Dean of Students. A notation of "Suspension" shall be placed on the student's official transcript until graduation. However, the student may petition the Dean of Students for earlier removal of the notation. 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 or from entering University premises or University-related premises. 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*.

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. 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. All students wanting to change majors should consult their academic dean, or for, College of Liberal Arts and Sciences students, the CLAS Academic Services Center.

Change of Campus. Most University programs require completion of 54 earned credits in order to change from a regional campus to the Storrs campus. A complete listing of campus change requirements can be found on the Office of the Registrar web site at <http://www.registrar.uconn.edu/campuschange.htm>. Rare exceptions to the campus change requirements are made for extenuating circumstances only and require approval from the Student Affairs Office at the student's regional campus. Storrs students who wish to change to a regional campus should contact the Office of the Registrar.

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 obtain a Transfer Course Approval form from the Transfer Admissions Office and submit an official transcript of the work as soon as it is completed. Ordinarily, the student must complete the last two semesters at the University of Connecticut. (See Residence Requirement)

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.

Honors Scholar Program

The Honors Scholar Program provides a nationally-competitive program for academically-superior and highly-motivated students. It enriches the academic experience of undergraduates in all majors by offering the challenges of more in-depth study and considerable opportunity for independent projects or research. Participation in the Honors Program further influences the quality and character of a student's education by offering opportunities for involvement in a community designed for individual, social, and cultural development.

During their first two years, Honors Scholars 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. Students also enroll in specially-designed Honors First-year Seminars and interdisciplinary Honors Core Curriculum courses. The *Sophomore Honors Certificate* is awarded after the second year and upon the fulfillment of Honors credit, activity, and grade point average requirements. During the junior and senior years, students emphasize work in the major, with Honors credit for course work generally attained by independent Honors projects associated with 3000 or 4000-level courses, Honors seminars in the major, graduate-level course work, and/or independent research.

An active living-learning environment is fostered through the First-year Honors Residential Community, Honors residence options for upper-class students, and the student-run Honors Council. Honors Scholars 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 Undergraduate Enrichment programs; the Individualized and Interdisciplinary Studies Program, the Office of National Scholarships, the Office of Study Abroad, the Office of Undergraduate Research. The Honors Program sponsors several study abroad experiences, including programs in Washington, DC and Cape Town, South Africa.

All students enrolled in the Honors Program are assigned specially-trained honors advisors who assist students with course selection. Once students have selected a major, they are assigned a faculty Honors advisor who provides support with long-range academic planning. Students enrolled in the Honors Program receive priority registration, special library privileges, and relief from maximum credit restrictions. Participation in the Honors Program is recorded on the student's transcript each semester. Students who graduate as Honors Scholars receive an Honors notation on the diploma and transcript. They are recognized in the commencement program and at the Honors Medals Ceremony, where they receive an Honors medal to wear during commencement.

Qualified entering first-year students at the Storrs campus are admitted to the Honors Scholar Program by invitation only. Candidates are expected to have superior academic ability as demonstrated by a rigorous high school curriculum and excellent scores on the College Board Scholastic Aptitude Test and evidence of leadership and engagement beyond the classroom. First-year students are notified of their admission to the Honors Program in their letter of admission to the University. Students admitted to the Honors Program as incoming first-year students are often awarded merit-based University scholarships.

Current first and second-year students with excellent academic records may apply for the Honors Scholar Program and are admitted based on their credentials and the availability of space in the Program. Rising juniors (fifth year for Pharm.D. students) who have excellent academic records along with the nomination of their major programs are also invited to join. Entering sophomore transfer students with excellent academic records may apply for admission. Entering junior transfer students with excellent academic records and the nomination of their major programs may also apply.

Honors Scholars are expected to participate fully in Honors Program courses and activities. Academic and participation records are reviewed annually for compliance with Program policies. A student's continuation as an Honors Scholar for the junior and senior year is subject to the review and approval of the major department. To graduate as Honors Scholars, students must earn a cumulative GPA of at least 3.4, complete at least twelve approved Honors credits in their major or related areas at the 3000 or 4000-level or above, and submit a departmentally-approved Honors thesis to the Honors Program office.

Beyond the minimum University-wide requirements, departments may add further or specific 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 of the department or program in which they seek Honors about its particular requirements.

Honors at the Regional Campuses

Opportunities for participation in the Honors Program vary across the regional campuses.

- At the Stamford Campus, the Sophomore Honors Certificate program is available to eligible first and second-year students. Students may apply to this program for the second semester of their first year. A version of the junior-senior Honors Scholar Program emphasizing independent research in the student's major and interdisciplinary Honors seminars is also offered.
- Students at the Avery Point campus may apply for admission to the Honors Program as second semester sophomores and engage in junior-senior honors coursework and thesis research in the majors offered at that campus.
- Students at Greater Hartford, Waterbury and Torrington may apply for entry to the Honors Program as rising juniors, provided that they prepare an acceptable plan of study for earning the necessary honors credits, secure a faculty member in their major to serve as their thesis advisor, and obtain the endorsement of the department of their major.

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 prestigious program allows motivated students to pursue individualized and intellectually-challenging programs of study that include an intensive research or creative project, and a more robust program of coursework to complement the project. Students are usually members of the Program for the last three semesters of undergraduate study. Graduation as a University Scholar is the highest academic honor bestowed on 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 submit a "letter of intent," an application form, and appropriate documentation by the published deadlines. Applicants must completely and clearly describe the subject matter, topic, or issue of interest; the proposed University Scholar project, including the methods and resources to be used to complete the project; and the set of courses that would enable them to explore their interests in depth. In late fall, an University Scholars Program committee selects recipients for this award according to the creativity, clarity, detail, and thoughtfulness of the applicants' proposed research projects and programs of study.

A committee composed of a major advisor and two additional advisors enlisted by the student guides the student through his or her study or project. The scholarly work culminates with a tangible product, such as a completed research paper or work of art. 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 the amount charged for the General University Fee every remaining semester the student enrolls in his or her undergraduate program. University Scholars are granted priority registration (graduate student status), 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 Honors Program, University of Connecticut, CUE Building, Room 419, Unit 2147, Storrs, CT 06269; 860-486-4223; or <http://www.honors.uconn.edu>.

College of Agriculture and Natural Resources

Kirklyn M. Kerr, B.S., D.V.M., M.S., Ph.D., *Dean, College of Agriculture and Natural Resources*

Cameron Faustman, Ph.D., *Associate Dean, College of Agriculture and Natural Resources*

Patricia Jepson, Ph.D., *Academic Advisory Center Director*

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 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 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 and Natural Resources maintains strong programs in fields such as agricultural biotechnology, allied health sciences, cloning, diagnostic and environmental sciences, health promotion, landscape architecture, medical technology, 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, Connecticut Institute of Water Resources, Connecticut State Climate Center, Food Marketing Policy Center, and the Northeastern Research Center for Wildlife Diseases are all integral components of the College of Agriculture and Natural Resources.

The following departments offer undergraduate instruction in the College: Agricultural and Resource Economics, Allied Health Sciences, Animal Science, Natural Resources Management and Engineering, Nutritional Sciences, Pathobiology and Veterinary Science, and Plant Science. 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.

Admission Requirements. Students may enter the College of Agriculture and Natural Resources directly upon admission to UConn as a freshman 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 Technology) are competitive junior/senior year programs with additional admission procedures and requirement as outlined below.

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

Scholarships. Over \$350,000 in scholarships and awards are available to students in the College of Agriculture and Natural Resources.

Advisors Assigned by Major: Departmental Advisors are assigned to students upon entry into the College of Agriculture 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 and Natural Resources also support students and advisors.

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 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 and Natural Resources, and their individual major as outlined below.

General Education Requirements

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

36 Credit Requirement for All Majors

Students in all majors of the College of Agriculture and Natural Resources must successfully complete at least 36 credits of courses numbered 2000 or above 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. be 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 and Natural Resources.
6. have a combined grade point average of at least 2.0
7. not include more than 6 credits (combined) of independent study, internship, or field studies
8. not be taken on Pass/Fail
9. not include more than 6 credits of S/U coursework

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 fourth week of classes of the semester in which a student expects to graduate. 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 Bachelor of Science degree.

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

Agricultural Education

Individuals preparing for a career in Agricultural Education obtain content area expertise by selecting a major and starting in the College of Agriculture and Natural Resources. Certification requirements and a Masters degree in Agriculture Education will be completed in the Neag School of Education.

Students interested in agricultural education should refer to the Neag School of Education section of this *Catalog*.

Agriculture and Natural Resources

This interdisciplinary major is designed for students who want broad training in agriculture and natural resources. Students work with their advisors to develop a personalized program of study.

To satisfy the general education requirement for the computer technology competency, Agriculture and Natural Resources majors must meet the University's entrance expectations. They will not have to meet any advanced requirement for computer technology.

To satisfy the general education requirement for information literacy, students must pass ENGL 1010 or 1011 and one course approved for information literacy in any department of the College of Agriculture and Natural Resources.

To satisfy the general education requirement for writing in the major, students must pass one approved 2000-level or above W course in any department of the College of Agriculture and Natural Resources.

Allied Health Sciences

Admission

Freshmen are admitted into the Department of Allied Health Sciences as Allied Health Sciences (AHS) majors. Students are advised in the Department of Allied Health Sciences. During the spring of their sophomore year, students may remain an Allied Health Sciences major, may further define their major by petition into a concentration within the Allied Health Sciences major, or apply to a Professional Program (admission to a professional program or to a concentration within the AHS major is not automatic; refer to program admission information).

The **Allied Health Sciences** major, taken with or without the concentrations in Diagnostic Sciences or Health Promotion Sciences, 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 admission to various graduate programs.

Diagnostic Sciences 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, Physician Assistant, Pathology Assistant, Medical or Dental School, Epidemiology, Physical Therapy, Occupational Therapy, and Advanced Nurse Practitioner or the Department of Allied Health Sciences' Post-Baccalaureate Certificate Programs.

The **Health Promotion Sciences** concentration in Allied Health Sciences prepares students interested in working in a setting such as health and social service agencies, worksite health promotion programs, government health agencies, hospital wellness programs, business, industry, and educational settings that emphasize health promotion. 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, Physician Assistant, and Advanced Nurse Practitioner.

Admission – Allied Health Sciences Concentrations

Admission to the Diagnostic Sciences or Health Promotion Sciences concentrations within the Allied Health Sciences major requires a minimum of 45 earned credits, a cumulative GPA of 2.2 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 mathematics.

To satisfy the general education requirements for computer technology and information literacy competencies, Allied Health Sciences majors must meet the University's entrance expectations. They will not have to meet any advanced requirements for computer technology and information literacy competency.

To satisfy the general education requirement for writing in the major, Allied Health Sciences students must pass AH 4241W.

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 in basic sciences:

Allied Health Sciences (no concentration) and Allied Health Sciences with Health Promotion Sciences concentration:

CHEM 1122 or 1124Q or 1127Q; PHYS 1010Q or CHEM 1125Q or CHEM 1128Q; BIOL 1107; NUSC 1165; PSYC 1100, 1101 or 1103, 2300, 2400; MATH 1040Q, 1060Q or higher; STAT 1000Q or 1100Q; and two (2) additional science courses approved by the Department of Allied Health Sciences

Allied Health Sciences with Diagnostic Sciences Concentration:

CHEM 1124Q or CHEM 1127Q; CHEM 1125Q or CHEM 1128Q; BIOL 1107; PHYS 1201Q and 1202Q; PSYC 1100; MATH 1060Q or higher; STAT 1000Q or 1100Q; and two (2) additional science courses approved by the Department of Allied Health Sciences.

Writing in the major - AH 4241W

All Allied Health Sciences majors must pass the following courses: Group A. AH 4241W, 4242, 4243, 4244

Allied Health Sciences Group B. Courses (12 credits from the following): (1) A minimum of 6 of those credits must be chosen from: AH 3021, 3133, 3175, 3203, 3231, 3234, 3270, 3271, 3272, 3273, 3274; DGS 3222, 3226, 4234; MT 3131; MLS 3101, 3111, 3121; (2) NUSC 2200, 4236, 4250; PVS 3100, 4300

Allied Health Sciences with Diagnostic Sciences concentration Group B.

(12 credits from the following): (1) A minimum of 6 of those credits must be chosen from: AH 3021; 3133; DGS 3222, 3226, 4234; MT 3131; MLS 3101, 3121; (2) PVS 3100, 4300; NUSC 4236, 4250

Allied Health Sciences with Health Promotion Sciences concentration Group B.

(12 credits from the following): (1) A minimum of 6 of those credits must be chosen from: AH 3133, 3175, 3203, 3231, 3234, 3270, 3271, 3272, 3273, 3274; MLS 3111; (2) NUSC 2200, 4236, 4250

Optional Independent Study or Internship (6 credits maximum applied to major requirements): AH 3091, 3099; DIET 3099; DGS 3999; MLS 4099; MT 4099.

36 Credits Major Requirement: Students majoring in Allied Health Sciences (with or without a concentration) must complete 36 credits of 2000-level or above courses meeting the following requirements. Courses outlined in Groups A and B above may be included in the 36-credit group.

1. Numbered 2000 or above
2. Be completed at the University of Connecticut
3. Approved by the Department of Allied Health Sciences
4. Courses can not be taken on pass/fail
5. Include 24 credits (core and major courses) in the College of Agriculture and Natural Resources of which a minimum of 18 credits must be in the Department of Allied Health Sciences
 - a. Core Courses (12 credits) - AH 4241W, 4242, 4243, 4244
 - b. Additional Major Courses (12 credits) - Include at least 12 credits in the College of Agriculture and Natural Resources of which a minimum of 6 credits are in the Department of Allied Health Sciences. Courses chosen can be selected based on the student's interest, ability, and intended post baccalaureate program and career.
6. Include at least 12 credits of Related Cognate Courses taken in departments outside the College of Agriculture and Natural Resources. Courses chosen can be selected based on the student's interest, ability, and intended post baccalaureate program and career.
7. A grade of "C" or higher must be earned in all core, major, and related cognate courses

Allied Health Sciences - Professional Majors

Cytotechnology, Dietetics, Diagnostic Genetic Sciences, and Medical Technology are Professional programs/majors in the Department of Allied Health Sciences. These professional majors 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. Currently, students are not being accepted to the Cytotechnology program.

The admission requirements and mandatory documentation and certifications are *only* required of students admitted to the Department of Allied Health Sciences' Professional majors. All other students do not need to complete this documentation unless required to do so as part of an optional internship course.

Admission

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, completed all University General Education requirements, 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 1st annually. Admission is for the fall semester.

Guaranteed Admission Policy: Although freshmen are not admitted directly into the professional majors, the Department of Allied Health Sciences has a Guaranteed Admission Offer. This offer provides freshmen 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 Technology a student must: (1) have entered the University as a freshman; (2) apply to the major within two years of their freshman admission; (3) complete 3 successive semesters of full time study of required course work at the University of Connecticut; (4) must 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 Technology, 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.

Health. In addition to pre-entrance University requirements, students admitted to the Professional Majors in the Department of Allied Health Sciences are required to have a tetanus immunization within the past ten years; physical examination; annual tuberculin test (with chest x-ray for positive reactors); rubella and rubeola titers (with vaccine if titer is negative); and varicella titer. Physical examinations, tuberculin tests and chest x-rays as indicated are planned through the University Student Health Services. In addition to the basic health screening requirements students in all professional majors are required to have Hepatitis B Immunization. Students are responsible for payment of health examinations and laboratory tests not covered by their personal insurance. Students who fail to provide written documentation that they have met the above stated health requirements will not be allowed in the clinical setting.

Education Certification. The Department of Allied Health Sciences will provide annual mandatory educational sessions so that students entering a professional major and who are entering the clinical setting are 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 that they met both the above stated OSHA and HIPAA requirements will not be allowed in the clinical setting.

CPR. Dietetics students are required to have Adult or Healthcare Provider cardiopulmonary resuscitation certification upon admission into the professional major. Students in the Diagnostic Genetic Sciences or Medical Technology majors are not required to have CPR certification. CPR certification must be kept current until graduation.

Clinical Experiences. Each of the professional major curricula of the department requires education experiences in clinical settings. Assignment to clinical placements is contingent upon successful completion of the appropriate prerequisite course work and the judgment of the faculty of the preparedness of the student for safe practice. Additionally, students entering clinical placements must complete clinical documentation to include but not limited to a Medicare Exclusion waiver and in some clinical settings a criminal background check.

Students will be notified if they are attending a clinical facility that requires this documentation. Students are responsible for payment of criminal background checks if part of their clinical affiliation.

Fees and Expenses. Students can expect fees to approximate those of other University students. The professional majors have added expenses for texts, uniforms and 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. During periods spent full-time in the affiliated areas off-campus, 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 insurance under the blanket University policy. Students will automatically be billed for this on the University fee bill.

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
 - a. The Diagnostic Genetic Sciences Major GPA includes all courses offered with the following departmental designations: AH, DGS, MLS, and the following MCB courses: 2210, 2410, and 2610
 - b. The Dietetics Major GPA includes all courses offered with the following departmental designations: AH, DIET, and the following NUSC courses: 2200, 3233, 3234, and 3235
 - c. The Medical Technology Major GPA includes all courses offered with the following departmental designations: AH, MLS, and MT
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).

Descriptions and specific course requirements of each of the Professional Majors of Cytotechnology, Diagnostic Genetic Sciences, Dietetics, and Medical Technology are included in individual programs sections listed in alphabetical order within this section of the *Catalog*.

Allied Health Sciences Post-baccalaureate Certificate Programs

These programs are open only to those students who have completed a Bachelors Degree in an appropriate discipline.

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 opportunity to achieve performance requirements for entry-level dietitians through a minimum of 900 hours of supervised practice. The Dietetic Internship is accredited by the American Dietetic Association Commission on Accreditation for Dietetics Education, a specializing accrediting body recognized by the Council on Post Secondary Accreditation and the United States Department of Education. 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 American Dietetic Association. Students must pass this examination in order to be a Registered Dietitian.

The Diagnostic Genetic Sciences Certificate Program is open to individuals with a baccalaureate degree. Students apply to one of two concentrations within this program: Cytogenetics or Molecular Diagnostics. Upon completion, the student receives a certificate from the Department of Allied Health Sciences and is eligible to sit for the specified certification examination.

The **Cytogenetics** concentration is open to individuals with a baccalaureate degree in the medical laboratory sciences or the biological or natural sciences and who meet the course prerequisites for admission to the clinical practicum components. Upon completion, students are eligible to sit for the Certification examination in Cytogenetics offered by the National Credentialing Agency for Laboratory Personnel (NCA).

The **Molecular Diagnostics** concentration is open to individuals with baccalaureate degrees in Cytogenetics, Medical Technology, or the biological or natural sciences, and who meet the specific course prerequisites and academic standards. Upon completion, students are eligible to sit for the Certification examinations in Molecular Genetics offered by the National Credentialing Agency for Laboratory Personnel (NCA) and the American Society of Clinical Pathology (ASCP).

Prospective students are advised to contact the Department of Allied Health Sciences (860-486-2834) for program information and admission requirements.

Animal Science

This major provides seven options leading to the B.S. degree: Pre-professional (veterinary medicine or graduate training), Biotechnology, Business/Service, Equine Sciences, Food Science, Environmental Health, and Production Management. (For detailed information, please refer to: www.canr.uconn.edu/ansci)

Animal Science majors must pass all courses from Group A, at least one course from Group B, at least two courses from Group C, and one additional course from either Group B or C.

Group A. (All of the following): ANSC 1001, 2111, 3121, 3122, 3194, PVS 2100, BIOL 1107, and CHEM 1122 or 1127Q or both 1124Q and 1125Q

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

Group C: ANSC 3313, 3323, 3343, 4341. Either MCB 2000 or 2610 or 3010 can fulfill one of the Group C requirements.

To satisfy the general education requirement for the computer technology competency, students must meet the University's entrance expectations.

To satisfy the general education requirement for information literacy, students must pass ENGL 1010 or 1011 and one of the following courses: ANSC 2111, 3194, 3261, 3314W, 3344W, or 4662W.

To satisfy the general education requirement for writing in the major, students must pass either ANSC 3314W, 3344W, or 4662W.

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

Cytotechnology

Students are not being accepted to the Cytotechnology program at this time.

Diagnostic Genetic Sciences

The Diagnostic Genetic Sciences major has two emphasis areas: Cytogenetics and Molecular Diagnostics. Medical cytogenetic technologists study blood, bone marrow, tissue and amniotic fluid for both normal and abnormal chromosome variations that are associated with malformations and diseases like cancer. Molecular Diagnostic technologists evaluate and investigate DNA and RNA with regards to disease, identity, cancer and forensics. The on-campus course requirements for the two emphasis areas are the same, but the clinical courses differ.

The Cytogenetics emphasis is approved by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS) (8410 W. Bryn Mawr Ave., Suite 670, Chicago, IL 60631-3415, phone: 773-714-8880). Graduates of both emphasis areas are eligible to take the certification examinations administered by the National Credentialing Agency for Laboratory Personnel (NCA) immediately upon graduation and the molecular pathology examination administered by the American Society of Clinical Pathology (ASCP).

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 and 2242 or CHEM 2443 and 2444; BIOL 1107; Biology Option: BIOL 1103 or a course in Anatomy and Physiology or BIOL 1108 or MCB 2610 or a Biology course pre-approved by the Diagnostic Genetic Sciences Program Director; MATH 1040Q or 1060Q or above; MCB 2000, 2210, 2410, 2610; STAT 1000Q or 1100Q.

Professional Courses - AH 4241, 4243, 4244; MLS 3101, 3121; DGS 3222, 3223, 3225, 4224, 4234W, 4235, 4246; Cytogenetics Emphasis Courses: 4701, 4702, 4703, 4712, 4713, 4750; Molecular Emphasis Courses: 4501, 4502, 4503, 4550; and one of the following: 4510, 4511, 4512, 4513, 4514, 4515

Writing in the Major - DGS 4234W

Computer Technology - University entry-level competencies have been reviewed and satisfy all program requirements.

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

Dietetics

The Coordinated Program (CP) in Dietetics 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 RD. Dietitians assess nutritional needs, plan individualized dietary plans, provide counseling and evaluate nutritional care for individuals and groups.

The Dietetics major is currently granted accreditation by the Commission on Accreditation for Dietetics Education of the American Dietetic Association. Students are eligible to take the National Registration Examination Dietetics administered by the Commission on Dietetic Registration of the American Dietetic Association 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; STAT 1000Q or 1100Q; MCB 2000, 2610; PNB 2264 and 2265; CHEM 2241; NUSC 1165, 2200, 3233, 3234, 3235

Social Sciences - SOCI 1001 or 1251 or PSYC 1103

Professional Courses - AH 4241, 4242, 4244, DIET 3150, 3155, 3210, 3215, 3230W, 3235, 3250, 3255, 4350, 4360, 4365, 4370, 4415, 4435, 4455, 4470, 4475

Writing in the Major - DIET 3230W

Computer Technology - University entry-level competencies have been reviewed and satisfy all program requirements.

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

Environmental Science

The major in Environmental Science 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 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 science and related fields.

A. Required courses in Basic Science: ARE 1150; BIOL 1107, 1108 or BIOL 1107, 1110; CHEM 1124Q, 1125Q, 1126Q or 1127Q, 1128Q; MATH 1120Q, 1121Q, 1122Q or 1131Q, 1132Q; PHYS 1201Q, 1202Q, 1230 or 1401Q, 1402Q; STAT 1000Q or 1100Q or 3025Q.

B. Required Courses in Introductory Environmental Science: Select any two from GEOG 2300, GEOL 1050, MARN 1002, NRME 1000.

C. Required courses numbered 2000 or above in Environmental Science: AH 3175, EEB 2244 or 2244W, GEOL 3020, MARN 3000, NRME 3145

D. Capstone course: GEOG 3320W

E. General Education competency requirements: Completion of GEOG 3320W will satisfy the writing in the major and information literacy requirements. Completion of BIOL 1108 and EEB 2244 will satisfy the computer literacy requirement.

F. Concentration requirements: All students majoring in Environmental Science must also fulfill the requirements of a concentration in a discipline associated with the program before graduation. Approved concentrations are listed below.

Environmental Health - Students must pass the indicated number of courses in the categories below:

Molecular and Cellular Biology: Two of MCB 2211, 2410, 2610*, 3011, 3212, 4415* (* At least one of these laboratory courses must be taken.)

AH 3021

ANSC 4341

Other departments: One of ANSC 4642; DGS 3222; NUSC 4236; PVS 2100, 4300

Natural Resources - Students must take NRME 4000W plus one course from each of the following groups:

Note: NRME 3690 Field Study Internship may be substituted for one of the group requirements.

Air and Water - NRME 3105, 3125, 3155, 4135, 4165, 4175

Forest Resources - NRME 2415, 3475, 4455

Remote Sensing/GIS - NRME 3252, 3535, 4535,

Fish and Wildlife - NRME 2315, 3335, 3345, 4335

Resource Economics - Students must take 15 credits from the following: ARE 3260, 3434, 3436, 3437, 3450, 4099, 4438, 4462, 4464 and up to one additional ARE course numbered 3000-level or above with prior Advisor approval.

Soil Science - Students must pass the following: SOIL 2120, 2125, and 3410

Must select 2 courses from: CE 5090; NRME 4165; PLSC 3995, 5420; SOIL 3253

Environmental Science also offers the following concentrations through the College of Liberal Arts and Sciences: Environmental Biology, Environmental Chemistry, Environmental Geography, Environmental Geoscience, Marine Science. For complete requirements, refer to the Environmental Science description in the "College of Liberal Arts and Sciences" section of this *Catalog*:

Horticulture

The Horticulture major offers courses in the commercial production of vegetables and fruits, propagation and production of woody and herbaceous ornamental plants, and the identification, uses, and maintenance of plants in landscapes and gardens. The Plant Biotechnology option includes micropropagation and the application of molecular methods to genetic improvement of plants. (For detailed information, please refer to: www.canr.uconn.edu/plsci)

Horticulture majors must pass the following courses: BIOL 1110; CHEM 1122 or 1124Q or 1127Q; PLSC 1000, 4210, 4215; SOIL 2120, 2125; and HORT 3640

Two of: HORT 2430, 3410, 3420; EEB 4272; NRME 2415

One of: ARE 1150, 3210, 3215 or ECON 1200, 1201

Two of: PLSC 3810, 3820, 3840; PLSC 3830 or EEB 4253

Two of: HORT 2750, 3540, 3620, 3650, 3660/W, 3670, 3675, or 3760

Horticulture majors must take HORT 3660W or LAND 3230W or TURF 3200W to fulfill their requirement for writing in the major.

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

Computer technology competency is satisfied by University entrance expectations.

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 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 6 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 and Natural Resources

To satisfy the general education requirement for the computer technology competency, Individualized Majors must meet the University's entrance expectations. They will not have to meet any advanced requirement for computer technology.

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 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: www.canr.uconn.edu/plsci)

Landscape Architecture majors must pass the following courses:

BIOL 1108 or 1110; CHEM 1122 or 1124Q or 1127Q; HORT 3410; SOIL 2120; LAND 2110, 2120, 2210, 2220, 2410, 3130, 3230W, 3310, 3320, 3420, 3430, 4294, 4330, 4340, 4440, and 4450

One of the following: HORT 2430, 2750, 3420, 3760; PLSC 4210; SOIL 3520; EEB 4272; NRME 2415

Accreditation and space restrictions necessitate that the number of students in the Landscape Architecture program be limited. All students choosing the Landscape Architecture major will be evaluated at the end of their third semester, after they have taken the introductory landscape architecture courses, LAND 2110 and 2210. Students will be allowed to continue in the program based upon their cumulative grade point average, graded performance in the two introductory landscape architecture courses, submission of a portfolio of work from these two courses and a letter of intent.

Students who do not meet the requirements may want to consider other majors including Horticulture or Turfgrass and Soil Science. (For detailed information, refer to <http://www.cag.uconn.edu/plsc/plsc/index.html>)

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

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

A minor in Landscape Design is described in the "Minors" section.

Medical Technology

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

The Medical Technology major is offered in conjunction with Hartford Hospital which holds accreditation through the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS), 8410 Bryn Mawr Ave., Suite 670, Chicago, IL 60631-3415, phone 773-714-8880). Graduates are eligible for certification examinations administered by the National Credentialing Agency for Medical Laboratory Personnel (NCA) or the American Society of Clinical Pathologists (ASCP) 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 and 2242 or CHEM 2443 and 2444; BIOL 1107; Biology Option: BIOL 1103 or a course in Anatomy and Physiology or BIOL 1108 or MCB 2610 or a Biology course pre-approved by the Medical Technology Program Director; MATH 1040Q or 1060Q or above; STAT 1000Q or 1100Q; MCB 2000; Related Science Requirement - MCB 2400 or 2410 or PHYS 1010Q or other 2000-level or above Physics course pre-approved by the Medical Technology Program Director; PVS 4300

Professional Courses - AH 4241, 4243, 4244; MLS 3101, 3121; MT 3131, 3333, 3361, 3365, 4094W, 4301, 4302, 4311, 4312, 4321, 4322, 4341, 4342, 4351, 4352, 4366, 4371, 4372

Writing in the Major - MT 4094W

Computer Technology - University entry-level competencies have been reviewed and satisfy all program requirements.

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

Natural Resources

This major, offered by the Department of Natural Resources Management and Engineering, 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. Students select one of the following concentrations: Air and Water Resources, Environmental Conservation, Fisheries and Wildlife Conservation, Forest Resources, or Geomatics. (For detailed information, please refer to: <http://www.canr.uconn.edu/nrme>)

Competency Requirements: Students successfully completing the courses listed below will have met their General Education information literacy exit requirements for this major. Students are expected to have gained additional computer technology competency in the fields of geographic information systems (GIS) and Global Positioning System (GPS) data collection and processing. Students will gain these competencies by passing NRME 2000. Students passing NRME 4000W will satisfy the writing competency requirement within the major.

All Natural Resources majors must pass the following core requirements:

NRME 1000, 2000, 2010, 4000W, 4094; BIOL 1107 or 1108 or 1110; CHEM 1122 or 1124Q or 1127Q; MATH 1060 or 1120Q or 1131; SOIL 2120 and 2125 or GEOL 1050; PHYS 1201Q or 1401Q; STAT 1100

In addition to the core requirements, all students must complete one of the following concentrations:

Air and Water Resources

All of the following: NRME 3125, 3145, 3218, 4135

Three courses from the following: NRME 3105, 3155, 3205, 3245, 4165, 4175, 4535, 4575, 4665

Two courses from the following: EEB 4247; GEOG 3310; GEOL 3020, 3710; MARN 3000, 3003Q

Environmental Conservation

ARE 1150 or ECON 1201; ARE 3434 or 3434W or 4438 or 4462; COMM 1100; EEB 2244 or 2244W; EEB 3205; NRME 1235, 3245 and 3690; PHIL 3216 or POLS 3842 or SOCI 3407

Students must also earn an additional 6 credits of NRME courses numbered 2000-level or above.

Fisheries and Wildlife Conservation

ARE 3434 or 3434W; EEB 2244 or 2244W; NRME 2315; NRME 3245; and NRME 3335 or 4335

One course from the following:

EEB 3254, 3265, 4200; or 4260 and 4261

Two courses in addition to those selected above from among the following:

EEB 2208, 3254, 3265, 4200, 4247, 4253, or 4260 and 4261; NRME 3105, 3205; NRME/EEB 3305/3307; NRME 2415, 3155, 3315, 3335, 3345, 3355, 3365, 4335, 4455, 4665

Forest Resources

All of the following: ARE 3434 or 3434W; EEB 4250 or 4253; NRME 2315, 2415, 3125, 3335, 3475, 3690, 4455

Geomatics

NRME 4535, 4545, and 4575

Two courses from the following: CE 2410; GEOG 2300, 4500, 4510; MATH 1120Q or higher

Four courses from the following: CSE 1100; NRME 2415, 3105, 3125, 3155, 3475, 4175, 4455, 4665, 4689

A minor in Wildlife Conservation is described in the "Minors" section.

Nutritional Sciences

Students majoring in Nutritional Sciences all receive a Bachelor of Science degree in Nutritional Sciences. The department offers two areas of emphasis: Dietetics and Nutritional Sciences. 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 Commission on Accreditation for Dietetic Education of the American Dietetic Association (ADA), 120 South Riverside Plaza, Suite 2000, Chicago, IL 60606-6695, (800) 877-1600. 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. (For detailed information, please refer to: www.canr.uconn.edu/nusci)

Nutritional Sciences majors must successfully pass the following courses:

NUSC 1165, 2200, 4236, and 4237W

CHEM 1122 or CHEM 1124Q and 1125Q or CHEM 1127Q and 1128Q

CHEM 2241, or 2443 and 2444

PNB 2264 and 2265, or BIOL 1107, 1108 and PNB 2250, or BIOL 1107, 1108 and PVS 2100

MCB 2000 or 3010

In addition to the courses listed above, a minimum of 4 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 4-credit requirement. Specific course recommendations are listed in the *Undergraduate Bachelor Degree Program* brochure in the department.

Students must take either NUSC 4237W or 4296W to fulfill their writing in the major requirement. The advanced information literacy requirement is fulfilled with NUSC 4237W or both NUSC 2245 and NUSC 4266. There are no advanced requirements for computer technology.

A minor in Nutrition for Exercise and Sport and a minor in Sport Nutrition are described in the "Minors" section.

Pathobiology

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: www.canr.uconn.edu/patho)

Pathobiology majors must pass the following courses:

PVS 1000, 2100, 3100 and 4300

One course in Microbiology: MCB 2610

One course in Biochemistry: MCB 2000 or MCB 3010

One course in Genetics: MCB 2410, 2413, or ANSC 3121

One course in Nutrition, Immunology, or Cell Biology: ANSC 2111, NUSC 1165, MCB 2210, 3212, or MLS 3121W

One of the following courses: PVS 2301, 3201 or 3201W, 3341, 4351

Students must pass either PVS 3094W or 3201W to fulfill their writing in the major requirement. The advanced information literacy requirement is fulfilled by passing PVS 3094W or 3201W. There are no advanced requirements for computer technology.

Resource Economics

This major in the Department of Agricultural and Resource Economics applies analytical and decision-making skills to problems of production and distribution of food products and the management of natural resources and the environment. Students may select the Agribusiness Management or Environmental Economics and Policy options. These prepare students for a wide variety of careers in the business and government sectors, or to pursue graduate studies. (For detailed information, please refer to: www.are.uconn.edu/)

Students must take either ARE 3260W or ARE 3434W to fulfill their writing in the major requirement. The advanced information literacy requirement is fulfilled with either ARE 3260W or ARE 3434W. There are no advanced requirements for computer technology.

Minors in Agribusiness Management, Aquaculture Business Management, Environmental Economics and Policy, and Equine Business Management are described in the “Minors” section.

Turfgrass and Soil Science

This major offers two areas of concentration. Turfgrass Science includes the management of golf courses, athletic fields, roadsides, erosion control sites, lawns and other areas where grasses are grown. The Soil Science option prepares students for professional certification. Courses focus on soil identification and suitability for different uses. (For detailed information, please refer to: www.canr.uconn.edu/plsci)

Turfgrass and Soil Science majors must pass the following courses: BIOL 1110; CHEM 1122, 1124Q or 1127Q; PLSC 1000, 4210, and 4215; SOIL 2120 and 2125

Students must earn a minimum of 9 additional credits in courses from the subject areas of Biology, Chemistry, Computer Science, Geology and Geophysics, Mathematics, Physics, or Statistics.

For the Turfgrass option, students must pass: TURF 1100, 3200/W, 3800; SOIL 3520, 3620; PLSC 3990

6 credits from: PLSC 3810, 3820, 3830, 3840

6 credits from: HORT 2430, 2750, 3410, 3420, 3640, 3650, 3660/W, 3760

Turfgrass and Soil Science majors must pass TURF 3200W or HORT 3660W to fulfill their requirement for writing in the major. Alternatively, Turfgrass and Soil Science majors with a minor in Landscape Design may use LAND 3230W to fulfill their requirement for writing in the major.

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

Computer technology competency is satisfied by University entrance expectations.

Double Major Option. Students may elect to complete requirements for two major fields of study offered by the College of Agriculture 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 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 6 credits of S/U coursework

Minors: The College of Agriculture and Natural Resources offers minors in Agribusiness Management, Aquaculture, Aquaculture Business Management, Dairy Management, Equine Business Management, Environmental Economics and Policy, Food Science, Landscape Design, Nutrition for Exercise and Sport, Sport Nutrition, Therapeutic Horsemanship Education, and Wildlife Conservation. All of these are described in the “Minors” section of this *Catalog*.

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, Nutritional Sciences, or Pathobiology, as well as many other science-based majors throughout the University. Pre-professional programs in the College of Agriculture 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.

Transfer Students. Transfer students can use transfer credits to meet General Education requirements and 2000-level course requirements in a specific major. Transfer students may apply a maximum of six credits of 2000-level work toward the 36 credit requirement for a major. 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 course work at the University of Connecticut, including at least 15 credits in College of Agriculture and Natural Resources courses.

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. For further information see the announcement of the Graduate School.

School of Business

P. Christopher Early, Ph.D., *Dean, School of Business*
 Linda Klein, Ph.D., *Associate Dean, School of Business*
 Janice E. Clark, M.A., *Assistant Dean for Undergraduate Programs*

Undergraduate education in business is designed to impart a broad base of general knowledge, within which students pursue additional knowledge about resource administration. 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*.

A minor in Business is described in the "Minors" section. Note: Accreditation standards restrict students who are not majors in the School of Business to no more than 27 credits of coursework offered by the School of Business. Credits from transfer coursework accepted for business credit at the University of Connecticut are counted toward the 27 credit limit.

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, four 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 Risk Management and Insurance 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 and Vermont; the Management and Engineering for Manufacturing major is open to students from all the New England states except Rhode Island and 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 <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 Post Secondary 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 freshmen. 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. 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 undergraduate programs office and meeting the admission criteria for that major.

School of Business majors will have to present either three years intermediate level of one foreign language (high school) or two years of one foreign language (through intermediate level college) to satisfy the language requirement for the degree.

Students 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 wishing to transfer directly into the School of Business should have made substantial progress toward completing the freshman-sophomore, 1000-2000 level requirements, particularly those courses which are prerequisites for the Common Body of Knowledge/Entry Level Business courses (ENGL 1010 or 1011, ACCT 2001, MATH 1070Q and 1071Q, ECON 1201 and 1202, or 1200, STAT 1000 or 1100) and must successfully complete these courses by the end of the term in which they have completed 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, including any repeated courses, and space availability will be key considerations in the admissions decision.

Transfer applicants not accepted directly into the School of Business at the time of entry to the University may apply for admission through the School of Business admission procedures previously listed. A decision will be made on a space available basis after completion of one full semester at the University. Individuals who have already completed a bachelor's degree should contact the M.B.A. or M.S. in Accounting program to consider a graduate, rather than another undergraduate, degree.

All applicants to the School of Business will be considered carefully in order to select the best-qualified candidates. If notified of admission before registration in the spring, students may register for fall semester classes in a business program. All admissions are contingent upon successful completion of any current course work for which applicants were registered at the time of application.

Scholastic Standing Requirements. Students admitted to the School of Business must earn a 2.7 cumulative grade point average by the end of the term in which they earn a minimum of 24 calculable credits of graded coursework at the University of Connecticut and a 2.82 cumulative grade point average by the end of the following fulltime equivalent term to be guaranteed continuation in the School. Students must also earn a minimum of a 2.9 cumulative grade point average in all freshman through sophomore year courses in order to be guaranteed continuation to the junior year in the School of Business. Normally the 2.9 cumulative grade point average review will take place at the end of a student's fourth term/when a student has completed 60 credits. Students who have not maintained an average of 15 credits per term may be reviewed after earning 54 credits, just prior to when they are eligible to take 3000/4000 level courses. Additionally, students must show substantial progress toward meeting the freshman-sophomore course requirements, especially those courses that are requisites for the 3000/4000 level business courses (ENGL 1010 or 1011, ACCT 2001, MATH 1070Q and 1071Q, ECON 1201 and 1202, or 1200, STAT 1000 or 1100) and must successfully complete these courses by the end of their 4th term (60 credits). Transfer students are reviewed under the above standards based on total credit standing, including transfer credits. However non University of Connecticut grades are not considered when computing the GPA so transfer students may be reviewed with fewer than 24 credits taken at the University of Connecticut. All course grades, including those of repeated courses, are considered in the above grade point average calculations.

Students accepted to the School of Business must maintain a minimum at least a 2.0 in their term grade point average, their cumulative grade point average and all School of Business courses. The GPA calculation will include all courses for which the students have been registered including repeat forgiveness courses and Business courses taken on pass/fail. Students who fail to maintain the minimum grade point average in any of these areas or fail to complete specified courses as noted above are subject to dismissal from the School of Business. Students conditionally admitted to the School on the basis of successful completion of courses for which they have indicated they were registered must pass all those courses by the end of that term and meet the 2.0 grade point average for the semester, cumulative, and business courses 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 cumulative grade point average; (3) earned at least a 2.0 grade point average for all credits in School of Business courses for which they have been registered; including all grades for repeated courses; (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 in the School of Business at the University of Connecticut, with no more than three of these credits in independent study courses and no more than three of these credits in field internship courses, and no credits from UConn Study Abroad or National Student Exchange; (6) met all the requirements of the School of Business.

The degree in business requires a minimum of 120 degree credits of course work. Business courses offered specifically for non-majors (all courses with the BADM designation and some courses offered by other schools) cannot be used to satisfy requirements for 3000-4000 level business electives. At least 60 credits presented for the degree must be comprised of courses other than business, including general education course work: no more than 9 credits of economics and no more than 6 credits of statistics may be counted as part of these 60 credits. Students who wish to minor in economics or statistics may do so, but this may require coursework beyond 120 credits to satisfy the requirements of both the major and the minor.

Regional Campus Programs. Students at Stamford, Waterbury, and Hartford can complete the requirements of the major in Business and Technology at those campuses. Students in other business majors may complete most of the Common Body of Knowledge courses before transferring to the Storrs campus.

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 ACCT 2010 and 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 - The Association to Advance Collegiate Schools of Business, 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 Academic Regulations section of this *Catalog*.

II. School of Business Requirements

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 (indicated by *).

Note: Please refer to the Curricula in Management and Engineering for Manufacturing listed later in this section.

Accounting

ACCT 2001

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.

Expository Writing

ENGL 1010* *or* 1011* , *or* 3800*

Quantitative Analysis

MATH 1070Q* *and* 1071*¹
or MATH 1131Q* *and* 1132*
or MATH 1120* *and* 1121Q* *and* 1122Q*
or MATH 1131Q* *and* 1070Q*
or MATH 1120Q* *and* 1121Q* *and* 1070Q*
or MATH 1120Q* *and* 1070Q* *and* 1071Q*
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*

Other Courses: HIST 1400*; PHIL 1101* *or* 1102* *or* 1103* *or* 1104* *or* 1105* *or* 1106*; ECON 1200* *or* both 1201 *and* 1202*; COMM 1000 *or* 1100*; PSYC 1100*; ANTH 1000* *and/or* GEOG 1700*; ACCT 2001

Additional Requirements

A minimum of 60 credits used toward graduation requirements must be comprised of non-business courses, including general education course work. No more than 9 credits of economics and no more than 6 credits of statistics may be counted as part of these 60 credits. COMM 1100 is recommended for Accounting majors.

Required Courses and Sample Sequence

Freshman Year First Semester

MATH 1070Q (or appropriate course from one of the alternate mathematics sequences), ENGL 1010 or 1011, PSYC 1100, PHIL 1101 or 1102 or 1103 or 1104 or 1105 or 1106, Elective

Freshman Year Second Semester

MATH 1071 (or appropriate course from one of the alternate mathematics sequences), HIST 1400, GEOG 1700 or ANTH 1000, ECON 1202 (or elective or ECON 1000, if planning to take ECON 1200), Elective

Sophomore Year Third Semester

ECON 1201 or 1200, ACCT 2001, Content Area Four diversity and multiculturalism course, Content Area Three laboratory science course, (Chemistry or Biology or Geology or Physics), Elective

Sophomore Year Fourth Semester

STAT 1000Q or 1100Q, "W" Writing Course, COMM 1000, ACCT 2101 (or elective), Elective

Junior-Senior, 3000-4000 Level Requirements

No School of Business students should enroll in any 3000-4000 level, business courses, with the exception of ACCT 2101, until they have passed the freshman-sophomore, 1000-2000 level, requirements.

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; MGMT 3070W, 3101; MKTG 3101; OPIM 3103, 3104

Capstone Requirement. All students are required to complete a capstone course sequence. Business & Technology majors must take MGMT 4902, Strategic Analysis. All other majors must take MGMT 4900, Strategy, Policy and Planning. All majors except Accounting and Business and Technology must take MGMT 3072, Career Development in Business.

Mobile Computing Program. Students in the School of Business at the Storrs campus are required to participate in the mobile computing program by leasing a notebook computer from the University while they are taking 3000-4000 level courses in the School (with the exception of ACCT 2101, which is open to sophomores). Students will be required to register for the Mobile Computing Lab course (BADM 3001) in order to be able to register for other courses within the School of Business and then successfully complete the lab. There will be a fee associated with the notebook computer lease that will be assessed in each of four semesters of the lease. For information about the current model of computer being used and details of the lease fee, consult the website: <http://www.business.uconn.edu/its>

All students majoring in Accounting, Business and Technology, Finance, Health Care Management, Management, Management Information Systems, Marketing, Real Estate/Urban Economics, and Risk Management Insurance must also fulfill the requirements in the three following competency categories. Students majoring in Management and Engineering for Manufacturing should consult the competency information listed with the other major requirements.

Computer Technology. The School of Business places special emphasis on the use of information technologies to complete the assignments in many classes. Exit expectations are met through all core business courses, but primarily through Business Systems course (OPIM 3103), which is required of all majors.

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 finance (FNCE 3101), marketing (MKTG 3101), and business information systems (OPIM 3103) and strategy (MGMT 4900) courses, which are all required.

Writing in the Major. Students are required to complete MGMT 3070W and one elective "W" course from outside the School of Business.

¹ Any listed calculus course numbered 1122 or above may be used in place of MATH 1071 as a prerequisite for 3000 and 4000-level business courses.

Accounting

The undergraduate (four year) program consists of the Bachelor of Science (B.S.) degree in Business with a major in Accounting. The B.S. degree combines a general background in business with an appropriate number (currently seven 3-credit plus one 1-credit, ACCT 3005, Introduction to a Profession) of upper level accounting courses to prepare students for successful entry into an accounting career.

Accounting majors are required to achieve a 2.0 grade point average in all accounting courses taken at the University of Connecticut, excluding grades and credits for independent studies (ACCT 4899's) and internship (ACCT 4891's) as a requirement for graduation.

A student majoring in accounting must have taken at least two-thirds of the following 3000-4000 level accounting course credits at the University of Connecticut or an accounting program accredited by the American Assembly of Collegiate Schools of Business.

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 (C.P.A.) or Certified Management Accountant (C.M.A.). Students preparing for the C.P.A. examination should also apply for the M.S. in Accounting Program. The M.S. in Accounting is a 30-credit program designed to meet the 150-hour education requirement for the CPA exam in Connecticut. Students preparing for the C.M.A. 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. Currently, the Accounting Department has internships during both Spring semester and the summer. During the period of internship, the students are employed and supervised by firms and participate in various types of auditing or accounting work.

Participation in these programs 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.

Business and Technology

The business and technology major is only open to students at the Stamford and Tri-Campus (Waterbury, Hartford, and Torrington) locations. The objective of the major in business and technology is to provide a business degree with a special emphasis in the application of information technology. Functional area concentrations (three courses) are also possible in selected areas based on the availability of courses.

Courses required in the major are: OPIM 3505, 3506, 3507 plus three 3 credit School of Business electives at the 3000-4000 level (courses in addition to the common body of knowledge and the capstone).

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, real estate, and risk management and insurance.

FNCE 4209

Any two 3-credit courses from the following: FNCE 3302, 3333, 4304, 4305, 4306
Any two additional 3-credit courses from the following: FNCE 3221, 3230, 3302, 3332, 3333, 3334, 3451, 4304, 4305, 4306, 4324, 4325, 4326, 4895; HSMG 3240, 3243, 4242, 4244

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 systems field. The Health Care Management Program is a Full Member of the Association of University Programs in Health Service Administration (AUPHA) and is the only undergraduate Health Care Management Program in New England to maintain both AACSB accreditation and AUPHA full membership. This academic program has been designated by the New England Board of Higher Education as a New England Regional Student Program. Qualified residents from other New England states may enroll in the Health Care Management Program at reduced tuition since the major is not offered at other state universities in the region.

Admission to the Health Care Management Program as a major is competitive on a space available basis.

FNCE 3221, 4324; HSMG 3240, 3243, 4242, 4244, 4891

Internships in Health Care Management. Students usually schedule their Internship in HSMG 4891 course (6 credits) during the summer following the junior year of study. The internship component of the program provides students with the opportunity to obtain clinical experience within a health care facility. Students normally participate in conducting a health systems management 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 Center for Health Care and Insurance Studies will provide considerable guidance in site selection.

Management

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 entrepreneurs or who see themselves working in the world of international business. Both of these areas require 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. All Management majors are required to take: MGMT 4271 (Venture Consulting) which affords each student a unique opportunity to apply classroom learning to real world business settings.

Beyond this required course, students must select from one of two concentrations:

Entrepreneurship Concentration - requires fifteen credits as follows:

MGMT 3230, 3234, 3235

In addition to these three required courses, students must also choose two 3-credit courses from the following:

FNCE 4319; Approved MKTG electives (3000-4000 level); OPIM 3221, 4895

Note: Student concentrating in entrepreneurship will also have the opportunity to take a special section of BLAW 3175 that will emphasize entrepreneurship.

International Business Concentration - requires 12 credits as follows:

MGMT 3225

In addition to this required course, students must also choose three 3-credit courses from the following:

BLAW 3660; MKTG 3370; MGMT 4893 - Foreign Study - 6 credits maximum; FNCE 3451, 4305, 4893 (Foreign Study - 6 credits maximum); MKTG 4893 (Foreign Study - 6 credits maximum)

Up to six of these credits may be Management or School of Business Electives.

Internships in Management. Many management majors find it valuable to participate in an internship usually in the summer following their junior year.

For those concentrating in Entrepreneurship the department offers a summer internship program working in small to mid-sized family owned businesses—an opportunity to learn first hand from successful entrepreneurs. Note: Credits earned in this internship may not be used to fulfill the 15 credits required by the entrepreneurship concentration; however they may be used as 3000-4000 level elective credit used to satisfy the 120 credit degree requirement.

For those concentrating in International Business, there are several opportunities for internships in the study abroad program during the academic year. Credits earned from these courses may be used toward fulfilling the requirements for this concentration.

Management Information Systems

The objective of this major is to train students in the development and use of business information systems. 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 information technology. In addition to OPIM 3103 and OPIM 3104, required courses are: OPIM 3211, 3220, 3221, 3222

Two additional 3-hour OPIM electives, from the following list are required:

OPIM 3212, 3223, 4895

Management Information Systems students must complete six elective credits in one of the following Applications Areas: MIS Internship, Accounting, Finance, Health Systems Management, Management, Marketing, Management and Engineering for Manufacturing, Operations and Information Management, Real Estate and Urban Economic Studies, Risk Management and Insurance; or from other subject areas approved by their faculty advisor and department head.

Internships in Management Information Systems. Many students who major in Management Information Systems 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 internship may be used to fulfill the Applications Area requirement.

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.

All Marketing majors are required to take:
MKTG 3208 or 3209; MKTG 3260

Beyond these two required courses, students must select from one of two concentrations:

General Marketing Concentration requires:

MKTG 3362 or MKTG 3370 and two additional three-credit Marketing or School of Business or Economics electives (3000-4000 level). A maximum of three (3) credits of MKTG 4891 or 4899 can be counted toward this requirement.

Professional Selling Concentration requires:

MKTG 3452, 3453, 3454

No Marketing major may count more than nineteen Marketing credits beyond MKTG 3101 toward those credits presented for degree requirements.

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.

FNCE 3230

Any two from the following: FNCE 3332, 3333, 3334; BLAW 3274

Two additional courses from the above list or from: FNCE 3221, 3302, 3451, 4209, 4304, 4305, 4306; ECON 3439; 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 intern 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. The internship provides meaningful practical experience in the field of real estate and helps students clarify their career goals.

Risk Management and Insurance

The objective of this major is to provide students with an understanding of risk management techniques used by individuals and businesses. The special role played by insurance in the areas of life and property-liability risk exposures and in the management of pension and other employee benefit plans is emphasized as preparation for a career as an insurance professional. The Risk Management and Insurance major has been designated by the New England Board of Higher Education as a New England Regional Student Program. Qualified residents from other New England states may enroll in this program at reduced tuition since the major is not offered at some state universities in the region.

FNCE 3221

Any two three-credit courses from the following:
FNCE 4324, 4325, 4326

Any two *additional* three-credit courses from the following:
FNCE 3302, 3332, 3333, 4304, 4306, 4324, 4325, 4326

Curricula in Management and Engineering for Manufacturing

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 "Academic Regulations" section of this *Catalog*.

II. School of Business Requirements

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 may also be used to fulfill University General Education requirements (indicated by *). School of Engineering requirements are indicated by**.

Management and Engineering for Manufacturing

(jointly offered by the School of Business and the School of Engineering)

Note: 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.

Expository Writing

ENGL 1010* or ENGL 1011* or ENGL 3800*

Quantitative Analysis

MATH 1131Q and MATH 1132Q *or* MATH 1120Q, 1121Q, and 1132Q - MATH 2110Q and 2410Q**; STAT 1100Q*

Other Requirements

HIST 1400*; PHIL 1104*; 1200*; CHEM 1127Q* or 1147Q*; PHYS 1501Q* and 1502Q*; ANTH 1000* and/or GEOG 1700*; One additional Content Area Four Course, unless both ANTH 1000 and GEOG 1700 are taken

Management and Engineering for Manufacturing majors are required to complete the following:

ACCT 2001, 2101; CE 2110**, 2120, and 3110; CSE 1100C**; ECE 3002; ENGR 1000**; FNCE 3101; ME 2233, 3221, 3222, 3227, and 3260W; MEM 1151, 2210, 2211, 3221, 3231, 4225, and 4915W; MGMT 3101 and 4900; MKTG 3101; MMAT 2001 or 2101; OPIM 3652; Technical Electives courses (6 credits)

The Technical Electives must be 3000-4000 level or higher courses from departments listed in the School of Business and the School of Engineering as specified in the *Management & Engineering for Manufacturing Guide to Course Selection*. MEM students who have completed CSE 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 organizations; compete successfully using principles of lean manufacturing, time management and quality assurance in the design and manufacture of products and services; approach engineering and business decisions consistent with ethical, global, environmental, societal contexts; and responsible leadership and continue to extend their professional and personal skills and engage in life-long learning.

Computer Technology. MEM graduates are expected to understand computer logic and basic structure and to develop algorithms to assist in both their academic and professional careers. These additional competencies are achieved by completing *CSE 1100 - Introduction to Computing* or equivalent course. Additional competencies are gained from the required courses in the MEM program.

Information Literacy. In addition to the basic competency achieved in ENGL 1010/1011 or equivalent, all School of Engineering 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 4915W.

Writing in the Major. MEM 4915W is the senior design project for the program. All engineers must write reports on their projects. This course provides one of the opportunities to write professional reports with appropriate feedback and criticism from two faculty members. ME 3260W is the junior year lab course. 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.

Other Educational Opportunities

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, real estate, 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.

Insurance – Actuarial Science. Insurance majors who are interested in preparing for careers in actuarial science should consult the requirements under the Mathematics Department in the College of Liberal Arts and Sciences.

Study Abroad. Business students with interest in International Trade and Marketing with special reference to East-West Trade and International Affairs have available to them a special joint School of Business-Center for European Studies program. For detailed program description see the College of Liberal Arts and Sciences section.

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 assistant dean, School of Business.

Cooperative Education Program. The School of Business participates in the Cooperative Education Program which develops pre-professional off-campus employment opportunities for University students.

Master of Business Administration Program

General management-oriented courses of study leading to the Master of Business Administration degree are offered as a full-time day program on the Storrs campus and as part-time evening programs in Hartford, Stamford, and Waterbury. Details of the programs may be obtained from the M.B.A. Director, School of Business, 2100 Hillside Road, Unit 1041, University of Connecticut, Storrs, CT 06269-1041.

Master of Science in Accounting Program

The M.S. in Accounting is a 30-credit asynchronous online program that provides students with the skill set necessary for a successful career in the accounting profession and enables them to meet the 150-hour education requirement to take the CPA exam in most U.S. states. The program can be completed full-time in eight months or part-time in 16 months. Details of the program may be obtained from www.business.uconn.edu/msaccounting or the M.S. in Accounting Director, School of Business, 2100 Hillside Road, Unit 1041, University of Connecticut, Storrs, CT 06269-1041.

Ph.D. Program in Business Administration

With areas of concentration in Accounting, Finance, Management, Marketing, and Operations and Information Management, the Ph.D. program in Business Administration aims to produce scholars able to make contributions to academic institutions as well as to government and business. Details of the program may be obtained from the Chairperson of the Ph.D. Admissions Committee, School of Business, 2100 Hillside Road., Unit 1041, University of Connecticut, Storrs, CT 06269-1041.

Center for International Business Programs

The Center for International Business Programs is a focal point for international research and outreach activities. The Center sponsors faculty travel and hosts visiting international scholars. It is a resource center for international business education. It is the focal point for facilitating academic-business partnerships on an international basis.

Center for Real Estate and Urban Economic Studies (CREUES)

The Center for Real Estate and Urban Economic Studies is especially concerned with research on real estate markets and valuation, urban growth and land use structure, and public and private administration of real estate resources. Research interests also include the administration of business firms in construction and development, real estate law, real estate financing, marketing, management, and valuation. The Center operates in conjunction with and supports the school's teaching program in real estate and urban economic studies.

Center for Health Care and Insurance Studies (CHCIS)

The Center for Health Care and Insurance Studies is concerned with education, research and service in the areas of health systems, planning, design and management. The Center administers the undergraduate program in Health Systems and the graduate program in Health Care Management. It also cooperates with other units of the University in offering interdisciplinary programs in health care education and research. Over the last ten years the Center has been primarily concerned with developing systems designed to improve the delivery of health care services.

CITI - Connecticut Information Technology Institute

CITI, a unit of the School of Business, provides the influential knowledge community needed to support IT focused academic degree programs and corporate IT development objectives. From enhancing office productivity to advanced development, from short course certification to academic degrees, the CITI knowledge community offers a variety of IT solutions, training, and education. CITI's special events, seminars and courses offer a range of dynamic education and training opportunities. Situated on UConn's campus in downtown Stamford, the location provides unique opportunities to learn and work in close proximity to some of the leading Fortune 500 corporate headquarters. More information can be found at <http://www.citi.uconn.edu>. For more details, contact Jim Marsden (jimm@business.uconn.edu) or Paulo Goes (paulo@business.uconn.edu)

edgelab

edgelab is the classroom; **edgelab** is the business world. Located in a 9000+ sq. ft. technologically-advanced setting, **edgelab** is a unique partnership with GE corporation that includes the co-location of upper level GE managers, UConn research faculty, and UConn students. Teams work on real-time, critical path problems selected based upon educational value and business value.

Institute for Development of Entrepreneurial Advantage

This Institute is dedicated to exploring various aspects of entrepreneurship. The Center has focused its activities in the areas of small businesses and family businesses. There is also a generalized program in entrepreneurship. Description of the three component parts of IDEA, the Family Business Program, the Small Business Institute, and the Thomas J. and Bette Wolff Family Program in Entrepreneurship follow.

Family Business Program

This program was created as a result of a business community-University of Connecticut School of Business partnership to provide a resource for family businesses. The Center also is a focal point for research in the area of family business. There are a number of corporate sponsors for this program. Members from all businesses can participate in workshops and round table discussion on issues of interest to family businesses.

Program for Sales Leadership

The courses in Program for Sales Excellence (Leadership) have been an integral part of the School of Business's curriculum since 2001. This program also acts as a primary conduit for companies seeking knowledgeable and committed graduates for entry-level professional sales positions. Additionally, the program has attracted and retained a number of companies as direct sponsors. It also offers master classes with nationally-recognized sales and sales management professionals and has conducted its own Professional Sales Career Fair for the past two years. We have also attracted the attention of research and consulting firms from across the nation, such as The HR Chally Group, the authors of Solution Selling and CustomerCentric Selling, Selling Power magazine, Sirius Consulting among others.

The Small Business Institute

The Small Business Institute (SBI) at the University of Connecticut was created in 1985 by the Management Department in the School of Business. The Institute provides free, limited management consulting on all types of business problems for small businesses and start-up ventures throughout Connecticut. Since its inception, the SBI has served close to 1000 small businesses in over 150 towns and cities in the state. Consultants are primarily undergraduate Management majors enrolled in the Small Business consulting course.

Consultants are exposed to a wide variety of problems that give them the opportunity to reality test their classroom learning. Beyond the obvious benefit to small businesses in the state, this program has improved relations between the Business School and the entrepreneurial community; improved performance of the businesses served, and is an invaluable learning experience for the students. The Management major requires all students who pursue the entrepreneurship and new venture creation track to participate in at least one project.

Thomas J. and Bette Wolff Family Program in Entrepreneurship

The Wolff Family Program in Entrepreneurship presently supports an endowed chair in strategic entrepreneurship which encourages cutting-edge research. In addition, program sponsors the Management Department's Annual Business Plan Competition, which awards \$10,000 in prize money to budding student entrepreneurs. The support for this program is due to the generosity of one of the School's most generous alums, Mr. Thomas J. Wolff. The department is indeed proud to have such support.

Center for Continuing Studies

Susan Nesbitt, Ph.D., *Director*
Peter Diplock, Ph.D., *Associate Director*

Degree: Bachelor of General Studies

Major: Individualized

The Bachelor of General Studies (BGS) program is designed for returning adults. A student needs at least 60 college credits or an associate's degree from a regionally accredited college to be considered for admission to the program. BGS students may complete a general interdisciplinary plan of study without a theme or follow an approved plan of study with a theme. BGS students build academic rigor in their studies by selecting courses from a minimum of three academic units. The required BGS capstone experience provides the mechanism which allows students to demonstrate interdisciplinary knowledge from their course of study. The BGS program is offered at all six undergraduate campuses of the University. Courses are available in the day, evening, weekends, and online.

Admission Requirements

1. An associate's degree from a regionally accredited college or university, or at least 60 college credits with a minimum GPA of 2.0 from a regionally accredited college.
2. An interview with a BGS academic counselor.
3. Official transcripts from all high schools and regionally accredited colleges and universities previously attended.
4. Completion of the BGS Application and submission of application fee (if applicable).
5. Students applying who have graduated from a Connecticut Community College since 2000 are guaranteed admission into the BGS program and have the \$95 application fee waived.

Bachelor's Degree Requirements

1. Earn a minimum of 120 credits towards graduation
2. Fulfill the University of Connecticut General Education Requirements
3. Earn 30 or more credits at the University of Connecticut
4. Earn 30 or more credits at the 2000-level or above from either courses taken at the University of Connecticut or courses that transferred at that level into the University of Connecticut.
5. Students who complete a school change from another school or college at the University of Connecticut into the BGS program must complete at least 15 credits as a BGS student.
6. Students must complete one of these 18-credit degree options using University of Connecticut courses only (15 credits from a or b or c below and 3 credits from 7 below):
 - a) A general interdisciplinary plan of study of 15 credits at the 2000-level or above with courses selected from a minimum of three different academic units.
 - b) A specific interdisciplinary theme of 15 credits at the 2000-level or above that has been pre-approved for the student's campus or online.
 - c) An individualized interdisciplinary theme of 15 credits at the 2000-level or above approved by a faculty oversight committee composed of three faculty at the student's campus.
7. All three options identified in (6) above require an integrative capstone experience of 3 credits (integrating general studies course, summary project, internship, electronic portfolio, or an approved academic unit course).
8. A University of Connecticut grade point average of at least 2.0
9. A BGS student is expected to complete degree requirements within eight years of admission unless an extension of time to complete the program is given.

Please note: A BGS student may take no more than 30 credits in a single academic unit except for the School of Business where a student may take no more than 27 credits.

Writing in the Major. The University's writing in the major requirement can be met by any 2000-level or above W course approved for a BGS theme.

Information Literacy. Students in the BGS program fulfill this competency area by successfully completing one of the following courses: GS 4278, 4279, or the Information Literacy course in a field where they have previously completed at least one other class.

Computer Technology Competency. Students must successfully complete the University of Connecticut computer technology modules.

School of Business Website

<http://www.business.uconn.edu/>

Center for Continuing Studies Website

<http://continuingstudies.uconn.edu/>

School of Engineering

Mun Y. Choi, Ph.D., *Dean, School of Engineering*
M. E. Wood, M.S., *Assistant Dean for Undergraduate Education*

Degrees Offered and Accreditation

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 (128-credits)
Environmental Engineering (128-credits)
Materials Science & Engineering (128-credits)
Mechanical Engineering* (128-credits)

Bachelor of Science (B.S.) degree (120-credits) in Computer Science#
Bachelor of Science (B.S.) degree (139-credits) in Management & Engineering for Manufacturing (jointly offered with the School of Business) and accredited by the Association to Advance Collegiate Schools of Business (AACSB)

The B.S.E. programs shown above that are asterisked (*), are accredited by the Engineering Accreditation Commission of ABET, 111 Market Place, Suite 1050, Baltimore, MD., 21202-4012; telephone: (410) 347-7700. The B.S.E. in Computer Science & Engineering and the B.S. in Computer Science are accredited by the (*) Computing Accreditation Commission of ABET, 111 Market Place, Suite 1050, Baltimore, MD., 21202-4012; telephone: (410) 347-7700. The new B.S.E. programs in Engineering Physics, Environmental Engineering, Computer Engineering, and Materials Science & Engineering and the B.S. program in Management & Engineering for Manufacturing will be submitted for accreditation at the earliest opportunity.

The School of Engineering and the College of Liberal Arts and Sciences offer a five-year, double-degree *EUROTECH* program leading to a B.S. in Engineering degree and a B.A. degree in German. The program includes German Language courses specially designed to include engineering content, engineering courses taught partly in German, and a six-month internship in a company in Germany.

Students who wish to concentrate their elective work in a second field within the School of Engineering may elect a double major program. This program requires the completion of all requirements in both majors. Students are required to inform the Director of Undergraduate Advising if they change or add a major.

The School of Engineering also offers Minors in Bioinformatics, Biomedical Engineering, Environmental Engineering, Information Technology, and Materials Science & Engineering. Please refer to the "Minors" section of this publication for their 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 calculus placement survey prior to attending summer orientation or 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.

Admission to Junior Year. Students should declare their major as soon as possible, but no later than the second semester of their sophomore year. In order to be admitted to their junior year in their selected major in the School of Engineering, each student must have a cumulative grade point average of at least 2.0 in all courses in mathematics, sciences, and engineering applicable toward the degree.

Scholarships. \$200,000 in scholarships is available to entering students with an academic merit record and more than \$580,000 in scholarships and awards is available annually to continuing students in the School of Engineering.

Faculty Advisors and Student Mentors. Faculty advisors are assigned to students entering the School of Engineering according to the student's major. Faculty advisors assist students in their course selections, counsel them in meeting their educational and career goals, and advise them in both academic and non-academic issues. The school's Mentoring, Advising and Tutoring (MAT) Center is staffed by graduate/undergraduate students and provides tutoring, coaching and mentoring to all engineering students during the day. Evening tutoring is available in the Mentoring, Advising and Tutoring (MAT) Center.

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. These requirements appear in the "Academic Regulations" 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 (or MATH 1120Q, 1121Q, and 1132Q), ENGR 1000 and CSE 1100, and PHIL 1104
- All majors, except B.S. in Computer Science majors, are required to complete CHEM 1127Q (or CHEM 1147Q) and PHYS 1501Q and 1502Q (BME majors do not have to take PHYS 1502Q)
- The University writing (W) course requirement is fulfilled through required major-specific W course work. Most 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. The following courses may not be counted for credit toward graduation in the School of Engineering: MATH courses numbered 1120Q and below; MATH 1110; PHYS 1010 and 1030Q; CSE 1000; STAT 1000; and courses labeled "independent study" or "variable topics" taken in departments outside the School of Engineering. No course taken on a Pass/Fail basis may be counted for credit toward graduation or may be used to meet any course requirements of the School of Engineering. Only eight credits for courses numbered CHEM 1124Q, 1125Q, 1126Q, 1127Q, 1128Q, 1147Q, and 1148Q and only eight credits for courses numbered PHYS 1201Q through 1602Q may be applied toward the degree.

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 computer technology and information literacy exit requirements 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 Documentation States. "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.

Bachelor of Science in Engineering in Biomedical Engineering

Biomedical Engineering majors are required to complete the following:

BIOL 1107; BME 3100, 3120, 3130, 3150, 3300, 3400, 3500, 3600W, 3700, 4900, 4910; CHEM 1128Q (or 1148Q) and 2443; ECE 2001W; ENGR 1166; MATH 2110Q; MSE 2001 or 2101; PNB 2264; STAT 3025Q; BME/Engineering electives (15 credits); Life Science elective (3 credits); Mathematics Science Elective (4 credits)

The professional requirements and electives are specified in the *Biomedical Engineering Guide to Course Selection*.

The Biomedical Engineering undergraduate program educational objectives are that our alumni/ae: are equipped with an up-to-date technical and hands-on education in biomedical engineering emphasizing analysis, synthesis and design, allowing them to successfully work in industry, or attend graduate, medical, dental, business or law schools; possess a desire for life-long learning and a curiosity about the world; possess the quantitative and analytic skills necessary to embrace emerging technologies and the ability to look at traditional textbook learning with a fresh perspective; possess excellent written and oral communication skills necessary to interact with health care professionals, engineers and scientists; possess the ability to work effectively in teams; possess the sense of responsibility of a professional engineer; and will become global leaders in the biomedical engineering professions.

Bachelor of Science in Engineering in Chemical Engineering

Chemical Engineering majors are required to complete the following: CHEG 2103, 2111, 3112, 3123, 3124, 3151, 4137W, 4139W, 4143, and 4147; CHEG Electives (6 credits minimum); CHEM 1128Q (or 1148Q), 2443, 2444, 2446, 3563, and 3566; ENGR 1166; MATH 2110Q and 2410Q; Professional Requirements (12 credits); MCB/CHEM requirement*; Elective courses (4 credits)

*Students may select CHEM 3332, 3564; MCB 2000, 2610 or 3010.

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.

The Chemical Engineering undergraduate program educational objectives are that our alumni/ae: demonstrate knowledge and skills that enable them to adapt to the ever-changing discipline of chemical engineering, and thus be successful, lifelong contributors to the profession and have a sense of commitment, professional ethics and responsibility that provides for life-long, mutually supportive relationships among alumni, academia, and industry.

Bachelor of Science in Engineering in Civil Engineering

Civil Engineering majors are required to complete the following:

CE 2010, 2110, 2120, 2210, 2310, 2410, 2710, 3110, 3120, 3300 or 3520, 3320 or 3610, 3510, 3620, and 4910W; CHEM 1128Q or 1148Q; ECE 3002 and ME 2233; ENGR 1166 (section offered by the CE Department recommended); MATH 2110Q and 2410Q; Professional Requirements courses (15 credits); Elective courses (6 credits); CE 2010 must be taken twice before CE 4910W.

To satisfy professional requirements, students must take at least one course each from four of the following different technical areas:

- Construction Management Engineering* - CE 4210
- Environmental/Sanitary Engineering* - CE 3320, 4310 (CE 3320 may be used only to fill the professional requirements by students who have taken CE 3610)
- Geotechnical Engineering* - CE 4510, 4520
- Hydraulic/Water Resources Engineering* - CE 4810, 4820
- Structural Engineering* - CE 4620, 4630
- Surveying Geodetic* - CE 4410
- Transportation Engineering* - CE 4710

Courses taken from the above list but not used to fulfill the four technical area requirements may be used to satisfy remaining professional requirements. In addition, the following courses may also be considered for remaining professional requirements: CE 3320 or 3610 (if both taken), CE 3300 or 3520 (if both taken), 4610, 4800; EEB 3247/ENVE 3320.

The Professional Requirements must satisfy engineering design credit and other distribution requirements as specified in the *Civil Engineering Guide to Course Selection*.

The Civil Engineering undergraduate program educational objectives are that our alumni/ae: excel in engineering practice in the public and private sectors in the technical areas of environmental, geotechnical, structural, transportation, and water resources engineering; become licensed professional engineers who design and construct solutions to civil engineering problems in the natural and built environments; and adopt and continuously practice life-long learning through post-graduate and professional education.

Bachelor of Science in Engineering in Computer Engineering

Offered jointly by the Departments of Computer Science & Engineering and Electrical & Computer Engineering

Computer Engineering majors are required to complete the following:

CSE 1102, 2100, 2102, 2300W, 2500, 3666, 4300; ECE 1101, 2001W, 3101, 3201, 3221, 3401, 3421, 4901, 4902; MATH 2110Q, 2210Q and 2410Q; STAT 3345Q; Professional Requirements courses (9 credits); Design Laboratory courses (6 credits including ECE 3411 or CSE 4903); Elective course (3 credits)

Further details and course sequences are given in the *Computer Engineering Guide to Course Selection*.

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 (corresponding to the description of the computer engineering program described above); demonstrate professionalism and a sense of societal and ethical responsibility in all their endeavors and engage in professional development or post-graduate education to pursue flexible career paths amid future technological changes.

Bachelor of Science in Computer Science

Computer Science majors are required to complete the following:

CSE 1102, 2100, 2102, 2304 or 3666, 2500, 3000 or 3002, 3500, 3502, 4300, and 4939W; MATH 2210Q, and either MATH 2110Q or 2410Q; Either STAT 3025Q or STAT 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 BIOL 1107, 1108, or 1110; CHEM 1127Q, or 1128Q; PHYS 1401Q, 1402Q, 1502Q, 1601Q, or 1602Q) but not in the same department as the two semester sequence; Either CSE 4100 or CSE 4102; Three courses from CSE 3300, 3800, 3802, 4095 with prior approval, 4500, 4701, 4703, 4705; One design laboratory course from CSE 4900, 4902, 4903, 4904, and 4905; Additional CSE courses as required to reach 42 credits in CSE courses not including CSE 2500; A minimum of three 3-credit courses at the 2000-level or above in a single related area forming a cohesive body of knowledge outside of Computer Science; 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 as computing professionals (appropriate to the description of the computer science program described above), conducting research and/or leading, designing, developing, or maintaining projects in various technical areas; apply the ethical and social aspects of modern computing technology to the design, development, and usage of computing artifacts; and enhance their skills and embrace new computing technologies through self-directed professional development and post-graduate training or education.

Bachelor of Science in Engineering in Computer Science and Engineering

Computer Science and Engineering majors are required to complete the following: CSE 1102, 2100, 2102, 2300W, 2500, 3500, 3502, 3504, 3666, 4100, 4300, 4302, and 4939W; Either CSE 3000 or 3002; One CSE design laboratory course from CSE 4900, 4901, 4902, 4903, 4904, 4905; ECE 4079 or ECE 4242; MATH 2110Q, 2210Q, and 2410Q; One of MATH 3160, STAT 3025Q, 3345Q, or 3375Q; ECE 2001W, and 3101; Professional Requirements courses (9 credits); Elective courses to reach a minimum of 126 credits.

Further details and course sequences are given in the *Computer Science & 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 as computing professionals (appropriate to the description of the computer science and engineering program described above), conducting research and/or leading, designing, developing, or maintaining projects in various technical areas; apply the ethical and social aspects of modern computing technology to the design, development, and usage of computing artifacts; and enhance their skills and embrace new computing technologies through self-directed professional development and post-graduate training or education.

Bachelor of Science in Engineering in Electrical Engineering

Electrical Engineering majors are required to complete the following:

CSE 1102 or ECE 1110 or ENGR 1166 and CSE 2300W; ECE 1101, 2001W, 3001, 3101, 3111, 3201, 3211, 4111, 4201, and 4211; ECE 4901 and 4902; MATH 2110Q, 2210Q and 2410Q; STAT 3345Q; Professional Requirements courses (12 credits); Design Laboratory courses (6 credits); Elective courses (9 credits)

Further details and course sequences are given in the *Electrical Engineering Guide to Course Selection*.

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; demonstrate professionalism and a sense of societal and ethical responsibility in all their endeavors; and engage in professional development or post-graduate education to pursue flexible career paths amid future technological changes.

Bachelor of Science in Engineering in Engineering Physics

Offered jointly by the Physics Department of the College of Liberal Arts and Sciences and the School of Engineering

Engineering Physics majors can concentrate in either Electrical, Materials Science, or Mechanical Engineering. Students must satisfy the course requirements of both the College of Liberal Arts and Sciences and the School of Engineering to complete this degree.

Engineering Physics majors are required to complete the following:

CHEM 1128Q or 1148Q; PHYS 2300, 2501W, 3101, 3201, 3202, and 3401; MATH 2110Q, 2410Q, and 3410

Electrical Engineering - ECE 2001W, 3101, 3111, 3201, 4111, 4211, 4231, 4232, 4901, and 4902; CSE 2300W; MATH 2210Q; PHYS 3300; STAT 3345Q, Elective courses (4 credits).

Mechanical Engineering - ME 2233, 2234, 3220, 3227, 3242, 3250, 3253, 4972 and 4973W; CE 2110, 3110; STAT 3345Q; ME Elective Courses (6 credits); PHYS Elective courses (6 credits).

Materials Science and Engineering - MSE 2001, 2002, 2053, 3001, 3002, 3003, 3004, 3055 and 3056, 4003W, 4901 and 4902W; CHEG 3156; PHYS 4150 and 4210; MSE Elective Courses (6 credits); Physics Elective Courses (3 credits).

The professional requirements and electives are specified in the *Engineering Physics Guide to Course Selection*.

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.

Bachelor of Science in Engineering in Environmental Engineering

Environmental Engineering majors are required to complete the following:

CE 2110, 3120 (or CHEG 3123); CHEG 2111 and 3173; CHEM 1128Q (or 1148Q); ENGR 1166; ENVE 2310, 2320, 2330, 3200, 3210, 3220, 3230 (or CHEG 3230), 4310, 4810 or 4820, 4910W, 4920W, and 4996; MATH 2110Q and 2410Q; NRME 3105 or 3155 and 4135 (or GEOL 3710); Elective course (6 credits); Professional Requirements courses (9 credits).

Professional Requirements include at least *one* course each to strengthen *three* of the following nine focus areas: Atmospheric Systems and Air Pollution Control, Environmental and Occupational Health, Environmental Chemistry, Environmental Systems Modeling, Hazardous Waste Management, Solid Waste Management, Water Supply and Resources, Hydrology of Earth Resources, and Wastewater Management. The following courses may be used to meet the Professional Requirements:

AH 3175; ARE 3434 and 4462; ENVE 4810, 4820/CE 4820; EEB 3247/ENVE 3320 and 4248; MCB 2000, 3635, and 3640W; CHEG 3151, 3173, 3260 and 4147; CHEM 3170W, 3332, 3563, 3564; GEOG 2300, 3320/W, 3400, and 3410; GEOL 3510, and 4735; OPIM 3610; MARN 3016 and 4030W; ME 3239; NRME 3115, 3245, 3535, 4000W, 4135, and 4165; SOCI 3407W; PLSC 3240

The Professional Requirements are specified in the *Environmental Engineering Guide to Course Selection*.

The Environmental Engineering undergraduate program educational objectives are that our alumni/ae: excel in practicing engineering in the public and private sectors in the technical area of environmental engineering; become licensed professional engineers, appraising the impact of human activity on the environment, designing and constructing solutions to minimize and mitigate such impacts, and tending to the natural environment as the earth's life support system; and adopt and continuously practice lifelong learning through post-graduate and professional education.

Bachelor of Science in Management and Engineering for Manufacturing

Offered jointly by the School of Business and the School of Engineering

Management & Engineering for Manufacturing majors are required to complete the following:

ACCT 2001 and 2101; ANTH 1000 or GEOG 1700; BADM 3001; BLAW 3175; CE 2110, 2120, and 3110; ECON 1200; ECE 3002; FNCE 3101; HIST 1400; MATH 2110Q and 2410Q; ME 2233, 3221, 3222, 3227, and 3260W; MEM 1151, 2210, 2211, 3221, 3231, 4225, and 4915W; MGMT 3101, and 4900; MKTG 3101; MSE 2001 or 2101; OPIM 3652; STAT 1100Q; Technical Electives courses (3 credits)

The Technical Electives must be 2000-level or above courses from departments listed in the School of Business and the School of Engineering as specified in the *Management & Engineering for Manufacturing Guide to Course Selection*. 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 – Manufacturing Internship, with instructor and advisor approval.

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 organizations; compete successfully using principles of lean manufacturing, time management and quality assurance in the design and manufacture of products and services; approach engineering and business decisions consistent with ethical, global, environmental, societal contexts; and responsible leadership and continue to extend their professional and personal skills and engage in life-long learning.

Bachelor of Science in Engineering in Materials Science and Engineering

Materials Science and Engineering majors are required to complete the following:

CHEM 1128Q or 1148Q; ENGR 1166; MATH 2110Q and 2410Q; CE 2110 and 3110; MSE 2001, 2002, 2053, 3001, 3002, 3003, 3004, 3055, 3056, 4001, 4003W, 4004, 4005, 4901, and 4902W; ECE 3002; CHEG 3156

- Recommended Professional and Technical electives, including the elective sequences that satisfy the MSE concentrations in Metallurgy, Biomaterials, and Nanomaterials, are listed in the *Materials Science and Engineering Guide to Course Selection* at <http://www.engr.uconn.edu/mse/selectionguides.php>.
- Recommended Professional Elective courses - 9 credits from: BME 3700 and 4701; ME 3217 and 3228; and MSE 3020, 3029, 3030, 3032, 4021, 4034, 4038, 4240 and 4241. Students with CGPA of 3.2 or greater may elect graduate core courses.
- Recommended Technical Elective courses - 6 credits, at least 3 credits must be in mathematics or basic science, from: CHEM 2443, 2444, 3563, and 3564; ENGR 4243; ECE 4244; MCB 2000; ME 3253, and 3255; MATH 2210Q, 3160, and 3210; PHYS 3401 and 3402; STAT 3025Q, 3075, and 3345Q

Selection of courses is detailed in the *Materials Science and Engineering Guide to Course Selection*.

The Materials Science and Engineering program educational objectives are that our alumni/ae: are flexible, responsible, and creative citizens, professionals, and leaders of change in a global technological society; serve the ever-changing materials engineering needs of industry by applying and continually expanding special, in-depth competencies in material design, properties and processing; apply professional skills of critical and cooperative thinking, communication, and leadership; and continue a life-long, mutually supportive relationship with the Department and University.

Bachelor of Science in Engineering in Mechanical Engineering

Mechanical Engineering majors are required to complete the following:

CE 2110, 2120, and 3110; ECE 3002; ENGR 1166; MATH 2110Q and 2410Q; ME 2233, 2234, 3220, 3227, 3242, 3250, 3253, 3255, 3260W, 3262, 4972, and 4973W; MSE 2001 or 2101 and 3152; ME Requirement (9 credits); Professional Requirements (6 credits); Electives (6 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 2194W, 2720W, 2784, and 2794W; all STAT courses except STAT 1000Q; all BIOL, EEB, MCB, and PNB courses; all CHEM courses except CHEM 1101; all GEOL courses, all MARN courses may be used.

Details on the ME and Professional Requirements are specified in the *Guide for Mechanical Engineering Majors*.

The Mechanical Engineering program educational objectives are that our alumni/ae: practice mechanical engineering by designing systems, solving problems, and effectively communicating results using mathematical, scientific, and engineering principles and tools; approach engineering decisions with an informed consideration of ethical, global, and societal contexts and consequences; and continue to expand their professional and personal skills and engage in life-long learning.

School of Engineering Website

<http://www.engr.uconn.edu/>

School of Fine Arts

David G. Woods, Ph.D., *Dean, School of Fine Arts*
 Ted Yungclas, Ph.D., *Assistant Dean, School of Fine Arts*
 Eva Gorbants, M.A., *Assistant Dean*

The School of Fine Arts encompasses the Departments of Art and Art History, 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 Standard. Fine Arts students (with the exception of Art History and Theatre Studies majors) must enroll in a minimum of six credits in major department courses (Art and Art History, Dramatic Arts, or Music) each semester of full-time study unless an exception is granted by the Director of Advising.

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.

Art and Art History

Degrees offered

Bachelor of Fine Arts
 Bachelor of Arts in Art History

Competency Requirements

Information Literacy and Writing in the Major. Students must successfully complete at least one Art History W course.

Computer Technology. Students must meet University entrance standards.

Art

B.F.A. Areas of Concentration

Communication Design	Illustration
Painting	Photography
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), and 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 completion of the fifth term. Studio Art credit minimum requirement is 66 credits, a minimum of 30 of which must be at the 2000-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.

Communication Design - ART 2011, 2110, 2120, 3110, 3120, 4110

Illustration - ART 2010, 2110, 3010, 3350, 3370 or 2011, 2210, 3020, 3210 (repeated once)

Painting - ART 2010, 3310, 3320, 3330, 3340 and six additional credits in the 3000-level courses in the painting area to be determined by student interest and faculty advisement.

Photography - ART 2420, 3420, 3430 (may be repeated once), 3440 (may be repeated once), 4410 (may be repeated once); ARTH 3460, 3560.

Printmaking - ART 2010, 3010, 3510, 3520, 3530 (may be repeated up to 18 credits).

Sculpture - ART 2010, 3630, 3640, 3650, 3660 plus 6 additional credits in any of the 3000-level courses in the three-dimensional area to be determined by student interest and faculty advisement.

Individualized Studies: A program of at least 30 credits (including ART 4901) on the 2000-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 fifth semester students with a minimum departmental grade point average of 3.0 and no outstanding incompletes for any other 3999. A maximum of 6 credits total.

Internships and Co-ops. Fifth semester students 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 senior show

The Department of Art and Art History reserves the right to retain student work for exhibition purposes and classroom demonstrations.

Art History

Bachelor of Arts in Art History

Majors must complete two 1000-level courses in the following: ARTH 1128, 1137, 1138, 1140, 1141, and 1162, and eight 3000-4000 level courses in the history of art with at least one 3000-4000 level course from at least five of the following six areas:

- A. Ancient: ARTH 3140, 3150, 3210*
- B. Medieval: ARTH 3210*, 3220, 3230, 3240, 3260,
- C. Renaissance-Baroque: ARTH 3320, 3330, 3340, 3620*
- D. Modern-Contemporary: ARTH 3020, 3035, 3430, 3440, 3445, 3450, 3460, 3510, 3520, 3530, 3560, 3630, 3640*, 3645*
- E. Cross-Cultural Perspectives: ARTH 3015W*, 3610, 3620*, 3630*, 3640*, 3645*, 3710, 3715, 3720, 3730, 3740, 3745
- F. Art History Theory and Methodology: ARTH 3005, 3010, 3015W*, 3030, 3260*, and 4010

In addition, art history majors must take two studio art courses on any level for which they meet the prerequisite. Four related courses at the 3000-4000 level must be taken outside the major.

Courses marked with an asterisk (*) may be used to fill one, but not both, of the categories they designate.

Minors. The department also offers a minor in Art History. It is described in the "Minors" section of this *Catalog*.

Dramatic Arts

Degrees Offered

Bachelor of Fine Arts in Acting, Design/Technical Theatre and Puppetry: preparation for successful careers in performing arts.

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

Prospective Acting majors - one contemporary and one Shakespeare verse monologue - total of 4 minutes

Prospective Design/Technical major - interview

Prospective Puppetry Arts majors - audition and interview

Prospective Theatre Studies majors - departmental application/essay and interview

Requirements - B.F.A.

- To fulfill their departmental writing in the major requirement, students in all three B.F.A. programs in Dramatic Arts must complete one of the following three courses: DRAM 3131W, 4135W, or 4711W.
- Basic information literacy skills required for Dramatic Arts students in all three BFA programs will be addressed in DRAM 1102 and/or DRAM 1701. Other information-gathering skills will also be addressed in the required DRAM 4711W (Directing) course and in the two courses each student must select from the 3000-4000 level Theatre History/Literature options (DRAM 3130, 3131W, 3138, and 4135W).
- All B.F.A. students in Dramatic Arts (Acting, Design/Technical, and Puppetry majors) must complete the following courses:** DRAM 1102, 2130, 2131, 4711, and 6 credits selected from 3130, 3131, 3138, or 4135.
- The following additional course requirements apply to the different major programs within the B.F.A.:

Acting majors must also complete:

- DRAM 1701, 1702, 1801, 1802, 1901, 2701, 2702, 2801, 2941, 4701, 4702, 4703, 4704, 4705, 4811, 4812, 4911, and 4912.
- DRAM 1282 (3 credits - one each in set running, costume running, and lighting or sound running) and DRAM 3182 (3 credits chosen from acting, assistant stage managing, dance or theatre management).
- There is no computer competency requirement for Acting majors beyond the University's entrance expectations.

Design/Technical majors must also complete:

- DRAM 1201, 1202, 1207 (three semesters - 3 credits each in lighting, costuming, and scenery), 1209, 1210, 3199 (12 credits), 3201, 3220, 3301, 3401, 3501.
- Three additional courses chosen from DRAM 3103, 3202, 3302, 3402, 3502, 3601, 3603.
- Beyond the University's entrance expectations, Design/Technical majors require computer competencies that are addressed in the following required courses: DRAM 1202, 1210, 3220 and 3501. Those intending to specialize in lighting design may also elect DRAM 3502.

Puppetry majors must also complete:

- DRAM 1207 (three semesters - 3 credits each in lighting, costuming, and scenery), 1701, 1702, 1901, 3201, 3301, 3401, 3402, 3501, 3601, 3602, 3603, 3604.
- DRAM 3182 (4 credits to be selected from the following areas: acting, construction, costuming, lighting, painting, properties, puppetry performance, and running crew).
- Beyond the University's entrance expectations, Puppetry majors require computer competencies that are addressed in the following required course: DRAM 3501.

Requirements - B.A. - Theatre Studies

- To fulfill their departmental Writing in the Major requirement, Theatre Studies majors complete one of the three following courses: DRAM 3131W, 4135W, or 4711W.
- Basic information literacy skills required for Dramatic Arts students in all three B.F.A. programs will be addressed in DRAM 1102. Other information-gathering skills will also be addressed in the required DRAM 4711W (Directing) course and in the two courses each student must select from the 3000-4000 level Theatre History/Literature options (DRAM 3130, 3131W, 3138, and 4135W).
- There is no computer competency requirement for Theatre Studies majors beyond the University's entrance expectations.
- All Theatre Studies majors must complete the following courses: DRAM 1207 (two semesters - one each in two of the following areas: lighting, costuming, and scenery), 1102, 1701, 2130, 2131, 4711, and 6 credits selected from 3130, 3131, 3138, or 4135.
- All Theatre Studies majors must complete 18 additional credits in DRAM courses at the 3000-4000 level.
- All Theatre Studies majors must complete 12 credits (approved by the student's advisor) at the 3000-4000 level in a related group outside the department. These courses should be closely related to the student's major but need not be in a single department or program. These same courses may be used to satisfy other University requirements if appropriate.

Minors. The department also offers minors in Theatre Production and Theatre Studies. They are described in the "Minors" section of this *Catalog*.

Music

Degrees Offered

Bachelor of Music with an emphasis in performance or theory.

Bachelor of Arts in Music: can be taken without emphasis, with a Music History Emphasis or with a Jazz Emphasis.

Bachelor of Science in music education: a dual degree program that leads to a Bachelor of Science degree through the Neag School of Education and a Bachelor of Arts in Music from the School of Fine Arts. Students spend their first three years in the School of Fine Arts and the last two years in both schools. For more information, see the Neag School of Education.

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.

Common Curriculum

- Completion of the following courses: MUSI 1101, 1103, 1222, 1311, 1312, 1313, 1314, 3311, 3312, 3313, 3314, 3401, 3402, 3403 and one additional 3000-level or above music history course. MUSI 1103 is required of all music students during the first fall semester of residence.
- Convocation (MUSI 1101), Private Lesson (MUSI 1222 or 3222), and Ensemble (MUSI 1110, 1111, or 1112) are required each semester. Students pursuing the Bachelor of Music or Bachelor of Arts with voice as their primary instrument may substitute MUSI 1118 for MUSI 1111 in the last four semesters of their course of study. Students pursuing the Bachelor of Science in Music Education may substitute MUSI 1118 for MUSI 1111 or 1114 in their eighth and ninth semesters of study. B.M. Theory students need 7 semesters of private lessons; B.A. and B.M. keyboard students need 4 semesters of ensemble.
- Four performances representing the student's primary instrument. (See specific guidelines under additional requirements.)
- Completion of piano proficiency equivalent to MUSI 1231 Class Piano Level 4.
- Students with a keyboard emphasis must complete 4 semesters of MUSI 1241 (B.M. and B.S. students must complete 4 semesters of MUSI 1241 before promotion to 3000-level or above applied study).

The University's information literacy requirement will be met through participation in MUSI 1101 which implements the performance requirement common to all degrees, MUSI 1222, 3222, and MUSI 3410W, 3411, 3412, 3413, 3414, 3415, or 3421W.

The University's writing in the major requirement will be met through participation in MUSI 3410W, 3421W, or any 3000-level or above W course that has been approved for this major.

There is no computer competency requirement for Music majors beyond the University's Entrance Expectations.

Additional Requirements – B.A.

1. 9 credits outside Music Department in addition to general education requirements
2. Minimum of 52 credits of music courses, of which 20 must be at the 2000-level or above.
3. Four performances in recital or convocation, as a soloist, chamber musician, or accompanist.

Music History Emphasis

- a. Music History courses: MUSI 4489, and three courses chosen from MUSI 3410W, 3411, 3412, 3413, 3414, 3415, 4471, 4472 and 4473: one of these three courses must be 4471, 4472 or 4473, and one must be on a pre-1700 topic.
- b. Music Theory courses: Two courses from MUSI 3321, 3322W, 3361, 3371Q.
- c. Foreign language: Option A-Two semesters of German, if another language was taken to fulfill the group requirement. Note: Students will take 1000-level courses in German for 4 credits.
Option B - If German was taken as a group requirement, then an additional 2 semesters will be required. Note: Students will take 2000-level or above courses in German for 3 credits.

Jazz Emphasis

- a. MUSI 1601, 3601, 3631, 3632
- b. For the last four semesters of this degree program, Jazz Ensemble (MUSI 1115) would fulfill the remaining four credits (1/semester) of the large ensemble requirement.
- c. Two semesters of applied study in jazz would count toward the 8 required semesters of applied study (MUSI 1222). Jazz lessons would be taught in either the third or fourth year of the degree program by members of our current jazz faculty.

Additional Requirements – B.M.

1. Completion of MUSI 3321 and 3322.
2. Four performances in convocation or recital, exclusive of any degree recitals. Students with an emphasis in performance must appear as soloist a minimum of three times, the other option being a chamber musician. Students with a theory emphasis may appear as a soloist, chamber musician, or accompanist.

In addition, completion of the following courses:

Performance emphasis: Instrumental

- a. MUSI 3222 (4 semesters), MUSI 3232, 4731, 4732 or 4733, 4979.
- b. Two of the four following courses: MUSI 3331, 3351, 3361 or 3371Q.
- 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.
- e. A total of 81 credits in music.

Performance emphasis: Vocal

- a. MUSI 1119 (4 credits), 1251, 1252, 2253, 2254, 3222 (4 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.
- c. A total of 88 credits in music.

Theory emphasis

- a. MUSI 3331, 3351, 3361, 3371Q, 4731, and one or two courses (minimum of 2 credits) from 1601, 3601, 3611, 3631 or 3421W
- b. MUSI 4999 Independent Study (Senior project/paper).
- c. A total of 79-82 credits in Music.
- d. A minimum grade point average of 3.33 in theory courses.

Additional Requirements – for students seeking the Bachelor of Science in music education through the Neag School of Education:

1. Completion of MUSI 1501 (5 credits).
2. Completion of the requirements of the Neag School of Education, including EDCI 3305, 4210W, and 4250.
3. A minimum of 36 3000-4000 level credits in music consisting of the following courses: MUSI 3222, 3313, 3314, 3321, 3571, 4731, 4732 or 4733.
4. Completion of professional education courses as specified by the Neag School of Education for certification; and a designated special education course.
5. Four performances in recital or convocation, as a soloist, chamber musician, or accompanist.

College of Liberal Arts and Sciences

Ross MacKinnon, Ph.D., *Dean, College of Liberal Arts and Sciences*
 Harry Frank, Ph.D., *Associate Dean, College of Liberal Arts and Sciences*
 Douglas Hamilton, Ph.D., *Associate Dean, College of Liberal Arts and Sciences*
 Debra Kendall, Ph.D., *Associate Dean, College of Liberal Arts and Sciences*
 Cyrus Ernesto Zirakzadeh, Ph.D., *Associate Dean, College of Liberal Arts and Sciences*

Admission Requirements

The college requires 16 high school units including:

- 4 years of English
- 3 years of mathematics, with 4 preferred
- 2 years of a single foreign language, with 3 preferred
- 2 years of a laboratory science
- 2 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:

1. earn a minimum of 120 credits.
2. earn at least 45 credits numbered 2000 or above.
3. meet the College of Liberal Arts and Sciences (from the list that follows) General Education and concentration requirements.
4. 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's Degree Requirements

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 below.

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.

Expository Writing: All students must take English 1010 or 1011, and three W courses, two required at the 2000-level or above with at least one 2000-level or above W course approved for use in the major field of study. 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.

Computer Competency: Unless an additional requirement is specified in a major, the Computer Technology Competency exit requirement for students in the College of Liberal Arts and Sciences does not go beyond the University's entrance requirement.

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.

A. Arts:

AFAM/FINA 1100
 ART 1000
 ARTH 1128, 1137, 1138, 1141, 1162
 DRAM 1101, 1110
 FREN 1171
 GERM 1171, 3261W, 3264W
 ILCS 1149, 3258/W, 3260W
 MUSI 1001, 1002, 1004, 1005, 1021, 1022, 1112
 SPAN 3250
 WS 1104

B. Literature:

CAMS 1101, 1102, 1103
 CLCS 1101, 1102
 ENGL 1101/W, 1103/W, 1503, 1616/W, 1640W, 2100, 2101, 2274W, 2405, 2407
 FREN 1176, 3230, 3234*, 3261W*, 3262W*, 3270W
 GERM 1140W, 3252W, 3253W, 3254W, 3255W
 HEB/JUDS 1103
 ILCS 1101, 1158, 3255W
 SPAN 1007, 3232*

C. History:

AASI/HIST 3531
 ECON 2101/W, 2102/W
 GEOG/URBN 1200
 HIST 1100/W, 1201, 1203/WS 1121, 1206, 1300, 1400, 1501/W, 1502/W, 1800, 3705
 HIST 3674/PRLS 3220, HIST/PRLS/LAMS 3660W
 HIST/SCI 2206

* indicates foreign-language prerequisite

D. Philosophical/ethical analysis:

LING 1010
 PHIL 1101, 1102, 1103, 1104, 1105/W, 1106, 1107, 1165W, 1175
 POLS 1002

E. World cultures:

ANTH 1001W, 3401
 ARAB 1121, 1122
 AASI 3201
 CHIN 1121, 1122
 CLCS 1103W
 FREN 1169, 1176, 1177, 3210*, 3211*, 3218, 3224, 3235, 3267/W*, 3268/W*
 GERM 1169, 1175, 3251, 3258
 ILCS 1160, 1170
 INTD 3260
 SPAN 1008

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 1120Q, 1121Q, and either 1122Q or 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

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 is now understood as comprising the study of issues and subjects from throughout the Western Hemisphere. Among the goals of the American Studies curriculum is to promote an awareness of complex cultural, political, and economic structures at the root of the social organizations that have existed throughout the history of what has come to be known as the "New World." Other areas of concentration may include, for example, the ways in which literary, musical, and visual artists have articulated cultural concerns, our changing understandings of the geography and ecology of the Western Hemisphere, or issues of cultural and ethnic diversity.

Prerequisite: 1000-level "Introduction to American Studies"

Core Courses: 15 Credits (One course from I, II, III, IV, and V below.)

I. One course from the following: HIST 3502, 3504, 3516, 3561, 3562, 3563, 3564.

II. ENGL 2201 or 2203

III. POLS 2607 or 3602 or 3802 or 3817 or ECON 2102

IV. One 2000-level or above course that deals with Latin America, Canada, or the Caribbean.

V. AMST/ENGL 3265W

Track Requirement: 9 Credits

Students must choose a "Track" from the four American Studies tracks. They must take three 2000-level or above courses from within this track.

Track I – History, Culture, and Society: ANTH 3026, 3027, 3041, 3152, 3504, 3902, 3903, 3904; GEOG 239; HDFS 2001, 3240, 3442; HIST 3502, 3504, 3520, 3522, 3530, 3541, 3554, 3555, 3561, 3562, 3563, 3564, 3570, 3660W; NRME 2315; PHIL 3228; SOCI 3221, 3501, 3511, 3601, 3651, 3825; WS 3264, 3266, 3267, 3268

Track II – Literature and the Arts: ARTH 3440, 3450, 3715; DRAM 3131, 4151; ENGL 2201, 2203, 3210, 3212, 3214, 3216W, 3218, 3801W, 3803W

Track III – Political Science, Economics, and the Law: BLAW 3175; COMM 3400; ECON 2102, 3468; HDFS 3530; HIST 3516, 3550, 3551, 3555; JOUR 3020; NRME 3245; PHIL 2245, 3226; PHRM 4007; POLS 2607, 2622, 3032, 3414, 3432, 3437, 3442, 3447, 3602, 3627, 3642, 3802, 3812, 3817, 3827, 3842, 3847; SOCI 3841

Track IV – The Americas: ANTH 3021, 3022, 3029, 3042; ARTH 3630, 3645; FREN 3273; GEOG 4710; HIST 3607, 3608W, 3609, 3610, 3620, 3635, 3640, 3643; LAMS 3575, 3579, 4994W; POLS 3235; SPAN 3201, 3204, 3233, 3234, 3260, 3265, 3266

A number of these courses are cross-listed in the catalog, but in most cases they appear on this list only once. Many are offered as "W" courses, and some may have departmental prerequisites.

Other courses, such as "Special Topics" courses, may be used to fulfill American Studies requirements with the approval of the Director of American Studies. (If possible, students should seek such permission before taking the course.) All courses must be taken for three credits.

The Core Courses may not be used to fulfill the 9-credit track requirement. A second core course from the same group, however, may be so used.

Seminar in American Studies: 3 Credits (W). This seminar will provide an in-depth study of a historical period, event, or cultural movement from an interdisciplinary perspective. Students will produce a substantial essay on a topic approved by the instructor.

AMST/ENGL 3265W satisfies the Information Literacy Competency and Writing in the Major requirements.

Related Courses: 12 Credits

Students will take four related courses. The approval of these courses as germane to the American Studies major will be left to the discretion of the advisor.

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.

All must take the following major courses:

A. ANTH 1000 or 1006

B. ANTH 2000, 2501, 2502, and 3002

C. At least one course in an ethnographic area (ANTH 3021, 3022, 3023, 3025, 3026, 3027, 3028, 3029, 3030, 3038, 3041, 3042).

D. At least three additional anthropology courses at the 2000 to 4000-level, two of which may not be ethnographic area courses. We strongly recommend that majors take ANTH 4001W in the senior year, if possible.

To satisfy the writing in the major competency, all majors must pass at least one 2000 to 4000-level ANTH W course approved for the major.

To fulfill the information literacy requirement, all majors must pass one of: ANTH 3003, 3004, 3200 or 3506W.

Related courses must be approved by the major advisor.

Minors in Anthropology and Native American Studies are 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). Other courses are listed separately under individual departments.

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 requirements for the major in Biological Sciences are designed to ensure a sound and broad background in biology, with opportunities to explore related fields. Biological Sciences majors should take BIOL 1107 and 1108, but majors interested primarily in botany may wish to take BIOL 1110 in addition or may substitute BIOL 1110 for BIOL 1108. Students wishing to complete this major must take at least 24 credits of 2000-level courses from EEB, MCB, and PNB. It is strongly recommended that at least four courses include laboratory or field

work. In addition to laboratory work associated directly with courses, an Independent Study course in any of the three biology departments will provide majors with a means of gaining specific research experience. Courses chosen for the major must include at least one course or course sequence from each of the following three groups:

- A. MCB 2000, 2210, 2410, 2413, 2610, or 3010
- B. EEB 2244/W or 2245/W.
- C. PNB 2250, or 2274-2275. (Note: PNB 2274-2275 must be taken in sequence to be counted towards the Biology major.)

To satisfy the writing in the major and information literacy competency requirements, all students must pass at least one of the following courses: EEB 2244W, 2245W, 3209W, 3220W, 4230W, 4243W, 4251W, 4253W, 4276W, 4896W, 5335W; MCB 3640W, 3841W, 4026W, 4997W; PNB 3263WQ, 4296W; or any W course approved for this major.

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. The American Chemical Society certifies a rigorous professional program which is an option for the B.S. students.

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. degree prepares 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 MATH 1120Q, 1121Q, and 1132Q)
- MATH 2110Q (or 2130Q)
- MATH 2410Q (or 2420Q)
- PHYS 1201Q-1202Q, and 1230 (or 1401Q-1402Q)

Failure to complete these sequences by the end of the fourth semester may delay completion of the degree.

A minor in Chemistry is described in the “Minors” section.

Field of concentration 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 requirements. The field of concentration requirements include CHEM 2443, 2444, 2445, (Organic), 3210, 3214, 3215 (Inorganic), 3332, 3334 (Analytical), and 3563, 3564, 3565W (Physical).

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 requirements. The field of concentration requirements include those listed above for the B.S. degree with the exception of CHEM 3215 and 3334.

For the degree certified by the American Chemical Society, two courses designated by the department as advanced courses must be taken in addition to the B.S. requirements. Also, these or other courses beyond the core curriculum must include at least 80 contact hours of laboratory work. The grade point average in all of the required chemistry courses must be at least 2.300.

Undergraduate students are encouraged to participate in research.

To satisfy the computer technology competency, all students must take CHEM 3565W. Other courses that will further enhance competency in computer technology include 3215, 3332, 3334, and 3564.

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.

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, 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 39 2000-level 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 requirements. These courses should be taken during the first four semesters and may fulfill general education requirements.

Core Courses (15 credits)

COGS 2201 and four of the following courses: ANTH 3002; CSE 4705; LING 2020; PHIL 3250; PSYC 2501

Research Courses (6 credits)

Statistics (one of the following for at least 3 credits): PSYC 2100Q; STAT 2215Q, 3025Q (Calculus level)

Research Methods (one of the following for at least 3 credits): ANTH 3004 (if elected for 3 credits); LING 3110; PSYC 3251/W, 3450W, 3550W, 3551W, 3552

Formal Systems Courses (3 credits)

CSE 2500, 3500^b, 3502^{a,b}, 3802; LING 3310Q^b, 3510Q^b; MATH 2210Q, 2410Q, 3160, 3210, 3230, 3270^{a,b}, 3412; PHIL 2211Q, 3214

Advanced courses (12 credits)

Must include courses from at least 3 departments. Can include core courses not needed to satisfy the core course requirement.

ANTH 3250, CDIS 3202/3202W^a, 4244/4244W, 4253; CSE 3500^{a,b}, 3502^b, 4095; LING 3310Q^b, 3510Q^b, 3610W; MATH 3270^{a,b}; PHIL 2210, 2212/W^a, 3241, 3247/3247W, 3249/3249W, 3256/3256W; PNB 3251; PSYC 2200, 2400, 2500, 3100/3100W, 3470^a, 3500, 3501, 3502, 3503; SCI 2400^a

Electives (3-6 credits)

One or two^b additional courses (from above lists or other related courses from any department), chosen with the approval of the advisors.

^a Due to content overlap, no more than one of each of the following pairs may be counted toward the major: (i) CDIS 3202/3202W and PSYC 3470; (ii) PHIL 2212/W and SCI 2400; (iii) CSE 3502 and MATH 3270.

^b The following courses may be used to fulfill both the Formal Systems and Advanced Courses requirements: CSE 3500, 3502; LING 3310Q, 3510Q; and MATH 3270. In this event, two electives are required.

Competency and Writing Requirements

The exit requirements for computer technology and information literacy will be met by satisfaction of the Research Methods Requirement. The exit requirements for writing in the major can be met by taking one of the following courses: CDIS 3202W, 4244W; LING 3610W; PHIL 2212W, 3247W, 3249W, 3256W; PSYC 2100WQ, 3100W, 3251W, 3450W, 3550W.

Students in the program will have an advisor and an associate advisor, each in different departments contributing to the cognitive science program. Students will consult with both of them to plan a course of study.

For further information, contact Professor Letty Naigles, Director of Undergraduate Studies in Cognitive Science, 141 Bousfield Psychology Building.

Communication Sciences

The Department of Communication Sciences is concerned with the human communication process and its analysis. Undergraduate students may major in Communication Sciences with a concentration in either Communication or Communication Disorders. The Department offers the following graduate degrees in the field of Communication Sciences: the M.A. with concentrations in Speech, Language and Hearing, and in Communication, and the Ph.D. with concentrations in Speech, Language and Hearing, and in Communication and Marketing Communication and the Doctor of Audiology, Au.D. degree.

Communication Disorders. The undergraduate concentration is a preprofessional program within the liberal arts curriculum. It permits the student to apply for graduate studies in one of two specialty areas: audiology or speech-language pathology.

Following requirements of the American Speech, Language, and Hearing Association, students must take one course in each of the following areas:

Mathematics/statistics: MATH 1040Q or MATH 1060Q or STAT 1100Q

Biological science: BIOL 1102 or BIOL 1103 or BIOL 1107/1108

Physical science: PHYS 1010Q or PHYS 1075Q

More advanced level courses may be substituted for the courses listed above.

Students who elect the concentration in Communication Disorders must take: CDIS 3201, 3202 or 3202W, 3247, 3248, 3250, 4242, and 4249 or 4249W

In addition, students must take at least two (2) of the following courses: CDIS 4244 or 4244W, 4251 or 4253.

The information literacy competency is met by the successful completion of required courses.

To satisfy the writing in the major requirement, students must pass at least one course from CDIS 3202W, 4244W, or 4249W.

The Master's degree programs in Speech and Language and the Au.D. degree in Audiology are accredited by the Council on Academic Accreditation of the American Speech-Language-Hearing Association. The University of Connecticut Speech and Hearing Clinic complies with the quality indicators for professional service programs in audiology and speech-language pathology issued by the American Speech-Language-Hearing Association.

Communication. The undergraduate concentration in Communication is designed to produce students capable of analyzing human communication behavior from a scientific standpoint. It concentrates on the empirical investigation of human communication, stressing developments in communication theory and research. The concentration emphasizes interpersonal, mass, new communication technologies, nonverbal, organizational and intercultural and international communication. Students who elect to take the Communication concentration must pass:

COMM 1000, 1100, 3000Q,

In addition, students must pass at least two (2) of the following Core courses: COMM 3100, 3200, 3300

Students must pass at least five (5) more 2000-level or above courses in Communication. No more than two of the five can be applied courses: COMM 4800, 4820, 4940, 4991, and 4992. Three of the five must be theory courses, which are all other COMM courses numbered 2000 or above. As long as students have met the above requirements, they may also pass additional applied courses. We strongly recommend that everyone take at least one internship (COMM 4991).

To satisfy the information literacy competency, all students must pass COMM 1000, 1100, and 3000Q. Other courses that will further enhance competency in information literacy include COMM 1300, 3100, 3103, 3200, 3300, 3321, 3400, 3450, 3600, 4089, 4100, 4120, 4220W, 4230, 4320, 4330, 4410W, 4420, 4450W, 4451W, 4460, 4500, 4551W, and 4620. To satisfy the writing in the major requirement, students must pass at least one course from COMM 2310W, 4220W, 4410W, 4450W, 4451W, 4551W, 4930W, 4996W, or any 2000-level or above W

course approved for this major. For students interested in media and public relations careers, journalism courses are recommended for additional writing competency.

Students must apply to the department to become a Communication Sciences major with a concentration in Communication. The deadline for applications during a semester is the end of the second week of classes. Applications are accepted for Fall and Spring semesters. Students typically apply Spring semester of their Sophomore year. Forms can be obtained outside Room 223 PCSB, on the department website, and from Communication faculty members at the Stamford Regional Campus.

The decision to admit will depend on several criteria:

- Successful completion of at least 54 credits, or successful completion of 40 credits plus current enrollment that should result in at least 54 credits by the end of the current semester.
- Cumulative GPA, and
- Successful completion of COMM 1000.

The applicant's academic record and space availability will also be considered.

We recommend that students interested in the Communication concentration complete COMM 1100 and COMM 1300 before junior year, if possible. COMM 1300 is a prerequisite for many 2000-level or above media courses, and is advised for all students interested in media production, communication technology, marketing, public relations, or advertising.

Prior to acceptance into the Communication Sciences major, students may designate themselves as Pre-Communication by notifying their advisor. The PRECOM designation, however, will only indicate an intention to apply and will not insure acceptance into the concentration. PRECOM majors must still apply to become Communication Sciences majors with a Communication concentration at the appropriate time. PRECOM majors are given priority in registering for 1000-level Communication courses.

A minor in Communication is described in the "Minors" section.

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:

BIOL1107, and BIOL 1108 or 1110

CHEM 1127Q and 1128Q or CHEM 1124Q, 1125Q, and 1126Q

Requirements for the EEB Major (B.S. or B.A.)

- I. Both of the following core courses: EEB 2244 or 2244W and EEB 2245 or 2245W
- II. At least one of the following animal diversity courses: EEB 2214, 3254, 3265, 3273, 4200, 4250, 4252, 4274, 4275, or 4260 and 4261
- III. At least one of the following plant diversity courses: EEB 2227, 3203, 3204, 3220/W, 3240, 3250, 3271, 4272
- IV. A course in physiology - EEB 4215 (students who take PNB 2250 as a related course are not required to take EEB 4215).
- V. It is recommended that students take at least four EEB courses that require extensive laboratory or field work.
- VI. Students are encouraged to complete a course in statistics.
- VII. At least 24 credits of EEB courses at the 2000-level or above, which may include courses in I - IV above.
- VIII. Related Course Requirements: At least 12 credits of 2000-level or above science courses outside EEB, which must include either MCB 2410 or 2413. One semester of organic chemistry is recommended.
- IX. To satisfy the Writing in the Major and Information Literacy competency requirements, all students must pass at least one of the following courses: EEB 2244W, 2245W, 3209W, 3220W, 4230W, 4243W, 4251W, 4253W, 4276W, 4896W, 5335W

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, comparative economic systems, labor economics, health economics, urban and regional economics, and economic development.

Economics majors must earn twenty-four credits in courses at the 2000 level or above, including two intermediate theory courses (ECON 2201 and 2202), plus at least nine credits in either quantitative skills courses (ECON 2301-2328) and/or courses at the 3000-level or above. No more than 6 credits in ECON 3499 may be counted toward the required 24 credits in economics courses at the 2000-level or above.

Economics 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, 1110Q, 1121Q, 1131Q, or 1151Q. MATH 1131Q and STAT 1100Q are preferred. Students may substitute more advanced MATH and STAT courses with consent of the faculty advisor.

The intermediate theory courses (ECON 2201 and 2202) should be taken early in the student's major program. Recommended courses for economics majors include ECON 2311 and ENGL 3003W. The department has special requirements for economic majors in the University Honors Program and for majors who qualify for the department's Economics Scholars and Quantitative Certificate Programs.

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.

Economics majors satisfy the computer technology competency by passing either STAT 1000Q or 1100Q in addition to meeting the University-wide computer entrance expectations.

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 2311, 2312W, 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 thirty credits of English courses numbered 2000 or above and including the following:

A. Introduction to Literary Studies (3 credits) ENGL 2600. This course should be taken within a semester of declaring the major or at its next offering.

B. Literary History (9 credits): One course from group 1, one course from group 2, and a third course from group 1, 2, or 3:

1) Survey and period courses before 1800: 2100, 3111, 3113, 3115, 3805W, 3807W.

2) Survey and period courses after 1800: 2101, 2201, 2203, 2301, 3119, 3177/W, 3801W, 3803W, 3809W, 3811W.

3) Multi-period, multicultural, and ethnic literature courses: 3120, 3122, 3210, 3212, 3214, 3216W, 3218, 3605, 3607.

C. Methods (6 credits). One course from group 1 and a second course from group 1 or 2:

1) 2401, 2405, 2407, 2409, 2420, 3240, 3265W, 3318, 3403, 3406, 3422, 3601, 3603, 3609, 3613, 3617, 3619, 3621, 3623, 3625, 3650, 3651.

2) 3003W, 3003WC, 3701, 3703, 3705, 3707, 3709.

D. Major Author (3 credits). One course from the following: 3501, 3503, 3505, 3507, 3509.

E. Advanced Study (3 credits). One from the following: 4101W, 4201W, 4203W, 4301W, 4302W, 4401W, 4405W, 4407W, 4600W, 4601W, 4613W, 4695W. These courses also satisfy the departmental requirements for Writing in the Major and Information Literacy.

F. Additional courses (6 credits). In addition to courses used to satisfy requirements A-E above, six credits must be chosen from English courses numbered 2000 or above. Course numbers used to satisfy requirements A-E may be used toward satisfaction of requirement F only when they designate a second or third section of a course repeated for credit with a change of topic.

Distribution Requirements:

1) At least two courses must concern literature written before 1800. Courses satisfying this requirement are 2100, 3111, 3113, 3115, 3301, 3495, 3501, 3503, 3505, 3507, 3805W, 3807W, 4695W.

2) At least one course must concern ethnic or postcolonial literatures in English. Courses satisfying this requirement are 2301, 3120, 3122, 3210, 3212, 3214, 3216W, 3218, 3318, 3605, 3607, 4203W, 4301W, 4302W.

3) No more than three credits from the following courses may count toward the English major: 3003W, 3003WC, 3011C, 3011W, 3091, 3692, 3701, 3703, 3705, 3707, 3709.

A minor in English is described in the "Minors" section.

Concentration in Irish Literature. English majors may choose to pursue a concentration in Irish Literature. Within the requirements for all English majors, these students will select four courses in Irish literature approved by their advisors in Irish literature and by the Irish Literature Coordinator.

Study Abroad in London: The Department of English sponsors programs in London occurring on an as-offered basis. These include the UConn Summer in London program and ENGL 3193, a spring course that includes a trip to London during the winter break.

Environmental Science

The major in Environmental Science 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 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 science and related fields.

A. Required courses in Basic Science: ARE 1150; BIOL 1107, 1108 or BIOL 1107, 1110; CHEM 1124Q, 1125Q, 1126Q or CHEM 1127Q, 1128Q; MATH 1120Q, 1121Q, 1122Q or 1131Q, 1132Q; PHYS 1201Q, 1202Q, 1230 or 1401Q, 1402Q; STAT 1000Q or 1100Q or 3025Q.

B. Required Courses in Introductory Environmental Science: Select any two from GEOG 2300, GEOL 1050, MARN 1002, NRME 1000.

C. Required Courses in 2000-level or above Environmental Science: AH 3175, EEB 2244 or 2244W, GEOL 3020, MARN 3000, NRME 3145

D. Capstone course: GEOG 3320W

E. General Education competency requirements: Completion of GEOG 3320W will satisfy the writing in the major and information literacy competency requirements. Completion of BIOL 1108 and EEB 2244 will satisfy the Computer Literacy requirement.

F. Concentration requirements. All students majoring in Environmental Science must also fulfill the requirements of a concentration in a discipline associated with the program before graduation. Approved concentrations are listed below.

Environmental Biology - Students must complete: EEB 2245 or 2245W; EEB 3307 or 4230W; and at least one course from each of the following groups:

Group I -- Ecological Systems and Processes: EEB 2208, 3230, 4215, 4247, 5301, 5302, 5310

Group II -- Plant Diversity: EEB 3203, 3204, 3220/W, 3240, 3250, 3256, 3271, 4272, 4276,

Group III -- Animal Diversity: EEB 2214, 3254, 3265, 3273, 4200, 4250, 4252, 4274, 4275, or 4260 and 4261

Environmental Chemistry - Students must complete at least 15 credits including CHEM 2443, 2444, 2445 or 2446, and 3332, with remaining credits from CHEM 3334; MATH 2110Q and CHEM 3563; CHEM 3210; or CHEM 5370.

Environmental Geography - Students must complete: GEOG 3510 or 4500; and at least four of: GEOG 3310, 3300/W, 3410, 3500Q, 4300, 4510

Environmental Geoscience - Students must complete at least five of: GEOL 3010, 3030, 3040, 3510, 3710, 4735

Marine Science - Students must complete five courses (fifteen credits) from the following list with at least one course from each group.

Group A: MARN 3014, 3015, 3016, 3017, 4010

Group B: MARN 3003Q, 3030, 4030W, 4050W

Group C: MARN 3060, 3061, 4060

Environmental Science also offers the following concentrations through the College of Agriculture and Natural Resources: Environmental Health, Natural Resources, Resource Economics, Soil Science. For the complete requirements, refer to the Environmental Science description in the "College of Agriculture and Natural Resources" section of this *Catalog*.

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.

For students whose goals are the bachelor's degree, 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. Our students have gone on to work as urban and regional planners, marketing specialists, environmental program managers, geographic information systems specialists, location analysts, and transportation planners. Students with a B.A. degree in geography are also prepared to move on to graduate school to pursue M.A. and Ph.D. degrees which enables them to teach at the college level or to secure higher ranking positions in the public and private sectors.

Requirements for the Major. The geography major requires 24 credits in 2000-level or above geography courses and 12 credits of related course work in other departments. Majors complete a basic core of 3 courses: GEOG 2100, 2300, and one methods course (choice of GEOG 2510, 3300, 3500Q, 3510, 4500), and 15 additional credits, including at least one "W" course in geography numbered 3300W or higher in consultation with their departmental advisor.

The writing in the major requirement for Geography can be met by passing any of the following geography courses: GEOG 3320W, 3330W, 4110W, or 4200W.

The information literacy requirement in Geography can be met by passing any of the following geography courses GEOG 3320W, 3330W, 4110W, or 4200W.

The computer technology exit requirement in Geography can be met by passing one of the following courses: GEOG 2510, 3300, 3500Q, 3510, or 4500.

A minor in Geographic Information Science is described in the "Minors" section.

Geology and Geophysics

Geology integrates biology, chemistry and physics in the study of the Earth's history and composition as recorded by rocks, fossils, and landscapes. Geophysics uses the methods of mathematical physics to investigate the Earth's interior through the analysis of earthquake energy and measurement of electromagnetic, gravitational, and thermal fields. Together, geology and geophysics provide the tools needed for the exploration for mineral and energy resources, for the monitoring and remediation of environmental contaminants in soil, sediment, and groundwater and for the study of earthquakes, volcanic eruptions, floods and other natural phenomena that pose a hazard to human life.

The challenge of geology and geophysics is to understand our planet and its history, and to use that knowledge to forecast its future in an era of global change.

The Geology and Geophysics Program is administered by the Center for Integrative Geosciences. Students interested in geosciences may pursue a course of studies with a foundation in geology and geophysics through the Individualized Major program. Faculty associated with the Center (located in Beach Hall) are available to provide information and for advising. For further information and application forms, contact the Individualized Major Program Director at (860) 486-3631.

A minor in Geology and Geophysics 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 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 must take HIST 2100 in the semester following their declaration as majors, and all majors except Honors students must take HIST 4994W in their senior year. Honors students should take in sequence 4994W and 4997W or 4997W and 4999. 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 3300 (ANTH 3513), 3301 (CAMS 3253), 3320 (CAMS 3254), 3325 (CAMS 3255), 3330 (CAMS 3256, HEB 3218, JUDS 3218), 3335 (CAMS 3250), 3340 (CAMS 3243), 3350, 3360, 3361, 3370, 3371, 3400, 3401, 3420, 3450, 3460, 3470

Group B - Modern Europe: HIST 2206 (SCI 2206), 2240, 2401, 2402, 3201 (HRTS 3201), 3203 (HDFS 3423), 3205, 3412, 3413, 3416 (WS 3416), 3418 (HEB 3203, JUDS 3203), 3421, 3426, 3430, 3440, 3451, 3456, 3463, 3471.

Group C - United States: HIST 2206 (SCI 2206), 3201 (HRTS 3201), 3204W, 3206, 3502, 3504, 3510, 3516, 3520, 3522, 3530 (AASI 3578), 3531 (AASI 3531), 3541 (URBN 3541), 3544, 3550, 3551, 3554, 3555, 3556W, 3561 (WS 3561), 3562 (WS 3562), 3563 (AFAM 3563, HRTS 3563), 3564 (AFAM 3564), 3568 (AFAM 3568), 3570, 3575 (PRLS 3221, HRTS 3221), 3660W (LAMS 3660W), 3674 (PRLS 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 3201 (HRTS 3201), 3202 (HRTS 3202), 3206, 3422, 3607, 3608W, 3609, 3610, 3620 (AFAM 3620), 3635, 3640, 3643, 3660W (LAMS 3660W), 3674 (PRLS 3220), 3704, 3705, 3712, 3752 (AFAM 3752), 3753 (AFAM 3753), 3770 (AFAM 3224), 3808 (AASI 3808), 3809 (AASI 3809), 3812 (AASI 3812), 3822, 3863.

Variable Topics Courses (HIST 3100W, 3101W, 3991, 3993, 3995, 3998, 4989, 4994W, 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 Studies

Students in the Human Development and Family Studies Major must complete the following requirements: HDFS 1070; PSYC 1100, 1103 (or 1101); SOCI 1001; and STAT 1000Q or STAT 1100Q (Note: These courses may also fulfill University General Education requirements.) Students must meet the computer technology, information literacy, and writing competency requirements through satisfactory completion of HDFS 2004W and either HDFS 4007W or HDFS 4087W.

The major in Human Development and Family Studies requires 46 credits at the 2000-level or above including 34 credits in Human Development and Family Studies 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 Studies. Students are allowed much flexibility in tailoring their major to meet their particular interests and educational goals. Most students choose to focus their work in one or more of the following concentrations:

Early Childhood Development and Education
Childhood and Adolescence

Family Relationships: Services and Counseling
Family in Society: Social Policy and Planning
Adult Development and Aging

This major must include all of the following required courses: HDFS 2001, 2004W, 2100, 2200, 2300 and either 4007W or 4087W.

This major must include the completion of one of the following courses: HDFS 3510, 3520, 3530, 3540, 3550.

This major also must include at least 12 credits from the following courses. HDFS 3083, 3087, 3092, 3098, 3101, 3102, 3103, 3120, 3122, 3123, 3125, 3126, 3130, 3240, 3249, 3252, 3260, 3261, 3268, 3277, 3310, 3311, 3319, 3340, 3342, 3420, 3421, 3422, 3423, 3430, 3431, 3432, 3442, 3510, 3520, 3530, 3540, 3550, 4004, 4087W, 4097. These 12 credits may include elections from among the five courses listed above (HDFS 3510, 3520, 3530, 3540, 3550), if not applied to satisfaction of the foregoing requirement.

Minors

A minor in Gerontology is administered under the auspices of the Center on Aging and Human Development. Please refer to its description in the "Minors" section of this *Catalog*.

Honors Program

The Human Development and Family Studies 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 Studies majors with an overall GPA of 3.2 or higher and a GPA in the major of 3.5 or higher are eligible to apply to the Honors Program in Human Development and Family Studies. 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 Studies Honors Advisor.

Individualized Major

Students with a grade point average of 2.0 or higher may apply for an individualized major. An individualized major requires a field of concentration of at least 36 credits numbered 2000 or higher. The 36 credits may come from two or more departments in the University. At least 18 credits shall come from departments of this College. The student may include no more than 6 credits of independent study nor more than 12 credits of field work. To graduate, students must earn a grade point average of 2.5 or better in the 36 concentration credits.

Students may submit proposals for admission to the individualized major once they achieve third semester status and may be admitted after completing three semesters of work (45 credits). The latest they may submit proposals is prior to beginning their final 30 credits of study. The proposed field of concentration must show coherence of subject matter or principle and have academic merit. Internship, field work, research, or study abroad is recommended as part of the proposed plan of study. For further information and application forms, see the Program website at: <http://www.iisp.uconn.edu/> or contact the Individualized and Interdisciplinary Studies Program at (860) 486-3631.

All students with approved individualized major plans of study must complete a capstone course as part of their concentration credits: they must register for INTD 4600W (INTD 4697W for honors and other students writing a thesis) during their last academic year. (Double majors and additional degree students may meet the capstone course requirement by substitution if they register for a capstone course or thesis in the final year of their other major.)

Writing in the major requirement: 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) and, in addition, take INTD 4600W (or INTD 4697W). (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 take INTD 4600W (or INTD 4697W). In addition, all majors must include 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.)

Computer technology competency: The University's basic entrance expectations are considered to be adequate for Individualized Majors in general. However, Individualized Majors are required to consider if more advanced computer technology competency is required for their major and, if yes, specify as part of their plan of study how they will achieve it.

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, public relations offices and political press offices.

In addition to satisfying the requirements of the College, majors must complete 24 credits in journalism at the 2000-level or above, including JOUR 2000W, 2001W, 3002, 3020 and 3030. JOUR 1002 is a prerequisite for JOUR 3002.

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).

Students will fulfill the computer technology competency by (a) meeting the university's expectations in computer operation basics, word processing, presentation software, spreadsheets, database basics, graphics and multimedia, Internet basics and electronic communication, and (b) completing Journalism 3030.

Journalism majors are advised to consult with their advisors about additional computer skills that may be helpful to them, based on individual career plans.

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 in the Journalism Department Student Resource Center, Arjona 428.

Students must meet the following two requirements:

- 1) Successful completion of 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) Cumulative GPA of at least 2.8 - or - successful performance on a timed writing exercise administered by the department. Applicants taking the test must show mastery of the fundamental tools of writing, including spelling, grammar and syntax. The applicant's academic record and goals also will be considered.

Latin American Studies

The major in Latin American Studies responds to a need in the New England region and nationally for a deeper understanding of the peoples and cultures of Latin America, its history and contemporary economic, social, and political problems, and its relations with the United States. Completion of the B.A. in Latin American Studies prepares the student to work in government, international organizations, business, journalism and communications, or to pursue graduate studies that lead to careers in research and teaching.

The Center for Latin American and Caribbean Studies administers the undergraduate major in Latin American Studies, a program of study leading to the B.A. degree. The major in Latin American Studies consists of a minimum of 36 credit hours of interdisciplinary course work built around 5 core courses (15 credit hours) as follows:

Core Courses

Anthropology: One course selected from ANTH 3021, 3022, 3029, or 3042.

History: One course selected from HIST 3607, 3608W, or 3609.

Humanities: One course in Latin American literature or art: SPAN 3233, 3234, 3266; ARTH 3610, 3620, or 3630.

Political Science: POLS 3235.

Latin American Studies: LAMS 4994W.

Language Requirement

Successful completion of two of SPAN 3178, 3179, 3240W, or 3241.

Students select the remaining courses (a minimum of 21 credit hours) needed to complete the major in consultation with an advisor, who will assure that the student's program is coherent and comprehensive.

Study Abroad. While study abroad is not mandatory, we strongly urge all Latin American Studies majors and minors to spend at least a semester in Latin America. The University sponsors academic programs in Mexico at the Universidad de las Américas, Puebla, in the Dominican Republic, at the Pontificia Universidad Católica Madre y Maestra, Santiago de los Caballeros, at the University of Costa Rica in San José, Costa Rica, at the Pontificia Universidad Católica de Chile and the Universidad de Chile in Santiago, Chile and at the Universidad de Buenos Aires, Argentina. Students may go for either a semester or a full academic year. The University also sponsors an academic year and a one-semester program in Brazil at the Universidade de São Paulo. For further information, contact the Center for Latin American and Caribbean Studies or the Study Abroad Office.

Information literacy and writing in the major competencies will be satisfied by completion of the core course LAMS 4994W.

A minor in Latin American Studies is 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.

For the **Linguistics and Philosophy** joint major, specifically required courses are LING 3110, LING 3510Q, and PHIL 3241. For this joint major, exit requirements for computer technology and information literacy will be satisfied by passing LING 3110. The exit requirement for writing in the major will be satisfied by passing either LING 3610W or PHIL 3225W.

For the **Linguistics and Psychology** joint major, specifically required linguistics courses are: LING 2010Q and 3110, and at least two out of the other 2000-level or above linguistics courses; and specifically required psychology courses are: PSYC 2100Q 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 computer technology and information literacy will be satisfied by passing LING 3110. The exit requirement for writing in the major will be satisfied by passing either LING 3610W or PSYC 3550W.

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.

Marine Sciences

Bachelor of Science in Coastal Studies:

The B.S. in Coastal Studies requires a foundation of courses including 29 credits of Marine Science courses, and 12 credits of defined social science courses constituting the Related Area. Coastal Studies majors must pass the following courses.

I. 1000-Level: BIOL 1107, 1108; either CHEM 1124Q, 1125Q and 1126Q or CHEM 1127Q, 1128Q; either MATH 1120Q, 1121Q and 1122Q or MATH 1131Q,

1132Q; either PHYS 1201Q, 1202Q and 1230 or PHYS 1401Q, 1402Q; MARN 1002 or 1003

Coastal Studies requires a course in data analysis and interpretation. This requirement may be fulfilled with STAT 1100Q or another course approved by the Department. Students are encouraged to fulfill some of their General Education requirements with the following choices: HIST/SCI 2206; and either ECON 1201 or ARE 1150

II. Coastal Studies B.S. Major Requirements

The following courses constitute the major requirements: MARN 2002, 3001, 3003Q, 3801W, 4001, 4002, and 3 electives. The electives must represent different areas of Marine Sciences. At least one course must be chosen from each of the following groups:

Group 1: MARN 3060, 3061, 4060;

Group 2: MARN 3012, 3013, 3014, 3015, 3016, 3017, 3030;

Group 3: MARN 3016, 3030, 4030W, 4050W.

Note: MARN 3016 and 3030 may be used to fulfill only one requirement, either Group 2 or 3. Students may be able to use MARN 4893, MARN 4895 or other MARN courses towards one or more of these electives with prior approval of the Department Head.

III. Coastal Studies B.S. Related Area

In consultation with their faculty advisor and a social science faculty member, students choose Related Area courses appropriate to their interests. The department maintains a list of courses acceptable for this requirement.

Bachelor of Arts in Coastal Studies: The B.A. in Coastal Studies requires a foundation of courses including 25 credits of Marine Science courses, and 18 credits of defined social science courses constituting the Related Area.

The B.A. plan of study requires students to take additional social science courses. Coastal Studies majors must pass the following courses.

I. 1000-Level: BIOL 1107, 1108; either CHEM 1124Q, 1125Q and 1126Q or 1127Q, 1128Q; either MATH 1060Q and 1110Q, or MATH 1060Q and 1071Q, or MATH 1120Q and 1121Q; either PHYS 1201Q, 1202Q or PHYS 1401Q and 1402Q; MARN 1002 or 1003.

Coastal Studies requires a course in data analysis and interpretation. This requirement may be fulfilled with STAT 1100Q or another approved course. Students are encouraged to fulfill some of their General Education requirements with the following choices: HIST/SCI 2206; and either ECON 1201 or ARE 1150.

II. Coastal Studies B.A. Major Requirements

The following courses constitute the major requirements: MARN 2002, 3001, 3801W, 4001, 4002, and 3 electives. The electives are: MARN 3000, 3003Q, 3012, 3013, 3014, 3015, 3016 or 3030, 3017, 3060, 3061, 3230, 4030W, 4050W, 4060. Students may be able to use MARN 4893, MARN 4895 or other MARN courses towards one or more of these electives with prior approval of the Department Head.

III. Coastal Studies B.A. Related Area

In consultation with their faculty advisor and a social science faculty member, students choose Related Area courses appropriate to their interests. The department maintains a list of acceptable courses.

Competency Requirements (B.S. and B.A. programs)

The University's General Education competency requirements for computer technology and information literacy will be satisfied by completing the major requirements above, in particular MARN 2002, 3001 and 4001 for computer technology, and 3001, 3801W and 4002 for information literacy. The writing in the major requirement will be satisfied by MARN 3801W.

Note: Some Marine Sciences courses may be offered only at the Avery Point campus. Others may be partially available through Distance Learning. Please check the Directory of Courses in this *Catalog*.

Both a minor in Marine Biology and a minor in Oceanography 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 and anthropology 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 Department Coastal Studies Program, 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

Core Courses

Students are required to take the following Core Courses:

MAST 1101; MARN 1001; ENGL 3650; ECON 2467; HIST 3544; POLS 3832; MAST 4994W

The writing in the major requirement can be met with MAST 4994W. Students will satisfy the information literacy requirement as they complete core courses.

Disciplinary Concentration

Students must take an approved four-course sequence of 2000-level or above courses. Disciplinary concentrations available at Avery Point include Political Science, History, English, Anthropology, and Economics. Students may pursue disciplinary tracks in other departments with the approval of the Maritime Studies Coordinator and their advisor.

Related Areas

Students must complete 12 credits in related areas. The Maritime Studies coordinator and the student's advisor will determine what courses are germane to Maritime Studies.

Mathematics

The Mathematics Department offers programs of study in Mathematics, Applied Mathematical Sciences, Actuarial Science (in cooperation with the School of Business), and Mathematical Statistics (in cooperation with the Department of Statistics).

MATH 2010Q, 2011Q, 2194W, 2720W, 2784, 2794W, and 3670W may not be counted in any of the major groups listed below.

The Department offers both a Bachelor of Science and a Bachelor of Arts degree in Mathematics, Applied Mathematical Sciences, Mathematics-Statistics, and Mathematics-Actuarial Science. 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 2194W, 2720W, 2794W, 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, 2710 (or 2141Q-2142Q) or (ii) MATH 2143Q-2144Q, 2710, or (iii) MATH 2141Q-2142Q-2143Q-2144Q;
- (2) MATH 3150 (or 4110), 3151, 3230 (or 4210);
- (3) At least 6 additional credits from any of the following courses: MATH 2360Q, 3146, 3160, 3170, 3210, 3231, 3240, 3260, 3270, 3330 (or 4310), 3370, 3410, 3430, 3435, 3510, 3511, 3710, 4735, and approved sections of 3094 and 3795;
- (4) At least 3 additional credits from any of the following courses: MATH 3210, 3231, 3240, 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, 2710 (or 2141Q-2142Q), or (ii) MATH 2143Q-2144Q, 2710, or (iii) MATH 2141Q-2142Q-2143Q-2144Q;
- (2) MATH 3150 (or 4110), 3230 (or 4210);
- (3) At least 3 additional credits from any of the following courses: MATH 3210, 3231, 3240, 3330 (or 4310), and 3370. The remaining credits 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, 2710 (or 2141Q-2142Q) or (ii) MATH 2143Q-2144Q, 2710 or (iii) MATH 2141Q-2142Q-2143Q-2144Q; (2) MATH 3410, 3150 (or 4110), 3510, and 3511; (3) Two courses to be selected from MATH 2420Q, 3146, 3151, 3160Q, 3170, 3270, 3430, 3435, 3710, and approved sections of 3094 and 3795; (4) At least 3 additional credits from MATH 2360Q, 3160, 3210 (or 4210), 3230, 3231, 3240, 3260, 3330 (or 4310), 4735, 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 at least 12 credits 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, 3510, and 3511. The remainder of the 27 credits of Mathematics must be chosen from MATH 2710, 3146, 3150 (or 4110), 3160, 3170, 3210 (or 4210), 3270, 3430, 3435, and 3710.

Bachelor of Science or Arts in Mathematics-Statistics: The requirements for the B.S. or B.A. in Mathematics-Statistics degree are 36 credits at the 2000-level or above in Mathematics and Statistics (in addition to MATH 2110Q or 2130Q), with at least 12 credits in each department. The required courses for the Mathematics-Statistics major are MATH 2210Q or 3210 (or 2143Q and 2144Q); 2410Q (or 2144Q); and STAT 3160 and 3375Q. To satisfy the writing in the Major and Information Literacy competencies, all students must pass one of the following courses: MATH 2194W, 2720W, 2794W, 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 36 credits at the 2000-level or above in Mathematics, Statistics, Business, and related areas (in addition to MATH 2110Q or 2130Q or 2143Q). The required courses are MATH 2210Q (or 2144Q), 2620, 3160, 3630-3631, 3634, STAT 3375Q-3445, and FNCE 3221 or 4325. Students should include ECON 1201 and 1202, a Computer Science course, and ACCT 2001 and 2101 in their program of study as early as possible. To satisfy the writing in the Major and Information Literacy competencies, all students must pass one of the following courses: MATH 2194W, 2720W, 2794W, 3670W, or 3796W.

Admittance to the University of Connecticut's Actuarial Science program will be available only to students who meet two requirements. First, the student must have a total grade point of 2.75 or higher or a grade point average of 3.0 or higher in mathematics. Second, the student satisfy one of the following:

1. successfully completed MATH 1121Q 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 2.75 or higher.

A minor in Mathematics is described in the “Minors” section.

Modern and Classical Languages

The Department of Modern and Classical Languages offers courses in French, German, Hebrew, Italian, Portuguese, Spanish, the classical languages, and selected critical languages. Students may major in Classics and Ancient Mediterranean Studies, French, German, Italian Literary and Cultural Studies, or Spanish or a combination of languages. The department aims to give students a working knowledge of foreign languages for teaching, research, travel, business, diplomatic or governmental work, and for graduate or undergraduate study of the civilization and literature of a foreign country.

Ordinarily study abroad or internship in the major **modern** language for at least one semester (or approved equivalent time period) will be required for all majors. With the advisor’s consent students may choose from a variety of programs. The department conducts programs in Austria, France, Italy, Spain and Germany, sponsors a resident study program in Mexico and offers credit arrangements for study at a Goethe Institute in Germany. Such study normally is most valuable during the junior year, but unusually qualified sophomores and some seniors are also eligible. (The year abroad program in Italy welcomes applications by sophomores, juniors and seniors.) Additional language experience is available through residence in the University’s Foreign Language dormitory. Students interested in any of these possibilities should consult early with their advisors.

Courses numbered in the 2000-level or above are open to freshmen and sophomores if they meet the prerequisites for the course. In the modern languages, classwork is conducted in the foreign language unless otherwise indicated.

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/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 8 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.)

*May count toward major only with consent of advisor.

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 3207, 3211, 3212, 3213, 3214, 3221, 3224, 3225, 3226, 3227, 3243, 3244, 3251, 3252, 3253, 3254, 3255, 3256, 3257, 3293*, 3295*, 3298*, 3299*. (These may be cross-listed under Art History, History, Judaic Studies, and Philosophy). JUDS/HEB 3201 and INTD 3260 may also be included.

*May count toward major only with consent of advisor.

Concentration in Ancient Mediterranean Studies. Students must complete a minimum of 8 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 3101, 3102, 3207, 3211, 3212, 3213, 3214, 3221, 3224, 3225, 3226, 3227, 3243, 3244, 3251, 3252, 3253, 3254, 3255, 3256, 3257, 3293*, 3295*, 3298*, 3299*. (These may be cross-listed under Art History, History, Judaic Studies, and Philosophy). JUDS/HEB 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.

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 the following courses: FREN 3211, 3261W, 3262W, 3268W, 3269 and 3257. Students may follow the French for the Global Community track or the French Cultural and Literary Studies track.

French majors pursuing the French for the Global Community track must complete 12 credits, distributed as follows: FREN 3215, 3216 or 3222; FREN 3217; FREN 3218 or 3273; FREN 3224 or 3274

French majors pursuing the French Cultural and Literary Studies track must complete 12 credits, distributed as follows: FREN 3210, 3223 or 3224; FREN 3218, 3230, 3231, 3232, 3234, 3235, or 3273; FREN 3220, 3221 or 3222; FREN 3272

Study Abroad in our Paris program is required for all French majors. Any of the above courses may be replaced, with advisor approval, by an appropriate FREN 3293 course from study abroad in Paris.

Study Abroad in Paris: French majors must complete at least a semester in the study abroad program in a Francophone culture. Students participating in the Paris program attend the University of Paris, and 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 in this program, and wishes students to take courses in other disciplines wherever possible.

To satisfy the writing in the major and information literacy requirements, all majors must take FREN 3261W, 3262W, and 3268W.

A minor in French is described in the “Minors” section.

German

Students majoring in German have a choice between a concentration in German literature or German studies. For the concentration in German literature the following courses are required: 1) 3233, 3234, 4246; 2) three from among the following literature courses: 3253W, 3254W, 3255W, 3293 (on a literary topic), 3294 (on a literary topic), and 3295 (on a literary topic); 3) one from 3200, 3231, 3232, 3245, 3261W, 3265, 3292, 3293 (on a non-literary topic), 3294 (on a non-literary topic) and 3295 (on a non-literary topic); and 4) one of the following courses taught in English: 3251, 3258, or 3264W. (Only one course taught in English is allowed toward the literature major.)

For the concentration in German studies the following courses are required: 1) 3233, 3234, 4246; 2) either 3251 or 3258; 3) three from 3200, 3231, 3245, 3261W, 3264W, 3265, 3292, 3293 (on a non-literary topic) and 3294 (on a non-literary topic) and 3295 (on a non-literary topic); 4) one of the following literature courses: 3253W, 3254W, 3255W, 3293 (on a literary topic), 3294 (on a literary topic) and 3295 (on a literary topic) (Only two courses taught in English are allowable toward the German studies major.)

To satisfy the Information Literacy Competency requirement, the following courses are required:

- 1) one of 3233, 3234; and
- 2) one of 3253W, 3254W, 3255W, 3261W, 3264W; and
- 3) 4246.

To satisfy the writing in the major requirement, all majors must take one of the following courses: 3253W, 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 GERM 3220, 3221, and 3222 for one of the courses in category 3 required of majors in German literature; and for one of the courses in category 2 required of majors in German Studies.

Study Abroad in Austria and Germany. The University of Connecticut sponsors a variety of programs in Salzburg, Regensburg and a number of universities in the State of Baden-Württemberg that allow 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

The major allows students to pursue a traditional concentration in Italian literary studies or a concentration in Italian cultural studies. Students who concentrate in Italian literary studies may take courses in Italian cultural studies in addition to their language and literature requirements. Those who concentrate in Italian cultural studies may also pursue relevant Italian literary studies.

Concentration in Italian Literary Studies

Students must complete a minimum of 8 courses (the equivalent of 24 credits) to be chosen among the following: ILCS 3237, 3239, 3240, 3243, 3244, 3250, 3253, 3254, 3259, 3261, 3262, 3270, 4279.

Concentration in Italian Cultural Studies

Students must complete a minimum of eight courses (the equivalent of 24 credits) from the following:

A. Three 2000-level or above Italian courses from the following: ILCS 3237, 3239, 3240, 3243, 3244, 3250, 3253, 3254, 3255W, 3256, 3258/3258W, 3259, 3260W, 3261, 3262, 3270, 4279.

B. Two courses from the following: HIST 3325, 3370, 3460, 3463, 4994W

C. Three courses to be chosen from the following: ARTH 3030, 3320, 3340, or MUSI 3413, 3421W; or ENGL 3218W

Students must demonstrate proficiency in Italian at a level equivalent to ILCS 1147.

Study Abroad in Italy. Students can participate in a variety of UConn-sponsored Study 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. No more than 12 credits taken in any Study Abroad Program may count toward a major in Italian at this University.

To satisfy the information literacy competency, all students must take ILCS 3255W, or 3258W, or 3260W. To satisfy the writing in the major requirement, all students must take ILCS 3255W, or 3258W, or 3260W.

A minor in Italian Cultural Studies and a minor in Italian Literary Studies are described in the "Minors" section.

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, 3293, 3298, 4200W.

Group 2 (Culture): SPAN 3200, 3201, 3204, 3205, 3206, 3207, 3208, 3214, 3250, 3251, 3252, 3254, 3293, 3298, 4200W

Group 3 (Language and Communication): SPAN 3110, 3170, 3177, 3178/W, 3179, 3204, 3240W, 3241, 3242, 3261, 3293, 3298, 4200W

The Spanish major requires 27 credits in 3000 and 4000-level Spanish courses and at least one semester of Study Abroad. A minimum of 12 of the major credits must consist of Spanish courses taken in residence. Up to 12 credits may be met by Study Abroad courses, with advisor's consent. Up to 6 credits may be transfer credits. AP credits may not be used toward the major. An additional 12 credits are required in 3000 and 4000-level related courses from programs other than Spanish. These may include appropriate Study Abroad courses (ARTH 3993, ECON 3493, SOCI 3993, POLS 3993, HIST 3993). Other related courses require advisor's prior consent.

All majors in Spanish must complete SPAN 3177, 3178, or 3178W and eight more courses from the three main groups.

A student majoring in Spanish can choose between the *Literature and Culture* track and the *Culture and Communication* track.

a) Majors pursuing the *Literature and Culture* track must take SPAN 3230. The other courses must be distributed as follows: four courses from Group 1 (one of which must be 3231, 3232, 3233 or 3234), two courses from Group 2, and one course from Group 3.

b) Majors pursuing the *Culture and Communication* track must take SPAN 3242. The other courses must be distributed as follows: two courses from Group 1, three courses from Group 2, and two courses from Group 3.

Variable topics courses (3204, 3207, 3208, 3261, 3293, 3298, 4200W) may be applied to any of the three groups as determined by course content and with prior consent by the Department.

To satisfy the information literacy and writing in the major requirements, all students must pass one of SPAN 3178W, 3240W, or 4200W.

A minor in Spanish 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.

The following 1000's level courses are required: BIOL 1107; CHEM 1124Q, 1125Q, 1126Q or 1127Q, 1128Q; MATH 1120Q, 1121Q, 1122Q, or 1131Q, 1132Q; and PHYS 1201Q, 1202Q, or 1401Q, 1402Q or 1601Q, 1602Q.

Courses required for the major: at least 24 credits in MCB, including:

Group 1: At least 3 of the following core courses

MCB 2410 (Note: MCB 2413 may be substituted for MCB 2410), 2210, 2610, 3010

Group 2: CHEM 2443 and 2444

Group 3: Laboratory requirement: At least 3 laboratory courses chosen from the following list: MCB 2000, 2225W, 2413, 2610, 3010, 3414, 3633, 3640W, 4026W, 4415, 3899 Independent Study (may be repeated, but only 3 credits may count toward the 24 credits of required MCB courses).

For breadth of study in biology, it is recommended that students take PNB 2250 and EEB 2244 or 2245. Majors must complete at least 24 credits in MCB courses at the 2000-level or above.

Where appropriate, a course may fulfill more than one requirement; e.g., MCB 2610 and 3010 count towards the Group 1 requirement as well as the Group 3 Laboratory requirement. 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, all students must take one of the following courses: MCB 2225W, 3022W, 3640W, 3841W, 4026W, 4997W; EEB 2244W or 2245W; or any 2000-level W course approved for this major.

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 earn 24 or more credits in philosophy courses numbered above the 1000's, and 12 or more credits in related fields. Within the 24 credits in philosophy, students must pass PHIL 2221 and 2222, and at least two of the following four courses: PHIL 2210, 2211Q, 2212, and 2215. 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 2000-level or above W course in Philosophy.

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.

In order to satisfy the information literacy exit competency requirement in the Physics Major, either PHYS 2300 or PHYS 4096W is required. Students will satisfy the University's computer technology and writing competency requirements by passing PHYS 2501W, which is required of all Physics majors. Courses that further enhance competencies are PHYS 2200 for computer technology, and PHYS 4096W for writing skills. These requirements apply to both the Physics B.S. and the B.A. degrees.

Bachelor of Science, General Option:

A total of 48 credits from 2000-level or above courses in physics, other sciences, mathematics, or engineering are required. Among these, 36 credits must be physics courses. The 36 credits of physics must include PHYS 2300, 2501W, 3101, 3201, 3202, 3300, and 3401, and at least three credits of an advanced laboratory (PHYS 2502, 3150, or 4900). 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 4099) may count towards the advanced laboratory requirement. No more than two credits from PHYS 4094, and 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:

A total of 48 credits from 2000-level or above courses in physics, other sciences, mathematics, or engineering are required. Among these, 30 credits must be physics courses. The 30 credits must include PHYS 2300, 2501W, 3103, 3104, and 3300, plus a minimum of nine credits from the following eight courses: PHYS 2502, 3150, 4140, 4150, 4210, 4350, 4900, and 5621, with at least three of the nine credits being from an advanced laboratory (PHYS 2502, 3150, or 4900). These eight courses involve the application of knowledge from multiple basic subjects, i.e., from mechanics, electricity and magnetism, statistical and thermal physics, and quantum mechanics. (PHYS 3101 and 3201 together may replace PHYS 3103.) All students are strongly encouraged to participate in an undergraduate research project. An experimental research project (PHYS 4099) may count towards the advanced laboratory requirement. The applied 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. To complete the 48 total required credits for the applied option, the remaining six credits may come from 2000-level or above courses in physics, other sciences, mathematics, or engineering. No more than two credits from PHYS 4094, and no more than six credits from PHYS 4099, may be counted towards this degree option.

Bachelor of Arts:

A total of 36 credits from 2000-level or above courses in physics, other sciences, mathematics, or engineering are required. Among these, 24 credits must be physics courses. These 24 credits must include PHYS 2300, 2501W, 3103, and 3104, along with 12 credits of elective physics courses. (PHYS 3101 and 3201 together may replace PHYS 3103.) No more than two credits from PHYS 4094, and 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 School of Engineering and the Department of Physics in the College of Liberal Arts and Sciences, Engineering Physics majors can concentrate in either (1) Electrical, (2) Materials Science and Engineering or (3) Mechanical. Students must satisfy the course requirements of both the College of Liberal Arts and Sciences and the School of Engineering to complete this degree.

The major requires 128 credits of course work.

Engineering Physics majors are required to complete the following:

CHEM 1128Q or 1148Q

PHYS 2300, 2501W, 3101, 3201, 3202, and 3401

MATH 2110Q, 2410Q, and 3410

Electrical Engineering - ECE 2001W, 3101, 3111, 3201, 4111, 4211, 4231, 4232, 4901, and 4902; CSE 2300W; MATH 2210Q; PHYS 3300; STAT 3345Q. Elective courses (4 credits).

Mechanical Engineering - ME 2233, 2234, 3220, 3227, 3242, 3250, 3253, 4972 and 4973W; CE 2110, 3110; STAT 3345Q; ME Elective Courses (6 credits); PHYS Elective courses (6 credits).

Materials Science and Engineering - MSE 2001, 2002, 2053, 3001, 3002, 3003, 3004, 3055 and 3056, 4003W, 4901 and 4902W; CHEG 3156; PHYS 4150 and 4210; MSE Elective Courses (6 credits); Physics Elective Courses (3 credits).

Students in the Bachelor of Science in Engineering Physics are required to pass ENGR 1000 in addition to PHYS 2300 in order to satisfy the information literacy competency requirement; they are required to pass CSE 1100 or the equivalent, in addition to PHYS 2501W, in order to satisfy the computer technology competency requirement; and PHYS 2501W will suffice to satisfy the writing in the major requirement.

The options for the elective courses are specified in the *Engineering Physics Guide to Course Selection*.

A minor in Physics is described in the "Minors" section.

Physiology and Neurobiology

This major leads to a Bachelor of Science, and is suitable for students interested in the physiology and neurobiology of humans and animals. Coursework and independent study opportunities span the fields of comparative physiology, neurobiology, molecular endocrinology, reproductive endocrinology, developmental neurobiology and neurochemistry.

The following 1000's level courses are required:

BIOL 1107, 1108; CHEM 1124Q-1126Q or 1127Q-1128Q; MATH 1131Q-1132Q or 1120Q-1121Q-1122Q; PHYS 1201Q-1202Q-1230 or 1401Q-1402Q or 1601Q-1602Q

PNB majors must take no fewer than 24 credits in PNB courses numbered 2000 and above. This must include all of the following core courses: PNB 2274-2275, 3251, 3262. The remaining credits needed to fulfill this requirement should be selected from the available PNB courses, including PNB 2250, 3225, 3252, 3263WQ, 3276, 3277, 3295, 3299, 4296W. (At most 3 credits from among PNB 3180, 3295 and 3299 may count towards the 24 credit requirement.)

PNB majors must also take all of the following courses, which count as the related group: CHEM 2443, 2444; MCB 2000 or 3010 and MCB 2410 or 2413.

In addition, students are urged to take: CHEM 2445; EEB 2244 or 2244W or 2245 or 2245W; and MCB 2210.

To satisfy the writing in the major and information literacy competency requirements, all students must pass at least one of the following courses: PNB 3263WQ, PNB 4296W, EEB 2244W, or EEB 2245W.

There is a minor in Physiology and Neurobiology. A minor in Neuroscience is offered jointly by the Physiology and Neurobiology Department and the Psychology 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 minimum of 24 credits in Political Science numbered 2000 or above (none on a pass-fail basis). Inter-departmental courses may not be included in the 24 credits. No more than 6 credits of independent study and/or field work can be counted toward the 24 credits.

A. Students majoring in Political Science must pass introductory 1000-level courses in three of the following four subdivisions: Theory and Methodology (1002), Comparative Politics (1202 or 1207), International Relations (1402), and American Politics (1602). It is recommended that these courses should be taken during the student's first two years of study.

B. All majors in political science must pass at least one course in **four** of the following six subdivisions (total of 12 credits). A W or Q course may be substituted for the same numbered course. Cross-listed courses may count only once toward this distribution requirement:

- I. Theory and Methodology: 2072Q, 3002, 3012, 3022W, 3032, 3042, 3052
- II. Comparative Politics: 2222, 3202, 3206, 3208, 3212, 3216, 3225, 3228, 3232, 3235, 3237, 3245, 3252, 3255
- III. International Relations: 3402, 3406, 3410, 3414, 3418, 3422, 3432, 3437, 3438, 3442, 3447, 3452, 3457, 3462, 3464, 3472
- IV. American Politics: 2607, 2622, 3602, 3604, 3612, 3617, 3627, 3632W, 3642, 3647, 3652, 3662, 3850W
- V. Public Administration, Policy and Law: 3802, 3807, 3812, 3817, 3822, 3827, 3832, 3842, 3847, 3852, 3857
- VI. Race, Gender, and Ethnic Politics: 3052, 3210, 3216, 3218, 3252, 3418, 3464, 3632W, 3642, 3647, 3652, 3662, 3807

POLS 2998 and 3995 may be counted toward this distribution only with consent of advisor. POLS 3426, 3991, 3993, 3999, 4994, 4997W may **not** be counted toward the Group B distribution requirement.

The writing in the major requirement may be satisfied by passing any 2000-level W course. Advanced information literacy exit requirements are incorporated into all Ws in the major, and students who successfully complete political science W courses will have met this requirement.

A minor in Political Science is described in the "Minors" section.

Psychology

The Psychology Department recommends that its majors take a broad selection of psychology 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.

The Department advises students planning to major in psychology to secure a background in the basic sciences and relevant social sciences, preferably before their junior year. Suggested courses include BIOL 1102, 1107, or 1108; ANTH 1006 or 2000; and SOCI 1001. If at all possible, majors should take STAT 1100Q (or 1000Q) by their third semester.

A maximum of seven 2000-level or above transfer credits in Psychology may count toward the major upon approval of the Transfer Coordinator in Psychology.

Up to three credits of PSYC 3889 or 3899 can be used, and PSYC 3880 cannot be used.

All Psychology majors are required to take two introductory-level psychology courses - General Psychology I 1100 and either General Psychology II 1101 or General Psychology II (Enhanced) 1103 - followed by at least 25 2000-level or above psychology credits, which are grouped as follows:

Foundation: 2100Q or 2100WQ

Area I. Social, Developmental, Clinical, & Industrial/Organizational: 2300 or 2300W, 2301, 2400, 2600, 2700

Area II. Experimental & Behavioral Neuroscience: 2200, 2500, 2501, 3201, 3500, 3501

Area III. Cross Area (I and II): 2201, 3100 or 3100W, 3102, 3105, 3400, 3601,

Area IV. Advanced & Specialty Lecture Courses: 2101, 2701, 3101, 3103, 3104, 3106 or 3106W, 3200 or 3200W, 3300 or 3300W, 3301, 3370, 3401, 3470 or 3470W, 3502, 3503, 3600 or 3600W, 3670 or 3670W, 3770 or 3770W, 3883, 3884, 3885

Laboratory Courses: 3250 or 3250W, 3251 or 3251W, 3252, 3350 or 3350W, 3450W, 3550W, 3551W, 3552, 3750 or 3750W

Research: 3889, 3899, 4197W

After completing 1100 and 1101 (or 1103), students must select one of our tracks for their major: 1. Bachelor of Arts: Standard, 2. Bachelor of Science: Standard, 3. Bachelor of Arts: Research Concentration, 4. Bachelor of Science: Research Concentration, 5. Bachelor of Arts: Honors, 6. Bachelor of Science: Honors

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, 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, 3100 from Area III, 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, 3100 from Area III, Two Area IV laboratory courses, 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, 3100 from Area III, 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, 3100 from Area III, Two Area IV laboratory courses, 3899 and 4197W from Area IV research (4197W may be substituted for one of the laboratory courses. If substituted, 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 or above non-psychology courses. At least 12 credits. Must be approved by advisor prior to registration. Because of content overlap, COMM 3100 (Persuasion), EPSY 3010 (Educational Psychology), and HDFS 2100 (Human Development: Infancy through Adolescence) may not be used.

To satisfy the computer technology competency, all students must pass PSYC 2100Q/2100WQ. Other courses that will further enhance competency in computer technology include PSYC 3250W, 3251W, 3350W, 3450W, 3550W, 3889, 3899, and 4197W.

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, 3251W, 3350W, 3450W, 3550W, 3889, 3899, and 4197W.

To satisfy the writing in the major requirement, all students must pass PSYC 2100WQ. Other courses that will further help students develop writing skills in psychological science are PSYC 2300W, 3100W, 3102W, 3106W, 3200W, 3250W, 3251W, 3300W, 3350W, 3450W, 3470W, 3550W, 3551W, 3600W, 3670W, 3750W, 3770W, and 4197W. For students who have taken PSYC 2100Q rather than 2100WQ, any 2000-level or above PSYC W course may be used to satisfy the writing in the major requirement.

There is a minor in Psychology. A minor in Neuroscience is offered jointly by the Psychology Department and the Physiology and Neurobiology Department. Both programs are described in the Minors section.

Psychology 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, or 1501 prior to taking SOCI 3201, 3211Q, and 3251.)

Passing SOCI 3201 satisfies the information literacy competency, and passing SOCI 3211Q satisfies the computer technology competency. To satisfy the writing in the major requirement, students must pass one of the following courses: SOCI 2301W, 2827W, 3251W, 3307W, 3311W, 3315W, 3351W, 3401W, 3403W, 3407W, 3421W, 3429W, 3451W, 3457W, 3459W, 3471W, 3501W, 3503W, 3511W, 3521W, 3621W, 3651W, 3601W, 3701W, 3703W, 3801W, 3821W, 3841W, 3901W, 3903W, 3905W, 3907W, 3971W, 3990W, 3996W.

At least one course must be taken from the following group: Inequality, Diversity, and Change (SOCI 2827, 3221, 3222, 3421, 3429, 3501, 3503, 3505, 3511, 3601, 3621, 3701, 3703, 3801, 3821, 3825 or 3905)

Twelve additional credits (usually four courses) must be taken from any 2000-level or above courses offered by the department, including those listed above. (Note: No more than three credits of SOCI 3990 can apply to the major).

A minor in Sociology is described in the "Minors" section.

Statistics

The Department of Statistics offers work leading to degrees in theoretical and applied statistics.

At the undergraduate level, the department offers a major in statistics and a major in 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 3375Q and 3445. MATH 2210Q or 3210Q and CSE 110 or 130 are strongly recommended. Since STAT 3375Q has MATH 2110Q or 2130Q as a prerequisite, students should begin the calculus sequence as soon as possible.

Students without mathematical background who wish 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. Students interested in statistics as a mathematical discipline should complete STAT 3375Q-3445.

Students who complete the requirements for the statistics major will satisfy the computer technology requirement. To satisfy the information literacy competency and writing in the major requirement, statistics majors must take the STAT 3484 and 3494W sequence.

The mathematics-statistics major requires a total of 36 credits at the 2000-level or above in mathematics and statistics (in addition to MATH 2110Q or 2130Q), with at least 12 credits in each department. The required courses in the mathematics-statistics concentration are MATH 2210Q or 3210, and 2410Q or 2420Q, and STAT 3445 and 3375Q.

Students who complete the requirements for the mathematics-statistics major will satisfy the computer technology requirement. To satisfy the information literacy competency and writing in the major requirement, mathematics-statistics majors must take one of the following courses: MATH 2194W, 2720W, 2794W, 3796W, or

the STAT 3484 and 3494W sequence. STAT 3484 and 3494W may not be counted toward the Statistics or the Mathematics-Statistics major.

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.

Required courses

CHEM 1124Q, 1125Q, and 1126Q or 1127Q and 1128Q or CHEM 1147Q and 1148Q; MATH 1120Q, 1121Q, and 1122Q or 1131Q and 1132Q or MATH 1151Q and 1152Q; MATH 2110Q or MATH 2130Q; MATH 2410Q or MATH 2420Q; PHYS 1201Q, 1202Q, and 1230 or PHYS 1401Q and 1402Q or PHYS 1601Q and 1602Q; CHEM 2443 and 2444; CHEM 3563 and 3564; CHEM 2445 or CHEM 3565W; MCB 3010; MCB 4008 or MCB 5038 or Special Topics: MCB 3895 (with Biophysics Program approval); MCB 4009

Recommended courses

MCB 2210, 2211, 2410, 2413, 2610, 3412, 3421, 3617, 3635, 3899, 4026W, 4415, 4997W, 5035; CHEM 3332, 4551; CSE 110, 130C, 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, 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 URBN 3000. 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 three 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
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; GEOG 4210; HIST/URBN 3541; HIST 3554, 3564; POLS 3842 or PP 3031; POLS/URBN 3632W; PP 4034; SOCI/URBN 3901/3275, SOCI 3425, 3911; URBN 3000.
3. One of the following: ECON 2327; GEOG 3500Q, 4500, POLS 2072Q; PP 3010; SOCI 3201; STAT 2215Q; URBN 2100.
4. Three additional courses selected from group 2, group 3, or the following list: ECON 2431, 3431; ECON/URBN 3439; GEOG 4200W; HIST 3530, 3563, 3568, 3674; HDFS 2001, 3510, 3530; INTD 3584; POLS 2622, 3642, 3662, 3847; PP 3020, 4033; SOCI 3459, 3825, SOCI/URBN 3903/3276, SOCI 3907; URBN 3981 or INTD 3594; URBN 3995, 3998, 4000, 4999.

In order to assure a breadth of experience, students are encouraged to take courses which 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; SOCI 1001, 1251; STAT 1000Q/1100Q; and URBN 1300W. They should also plan on enrolling in URBN 2000 as soon as possible.

The writing within the major requirement can be met by taking any of the following courses: GEOG 4200W; HIST/URBN 3541W; POLS/URBN 3632W; PP 3020W; SOCI 3459W; SOCI/URBN 3901W/3275W, 3903W/3276W; SOCI 3907W; URBN 2000W, 4000W or 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 Studies

The Women's Studies Program is a flexible interdisciplinary academic program devoted to the critical analysis of gender and the pursuit of knowledge about women. Combining the methods and insights of traditional academic disciplines with the special insights of Women's Studies scholarship, our courses yield fresh perspectives which help us to understand the origins of and changes in diverse cultural and social arrangements. The Women's Studies major is broad as well as flexible, and the student's program can readily reflect individual interests or complement a second major.

Gender is a common thread in our offerings, but it always interweaves with race, class, and other factors which contribute to the diversity of women's lives. The Women's Studies Program is committed to a vision of women and gender that is truly transnational and cross-cultural. Without this perspective, our view of the world is profoundly impoverished and stereotypes will continue to distort our understanding.

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 work with and for women to create a more humane society. Women's Studies fosters interdisciplinary breadth and critical thinking and thus opens the way to a wide variety of career choices and graduate programs. Women's Studies students are flourishing in social service agencies, business, law, education, and journalism, and employers appreciate the broad interdisciplinary perspective of a Women's Studies education.

Core Courses

Students are required to pass the following Core Courses:

One 1000-level WS Introductory Course; WS 3265W; PHIL 3218 or WS 3250; WS 3891/3894; WS 4994W

Supporting Courses

Students are required to pass five 2000-level or above Supporting Courses. (15 credits) At least three of these courses will be Women’s Studies or cross-listed courses. Two of the five supporting courses may include cross-referenced courses that cover special topics relevant to feminist scholarship in various departments. Such cross-referenced courses will be applied to the major with approval of the Program Director or Academic Advisor.

Related Courses

Students must pass an additional 12 credits at the 2000-level or above in fields closely related to the major. No required course in the major or in the related area may be taken pass/fail.

General Education Competencies

Information Literacy and Writing in the Major: Passing the core courses WS 3265W and WS 4994W will fulfill these competencies.

A minor in Women’s Studies is described in the “Minors” section.

Alternative Areas of Study

African American Studies Institute. The primary mission of the Institute is to enlighten and inform people about the history, culture, contributions and experiences of people of African descent in the United States. To achieve this goal, the African American Studies Institute promotes high quality research, scholarship, and teaching of the African American experience and sponsors a wide variety of programs on topics and issues that are critical to Black America and pertinent to a better understanding of the Black world. The Institute is located in Wood Hall. Professor Jeffrey O. G. Ogbar is Director. Phone (860) 486-3630.

Air Force Studies. Under Public Law 88-647, the Air Force Reserve Officer Training Corps (AFROTC) offers courses to prepare interested college students for United States Air Force officer commissions; other college students who have no interest in military commissions may also take these courses for credit. Qualified students may apply for Air Force ROTC scholarships. Current Air Force ROTC membership isn’t necessary to apply for these scholarships; however, a student who receives and accepts an AFROTC scholarship must participate in the AFROTC program while in college and serve in the Air Force as an officer upon graduation and commissioning.

The basic Air Force ROTC course, called the General Military Course (GMC), covers the freshman and sophomore years; juniors, seniors and others may also participate. Unless they’ve already accepted AFROTC scholarships, students aren’t obligated to the Air Force at this time. During the first two years, students take a one-credit Air Force ROTC class each semester; we recommend the following sequence: AIRF 1000, 1200, 2000 and 2200. They also attend Leadership Laboratory, a cadet-run, two-hour-a-week session.

The advanced course, called the Professional Officer Course (POC), covers the junior and senior years. Before entering this phase, students must secure an Air Force officer candidate allocation and successfully complete four-weeks of summer field training. Students who do not complete the entire GMC enroll the same way, but attend field training for six weeks. If interested in an Air Force commission, cadets sign a contract obligating them to service in the Air Force at the beginning of their junior year unless they have previously agreed to the commitment through acceptance of a scholarship.

In the POC, students take a three-credit AFROTC class every semester and attend Leadership Laboratory (other students may take only the academic classes without obligation to the Air Force). Cadets must maintain full-time student status. Students in the POC receive a nontaxable stipend of \$350-400 per month. The Air Force commissions these students as second lieutenants after graduation and completion of all AFROTC requirements. For most AFROTC graduates there is an initial obligation of four years on active duty in the Air Force.

Please contact the Air Force ROTC office at (860) 486-2224 for further information. Information can also be found at: www.airforce.uconn.edu.

Asian American Studies Institute. The Asian American Studies Institute is an interdisciplinary research, teaching and publication program devoted to study of the Asian American experience within the larger context of an evolving American society. Of special importance is the internment of Americans of Japanese ancestry during World War II. Although the primary focus of the Institute is upon Asians in America, attention is also given to a study of Asia, since the unique cultural sources of Asian Americans are rooted in Asia.

Although not offering a degree program, the Institute does offer a concentration in Asian American Studies at the undergraduate level in the fields of Allied Health, English, Geography, History and Sociology. These courses, whose common thread is the Asian American experience, offer a comparative analysis of class, gender and Asian ethnicity. In addition, these courses explore the neglected aspects of the cultural, historical, socioeconomic and political experiences of Asian Americans.

The goal of the Institute is to prepare students for positions of leadership and service by cultivating a broad understanding of America’s racial and cultural diversity. The goal of the Institute is to also prepare students to employ critical learning in their private lives as citizens. To complement its academic mission, the Institute serves the community beyond the University as a resource for information and advocacy.

Students wishing to specialize in Asian American Studies can take the following courses: AASI 2274, 3201, 3220, 3221, 3222, 3295, 3531, 3578, 3808, 3809, 3812. Check with the Institute to find which AASI Special Topics courses are being offered currently.

Permanent features of the Institute’s programming include: annual publication of the newsletter *The Asian American*; an annual guest lecture series; the Asian Community in Connecticut Research Publication Series; the Fred Ho Collection and biennial Fred Ho Prize in Asian American History and Culture; the annual Asian American Heritage Observance and the Japanese American Internment Resource Library and Oral History Project.

The Institute is directed by Professor Roger N. Buckley, Room 416, Beach Hall. For further information, contact the Asian American Studies Institute, Beach Hall, Room 416. (860) 486-4751; FAX (860) 486-2851.

Comparative Literary and Cultural Studies. Students interested in comparative literature may take a wide range of comparative literature courses (no foreign language requirements) as well as courses offered by the participating literature departments. For advice about integrating the study of several literatures and preparing for further work in comparative literature, students may consult the chair, Lucy McNeece, or any member of the comparative literature faculty.

Judaic Studies. Courses in Judaic Studies are listed under Judaic Studies as well as Hebrew (Modern and Classical Languages), History and Sociology. Students may major in Judaic Studies through the College of Liberal Arts and Sciences Individualized Major. The description of a minor in Judaic Studies is listed in the

“Minors” section of this *Catalog*. For further information about current courses you are invited to contact the Center for Judaic Studies and Contemporary Jewish Life, Unit 1205, Dodd Center; Stuart S. Miller, Associate Director, or Arnold Dashefsky, Director.

Law. The process of applying for admission to law school begins in the student’s final year of academic work as an undergraduate. Pre-law advising services provides general information and procedural advice about each element of the application process. In addition, prospective applicants can receive information to help them select law schools from among the nearly 200 ABA-accredited schools across the country. Students with general questions about the legal profession, the bar admission process and employment opportunities in the legal profession are also welcomed.

Pre-law advising services are available to all UConn undergraduates on all campuses in any year of their undergraduate career, regardless of major field, program or specialization. Students are invited to come in during the regularly scheduled office hours established for each semester. Appointments are not necessary. Contact Frank M. Goetz, Monteith Building, Room 134, telephone: (860) 486-2440, e-mail: frank.goetz@uconn.edu.

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.

Medical and dental schools require that students take a year of general and organic chemistry including lab, physics (one year), biochemistry, genetics, and physiology prior to taking admissions tests (e.g. MCAT or DAT). Students need to take the MCAT in April or August of the year before they apply. The DAT can be taken anytime. Students typically apply for admission into medical or dental school during the summer between their junior and senior years. Students should contact the Pre-medical/Pre-dental Advising Office early in their junior year to arrange for a composite letter of recommendation. Students with questions can access the Pre-medical and Pre-dental web page at: <http://www.premed.uconn.edu> or contact advisors by phone at (860) 486-5415.

Medieval Studies. Students wishing to gain broad cultural and scholarly grounding in the Middle Ages in conjunction with a departmental specialization may consult the chairman or one of the members of the Committee for Medieval Studies. T. Jambeck and R. Hasenfratz, (Co-chairs), F. Biggs, J. Givens, S. Olson.

Military Science. Under Public Law 88-647, Army Reserve Officers’ Training Corps (AROTC) offers courses to prepare interested and qualified students for an officer commission; other students not interested in a commission may take the first two years of courses. Successful completion of the program can qualify the student for a commission in the United States Army, Army Reserve, or Army National Guard. AROTC furnishes uniforms, all textbooks, and other related equipment at no expense to the student. The program consists of the basic and the advanced courses. There is no military obligation in the basic course. Students desiring to take the basic course need only to register during the normal registration period but is generally restricted to freshman and sophomore students. Veterans (to include current members of the National Guard or Army Reserve) should consult with the Professor of Military Science (PMS) for possible waiver of the basic course.

A two-year program is available by special application and consent of the PMS during the sophomore year. Qualified students attend a paid, four-week summer camp after the sophomore year in lieu of the basic course, making them eligible to participate in the last two years of AROTC. The advanced course covers the junior and senior years and includes four three credit courses that meet for one two hour period per week, plus a leadership lab immediately following class. This is also available to graduate students but they must coordinate with PMS.

Advanced course students attend a four-week summer camp after the junior year. Participation in the advanced course requires a military obligation. Entry into the advanced course is subject to the approval of the PMS. All contracted advanced course cadets receive a subsistence allowance of \$400-\$450 per month.

Two, three, and four-year scholarships are available to qualified students. Criteria considered include academic performance, physical fitness, and leadership potential, as evaluated through a board scholarship interview.

Interested students should visit the AROTC office or call (860) 486-6081/4538. Information can also be found at: www.armyrotc.uconn.edu

Native American Studies. The University offers interdisciplinary curricula in topics pertaining to Native American cultures of the present and past. Native American studies is an area of concentration within the Individualized Major program. The description of a minor in Native American Studies is listed in the “Minors” section of this *Catalog*. For further information contact Kevin McBride, or write to Native American Studies at Unit 2176.

Puerto Rican and Latino Studies. The Institute for Puerto Rican and Latino Studies has a flexible interdisciplinary research and teaching program devoted to the comparative, critical analysis of ethnicity and the quest for knowledge about Puerto Ricans on the island and the mainland, as well as about Mexican Americans, and other peoples of Latin American descent in the United States. Although the primary focus of the program is upon the majority segments of the Latino population who, like Puerto Ricans and Mexican Americans, are U.S. citizens, attention is also given to that segment which due to recent immigration or other reasons has not met the formal requirements for U.S. citizenship.

The Institute’s Program prepares students to employ critical learning in their private lives, in their public roles as citizens, and as members of the labor force, and enhances their ability to work with and for peoples of Puerto Rican or Latin American descent to promote the development of fairness and equity in public policy as well as multicultural diversity in state, regional, and national life. Puerto Rican and Latino Studies promotes critical, comparative, interdisciplinary thinking and thus facilitates a wider variety of professional or other career choices for students. Students wishing to specialize in Puerto Rican/Latino Studies may take 12 credits from the following courses: PRLS 3241, 3295, 3298.

Please note that PRLS 3295 and 3298 may be repeated for credit. Additional courses will become available so it is necessary to check with the Institute’s office to verify current course offerings.

For further information about Puerto Rican and Latino Studies, contact the Institute for Puerto Rican and Latino Studies, Beach Hall, Room 413, (860) 486-3997.

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.

College of Liberal Arts and Sciences Website

<http://www.clas.uconn.edu/>

Neag School of Education

Richard L. Schwab, Ph.D., *Dean, Neag School of Education*
 Thomas C. DeFranco, Ph.D., *Associate Dean, Neag School of Education*
 Yuhang Rong, Ph.D., *Assistant Dean, Neag School of Education*

The University's general education requirements are listed in the *Academic Regulations* 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 of the major program fields will develop writing skills specific to the content area domain, as well as be consistent with the practices of professionals in the area of teacher education. Courses that will satisfy the W requirement include: EGEN 3110W, EDCI 4110W, EDCI 4205W, EDCI 4210W, and EPSY 3120W. All students in the Department of Kinesiology will be required to successfully complete two writing intensive (W) courses within the Neag School of Education. The W courses in each of the major program fields will develop writing skills specific to the content area domain, as well as be consistent with the practices of professionals in the areas of athletic training, exercise physiology, sport sociology and sport management or marketing. Courses that will satisfy the W requirement include: EKIN 3099W, 3155W, 3165W, 3300W, 3530W, 3697W, and 4510W.

Information Literacy Competency

The information literacy competency requirement for IB/M Teacher Education students and Kinesiology students will be satisfied by the successful completion of the W courses within each concentration area within the Neag School of Education.

Computer Technology Competency

The computer technology competency requirement for IB/M Teacher Education students and Kinesiology students will be satisfied by the successful completion of the Neag School of Education's Level One Computer Competency Assessment Program.

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 professional preparation for educators 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 liberal arts faculty of the University.

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 a minimum of 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, followed by at least two years of full-time course work in a subject area major and professional education while enrolled in the undergraduate teacher education program, followed by at least one year of full-time course work in professional education while enrolled in the Graduate School to earn the Master of Arts in Education. Connecticut's essential skills and subject knowledge testing requirements must also be successfully completed.

The Integrated Bachelor's/Master's Teacher Education Program includes the following certification areas:

Elementary Education - Grades K-6

Secondary Education - Grades 7-12

English

History and Social Studies

Mathematics

Sciences - Biological Sciences, Chemistry, Physics, Earth Sciences, or General Science

World Languages - French, German, or Spanish

Comprehensive Special Education - Grades K-12;

Agricultural Education - Pre-K-12;

Music Education - Pre-K-12

Our state-approved teacher education program meets certification requirements and statutory regulations for Connecticut. Education requirements, however, are subject to change in accordance with the changes mandated by the state of Connecticut (<http://www.state.ct.us/sde>). 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 <http://www.education.uconn.edu/students/advising>. Please note that the requirements listed below are currently in effect.

Elementary Education

Students in Elementary Education are prepared to teach in grades K-6. Students complete general education requirements, a 39-credit subject area major that includes a single subject (Mathematics, Science, English, or History/Geography) plus a second concentration, and required courses in professional education. Requirements include: EPSY 3010, 3110, 3230, 4010, 4015; EDCI 3000, 4110W, 4115, 4120, 4125, 4130, 4150; EGEN 3100, 3110W, 4100, 4110; HIST 1501 or 1502; HDFS 1070 or PSYC 2400; PSYC 1100; and the Master of Arts in Education program.

English Education

English education majors are prepared 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. Students complete general education requirements, a 36-credit subject area major in English, and required courses in professional education. Requirements include: EPSY 3010, 3110, 3230, 4010, 4015; EDCI 3000, 4010, 4210W, 4215, 4250; EGEN 3100, 3110W, 4100, 4110; HIST 1501 or 1502; PSYC 1100; and the Master of Arts in Education 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. Students complete general education requirements, a 42-credit subject area major in History and Social Studies, and required courses in professional education. Requirements include: EPSY 3010, 3110, 3230, 4010, 4015; EDCI 3000, 4010, 4210W, 4250; EGEN 3100, 3110W, 4100, 4110; HIST 1501 or 1502; PSYC 1100; and the Master of Arts in Education 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. Students complete general education requirements, a 36-credit subject area major in Mathematics, and required courses in professional education. Requirements include: EPSY 3010, 3110, 3230, 4010, 4015; EDCI 3000, 4010, 4210W, 4250; EGEN 3100, 3110W, 4100, 4110; HIST 1501 or 1502; PSYC 1100; and the Master of Arts in Education program.

Science Education

Majors prepare to teach biology, chemistry, earth science, general science, or physics for grades 7-12, depending on academic preparation. Students complete general education requirements, a 36-credit subject area major in the academic area of preparation, and required courses in professional education. Requirements include: EPSY 3010, 3110, 3230, 4010, 4015; EDCI 3000, 4010, 4210W, 4250; EGEN 3100, 3110W, 4100, 4110; HIST 1501 or 1502; PSYC 1100; and the Master of Arts in Education program.

World Language Education

Majors in world language education are prepared to teach French, German, or Spanish in grades 7-12. Students complete general education requirements; a 36-credit subject area major in grammar, literature, culture, and civilization relevant to their world language; and required courses in professional education. Requirements include: EPSY 3010, 3110, 3230, 4010, 4015; EDCI 3000, 4010, 4205W, 4250; EGEN 3100, 3110W, 4100, 4110; HIST 1501 or 1502; PSYC 1100; and the Master of Arts in Education program.

Agricultural Education

The program in Agricultural Education is designed to prepare graduates to teach in public schools or one of Connecticut's Regional Vocational Agriculture Centers for grades pre-K-12. Students with subject matter specialties in animal science, plant science, agricultural mechanics, or natural resources conservation add a teaching, managerial and human relation aspect to their backgrounds by completing the program. Students complete general education requirements, a 39-credit subject area major in the academic area of preparation, and required courses in professional education. Requirements include: EPSY 3010, 3110, 3230, 4010, 4015; EDCI 3000, 4010 or 4110, 4210W, 4250; EGEN 3100, 3110W, 4100, 4110; HIST 1501 or 1502; PSYC 1100; and the Master of Arts in Education program.

Comprehensive Special Education

The Comprehensive Special Education Program prepares prospective teachers of students with disabilities in grades K-12. Students complete general education requirements, a 39-credit subject area major that includes a single subject (Mathematics, Science, or English) plus a second concentration and required courses in professional education. Requirements include: EPSY 3010, 3110, 3115, 3120W, 3125, 3230, 4010, 4015, 4100, 4110, 4115; EDCI 3000, 4110W, 4115; EGEN 3100, 3110W, 4100, 4110; HIST 1501 or 1502; HDFS 1070 or PSYC 2400; PSYC 1100; and the Master of Arts in Education program.

Music Education

Prospective music educators initially enroll in the School of Fine Arts. The undergraduate program undertaken in the Neag School of Education enables majors to teach music from pre-K-12 and direct bands, orchestras, and choruses. Students complete general education requirements, a 36-credit subject area major, and required undergraduate courses in professional education. Requirements include: EPSY 3010, 3110, 3230, 4010, 4015; EDCI 3000, 3305, 4010 or 4110, 4210W, 4250; EGEN 3100, 3110, 4100, 4110; One 3-credit Language and Cultural Diversity in Education course: EDCI 5700, 5715, 5720, 5740, 5750, 5765, 5875, 5890, 5895; HIST 1501 or 1502; PSYC 1100.

Kinesiology Programs

The Department of Kinesiology provides students with the opportunity to pursue an undergraduate degree in areas emphasizing the sport experience, sport theory, exercise science, sport and exercise research and sport application.

The Department has well-equipped laboratories in Exercise Physiology, Exercise Biochemistry, Sport Biomechanics, and the Social Sciences of Sport and Leisure.

The University's general education requirements are listed in the *Academic Regulations* section of this *Catalog*.

The Department of Kinesiology offers the following undergraduate programs:

Athletic Training

Athletic Training

Exercise Science

Exercise Science

Strength and Conditioning

Social Science of Sport

Coaching and Administration

Sport Management

The most recent program guidelines and sample semester sequence for each program are available on the Neag School of Education website at <http://www.education.uconn.edu>.

Athletic Training

The aim of the Athletic Training program is to prepare students to become certified as athletic trainers by the NATABOC* and work with interscholastic, intercollegiate, and professional sport teams; and sport medicine centers that specialize in sport injuries and rehabilitation. Applicants for this degree will be required to complete 100 hours of observations/experience under the supervision

of a certified athletic trainer in a facility that specializes in sport injuries and rehabilitation. The students complete course work in general education, cognate areas, and kinesiology. Requirements for a Bachelor of Science degree in Athletic Training include: BIOL 1107; CHEM 1122 or 1127Q; COMM 1100; NUSC 1165, 4250; PHYS 1010Q or 1201Q; PNB 2264-2265; PSYC 1100; STAT 1000Q or 1100Q; EKIN 1160, 2100, 2110, 3100, 3105, 3110, 3111, 3112, 3113, 3114, 3115, 3120, 3124, 3125, 3130, 3135, 3140, 3145, 3150, 3155W, 3156, 3160, 3165W, 3170, 3175, 3177, 3520, 3522, 4500, 4510W.

*NATABOC certification requires that students (a) receive a Bachelor of Science degree in athletic training from an accredited program in athletic training education and, (b) take a national certification examination (written and practical sections).

Coaching and Administration

The Coaching and Administration concentration prepares students to coach and/or administer their sport or sports to individuals and teams at the amateur, collegiate and professional levels. Students receive a diverse and unique instructional program in strength training, sports medicine, exercise science, sports law, marketing, management and theory of coaching as well as practical experiences with proven coaches, referees and administrators. Students complete course work in general education, cognate areas, and kinesiology. Requirements include: ACCT 2001; BADM 4895; BIOL 1102 or 1107; CHEM 1122; COMM 1100; ECON 1201, 1202; MATH 1070Q, NUSC 1165, PSYC 1100; 1101 or 1103; SOCI 1001 or 1251; STAT 1000Q or 1100Q; EKIN 1160, 3090, 3091, 3099W, 3100, 3200, 3210, 3215, 3300W, 3310, 3315, 3320, 3335, 3340, 3500, 3520, 3545.

Exercise Science

The Exercise Science concentration prepares students to analyze sport and exercise performance in a physiological context. The majority of students use this concentration to prepare for graduate study in exercise physiology. Other students have used this concentration in preparation for medical school, physician assistant programs, and physical therapy. Students complete course work in general education, cognate areas, and kinesiology. Requirements include: BIOL 1107, 1108; CHEM 1127Q, 1128Q; 2241 or 2443; COMM 1100; MATH 1120Q or 1131Q; MCB 2000 or 3010; NUSC 1165; PHYS 1201Q, 1202Q; PNB 2264-2265; PSYC 1100; STAT 1000Q or 1100Q; EKIN 1160, 3099W, 3315, 3320, 3520, 3522, 3525, 3530W, 3545, 4500, 4510W.

Related Electives: Students will select a minimum of 9 credits from the following courses: CHEM 2444 (if CHEM 2443 was taken), 2445 (if CHEM 2444 was taken or taken concurrently), MCB 2210, 2211, 2410, 2610, 3006, 3011, 3212, 4219; NUSC 4250; PVS 4300; PNB 2250, 3225, 3230, 3251, 3262; PSYC 2200, 3601 (if PSYC 1101 or 1103 was taken).

Sport Management

The Sport Management concentration prepares students to gain employment in marketing, promotion, and/or production management of sport-related enterprises. Such sites include commercial, college/university, and private sport-related areas. Students complete course work in general education, cognate areas, and kinesiology. Requirements include: ACCT 2001; BADM 3710, 3750, 4895; COMM 1100, 1300; ECON 1201, 1202; MATH 1070Q, 1071Q; PSYC 1100; 1101 or 1103; SOCI 1001 or 1251; STAT 1000Q or 1100Q; EKIN 1160, 3090, 3091, 3099W, 3300W, 3310, 3315, 3320, 3330, 3335, 3340, Cognate Electives.

Strength and Conditioning

The Strength and Conditioning concentration prepares students to assist with strength and conditioning programs in corporate, industrial, recreational, educational, commercial, and clinical settings. Students complete course work in general education, cognate areas, and kinesiology. Requirements include: ACCT 2001, BIOL 1107; CHEM 1122; COMM 1100; ECON 1202; NUSC 1165, 4250, PHYS 1010Q; PSYC 1100; PNB 2264-2265; STAT 1000Q or 1100Q; EKIN 1160, 3091, 3099W, 3100, 3200, 3210, 3215, 3310, 3315, 3320, 3520, 3525, 3530W, 3522, 3545, 4500, 4510W.

Physical Therapy Program

The Undergraduate program in Physical Therapy is no longer offered; a Doctorate in Physical Therapy is offered by the Graduate School. Please refer to the Graduate Catalog for additional information.

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 freshman and sophomore years declaring a pre-education major. Students who intend to teach declare a pre-teaching major. Students who intend to pursue a kinesiology program declare a pre-kinesiology major.

Pre-Education students should seek the most recent information at the earliest opportunity. Admission information, including a list of faculty advisors, program guidelines, sample semester sequences, and information on Connecticut's essential skills testing requirement are available on the Neag School of Education's website at <http://www.education.uconn.edu/students/advising>; or the Academic Center for Exploratory Students (ACES) located on the first floor of the Center for Undergraduate Education; or the Neag School of Education, C. B. Gentry Building, Room 124. 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 who declare themselves as pre-education majors should register through the Academic Center for Exploratory Students (ACES).

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. Students complete their first two years in another of the schools or colleges of 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 Neag School of Education are available on the Neag School of Education website at: <http://www.education.uconn.edu>.

Students not currently attending the University of Connecticut must submit an additional University admission application with the Transfer Admissions Office, 2131 Hillside Road, Unit 3088, Storrs, CT 06269-3088. 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 15, to be considered for admission for the following fall semester.

Connecticut statute requires that all students wishing to be formally admitted to a teacher education program must successfully complete Connecticut's essential skills testing requirement. Beginning in January of 2002, Educational Testing Service's (ETS's) Praxis I Academic Skills Assessments Pre-Professional Skills Test (PPST) became Connecticut's required test. Either the computer-based or paper-based Praxis I PPST is acceptable. Students wishing to be formally admitted to foreign language education programs must successfully pass the ACTFL Oral Proficiency Interview (OPI) and the Written Proficiency Test (WPT).

Educational Testing Service's (ETS's) Praxis I Computer-Based Tests (CBT's) which were required from 1994 to 2001 continue to fulfill Connecticut's essential skills testing requirement. National Evaluation System's (NES's) Connecticut Competency Examination for Prospective Teachers (CONNCEPT), which was required from 1985 until 1994 continues to fulfill Connecticut's essential skills

testing requirement. Eligibility for essential skills test waiver requires a combined score of at least 1,100 with at least 450 on any subtest for any Scholastic Aptitude Test (SAT) completed after April 1, 1995; a combined score of at least 1,000 with at least 400 on each subtest for any SAT completed before March 31, 1995; equivalent scores on the Prueba de Aptitud Académica (PAA) with a score of at least 510 on the English as a Second Language Achievement Test (ESLAT); the Test of English as a Foreign Language (TOEFL); scores on The American College Testing Assessment (ACT) of at least 22 on the English subtest and at least 19 on the Mathematics subtest; or a score of 1000 on the GRE quantitative and verbal reasoning tests, with no less than a score of 500 in quantitative reasoning and 450 in verbal reasoning on tests taken prior to October 1, 2002; after October 1, 2002, a score of 1000 on the GRE quantitative and verbal reasoning tests, with no less than a score of 500 in quantitative reasoning and 450 in verbal reasoning, plus a minimum analytical writing score of 4.5. The most up-to-date information on these tests can be reviewed at <http://www.ets.org>.

Successful applicants to teacher education programs generally have completed sufficient credits to be eligible for consideration, have applied by the annual deadline of January 15, have completed Connecticut's essential skills testing requirement, have participated in successful interviews with faculty, have accumulated sufficient experience working with children, have written acceptable essays, have submitted contact information for references who can confirm their professional potential, and have earned the most competitive cumulative grade point averages. Although the minimum admission standards of the Connecticut State Board of Education include at least a B- average for all undergraduate courses, teacher education programs offered by the Neag School of Education are generally more competitive.

Applicants for the Master of Arts in Education 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.

Kinesiology

Students must submit the application and all supporting materials by February 1 for fall admission with the exception of Athletic Training applicants who apply by October 1 for spring admission.

Successful applicants to Kinesiology programs generally have completed sufficient credits to be eligible for consideration, have applied by the annual deadline, have competitive aptitude test scores, have accumulated sufficient experience related to their career choice, have written acceptable essays, have submitted required personal recommendations confirming their professional potential, and have earned the most competitive grade point average. The Athletic Training Education major is a competitive and selective academic program that prepares students for a professional career in the field of Athletic Training. All prospective Athletic Training students must be enrolled in EKIN 2100/2110 and EKIN 3100 and meet the October 1st deadline to be considered for admission. Students are encouraged to contact Dr. Stephanie Mazerolle, Director, Entry-Level Athletic Training Education at stephanie.mazerolle@uconn.edu for any additional information.

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 National Council for the Accreditation of Teacher Education. 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 National Council for the Accreditation of Teacher Education approved program.

The Athletic Training Education Program is accredited by the Commission on Accreditation of Athletic Training Education (CAATE). Upon completion of the program students are eligible to take the National Athletic Trainers Association, Board of Certification (BOC) administered certification examination. Students who pass the BOC Certification Examination will be eligible for athletic training licensure or other state requirements for practice.

The program in Physical Therapy is accredited by the American Physical Therapy Association. Graduates of the Master's or DPT in Physical Therapy are eligible to take the physical therapy licensure examination and meet the requirements of each state licensing agency.

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 certifying official 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.

Connecticut statute mandates a series of assessments for prospective teachers.

1. Formal admission to a teacher education program requires completion of Connecticut's essential skills testing requirement. Additional information regarding approved tests and eligibility criteria for an essential skills test waiver is included elsewhere in this chapter related to Admission to Neag School of Education programs.

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. The most up-to-date information on these tests can be reviewed at <http://www.ets.org>. 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 <http://www.education.uconn.edu/departments/teachered/title2.cfm>.

3. Beginning teachers issued initial educator certificates must successfully complete the Beginning Educator Support and Training Program (BEST).

Because of the nature of Connecticut's certification and educator preparation program approval regulations, including the standards of the National Council for the Accreditation of Teacher Education and its professional associations, it is essential that students satisfy all program requirements in order to be recommended for certification.

Neag School of Education Website

<http://www.education.uconn.edu/>

School of Nursing

Anne R. Bavier, Ph.D., R.N, F.A.A.N., *Dean*
 Regina Cusson, Ph.D., RNC, APRN, *Associate Dean for Academic Affairs*
 E. Carol Polifroni, Ed.D, CNA, BC, RN, *Associate Dean for Academic Affairs*

The undergraduate program provides an opportunity to combine a general education with professional preparation in nursing. The program is accredited by the Commission on Collegiate Nursing Education and approved by the Connecticut State Board of Nurse Examiners.

The curriculum requires four academic years. Upon successful completion of the program, students receive the Bachelor of Science degree and are eligible for examination for licensure as registered nurses.

Preclinical Requirements. In addition to pre-entrance University requirements, students admitted to the School of Nursing must present evidence of the following prior to clinical experiences: color blindness testing, tetanus immunization within the past ten years; one poliomyelitis booster following initial immunization; physical examination; tuberculin test (with chest x-ray for positive reactors); rubella, rubeola, hepatitis B titers (with vaccine if titer is negative); and varicella titer 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 certificate in cardio pulmonary 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. A criminal background check may be required prior to placement in a clinical assignment. In certain circumstances evidence of a criminal record may prevent a student from fulfilling clinical requirements and/or requirements for professional licensure.

Faculty reserve the right to recommend a student's withdrawal from the program for reasons of health.

Transportation. Students must furnish their own transportation and cover cost of travel and parking to the clinical agencies.

Books, Uniforms and Professional Equipment. Students are expected to purchase books, uniforms, and the professional equipment required before beginning the clinical experiences. All undergraduate students pay a fee of \$10.00 per semester for the last five semesters. This fee is assessed upon enrolling in NURS 3120, 3292, 3392, 3692, and 4292 and represents laboratory supplies and consumables. Another fee of \$10 per course is applied to NURS 3120, 3292, 3392, 3692, and 4292 and covers malpractice insurance. In addition, all undergraduate students enrolling in NURS 3292 (first clinical course) are assessed a one-time fee of \$75.00. Students receive medical-surgical supplies which are utilized in simulation lab learning exercises.

Licensure. Under the provisions of N 19a-14(a) of the Connecticut General Statutes, as amended by Public Act 86-365, (<http://www.cga.ct.gov/2007/pub/Chap368a.htm#Sec19a-14a.htm>) 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.

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 freshmen. See Freshmen Admission. Admission is competitive and applicants should have credentials placing them in the upper range of their high school graduation class. Freshman, transfer, and petition students must have completed a high school (or college) course in chemistry, physics, and algebra for admission consideration.

Transfer students should see Transfer Admission. Such students should have made substantial progress toward completing the freshman 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 Change Petition form as well as a statement as to why they desire the School change to the School of Nursing, Admission and Enrollment Services Office, Storrs Hall, Room 102. Change of School petitions are due by February 1st for fall acceptance consideration. Decisions will be based on several criteria including the applicant's academic record, courses taken and space availability. School Change applicants are expected to have a minimum cumulative GPA of 3.0 as well as a math/science GPA that is equal or higher to be competitive.

Students taking non-degree course work through the Center for Continuing Studies in a non-matriculated fashion may petition for a change of classification to degree-seeking matriculated status. See Center for Continuing Studies, Non-Degree Study.

Curricula in Nursing

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 "Academic Regulations" 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; HDFS 1070; MATH 1020Q or 1030Q; MCB 2400 or 2410; PHIL 1101, 1102, 1103, 1104, 1105, or 1106; PNB 2264 and 2265; PSYC 1100; SOCI 1001; STAT 1000Q or 1100Q

Writing in the Major. All students in the School of Nursing are required to pass NURS 3215W.

Information Literacy. All students in the School of Nursing fulfill this area of competency by the successful completion of NURS 3130, 3215W, 3230 or 3292, and 4292.

Computer Technology Competency. The following courses are used to fulfill this area of competency:

NURS 3130; NURS 3715; NURS 3292, or 3392, or 3492, or 3592, or 3692, or 4292

III. Baccalaureate Student

Nursing students must complete the following nursing courses (79 credits):

NURS 1110, 1130, 3100, 3110, 3120, 3130, 3215W, 3220, 3225, 3230, 3292, 3330, 3392, 3450, 3492, 3560, 3592, 3670, 3692, 3715, 4235, 4265, 4292

IV. Additional Requirements

To be eligible to enroll in NURS 3292 (first clinical course) in the fall semester, students must have completed the following coursework by the end of the preceding spring semester:

CHEM 1122; BIOL 1107; PSYC 1100; SOCI 1001; PNB 2264 and 2265; MCB 2400 or 2410; ENGL 1010 or 1011; HDFS 1070; one course in Philosophy 1101-1106; MATH 1020Q, 1030Q or higher; STAT 1000Q or 1100Q; NURS 1110, 1130, 3100, 3110, 3120, 3130. If a grade of C- or less is earned in PNB 2265, MCB 2400 or 2410, NURS 3110, 3120 or 3130, the student may still be considered for NURS 3292 enrollment in the fall if the course is retaken and a grade of C or better earned by July 1.

V. Program Requirements: Registered Nurses

Registered nurses who graduated from an approved associate degree or diploma program in nursing, who enroll in the School of Nursing and earned a C or higher in all nursing courses, may earn 30 transfer credits in nursing under the Connecticut Articulation Model for Nurse Educational Mobility.

Registered nurses must complete the following nursing courses: NURS 3130, 3215W, 4292, 5010, 5040, 5050, 5080; EPSY 5605, and 15 credits of electives.

Scholastic Standing Requirement. In the following courses: BIOL 1107; CHEM 1122; MCB 2400 or 2410; PNB 2264, 2265; MATH 1020Q, 1030Q, or 1040Q; STAT 1000Q or 1100Q; PSYC 1100; SOCI 1001; HDFS 1070; PHIL 1101-1106; NURS 1110, 1130, 3100, 3110, 3120, 3130 a student in the School of Nursing must have a grade of C or better. 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, 3230, or 3292. 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.

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 127 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 Nursing and University General Education Requirements. (See Scholastic Standing Requirement.)

School of Pharmacy

Robert L. McCarthy, Ph.D., *Dean, School of Pharmacy*
 Andrea K. Hubbard, Ph.D., *Associate Dean, School of Pharmacy*

In 1941 the General Assembly took over the assets of the Connecticut College of Pharmacy and added this institution to the schools and colleges of the University of Connecticut. The pharmacy program, which had been “inaugurated under independent auspices” in New Haven in 1925, continued to operate there under State auspices until 1951, when the program was moved to Storrs. The School of Pharmacy has offered the Doctor of Pharmacy (Pharm.D.) as its sole professional degree since 1997. The professional program requires completion of the two years of pre-Pharmacy 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**, four-year professional program (146 credits professional program plus 64 credits pre-pharmacy for a total of 210 credits), making the Pharm.D. graduate eligible to stand for licensure. For the last 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.

The School of Pharmacy also offers a joint 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 Pharmacology or Toxicology. 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 which will shorten the total time required to complete both degrees. Students must meet the admission requirements of both programs and apply to the Ph.D. program in the spring semester of the P2 year as they complete the B.S. in Pharmacy Studies.

Accreditation. The University of Connecticut’s Doctor of Pharmacy program has been granted full accreditation by The Accreditation Council for Pharmacy Education (ACPE), <http://www.acpe-accredit.org/>. The School of Pharmacy also offers a number of courses leading to the degrees of Master of Science and Doctor of Philosophy. Students holding the degree of Bachelor of Science may prepare for the Doctor of Philosophy degree with a major in pharmaceuticals, medicinal and natural products chemistry, pharmacology or toxicology. 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.

Admission. Admission to the professional program in Pharmacy is competitive. Students should apply for admission to the School of Pharmacy after completion of their third semester of study for entry into the professional program in the following September. All required math, science and English courses must be completed by May for entry into the professional program in the following fall semester. Sociology and economics 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. Students seeking admission to the School of Pharmacy will complete their first two years in one of the schools or colleges of the University of Connecticut. Students may enter the College of Liberal Arts and Sciences as freshmen and identify themselves as pre-Pharmacy majors. Pre-Pharmacy students will be advised through the Academic Center for Exploratory Students (ACES).

To be guaranteed an interview for admission to the School of Pharmacy, the following criteria must be met:

- 1) Completed **all** courses at the University of Connecticut earning no grade below 2.0;
- 2) Earned a minimum 3.50 cumulative grade point average (GPA) in all required math and science classes;
- 3) Pharmacy College Admission Test score of 85% (www.pcatweb.info)

- 4) Earned a minimum grade of 2.7 in English requirements;
- 5) No repetition of a prerequisite course;
- 6) Completed a School of Pharmacy Professional Program application.

All other students will be considered for an interview and admission on a competitive basis.

Students receiving an interview should not assume that they will be admitted to the professional program.

Applications should be submitted after fall grades are posted, but on or before a February 1 deadline. Applications will begin to be reviewed in February and will continue on a space available basis. School of Pharmacy applications are available in the School of Pharmacy Professional Program Office.

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. The total credits for the 11 specific math/science prerequisites equals 39. When approved course substitutions are taken, the courses are treated as substitutions and *not* as replacements for the specific prerequisite courses. The total number of credits is still 39.

Substitutions

Grades for MATH 1120Q and 1121Q (a total of 8 credits) will be averaged and substituted for 4 credits of MATH 1131Q. MATH 1120Q and 1121Q may *not* be used as replacements for MATH 1131Q.

CHEM 1124Q, 1125Q, and 1126Q (a total of 10 credits) will be averaged and substituted for 8 credits of CHEM 1127Q and 1128Q. CHEM 1124Q, 1125Q, 1126Q may *not* be used as replacements for CHEM 1127Q and 1128Q.

The same applies for other approved substitutions.

Physics

The required prerequisite for physics is PHYS 1300 (3 cr.)

With approval from the School of Pharmacy, PHYS 1201Q, 1401Q, 1501Q, etc. can be substituted for PHYS 1300.

However, taking another physics course (e.g. PHYS 1201Q, 1401Q, 1501Q, etc.) in addition to PHYS 1300 may be considered repetition of a prerequisite.

Advanced Placement

When AP work is applied toward prerequisites, the number of total prerequisite credits (39) 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.

Scholastic Standards. Students admitted to the professional pharmacy program must maintain the following standards of scholastic achievement to continue and/or complete the program:

- 1) A minimum **semester** and **cumulative** grade point average of 2.0.
(Students are subject to dismissal if there is more than one semester in which they earn a semester or cumulative grade point average below 2.0.)
- 2) A minimum 2.0 grade point average in all required **Pharmacy** courses.
(Students are subject to dismissal if there is more than one semester in which they earn a semester grade point average below 2.0 in required Pharmacy courses.)
- 3) A minimum cumulative grade point average of 2.0 in all required Pharmacy courses is required to enroll in clinical clerkships/rotations.
- 4) A minimum cumulative grade point average of 2.0 is required for graduation.

In addition, to demonstrate effective written and oral communication skills in English, the student must receive a grade of 2.0 or above in *Interpersonal Skills Development* (PHRM 3008) and in *Pharmacy Practice Laboratory* (PHRM 5009, PHRX 5047) to continue into the clinical experience sequence.

All required Pharmacy courses must be taken for a grade (*i.e.* may not be taken on Pass/Fail or Satisfactory/Unsatisfactory).

Failure to meet any of the requirements may result in dismissal of the student from the program.

The student has the right to appeal in writing to the Office of the Dean of the School of Pharmacy any dismissal decision.

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 a Pharmacy Honors Advisor.

Physical Examination Requirements. All students by the end of the first semester in the professional phase of their program are required to have an initial physical examination including CBC and urinalysis. Additionally, all students are required to have Rubeola Titer; a Varicella Titer; a Rubella Titer (note: even though you may have already had measles and/or chicken pox as a child, you still need titers); a DT (Diphtheria/Tetanus) shot; Hepatitis B immunization (a series of three injections for Hepatitis B and mandatory post-titer level); and a PPD. The Tuberculin Test or PPD must be repeated annually. In addition, a medical release form must be signed annually. Rubella immunization is necessary if the titer is absent. You must have had an updated Tetanus immunization within the last 10 years.

Students may have the health requirements conducted by Health Services or may elect to have the physical examination and required tests performed by a private physician.

In addition, the School of Pharmacy will provide, in compliance with the OSHA Blood Borne Pathogen Standard, mandatory annual educational sessions for all students.

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 in the professional phase of their pharmacy education are required to carry health insurance as stated in the University's health policy. It is the student's responsibility to present a completed Verification of Health Form to the Director of Experiential Education at the School of Pharmacy. This must be done **annually**, prior to the start of the third full week of classes. It is also the student's responsibility to re-present proof of coverage (by filling out a Verification of **University of Connecticut** Health Insurance Form) to the Director of Experiential Education in advance of the expiration date should it occur sometime in the middle of any semester.

Any medical expenses incurred by the student while participating in the clinical portion of the program will be assumed by the student.

Professional Liability Coverage. All students in the professional phase of their curriculum are required to carry specific professional liability (malpractice) coverage. You will automatically be billed for this on your University fee bill. 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 the associate dean of the School of Pharmacy early in their professional program.

Intern Registration. It is mandatory that all Pharmacy students register with the Connecticut Board of Pharmacy upon admission to 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 courses or any of the other practice component of the 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.

Degree Requirements for the Bachelor of Science in Pharmacy Studies. The Bachelor of Science in Pharmacy Studies is awarded after the completion of two years of pre-pharmacy and the first two years of pharmacy study in the professional program. 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) completed at least 30 credits of courses defined as behavioral, social, and humanistic areas of knowledge; (4) satisfied the University's General Education Requirements; (5) earned at least a 2.0 grade point average for all calculable required pharmacy courses; and (6) earned 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. Courses which satisfy (3) above can also be used to satisfy (4) above.

Degree Requirements for the Doctor of Pharmacy (Pharm.D.) The Doctor of Pharmacy is a professional degree, not a graduate degree. It is awarded after two years of pre-pharmacy studies and four years of study in the professional program. 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 210 credits; (2) completed all requirements for the professional years and the Professional Program; (3) completed at least 30 courses defined as behavioral, social, and humanistic areas of knowledge; (4) satisfied the University's General Education Requirements; (5) earned at least a 2.0 grade point average for all calculable required pharmacy courses; and (6) earned 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. Courses which satisfy (3) above can also be used to satisfy (4) above.

Required Courses for the Professional Degree

I. General Education Requirements

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 "Academic Regulations" section of this *Catalog*. The course requirements are those of the School of Pharmacy and also satisfy the University requirements.¹

School of Pharmacy Requirements

Mathematics and Science Courses

CHEM 1124Q, 1125Q, and 1126Q or CHEM 1127Q, 1128Q
CHEM 2443, 2444

BIOL 1107

PHYS 1300

MATH 1120Q and MATH 1121Q or MATH 1131Q

MCB 2000, 2610

PHAR 2002

PHAR 2003

Social Sciences Courses

ECON 1201

1000-level sociology or psychology or anthropology course

Computer Technology Competency

PHRM 4003 or PHRX 3030 satisfies the University computer technology competency exit expectations for the pharmacy major.

Information Literacy Competency

Information literacy competencies will be met through successful completion of program major courses.

Writing in the Major

PHAR 3087W, PHRM 4005W or PHRX 4001 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 1201¹; MATH 1131Q

First College Year - Second Semester: CHEM 1128Q; ENGL 1010 or 1011; PHYS 1300; Arts and Humanities course from GER Content Area 1; Diversity course from GER Content Area 4

¹ These courses need not be taken in the semester indicated, but must be completed during the first two years.

Second College Year - First Semester: CHEM 2443; PHAR 2002; Diversity course from GER Content Area 4; SOCI 1001^{1,2}; MCB 2610

Second College Year - Second Semester: CHEM 2444; PHAR 2003; GER W course; MCB 2000; Arts and Humanities course from GER Content Area 1

Total pre-professional credits - 64

III. The Professional Program for Students Entering the School of Pharmacy in Fall 2008

Students will be admitted to the Pharmacy Studies degree program after completion of the two-year pre-pharmacy program (64 credits) and acceptance by the Admissions Committee.

First Professional Year - 37 Credits

First Semester: PHRX 3000, 3001, 3002, 3006, 3020, 3030, 3050
Total credits - 17

Second Semester: PHRX 3003, 3007, 3011, 3021, 3031, 3032, 3040; 3 credits of Pharmacy Electives

Total credits - 20

Second Professional Year - 36 Credits

First Semester: PHRX 4010, 4020, 4030, 4031, 4040, 4041, 4050; 3 credits of Pharmacy Electives

Total credits - 18

Second Semester: PHRX 4000, 4001, 4011, 4021, 4042, 4043, 4044, 4051; 3 credits of Pharmacy Electives

Total credits - 18

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 5010, 5020, 5040, 5041, 5042, 5047, 5048; 3 credits of Pharmacy Electives

Total credits - 18

Second Semester: PHRX 5011, 5021, 5043, 5044, 5045, 5046; 3 credits of Pharmacy Electives

Total credits - 19

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 (1 month = 4 credits) Required (one month each) 16 credits

Direct patient contact indicated by ^D

Course Numbers and (Credits)

PHRX 5100^D, (4 cr.), 5101 (4 cr.), 5102^D (4 cr.), 5103^D(4 cr.)
(may substitute Pediatrics or Geriatrics for Ambulatory Care and General Medicine)

Electives, minimum of 5 (one month each) 20 credits

At least 2 of the electives must be direct patient contact.

Direct patient contact indicated by ^D

All of the PHRX courses in the list are offered for 4 credits.

PHRX 5104^D, 5105^D, 5106^D, 5107^D, 5108^D, 5109^D, 5110^D, 5111^D, 5112, 5113, 5114, 5115, 5116, 5117, 5118, 5119, 5120, 5121, 5122, 5123^D, 5124^D, 5125^D, 5126^D, 5127^D, 5128^D, 5129^D, 5195, 5199; PHAR 3095, 3099

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 Associate Dean of the School. The Dean of the School of Pharmacy must approve such exemptions or substitutions. Any waivers or substitution for professional courses must be approved by the School of Pharmacy Curriculum Committee.

IV. The Professional Program for Students Entering the School of Pharmacy in Fall 2007

Students will be admitted to the Pharmacy Studies degree program after completion of the two-year pre-Pharmacy program (64 credits) and acceptance by the Admissions Committee.

The Professional Program

First Professional Year - 29 Credits

First Semester

PHRM 3001, 3002, 3003, 3005, 3006, 3007³; 3 credits of Electives⁴

Total credits - 14

Second Semester

PHRM 3007, 3008, 3009, 3010, 3011; PVS 4300

Total credits - 15

Second Professional Year - 33 Credits, First Semester

PHRM 4000, 4001, 4002, 4003C, 4004, 4006³

Total credits - 15

Second Semester

PHRM 4005W, 4006, 4007, 4008, 4009, 4010, 4011,

Total credits - 18

Total credits for Bachelor of Science in Pharmacy Studies - 126

Doctor of Pharmacy - 70 Credits

Students must complete two additional years to earn the Pharm.D. with a total of 196 credits.

Third Professional Year - 34 Credits

First Semester

PHRM 5000, 5001, 5002, 5003, 5004, 5005, 5006³; 3 credits of Electives⁵

Total credits - 15

Second Semester

PHRM 5006, 5007, 5008, 5009, 5010, 5011; 3 credits of Electives⁵

Total credits - 19

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 (1 month = 4 credits) Required (one month each) 16 credits

Direct patient contact indicated by ^D

PHRM 5100^D, 5101, 5102^D, 5103^D

(may substitute Pediatrics or Geriatrics for Ambulatory Care and General Medicine)

Electives, minimum of 5 (one month each) 20 credits

At least 2 of the electives must be direct patient contact.

Direct patient contact indicated by ^D

All of the PHRM courses in the list are offered for 4 credits.

PHRM 5104^D, 5105^D, 5106^D, 5107^D, 5108^D, 5109^D, 5110^D, 5111^D, 5112, 5113, 5114, 5115, 5116, 5117, 5118, 5119, 5120, 5121, 5122, 5123^D, 5124^D, 5125^D, 5126^D, 5127^D, 5128^D, 5129^D, 5195, 5199; PHAR 3095, 3099

Total credits for Doctor of Pharmacy - 196

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 Associate Dean of the School. The Dean of the School of Pharmacy must approve such exemptions or substitutions. Any waivers or substitution for professional courses must be approved by the School of Pharmacy Curriculum Committee.

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.

³ Register for the course each semester. A letter grade and one credit are issued in the spring semester.

⁴ These courses need not be taken in the semester indicated, but must be completed by the end of the second professional year if the student will not have 126 credits.

⁵ If student will not have 196 credits earned following the completion of the Fourth Professional Year, these elective credits must be taken. A total of 196 credits are necessary for the Pharm.D. degree.

Ratcliffe Hicks School of Agriculture

Cameron Faustman, Ph.D., *Associate Dean, College of Agriculture and Natural Resources and Director, Ratcliffe Hicks School of Agriculture*

Patricia J. Jepson, Ph.D., *Director, Academic Advisory Center*

The Ratcliffe Hicks School of Agriculture confers Associate of Applied Science Degrees in Animal Science and Ornamental Horticulture and Turfgrass Management. 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 must submit a University of Connecticut Admission Application, high school transcript, Scholastic Assessment Test scores, and a personal statement describing their interest, experience, and career goals in the field of agriculture. 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 and Ornamental Horticulture and Turfgrass Management 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 and animal science may also register for Ratcliffe Hicks School of Agriculture courses as non-degree students through the Center for Continuing Studies at the University of Connecticut. Non-degree students do not have to apply for formal admission to the University.

Scholarships

The Ratcliffe Hicks School of Agriculture offers Heritage Scholarships for qualified individuals entering the two-year program. Selected applicants receive up to \$1,200 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 Heritage Scholarships prior to entering the program. Selection is based on academic and career-related accomplishments, and potential for continued success.

Many other scholarships in Agriculture and Natural Resources are available to Ratcliffe Hicks students, for more information please see: <http://www.myagrn.uconn.edu>

Associate Degree Curricula

Majors. The Ratcliffe Hicks School of Agriculture students major in Ornamental Horticulture and Turfgrass Management or Animal Science. Ornamental Horticulture and Turfgrass Management majors may concentrate in turfgrass management,

floriculture, or nursery management and landscaping. Graduates pursue careers in golf course management, floriculture, landscape and grounds maintenance, greenhouse and garden center operations, nursery management, interiorscaping, park and land management or public horticulture.

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 service industries.

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 School of Agriculture Director's Office and Academic Advisory Center provide additional support to faculty advisors and Ratcliffe Hicks School of Agriculture students.

Registration. Ratcliffe Hicks students are restricted primarily to Ratcliffe Hicks School of Agriculture courses, numbered 0000 - 0999. Ratcliffe Hicks School of Agriculture students may register for up to 19 credits of 1000-level courses including NRME 1000, 1235; NUSC 1165; BIOL 1102 and the courses listed in the "Associate Degree Requirements" section below.

No more than 19 credits of 1000-level course work may be used toward the Associate of Applied Science degree. Ratcliffe Hicks School of Agriculture students must have approval of the advisor and Director to register for 1000-level courses not listed below. Ratcliffe Hicks School of Agriculture students may not register for 2000-level or above courses or skill code courses (W, Q) unless approved by the Director. Inappropriate registration may result in administrative changes to a student's schedule or credit restrictions toward graduation requirements.

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 can not 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 64 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 32 credits at the University of Connecticut in Ratcliffe Hicks courses numbered 0011 - 0999.

The University General Education Requirements for baccalaureate students do not apply to students in the Ratcliffe Hicks School of Agriculture. All students must pass the following courses in order to earn the Associate of Applied Science Degree:

Freshman Seminar:

SAAG 250

Writing:

ENGL 1004, 1010, or 1011 (based on SAT scores)

Mathematics:

SAAG 240 or MATH 1011Q

Students with higher level math ability may be eligible for a substitution or exemption for SAAG 240 based on Math SAT scores and/or performance on the Ratcliffe Hicks School of Agriculture Math Proficiency Test.

Arts and Humanities:

One course from the following;

ART 1000; DRAM 1101, 1110; FREN 1171; GEOG/URBN 1200; GERM 1171; HIST 1201, 1501, 1502; ILCS 1158; MUSI 1001, 1004; PHIL 1102, 1104; POLS

1002; WS 1104; SPAN 1001, 1002; FREN 1161, or 1162 (or other 1000-level course approved by the Ratcliffe Hicks School of Agriculture director)

Social Science:

POLS 1602 and

One additional course from the following:

ANTH 1000, 1006; ARE 1110, 1150 (SARE 450); ECON 1000, 1201, or 1202; GEOG 1000, 1700; HDFS 1070; POLS 1202, 1207, 1402; SOCI 1001, 1251, or 1501 (or other 1000-level course approved by the Ratcliffe Hicks School of Agriculture director)

Other Alternatives:

Students may substitute COMM 1100; NUSC 1167; PLSC 1125 for the additional course requirement (not for POLS 1602) in the Social Sciences category above.

Requirements for the Major

Science and computer technology requirements for the A.A.S. degree are incorporated into courses required for the major.

Major Requirements

Animal Science Core

SAAS 101, 111, 112, 113, 121; SAPB 301

Horticulture Core

Ornamental Horticulture and Turfgrass Management majors may select options in Ornamental Horticulture or Turfgrass Management.

Ornamental Horticulture

SAPL 100, 110, 120, 300, 410, 550, 640, 750, 800 or 810, 840

Area of Specialization for Both Majors

In addition to the general education requirements and the major core requirements listed above, students must complete at least 12 credits of course work related to an area of specialization within their major. These courses must be Ratcliffe Hicks courses numbered 0000 - 0999 and must be approved by the student's advisor.

Internship and Independent Study Courses. Students may apply no more than six credits of these courses toward the minimum graduation requirement of 64 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 fourth week of classes of the semester in which a student expects to graduate.

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. Upon completion of the A.A.S. degree, students may apply to transfer into the College of Agriculture and Natural Resources or other baccalaureate programs of the University. Students should contact the Director's Office, W.B. Young Building, Room 211, to obtain an application and verify procedures. The Ratcliffe Hicks School will review applications for transfer and submit recommendations to the Transfer Admissions 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 all credits earned with a grade of C or higher, except that no credit will be given for any course graded Satisfactory-Unsatisfactory, or for SAAG 240, Applied Mathematics.

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.

Housing Regulations. Students who desire housing will be assigned rooms in residence halls with baccalaureate students. See the section devoted to Residence Halls under General Information for additional information.

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. 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 specifically stated otherwise in a major or minor. Substitutions are not allowed. A plan of study for the minor; signed by the department or program head, director, or faculty designee; must be submitted to the Degree Audit Office during the first four weeks of the semester in which the student expects to graduate. The minor is then recorded on the student's final transcript. The minor may be chosen from any of those listed below in alphabetical order by title.

African American Studies

This minor provides an interdisciplinary study of African people on the continent and Diaspora through the humanities, social sciences and the arts, with particular emphasis on African Americans. Its broad educational objectives are to engender among all students an intellectual appreciation of black life, to encourage students to develop critical and analytical skills, as well as to appreciate ideals of equality, democracy and humane values.

The requirements include 15 credit hours selected from the following:

- AFAM 3211 (Introduction to African American Studies)
- One course each from groups A, B, and C
- One additional course from any of groups A, B, or C; or AFAM 3295

Group A - History

AFAM/HIST 3224/3770, 3564, 3568, 3620, 3752, 3753; AFAM/HIST/HRTS 3563

Group B - Social and Political Inquiry

AFAM/ANTH 3025, 3152; AFAM/HRTS/SOCI 3505, 3825; AFAM/POLS 3252, 3642, 3647; AFAM/POLS/WS 3652; AFAM/PSYC 3106; AFAM/SOC 3501, 3703; HDFS 3422

Group C - Literature and the Arts

AFAM/ENGL 3214W, 3216W; AFAM/FINA 1100; AFAM/DRAM 3131/W; MUSI 3611

The minor is administered by the Institute for African American Studies. For information, contact Jeffrey O.G. Ogbar: jeffrey.ogbar@uconn.edu.

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: AFAM/ANTH 3025; AFAM/HIST 3753; AFAM/POLS 3252; AFAM/SOCI 3703

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: ARE 3255; ANTH 3023, 3512; ARTH 3710W; ECON 3473; AFAM/HIST 3752; 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 Center for Contemporary African Studies. For information, contact Elizabeth Mahan: elizabeth.mahan@uconn.edu.

Agribusiness Management

The minor will provide an overview of marketing, management, and financial principals and concepts in agribusiness. Analytical and applied decision-making skills are emphasized. All students are required to complete 18 credits from the following courses: ARE 3210, 3215, 3221, 3225, 3260/W, 4217, 4275, 4279, 4464; HORT 3540; ANSC 3452, or 4662W, any 3000-level or above ARE course, if approved by minor advisor. *Note:* ARE 1150 may be required for some 3000-level or above Agricultural and Resource Economic courses. Other courses listed may have additional prerequisites as well. 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 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 Agricultural and Resource Economics. For more information, contact Dr. Linda K. Lee at Linda.Lee@uconn.edu or 860-486-2836.

American Studies

This minor promotes an interdisciplinary understanding of the complex economic, political, and cultural structures at the root of the societies of the Western Hemisphere. Our studies range from the first immigrations across the land bridge from Siberia, to the colonization of the Americas by Europeans, to the present day. Students may also examine such issues as ethnicity, gender relations, and environmental awareness, and discuss how literary and visual artists have articulated contemporary cultural concerns. Students must complete fifteen credits, including any one of the following: ENGL 2201, ENGL 2203, or ARTH 3440 and one approved 2000-level or above history course.

They must then choose a *track*, a series of related, 2000-level and above courses within a broad area of study. Students must complete three courses within this track in order to attain the minor. These courses may be used to fulfill a student's "related" course requirement; however, a student may not use American Studies courses to fulfill simultaneously the requirements of his or her major field and the requirements of the minor.

To insure focus, students must provide a brief rationale for their track and course choices.

The minor is offered by the American Studies Program. For more information, contact Wayne Franklin, Director, 486-4263.

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, 2111, 3122

Students must complete a minimum of 9 credits of coursework by choosing from the following courses:

At least 3 credits from: ANSC 3121, 3313, or 4341, *and*

At least 3 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 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 Animal Sciences Department.

Anthropology

The requirements for this minor are at least 15 credits in Anthropology courses that include (1) two courses chosen from ANTH 2000, 2501, 2502, and 3002, 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, 3521W, 3522W, 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.

Aquaculture

This minor provides students with a basic understanding of aquaculture, especially in closed circulation systems. Students will be required to complete 18 credits which include a common core for all students and a selection of courses based on a specific area of interest. The requirements for the minor are:

NRME 3315; EEB 4200; PNB 3235, one 2-credit internship (as approved by advisor), and two courses from the following: NRME 4335; ARE 3215; PVS 4351; ANSC 3343; NUSC 3235; EEB 3230/MARN 3014

The minor is offered jointly by the College of Agriculture and Natural Resources and the College of Liberal Arts and Sciences. For more information, contact Dr. Eric Schultz at Eric.Schultz@UConn.edu.

Aquaculture Business Management

The minor provides interested students with an overview of marketing, management, and financial principals and concepts in aquaculture management. Analytical and applied decision-making skills are emphasized.

All students are required to complete 15 credits from the following two groups.

1. 12 credits from: NRME 3315; ARE 3436, 3450, 4462
2. 3 credits from: ARE 3210, 3215, 3225, 4217, 4275, 4464; ANSC 3343; or any one 3000-level or above ARE course approved by the minor advisor.

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 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 Agricultural and Resource Economics. For more information, contact Dr. Linda K. Lee at linda.lee@uconn.edu or 860-486-2836.

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 3000-4000 level credits in Art History drawn from at least three of the following categories:

- A. Ancient: ARTH 3140, 3150, 3210*, 3993**, 3995**
- B. Medieval: ARTH 3210*, 3220, 3230, 3240, 3260*, 3993**, 3995**
- C. Renaissance-Baroque: ARTH 3320, 3330, 3340, 3620*, 3993**, 3995**
- D. Modern-Contemporary: ARTH 3020/W, 3035, 3430, 3440, 3445, 3450, 3460, 3510, 3520, 3530, 3560, 3630*, 3640*, 3645*, 3993**, 3995**
- E. Cross-Cultural Perspectives: ARTH 3015W*, 3610, 3620*, 3630*, 3640*, 3645*, 3710, 3715, 3720, 3730, 3740, 3745, 3993**, 3995**
- F. Art History Theory and Methodology: ARTH 3005, 3010, 3015W*, 3030, 3260*, 4010, 3993**, 3995**

Students interested in this minor, should arrange for a counselor 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 3993** and 3995** 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 the 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

Asian American Studies is an interdepartmental, interdisciplinary program devoted to the study of the Asian American experience within the larger context of an increasingly diverse American society. Although the primary focus of the minor is upon Asian Americans, attention is also given to the study of the global context, especially Asia, since this larger context informs the Asian American experience.

Students are required to complete eighteen credits at the 2000-level and above by completion of Sections A, B, C, and D:

Three credits from Section A: AASI 3201.

Six credits from Section B: AASI 3215; AASI 3220/ARTH 3020; AASI/ENGL 3212; AASI/HIST 3531, AASI 3578/HIST 3530, AASI 3221/HRTS 3571/SOCI 3221; AASI 3295*, 4999*

Six credits from Section C: AASI 3214, 3216; AASI 3222/HRTS 3573/SOCI 3222; AASI/HIST 3808, 3809, 3812; HIST 3822; POLS 3472; AASI 3295*, 4999* and

Three credits from Section D: AFAM/ENGL 3214W; AFAM/HIST/HRTS 3563; ANTH/PRLS 3041/3241; AFAM/HRTS/SOCI 3505, 3825; COMM/PRLS 4320; DRAM 3401; AFAM/HIST 3564; HIST/WS 3562; PRLS 3298.

* Must be approved by the Asian American Studies Minor Advisor

This minor is offered by the Asian American Studies Minor Advisor, Director, Asian American Studies Institute, Beach Hall, Rm. 417. For more information, e-mail Roger.Buckley@uconn.edu or phone (860) 486-4751.

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 but may not be used towards the 15 credits for the Bioinformatics minor.

Group A: Bio-Computing / Computer Science

MCB 3421, 3832; MCB 5472/EEB 5372; EEB 5348, 5462; CSE 2102, 2300W, 2363, 3500, 3502, 3800, 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

Group D: Genetics

MCB 2211, 2410, 2413, 3412, 3617; EEB 5348

MCB 3899, CSE 4095, and CSE 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@enr.uconn.edu or Dr. J. Peter Gogarten at gogarten@uconn.edu.

Biological Sciences

Students wishing to complete this minor must take at least 15 credits of 2000-level 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:

- A. MCB 2000, 2210, 2410, 2413, 2610, or 3010.
- B. EEB 2244/2244W or 2245/2245W.
- C. 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.

Biomedical Engineering

A minor in Biomedical Engineering requires completion of 16-17 credits including the following: BME 3100; BME 3301 or CHEG 3173; BME 3500, 3600W and 3700.

The minor is offered by the School of Engineering. For the Biomedical Engineering minor, contact Dr. John Enderle at jenderle@enr.uconn.edu.

Business

In order to receive a minor in Business, a student must complete five, 3 credit, 3000-4000 level courses (15 credit hours) offered by the School of Business. ACCT 2010 may be counted in place of one 3000 to 4000-level course and is the only 2000-level course which may count toward the minor. Credits from internships (4891's) cannot be used to satisfy the requirement. No more than three of these credits may be from transfer credits of courses equivalent to University of Connecticut courses, UConn Study Abroad or National Student Exchange courses. With approval, one 4 credit transfer course may be used. Note: Accreditation standards restrict students who are not majors in the School of Business to no more than 27 credits of coursework offered by the School of Business.

Courses used to fulfill the requirements for the business minor may not also be used to fulfill the requirements for the entrepreneurship minor. Courses designed for students pursuing a 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 minor, but students will typically require departmental permission to register for those classes. Students should also note that they must meet all requisites for those classes.

The minor is offered by the School of Business. For the Business minor, contact the Undergraduate Programs Office, School of Business, room 121 or phone (860) 486-2315.

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, 3661

The minor is offered by the Chemistry Department.

Classics and Ancient Mediterranean Studies

This minor allows students to pursue an interest in Greek, Latin, and 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:

- A. Two courses on Classical or Biblical literature in English (a second course from C may be substituted for any of these): CAMS 3241W, 3242W; INTD 3260
- B. At least one course dealing with the ancient world: CAMS 3243, 3244, 3251, 3252, 3253, 3254, 3255, 3256, 3257, 3293*, 3295, 3298*, 3299* (These may be cross-listed under Art History, History, Judaic Studies, and Philosophy.) JUDS/HEB 3201 and INTD 3260 may also be included.
- C. Optional: Courses involving reading in Greek and/or Latin: CAMS 3207, 3211, 3212, 3213, 3214, 3221, 3224, 3225, 3226, 3227, 3232, 3293*, 3295*, 3299*

(*May count toward minor only with consent of advisor).

The minor is offered by the Modern and Classical Languages Department.

Cognitive Science

Cognitive Science is the interdisciplinary study of mind and intelligence, bringing together course content from Psychology, Linguistics, Artificial Intelligence, Anthropology, Communication Disorders, 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 6 credits may be counted from any one department.

- A. Cognition: ANTH 3250; CSE 4705; PHIL 3247/3247W, 3250/3250W; PSYC 2500, 2501
- B. Language: ANTH 3002 or LING 3610W; LING 2020; PHIL 3241; PSYC 3500

C. Perception: PHIL 3256/3256W; PSYC 3501, 3502

D. Development: CDIS 3202/3202W or PSYC 3470/3470W; CDIS 4253; PSYC 2400

E. Neuroscience: CDIS 4244/4244W, PHIL 3249/3249W; PNB 3251; PSYC 2200

F. Formal Systems: CSE 2500, 3502; LING 3310Q, 3510Q; PHIL 2211Q, 3214

The minor is offered by the College of Liberal Arts and Sciences. For the Cognitive Science minor, contact Prof. Letty Naigles, Director of Undergraduate Studies in Cognitive Science, 141 Bousfield Psychology Building.

Communication

Students wishing to complete this minor must take at least 15 2000-level or above credits in COMM courses. Selected courses must include:

1. COMM 3000Q or equivalent research methods course. If an equivalent research methods course is used, 15 credits in 2000-level or above COMM courses are required.
2. At least two from the following Core courses: COMM 3100, 3200, and 3300
3. Only one (3 credits) can be an Applied course from the following list: 4800, 4820, 4940, 4991, 4992.
4. The Communication Advisor's permission is needed for 4995, 4998.

The minor is offered by the Communication Sciences Department.

Criminal Justice

The purpose of this minor is to provide in-depth study of topics in criminal justice and to offer preparation for possible careers within the criminal justice system. A maximum of three credits in the minor can be part of a major; 12 to 15 credits can constitute the related area courses.

Course Requirements. A total of 18 credits from the following courses:

1. Three required courses: POLS 3827, SOCI 2301, PSYC 2300
2. One Course (Three credits) from the following: HDFS 3080*; INTD 3590; POLS 3991*; SOCI 3990*; SOCI 5301 (for seniors with at least a 2.6 cumulative GPA); or PSYC 3880

* Field work must be in a criminal justice setting.

Students who are employed full time within a criminal justice setting may have the Group II requirement waived by their Criminal Justice Advisor when employment is documented by their supervisor.

3. Two or more courses (Six credits) from the following: HDFS 2001, 3103, 3340, 3510, 3520; HRTS/WS 3263; PHIL 3226; POLS 2622, 3802, 3817, 3842, 3999 (on a criminal justice topic); PSYC 2100Q, 2301, 2501, 2700; SOCI 3307, 3311, 3315/W, 3425, 3457, 3503, 3999 (on a criminal justice topic), 5301 (for seniors with at least a 2.6 cumulative GPA).

The minor is offered by the College of Liberal Arts and Sciences. Interested political science majors should contact Frank Goetz at Frank.Goetz@uconn.edu. Psychology majors should contact Eleanor Coldwell at Eleanor.Coldwell@uconn.edu. Family studies' majors should contact Steven Wisensale at Steven.Wisensale@uconn.edu. Sociology majors should contact Brad Wright at Bradley.Wright@uconn.edu. Greater Hartford campus students should contact Nadine Brennan at Nadine.Brennan@uconn.edu. All other students should contact the Individualized and Interdisciplinary Studies Program office at iisp@uconn.edu.

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; PVS 2301; ARE 3215, 4217. 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 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 Animal Science Department.

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, WS 1104, and WS 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.)

A) One required three-credit course: INTD 2245

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:

I. Gender, Physicality, and Sexual Identities

DRAM 3130; ENGL 3609, 3613; HDFS 2001, 3261; POLS/WS 3052; PRLS 3231/WS 3259; PRLS 3251/HDFS 3268; PSYC/WS 3102/W; SOCI 3221/AASI 3221/HRTS 3571; SOCI/WS 3453, 3621/W; SOCI 3601/W; WS 3252, 3266, 3267, 3269

II. Ethnicity, Culture, and Race

AASI 3201; AASI/ENGL 3212; AFAM/DRAM 3131/W; ENGL 3605/PRLS 3232; ENGL 3607/PRLS 3233; ENGL 3210; ENGL 3214; ENGL/AFAM 3216W; ENGL 3218W; PRLS 3210; PRLS 3230/WS 3258; PSYC/AFAM 3106/W, PSYC 2101, 2701; SOCI/AFAM/HRTS 3505, 3825; SOCI/AFAM 3501; SOCI 3501W; SOCI/JUDS 3511; SOCI 3503/W, 3511W

III. History and Politics

HIST/WS 3562, HIST 3570; HIST/AFAM/HRTS/3563; HIST/AFAM 3564; HIST/AASI 3531; HIST 3674/PRLS 3220; HIST 3575/PRLS 3221/HRTS 3221; HIST 3530/AASI 3578; POLS/AFAM/WS 3652; POLS/AFAM 3642; POLS 3662/PRLS 3270; SOCI/HRTS 3421; SOCI 3421W

The minor is offered by the College of Liberal Arts and Sciences. For more information, contact Katharine Capshaw Smith at capshaw@uconn.edu.

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 five three-credit courses at the 2000-level and above, including ECON 2201, 2202, and one course numbered 2301-2328 or at the 3000-level or above.

The minor is offered by the Economics Department.

English

Students wishing to complete this minor must take at least 15 credits of English courses at the 2000-level or above, including:

1. At least one of ENGL 2100 (or English Honors 2101 or 3805W) and ENGL 2101 (or English Honors 3809W or 3811W);
2. At least one of ENGL 2201 (or English Honors 3801W) and 2203 (or Honors 3803W); and
3. Any three other English courses at the 2000-level or above, with the following exceptions: 3010W, 3091, 3111-3119, 3177, 3693, and 3800.

The minor is offered by the English Department.

Entrepreneurship

To receive this minor, a student must complete five, 3 credit, 2000-level or above courses (15 credit hours) offered by the School of Business. Credits from internships cannot be used to satisfy the requirement. No more than three of these credits may be from UConn Study Abroad or National Student Exchange courses.

Courses used to fulfill the requirements for the entrepreneurship minor may not also be used to fulfill the requirements for the business minor. Note: Accreditation standards restrict students who are not majors in the School of Business to no more than 27 credits of coursework offered by the School of Business.

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 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.

As part of the five courses required for the minor, students must satisfy the following requirements: BADM 3740 or MGMT 3101; BADM 3741 or MGMT 3234; and BADM 3742 or MGMT 3235

The minor is offered by the School of Business. For more information, contact the Undergraduate Programs Office, School of Business, room 121 or phone (860) 486-2315.

Environmental Economics and Policy

The minor will provide interested students with 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.

All students are required to complete 12 credits from the following courses: ARE 3260/W, 3434/W, 3436, 3437, 4099, 4438, 4462, 4464, or any other 3000-level or above ARE course if approved by the Minor Advisor. The 12 credits used 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 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 Agricultural and Resource Economics. For more information, contact Dr. Linda K. Lee at Linda.Lee@uconn.edu or 860-486-2836.

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:

An approved *Plan of Study*

ENVE/CE 2310, 3220/3320, 4310

ENVE/CHEG 3230

6 elective credits from an approved list of 2000-level and above courses, but not more than 3 credits of research

The minor is offered by the Environmental Engineering Program. For the Environmental Engineering minor, contact Dr. Amvrossios Bagtzoglou at acb@enr.uconn.edu.

Environmental Studies

Environmental Studies is broadly concerned with the interaction between humans and the environment. The Environmental Studies Minor is a coherent 16-credit interdisciplinary (humanities, social sciences, and sciences) program to enable students interested in social science and/or policy approaches to solve 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.

Requirements. Total of 16 credits as follows:

Core Courses:

EEB 2244 or GEOL 3010

3 credits from ANTH 3200; ARE 3434; ENGL 3240; GEOG 3410; NRME 3245 or PHIL 3216

Electives. (Additional 9 credits, no more than 6 from one department) - AH 3175; ANTH 3093, 3201, 3302; ARE 3434; EEB 3205, EEB 2244; ENGL 3240; GEOG 3300, 3320/W, 3410, 4300; HIST/SCI 2206; NRME 3245; PHIL 3216; POLS 3406; SCI 2400. In addition, ANTH 3200, EEB 2244, GEOL 3010 may be taken as electives if not chosen core courses.

Students may also incorporate off campus study with the minor advisor's approval, such as internships, Biosphere, or study abroad.

The minor is offered jointly by the College of Liberal Arts and Sciences and the College of Agriculture and Natural Resources. For more information, please contact Robin Chazdon, Ph.D. Ecology and Evolutionary Biology Department 860-486-4057 or Jean Crespi, Ph.D. Geology and Geophysics 860-486-4435.

Equine Business Management

The minor provides interested students with an overview of marketing, management, and financial principals 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 3210, 3215
2. Nine credits from the following courses: ARE 3225, 4217, 4275, 4438, 4464, and any one 3000-level or above ARE course, if approved by the minor advisor.

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 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 Agricultural and Resource Economics. For more information, contact Dr. Linda K. Lee at linda.lee@uconn.edu or 860-486-2836.

European Studies

This minor allows students to pursue an interest in social, historical, political, and cultural aspects of Western Europe or to pursue a topic, such as environmental protection or cultural identity, that cuts across regions. Students electing this minor must complete a minimum of 18 credits at the 2000-level or above distributed across the following categories:

1. One required course: HIST 2402
2. Three courses distributed across three of the following four disciplines: ECON 2101 or 2101W; GEOG 4700; HIST 2401 or 2401W; HIST 3412 or 3412W; HIST 3413 or 3413W; POLS 240/W; 2222/W
3. One course from the ES advisor's list of approved electives, chosen in close consultation with the ES advisor. With the advisor's approval, a student may opt to do a senior thesis, equivalent to three credits of the elective requirement, on an aspect of European Studies.
4. One three-credit course at the 2000-level and above in European literature, culture, or civilization, from the Modern and Classical Languages listings; or the student may combine three 1-credit Linkage Through Language modules for a total of 3 credits.
5. Language requirement: Intermediate proficiency in reading, writing, speaking, and understanding a European language other than English, demonstrated either through completion of the fourth semester of a college-level language sequence or through examination by a faculty instructor in the language. Study abroad is strongly encouraged as an effective means to increase proficiency.

The minor is administered under the auspices of the Center for European Studies. Courses of study are supervised by committees of participating faculty. For further information, including a list of designated courses, contact Ludmilla Burns, Program Advisor, 486-5888.

Film Studies

Students electing this minor must take two courses from each of the following three Distribution Groups:

Two courses in core film studies: CLCS 2214, 3207, 3208; DRAM 4152

Two courses in national cinemas: DRAM 4151; GERM 3261W (taught in German), 3264W (taught in English); FREN 3223 (taught in either English or French), 3226 (taught in English); ILCS 3260W (taught in English); SPAN 3250 (taught in English), 3251 (taught in either English or Spanish), 3252 (taught in Spanish), 3254 (taught in English)

Two interdisciplinary courses: AASI/ENGL 3212; CLCS 3201; CAMS 3245; WS 3217/ENGL 3623; POLS 3426; ENGL 3621; LAMS 3575; SOCI 3703/W; ILCS 3258/W; COMM/PRLS 4320

This interdisciplinary minor is offered by the Department of Modern and Classical Languages. For more information, contact Norma Bouchard by e-mail at Norma.Bouchard@UConn.edu or by phone at (860) 486-3292.

Food Science

This minor addresses food science as an academic discipline which utilizes approaches for solving applied science problems associated with the acquisition and processing of food.

Students in this minor must pass: ANSC 3343, 4341; NUSC 3233, 3235

Additional courses from the following to meet the 18 credit total requirement: ARE 1150; ANSC 2695; ANSC/NUSC 1645; NUSC 1165, 1167, 3234

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 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 Animal Science Department and the Nutritional Science Department.

French

The French minor consists of 18 semester credit hours at the 2000-level and above in French: 6 credits from A) Language, 6 credits from B) French and Francophone Culture, 6 credits from C) French Literary Studies. Study abroad in our Paris program is recommended (students in Paris may earn up to 9 credits towards the French Minor).

Any of the courses may be replaced by the appropriate FREN 3293 from Paris.

A. Language (French grammar, written language and oral skills)

Grammar and composition: FREN 3268 or 3269

Conversation and Phonetics: FREN 3250, 3251, or 3257

B: French and Francophone Culture (any two courses from the list)

FREN 3210, 3211, 3215, 3216, 3217, 3218, 3224, 3273, 3274

C: French Literary Studies (any two courses from the list)

FREN 3220, 3221, 3222, 3223, 3230, 3231, 3232, 3234, 3235, 3261W, 3262W, 3272

The minor is offered by the Modern and Classical Languages Department.

Geographic Information Science

The minor consists of courses that concern spatial data acquisition, evaluation, manipulation, and analysis. Students electing this minor must complete at least fifteen credits from the following:

1. Two required courses: GEOG 4500 and 4510

2. One of the following: GEOG 3510, GEOG 3520

3. One of the following: ECON 2326; GEOG 3500Q; MATH 255; 3710; STAT 2215Q

Geography majors may not select GEOG 3500Q, and may not use any other Geography course to fulfill both major and minor requirements.

The minor is offered by the Geography Department.

Geography

The requirements for this minor are GEOG 2100 or 3120, GEOG 2300, and an additional 9 credits of 2000-level and above Geography courses selected in consultation with an advisor to form a coherent program of study.

The minor is offered by the Geography Department.

Geology and Geophysics

The minor in Geology and Geophysics provides instruction in the core concepts and principal methods of investigation in the study of the Earth. This course of study compliments a major in the biological or marine sciences, chemistry, physics, civil and environmental engineering, anthropology, geography, or natural resources management and engineering.

Students wishing to take this minor must complete the requirements of either the Geology Option or the Geophysics Option.

The Geology Option consists of the following four courses: GEOL 3010, 3020, 3030, 3040

An additional 2000-level or above Geology and Geophysics course, chosen in consultation with the Geology Option minor advisor, must also be completed so that the total number of credits is at least 15.

The Geophysics Option consists of the following four courses:

GEOL 4510, 4520, 4550, 4560

An additional 2000-level or above Geology and Geophysics course, chosen in consultation with the Geophysics Option minor advisor, must also be completed so that the total number of credits is at least 15.

The minor is offered by the Center for Integrative 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 2 of the following courses: GERM 3231, 3233, 3234, 3245, 4246
2. Content Courses (in literature, film, culture, etc.): students must choose 2 of the following, or they may substitute three 1-credit Linkage Through Language courses in German for one of the following 3-credit courses: GERM 3253W, 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 Modern and Classical 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 18-credit minor consists of both course work and field experiences working in community settings serving older adults.

Course Requirements

1. Three required courses (Nine credits): HDFS 2200, 3240, 3249
2. One course (three credits) from the following: HDFS 3252, 3510, 3530; AH 3203
3. Six credits in HDFS 3080: Fieldwork in Community Settings Working with Older Adults

Six credits of fieldwork with older adults may consist of either two 3-credit field experiences during different semesters or one 6-credit field experience.

The minor is administered under the auspices of the Center on Aging and Human Development. Students should contact the Department of Human Development and Family Studies.

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 3300 (ANTH 3513), 3301 (CAMS 3253), 3320 (CAMS 3254), 3325 (CAMS 3255), 3330 (CAMS 3256, HEB 3218, JUDS 3218), 3335 (CAMS 3250), 3340 (CAMS 3243), 3350, 3360, 3361, 3370, 3371, 3400, 3401, 3420, 3450, 3460, 3470

Group B - Modern Europe: HIST 2240, 2401, 2402, 2206 (SCI 2206), 3201 (HRTS 3201), 3203 (HDFS 3423), 3205, 3412, 3413, 3416 (WS 3416), 3418 (HEB 3203, JUDS 3203), 3421, 3426, 3430, 3440, 3451, 3456, 3463, 3471.

Group C - United States: HIST 2206 (SCI 2206), 3201 (HRTS 3201), 3204W, 3206, 3502, 3504, 3510, 3516, 3520, 3522, 3530 (AASI 3578), 3531 (AASI 3531), 3541 (URBN 3541), 3544, 3550, 3551, 3554, 3555, 3556W, 3561 (WS 3561), 3562 (WS 3562), 3563 (AFAM 3563, HRTS 3563), 3564 (AFAM 3564), 3568 (AFAM 3568), 3570, 3575 (PRLS 3221, HRTS 3221), 3660W (LAMS 3660W/PRLS 3660W), 3674 (PRLS 3220).

Group D - Africa, Asia, Latin America, and Middle East: HIST 3201 (HRTS 3201), 3202 (HRTS 3202), 3206, 3422, 3607, 3608W, 3609, 3610, 3620 (AFAM 3620), 3635, 3640, 3643, 3660W (LAMS /PRLS 3660W), 3674 (PRLS 3220), 3704, 3705, 3712, 3752 (AFAM 3752), 3753 (AFAM 3753), 3770 (AFAM 3224), 3808 (AASI 3808), 3809 (AASI 3809), 3812 (AASI 3812), 3822, 3863.

Variable Topics Courses (HIST 3100W, 3101W, 3991, 3993, 3995, 3998, 4989, 4994W, 4999, or a graduate level History course) may be applied to any of the four distribution groups as determined by course content and with the Undergraduate Director's consent. No more than six credits of HIST 3991 will count toward the minor requirements.

The minor is offered by the History Department.

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 and above are required. Six credits from Group A, Core Courses; six credits from Group A or B, Electives; and three credits from Group C, Internship. More than six credits may not be taken in one department. A student may petition the Director of the Human Rights Minor to allow a course not on the following list to count as an Elective (Group B).

Group A. Core Courses.

HRTS/POLS 3042; POLS/HRTS 3212; HIST/HRTS 3201, 3202

Group B. Electives.

AFAM/HIST/HRTS 3563; AFAM/HRTS/SOCI 3505, 3825; ANTH 3026; ANTH/WS 3350; ANTH/HRTS 3028; AASI 3215; AASI/HIST 3531; AASI 3221/HRTS 3571/SOCI 3221; AASI 3222/HRTS 3573/SOCI 3222; ECON 2127, 2198, 3473; HIST/WS 3562; HIST/AFAM 3770/3224; HIST 3570, 3995; HIST 3575/HRTS 3221/PRLS 3221; HRTS 3293, 3295, 3299; HRTS/POLS 3418; HRTS/SOCI 3421, 3429, 3801; HRTS/WS 3263; PHIL 2215, 3218; PHIL 2245/ECON 2126; POLS 3255; SOCI/HRTS 3831; SOCI 3503, 3701

Group C. Internship: HRTS 3245

The minor is offered by the College of Liberal Arts and Sciences. For more information, contact Richard Hiskes in the Political Science Department.

India Studies

Completion of a minimum of fifteen credits at the 2000-level or above is required, including at least two courses from Group A and at least two courses from Group B. In addition the India Studies minor requires the completion of INDS 4296 or participation in an approved, credit-bearing Study Abroad program in India. Any remaining credits can be completed in INDS courses, an additional course from Group A or B, or any independent study that focuses on India (approved by coordinator of India Studies). Also recommended are appropriate 2000-level and above courses that provide an introduction to the advanced courses. These might include PHIL 1106 and ARTH 1140. Students are strongly encouraged (although not required) to take an Indian language course in the Critical Languages program.

Group A: Core courses

AASI/HIST 3812; INDS 3210; PHIL 3263; POLS 3472/W; AASI/HRTS/SOCI 3222/3573/3222; ENGL 3318 (when taught as "India"); ART 3375

Group B: Related courses

SOCI 3701/W; POLS/WS 3216; ECON 3473/W; ARE 3255; ENGL 2301/W; AASI 3216

The minor is offered by the India Studies Program. For more information, contact Elizabeth Hanson, 486-2534.

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)
CE 2110 and CSE 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 School of Engineering. For the Information Technology minor, contact Dr. Alexander Shvartsman at: aas@engr.uconn.edu.

International Studies

This minor enables students, regardless of their fields of concentration, to develop a broad understanding of the rapidly changing global environment. The minor requires fifteen to eighteen hours of course work, and either an intermediate level of competency in a modern foreign language, participation in an approved Study Abroad program, or completion of an internship. Further information on the International Studies minor can be obtained from the International Studies Minor Advisor, Ludmilla Burns, 486-5888, or at <http://www.oia.uconn.edu/academics.html>.

Italian Cultural Studies

Students electing this minor must complete 18 credits from the following:

- A. Two courses in Italian literature and/or cinema in English: ILCS 3255W, 3256, 3258/3258W, 3260W
 - B. Two courses in History: HIST 3325, 3370, 3460, 3463, 4994W
 - C. One course in Art History: ARTH 3030, 3320W, 3340W,
 - D. One additional 2000-level or above course in Italian Cultural Studies or History. ILCS 3239, 3240, 3270, and 4279 may count for Group D.
- Students must demonstrate proficiency in Italian at a level equivalent to ILCS 1147.

The minor is offered by the Modern and Classical Languages Department.

Italian Literary Studies

This minor requires the completion of 18 credits in 2000-level or above courses. All of the courses listed below require ILCS 1145, 1146, 1147, 1148, or the equivalent, as prerequisites, but those language courses do not count toward the minor. The following are the courses required for completion:

- A. One course in composition and conversation: ILCS 3239 or 3240
- B. Both of the following: ILCS 3243 and 3244
- C. Two courses from the following: ILCS 3250, 3253, 3254, 3259, 3261, 3262
- D. One course from the following: ILCS 3237, 3270, 4279

The minor is offered by the Modern and Classical 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 the Jews throughout the world stretching back four millennia to biblical Israel.

Course Requirements

JUDS/HEB 1103 is a prerequisite. At least one year of biblical or modern Hebrew is strongly recommended. A total of 15 credits from the following 2000-level or above courses is required: A minimum of six credits in Foundational Courses

(Group A): HEB/JUDS 3201; HEB 3203/HIST 3418/JUDS 3203; JUDS/SOCI 3511; CAMS 3256/HEB 3218/HIST 3330/JUDS 3218; INTD 3260.

A maximum of nine credits in Topical Courses (Group B): HEB 3293, 3299; JUDS 3202, 5397; CAMS 3244; CAMS 3253/HIST 3301; HIST 3705, 3712, 3995.

The minor is offered by the Judaic Studies Department.

Landscape Design

This minor provides an introduction to landscape architecture, the communication of ideas via presentation drawing, and the methodology of designing the landscape to meet individual and societal needs.

Students in this minor must pass a total of 16 credits including: HORT 3710; LAND 2110, 2210

And three of the following courses: HORT 2430, 3410, 3420, 2750; LAND 2220, 3230W; TURF 3720

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 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.

Latin American Studies

This minor provides basic, interdisciplinary understanding of Latin America and the Caribbean that supplements a student's undergraduate major. Students must complete a minimum of four 2000-level or above courses on Latin America and/or the Caribbean selected from at least three disciplines. At least two of the four courses must be selected from the following:

ANTH 3021, 3029; HIST 3607, 3608W, 3609; POLS 3235; SPAN 3205

Students minoring in Latin American Studies must also take LAMS 4994W, the Latin American Studies Research Seminar. Only 3 credits of Latin America-related course work in the student's major department may be counted towards the minor. Students must also complete one 2000-level or above course in Spanish and/or Portuguese. Students minoring in Latin American Studies should also consider participating in a study abroad program in Latin America or the Caribbean.

The minor is offered by the Latin American Studies Program. For information, contact Elizabeth Mahan: elizabeth.mahan@uconn.edu.

Latino Studies

An interdisciplinary minor in Latino Studies is available through the College of Liberal Arts and Sciences for those who wish to develop an understanding of the cultural, historical and socio-political aspects that affect U.S. Latinos/as as an important segment of American society. The minor offers students the opportunity to focus on specific issues related to Latinos/as in the United States while expanding their knowledge in the Social Sciences and Humanities. The courses provide a multicultural approach to knowledge and explore multidisciplinary methodologies in research. Students may elect to take a research project or an internship course to further integrate the knowledge and skills developed.

Students must complete a minimum of fifteen 2000-level or above credits with a grade C or higher.

A. Core courses:

One required course: PRLS 3210 (3 credits)

Two courses selected from PRLS course offerings (6 credits): ANTH 3041/PRLS 3241; COMM/PRLS 4320; COMM 3321/PRLS 3264/WS 3260; ENGL 3605/PRLS 3232; ENGL 3607/PRLS 3233; HIST 3575/HRTS 3221/PRLS 3221; HIST 3674 /PRLS 3220; HDFS 3442/PRLS 3250; HDFS 3268/PRLS 3251; POLS 3662/PRLS 3270; PRLS 3271, 3298-01, 3298-02; PRLS 3230/WS 3258; PRLS 3231/WS 3259;

One or two of the following research or internship courses (3-6 credits): PRLS 3211, 3299, 4212

B. Related Elective courses (if needed): 2000-level or above courses from a related discipline such as Anthropology, Communication Sciences, Economics, History, Political Science, Sociology, Spanish, or Women's Studies: ANTH 3029; ECON 2456; ENGL 3218; HIST 3609; AFAM/HIST 3620; AFAM/SOCI 3501; HDFS

3421; HRTS/SOCI 3421, 3429, POLS 3235; POLS/URBN 3632W; POLS/WS 3216; PRLS/SPAN 3265; SOCI 3503; WS 3267

The minor is offered by the Institute of Puerto Rican/Latino Studies. For more information, contact Blanca G. Silvestrini, Director, (860) 486-3997.

Linguistics

This minor requires 15 credits of 2000-level or above course work. Required courses are:

- A. Core areas of theoretical Linguistics: LING 2010Q, 3310Q, and 3510Q
 - B. Extensions of Linguistics: At least one other 2000-level or above Linguistics course.
 - C. Either a second Extensions course (B, above), or one of the following courses in related fields: ANTH 3002; CDIS 3202; PHIL 2211Q, 3241; PSYC 3500
- The minor is offered by the Linguistics Department.

Marine Biology

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 of the following courses**: MARN 3012, 3013, 3016 or 3030/5032, 3015/5015, 3017/5017, 3811, 5014, 5016; EEB 4200, 4275. Students may use MARN 4893, 4895, or other MARN courses towards one or more of these electives with prior approval of the Department Head.

* Students who have taken both MARN 2002 and 3001 may substitute these for MARN 4010

** Coastal Studies majors may use only one 2000-level or above MARN elective courses to count for both the major and the Marine Biology minor.

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; MARN 1002 or 1003; GEOL 1050 or 1051; GEOG 1000; HIST 1201, 1300, 1400.

Requirements for the Minor: 18 Credit hours of course work as follows: ANTH 2501, 2510

Select one course from the Science/Technology list: GEOL 3230/MARN 3230; GEOG 2300, 4500

Select nine credits from the History/Anthropology/Marine Studies list: 6 credits of ANTH 3990*; HIST 2100, 3544; ANTH 3701, 3902, 3904W; 1 to 3 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 Maritme Studies. Interested students may contact Helen Rozwadowski at Helen.Rozwadowski@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 16 credits including the following:

An approved *Plan of Study*

MSE 2001 (or 2101), 2002, and 2053 (or 3152)

9 credits selected from MSE 3000-level courses, MSE 4000-level courses (but not more than 3 credits of independent study or directed research); BME 3700, and BME 4701.

The minor is offered by the Materials Science and Engineering Program of the Chemical, Materials, and Biomolecular Engineering Department. For more information, contact Dr. R. Ramprasad (860) 486-4102 or rampi@ims.uconn.edu.

Mathematics

The requirements for this minor are 15-18 credits of Mathematics, following one of these tracks:

Either 1. MATH 2110Q (or 2130Q or 2143Q), 2210Q (or 3210 or 2144Q), 2410Q (or 2420Q or 2144Q), and two additional courses from the following: MATH 2360Q, 3146, 3150 (or 4110), 3160, 3230 (or 4210), 3240, 3260, 3330 (or 4310), 3370, 3510, 3710, 4735 or certain sections of 3094, 3795, and 3799 approved by the department head.

or 2. MATH 2141Q, 2142Q, 2143Q and 2144Q.

The minor is offered by the Mathematics Department.

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 18 credits at the 3000 and 4000-level that satisfy the following criteria.

1. The basic required course is HIST 3705.
2. In addition, students must complete five courses, spread across at least four fields, from the following list: ANTH 3038; CLCS 2214, 3201, 3203; ECON 2104 (2104W); FREN 3218; HEB/JUDS 3201; HIST 3704, 3712; HIST 3300/ANTH 3513; HIST 3301/CAMS 3253; HIST 3330/HEB 3218/CAMS 3256/JUDS 3218; INTD 3260; POLS 3447, 3462; and 3000 and 4000-level courses on Middle East Languages.

Courses 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 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.

The Critical Languages Program offers courses in Middle Eastern languages that may be used to fulfill the foreign language requirement of the University. Students are strongly encouraged to take a language relating to their field of study.

The minor is offered by the Middle East Studies Committee. For information, contact Lucy McNeece: lucy.mcneece@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 2211, 2410, 2413, or 3617
- B. MCB 2000 or 3010
- C. MCB 2210 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. (6 credits)
2. Completion of two courses chosen from MUSI 1004, 1021, 1022, 3401, 3402, 3403. (6 credits)
3. At least 6 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 (except MUSI 1108 or 1109) or academic studies.*

*Private applied study (MUSI 1221, 1222, 3222) is normally not offered to non-majors. Students who wish to do so may enroll for private lessons through the University's Community School of the Arts.

The minor is offered by the Music Department.

Native American Studies

Students must complete a total of nine hours in three courses: ANTH 3026, ENGL 3210, and HIST 3570. Students will then select one of five tracks: Archaeology; History and Culture; Native Latin Americans; Gender and Religion; Ecology, Environment and Policy. Each student will complete three courses within their decided track. Completion of a total of 18 credits is required.

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 that are structured in the following manner. Required lecture courses: All students must take both PSYC 2200 and PNB 3251. Lab requirement: Students must take at least one of the following: PSYC 3250W, 3251/W, 3252, or PNB 3263WQ. Additional courses required to satisfy the 15 credit requirement may include: PSYC 2201, 2500, 3200, 3201, 3250/W, 3251/W, 3252, 3501; PNB 3262, 3263WQ, 3276. 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 3 credits of independent study (PNB 3299, PSYC 3889, 3899) may be counted towards the minor with permission of the neuroscience minor advisor.

The minor is offered by the Psychology Department and the Physiology and Neurobiology Department. Interested students should contact John Salamone at Salamone@psych.psy.uconn.edu.

Nutrition for Exercise and Sport

This minor has been established in cooperation with the Department of Kinesiology. Students admitted to the minor are expected to have completed PNB 2264 and PNB 2265 with a grade of B or better. All students are required to complete a minimum of 17 credits.

Students in this minor must pass:

EKIN 4500, 4510; NUSC 2241, 4250

And two of the following courses for an additional 6 credits:

EKIN 3099, 3520; NUSC 3180 or 4299

The minor is offered jointly by the College of Agriculture and Natural Resources and the Neag School of Education. Students who are interested in pursuing this minor should contact Nancy Rodriguez at Nancy.Rodriguez@uconn.edu.

Oceanography

This minor focuses on biological, chemical, geological, and physical oceanography. Students pursuing the minor must take at least 15 credits of 2000-level and above courses, including 3 courses from Group A, and 2 additional courses from either group A or B.:

A. MARN 4010, 4030W, 4050W, 4060

B. MARN 2002, 3000, 3001, 3015, 3016, 3017, 3060, 3061

Coastal Studies majors may not choose MARN 4010. No more than 2 courses may be counted towards both this minor and the student's major.

The minor is offered by the Department of Marine Sciences. More information is available on the internet: www.marinesciences.uconn.edu, by email: marinesciences@uconn.edu, or by phone: 860-405-9152.

Ornamental Horticulture

The minor in Ornamental Horticulture provides an introduction to the production, maintenance and use of plants to enhance human environments.

All students are required to complete a minimum 15 credits including

HORT 3640

6 credits from among: HORT 2430, 3410, 3420

3 credits from among: HORT 2520, 2750, 3530, 3660, 3670, 3760

3 credits from among: PLSC 3810, 3820, 3830, 3840

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 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.

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

Category II: Metaphysics and Epistemology: PHIL 2210, 2212, 3250

Category III: Logic and Philosophy of Language: PHIL 2211Q, 3241

Category IV: Value Theory: PHIL 2215, 2217, 3218

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 lower division 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 and above course work.

Course Requirements

A minimum of fifteen credits, of which nine are from part (a) and six are from part (b):

(a) At least one course from each of the three groups below:

Group one: PHYS 2300

Group two: Either PHYS 3103 or two additional courses: one from either PHYS 3101 or ME 3214 and one from either PHYS 3201 or ECE 3001

Group three: PHYS 3104 or both PHYS 3300 and 3401

(b) Two or more elective courses (at least six credits) from any of the PHYS 2000-level or higher courses other than the ones already taken above, with no more than three credits from each of PHYS 4094, 4096W and 4099.

The minor is offered by the Physics Department.

Physiology and Neurobiology

Students desiring this minor must take at least 15 credits of 2000-level PNB courses including fulfilling the Core requirements of either Group A or Group B, below:

Group A. PNB 2274 - 2275

Group B. PNB 2250, 3251, 3262, 3263WQ,

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, or 1602. 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, with consent of instructor and minor advisor). POLS 3991 and 3999 may not be counted toward the minor. POLS 2998 and 3995 may be counted toward the minor only with consent of the advisor. A W or Q course may be substituted for the same numbered course.

Students must complete at least 15 credits of POLS work at the 2000-level (or higher, with consent of instructor and minor advisor). Of these 15 credits, 9 credits (3 courses) must be taken from 3 of the 6 disciplinary subdivisions as they appear in the Distribution B requirement of the Political Science major described in the College of Liberal Arts and Science section of this *Catalog*. Cross-listed courses may count only once toward this distribution requirement.

The minor is offered by the Political Science Department.

Psychology

All Psychology Minors 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, & Industrial/Organizational: 2300 or 2300W, 2301, 2400, 2600, 2700,

Area II. Experimental & Behavioral Neuroscience: 2200, 2500, 2501, 3201 (EEB 3201), 3500, 3501,

Area III. Cross Area (I and II): 2201, 3100 or 3100W, 3102, 3105, 3400, 3601

Area IV. Advanced & Specialty Lecture Courses: 2101, 2701, 3101, 3103 (COMM 3103), 3104, 3106 or 3106W (AFAM 3106 or 3106W), 3200 or 3200W, 3300 or 3300W, 3301, 3370, 3401, 3470 or 3470W, 3502, 3503, 3600 or 3600W, 3670 or 3670W, 3770 or 3770W, 3883, 3884, 3885

Laboratory Courses: 3250 or 3250W, 3251 or 3251W, 3252, 3350 or 3350W, 3450W, 3550W, 3551W, 3552, 3750 or 3750W

Research: 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 3889 or 3899 may be counted toward the minor. 3880 cannot be used. 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 Psychology Department.

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. Students interested in the Public Policy Minor are encouraged to complete PP 1001; ECON 1201 and STAT 1100Q (or equivalent).

Requirements:

a) PP 3001 and PP 3010; b) Students choose 9 credits of additional PP 2000-level or above courses in consultation with their academic advisors. URBN 2100 and PP graduate courses courses can be used to meet this requirement.

Prospective students should contact Robert Bifulco of Public Policy at robert.bifulco@uconn.edu.

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 one department.

Group A. Foundational Courses:

ANTH 3400/3400W, 3401; INTD 3260; PHIL 3231; SOCI 3521

Group B. Topical Courses:

ANTH/WS 3402; ANTH /WS 3403; ARTH 3140/CAMS 3251; ARTH 3150/CAMS 3252; ARTH 3210, 3220, 3230, 3240; CAMS (Latin) 3213, CAMS 3244; CAMS 3243/HIST 3340, CAMS 3250/HIST 3335; CAMS 3253/HIST 3301, CAMS 3256/HEB 3218/HIST 3330/JUDS 3218; ENGL 3617, 3621 (when offered as *Literature & Mysticism*); HEB /JUDS 3201; HEB 202/JUDS 3202; HEB 3298; HDFS 3252; INTD 3999; JUDS/SOCI 3511; PHIL 3261, 3263

The minor is offered by the College of Liberal Arts and Sciences. For more information, contact the Anthropology Department by phone (860) 486-0067 or e-mail Jocelyn.Linnekinn@uconn.edu.

Slavic and Eastern European Studies

This minor allows students to pursue an interest in social, historical, political and cultural aspects of eastern Europe, and particularly Russia, through a coherent course of study. Students electing this minor must complete a minimum of 18 credits at the 2000-level or above distributed across the following categories:

1. One required course: HIST 3471
2. Three courses distributed across three of the following four disciplines: ECON 2477; GEOG 4700; HIST 3456, 3470; POLS 3225, 3228, 3457
3. Two courses from the SEES advisor's list of approved electives, chosen in close consultation with the SEES advisor. With the advisor's approval, a student may opt to do a senior thesis, equivalent to three credits of the elective requirement, on an aspect of Slavic and Eastern European Studies.
4. Language requirement: Intermediate proficiency in reading, writing, speaking, and understanding a Slavic or Eastern European language, demonstrated either through completion of the fourth semester of a college-level language sequence or through examination by a faculty instructor in the language. Study abroad is strongly encouraged as an effective means to increase proficiency.

Prospective students wishing more information are invited to contact the Program Advisor for SEES at the Center for European Studies, Wood Hall, Room 306.

Sociology

Students must complete SOCI 1001, 1251, or 1501 and 5 different 2000-level or above Sociology courses (totaling 15 credits), including either SOCI 3201 or 3251.

The minor is offered by the Sociology Department.

Spanish

Students wishing to complete a Minor in Spanish are expected to take at least 18 credits of 3000 and 4000-level Spanish courses. Students must earn a C (2.0) or better in each course. The requirements are:

- a) One course in composition: SPAN 3178, 3178W, 3177, or 3240W.
- b) One introductory course: SPAN 3230 (Introduction to Literary Study) or 3242 (Spanish Communicative Grammar)
- c) One from each group and one additional from any group:

GROUP 1 (Literature): SPAN 3207, 3208, 3230, 3231, 3232, 3233, 3234, 3260, 3261, 3262, 3263, 3264, 3265, 3266, 3293, 3298, 4200W.

GROUP 2 (Culture): SPAN 3200, 3201, 3204, 3205, 3206, 3207, 3208, 3214, 3250, 3251, 3252, 3254, 3293, 3298, 4200W.

GROUP 3 (Language and Communication): SPAN 3110, 3170, 3204, 3261, 3177, 3178, 3178W, 3179, 3240W, 3241, 3242, 3293, 3298, 4200W.

Variable subject courses (such as 3204, 3207, 3208, 3261, 3293, 3298, 4200W) and study abroad courses may be applied to any of the three groups as determined by course content and with advisor's prior consent. A single course cannot satisfy more than one requirement from categories a, b, and c, nor can a single course be applied to more than one group of courses as described in category c. AP credits may not be counted toward the minor. A maximum of 6 credits may be used from Study Abroad (SPAN 3293).

The minor is offered by the Modern and Classical Languages Department.

Sport Nutrition

This minor, for Kinesiology students, is the official recognition of an emphasis area that has evolved in recent years. The minor is timely and addresses a growing market of job opportunities for students.

Requirements. All students will complete the following three required courses and select from a group of approved elective courses for a total of 13 credits. NUSC 1165 is a prerequisite for courses listed below.

Required courses (7 credits to be completed by all students)
NUSC 2200, 2241, and 4250

Elective courses (choose 2 of the following for a total of 6 credits.)*
NUSC 3180, 3267, 4236, 4299, or EKIN 3099

*Students can elect to take 3 credits of either NUSC 3180 or 4299. Not both.

The minor is offered jointly by the Neag School of Education and the College of Agriculture and Natural Resources. Students who are interested in pursuing this minor should contact Nancy Rodriguez at Nancy.Rodriguez@uconn.edu.

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, 3445Q, 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 1122Q, or 1132Q and also MATH 2110Q or 2130Q are strongly advised to take Track I. Students who have passed only MATH 1122Q, 1132Q, or 1152Q should take Track II.

The minor is offered by the Statistics Department.

Theatre Production

Requirements. For students seeking this minor:

1. Completion of DRAM 1102 and 1207 (one section)
2. Completion of 12 credits of 3000-4000 level course work from the following:
DRAM 3103, *3199, 3201, 3202, 3205, 3206, 3207, 3209, 3220, 3231, 3232, 3301, 3302, 3401, 3402, 3501, 3502

*Offered under special circumstances for production assignments

The minor is offered by the Dramatic Arts Department.

Theatre Studies

Requirements. For students seeking this minor:

1. Completion of DRAM 2130 and 2131
2. Completion of 12 credits of 3000-4000 level course work from the following:
DRAM 3130, 3131, 3138, 3141, 3611, 4135

The minor is offered by the Dramatic Arts Department.

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.

The requirements for this minor are at least 16 credits of coursework. The student must complete all of the following courses: ANSC 3453 or 1 semester of Horse Practicum; ANSC 2251, 3456, 3691, 4457.

The student must also complete a minimum of 8 credits of coursework by choosing from the following courses: ARE 3215, 4217; PNB 2264/2265 OR PNB 2274/2275; HDFS 2100, 2200; BADM 3740.

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 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.

All students are required to complete a minimum of 16 credits including:

TURF 1100, 3200/3200W, 3800; SOIL 2120

And any two of the following: TURF 3100, 3300, 3400, 3720; SOIL 3520

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 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.

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 professional schools that emphasize human services such as Human Development and Family Studies or Education.

The minor requires passing 15 credits at the 2000 or above level as follows:

1. URBN 2000
2. 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; GEOG 4210; HIST/URBN 3541; HIST 3554, 3564; POLS 3842 or PP 3031; POLS/URBN 3632W; PP 4034; SOCI 3901/URBN 3275; SOCI 3425, 3911; URBN 3000.
3. Two additional courses selected from group 2 or the following list: AFAM/HIST 3568; AFAM/HIST/HRTS 3563; AFAM/POLS 3642; ECON 2431, 3431; ECON/URBN 3439; GEOG 4200W, 4500; HIST 3530; HIST 3674/PRLS 3220; HDFS 2001, 3510, 3530; HDFS 3240/SOCI 3459; INTD 3584; POLS 2622, 3847; POLS 3662/PRLS 3270; PP 3001, 4033; SOCI 3907; SOCI 3903/URBN 3276; URBN 3995, 3998, 4000, 4999; URBN 3981 or INTD 3594.

Students interested in pursuing a minor in Urban and Community Studies are advised to complete 1000-level courses in the social sciences, which are prerequisites for courses in Urban and Community Studies. These include, but are not limited to GEOG /URBN 1200; ECON 1201; POLS 1602; SOCI 1001, 1251; and STAT 1000Q/1100Q. 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 NRME 2315 and 3335 and twelve or more credits from the following courses: NRME 2000, 2415, 3105, 3201, 3205, 3305 (EEB 3307), 3345, 3355, 3365, 4335, or 4455

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 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 Management and Engineering.

Women's Studies

Fifteen hours of course work in Women's Studies courses or cross referenced courses, of which one course may be at the 1000-level.

Not more than two courses may be counted toward both the minor and the major.

Not more than 6 credits for the Women's Studies Internship Program may be applied to the minor.

The minor is offered by the Women's Studies Program.

Regional Campuses

Extending the resources of the University throughout the state, the five Regional Campuses—Avery Point, Greater Hartford, Stamford, Torrington, 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. Read about each individual campus and find out what it can do for you.

Avery Point Campus

Joseph Comprone, Ph.D., *Associate Vice Provost and Director*
www.averypoint.uconn.edu

Avery Point is the University of Connecticut's campus-by-the-sea, established in 1967 on the seventy-three-acre Gatsby-era estate of industrialist Morton Plant. Situated directly on Long Island Sound at the mouth of the Thames River in Groton, the Avery Point campus offers day and evening courses in an environment enhanced by the ever-present sights, sounds, smells — the very feel — of the ocean.

UConn Avery Point offers a wide range of courses, including those leading to completion of the Bachelor's degrees in American Studies, Coastal Studies, and Maritime Studies, creating ideal degree completion opportunities for transfer students, as well as for continuing UConn students. Also, students may select from extensive academic program offerings in the College of Liberal Arts and Sciences and the College of Agriculture and Natural Resources, as well as the professional Schools of Education, Business, Pharmacy, and Nursing. Avery Point students enrolled in these programs can look forward to a smooth transition to Storrs at the end of the freshman or sophomore year, depending on their major.

The campus offers a significant number of courses in the evening. This scheduling accommodates the needs of working students and returning adults enrolled in the Bachelor of General Studies program. The BGS program is a junior-senior level interdisciplinary degree program for non-traditional part-time students, tailored to individual student needs and goals. Students may complete the entire BGS degree program at the Avery Point campus.

The campus's Academic Center is an active and popular hub for supplemental instruction programs, tutorial help, and assistance with specific projects including writing, math, the sciences, study skills, and computer literacy. Academic resource facilities include Avery Point's 35,000-volume library, which is networked for computerized searches and Internet access to numerous bibliographic and full-text databases and which provides traditional library services as well. The campus library also includes growing special collections in coastal and maritime studies.

The Coastal Studies classes and laboratories are located in the new Marine Sciences Building. The undergraduate academic complex features newly renovated chemistry and physics laboratories, a state-of-the-art personal computer laboratory, distance learning facilities, high-tech classrooms, wireless classrooms, library, and study lounge, the UConn Co-Op bookstore, and other classrooms, laboratories, and seminar rooms.

Campus venues for social functions and cultural activities include the Avery Point Student Center, the Alexey von Schlippe Gallery of Art, the Branford House mansion, a newly renovated gym and pool facility, and an expanding waterfront recreation program.

Stamford Campus

Michael Ego, Ph.D., *Associate Vice Provost*
www.stamford.uconn.edu

Established in 1951, the Stamford Campus represents the combined efforts of the University, the State of Connecticut, and the Stamford community to develop and maintain a distinguished educational program in southwestern Connecticut. The first building completed under the UConn 2000 Initiative, the new downtown campus boasts the latest in state-of-the-art technology, classrooms, and laboratory equipment. Distance learning classrooms link UConn Stamford to Storrs and the other regional campuses for extended instructional activities.

As a regional campus located in Southwestern Connecticut, the Stamford Campus attracts and accommodates a highly pluralistic student body, drawn from a variety of ethnic, social, and economic backgrounds. Students may complete undergraduate degrees in American Studies, Business and Technology, Economics, English, General Studies, History, Human Development and Family Studies, Individualized Studies, Political Science, Psychology, and Sociology. In order to meet the needs of returning adult students, the Stamford Campus offers the Bachelor of General Studies through evening, as well as day, classes.

The Honors Program provides talented and motivated juniors and seniors with opportunities to participate in research and an interdisciplinary Honors Seminar. The Connecticut Information Technology Institute (CITI) offers non-credit professional development opportunities in IT as well as credit-bearing courses for several degree programs. The *edgelab* is a 10,000-square foot multimillion-dollar information technology learning facility. A model partnership among UConn's School of Business, CITI, and General Electric (GE) created the *edgelab*. It provides student interns with the opportunity to work closely with UConn faculty and GE staff in an actual research and development laboratory.

The Stamford Campus recognizes its special urban character and welcomes its close relationship with major corporations in Fairfield County. Dedicated to strengthening its ties with these organizations and non-profit social service agencies, the campus encourages students to take advantage of off-campus learning such as internships and fieldwork. The campus has emerged as the Communiiversity Center for the region and offers social and cultural events, which include an outstanding Art Gallery and the Fairfield County Sports Hall of Fame. The UConn Center for Globalization and Commerce works closely with the Stamford Chamber of Commerce to engage in research initiatives that address global and international issues.

Tri-Campus

Veronica Makowsky, Ph.D., *Vice Provost for Undergraduate Education and Regional Campus Administration*
www.tri-campus.uconn.edu

While retaining their own unique characteristics, the Greater Hartford, Torrington, and Waterbury campuses work together as a team, sharing faculty, facilities, and resources as a Tri-Campus. Through this partnership, the University can offer commuter students the opportunity to complete four-year degree programs without having to travel to the Storrs Campus. The Tri-Campus offers Bachelor's Degrees in Business and Technology, Human Development and Family Studies, Psychology, Urban and Community Studies, and American Studies. Master's Degrees in Business Administration, Nursing, Public Administration, Survey Research, Education with Teacher Certification for College Graduates, and the Social Work Program are also offered.

Through collaborative efforts with the University's 25-year-old BGS program, which provides evening and weekend courses for returning adult students at the Junior-Senior level; with the Cooperative Extension Service; and with the region's Community Colleges, the Tri-Campus team welcomes and meets the needs of area commuter students.

Hartford Campus

David W. Williams, Ph.D., *Director*
www.hartford.uconn.edu

As its name indicates, the Greater Hartford Campus serves a broad section of the area's populace. Opened in 1946 in the City of Hartford, the University of Connecticut's Greater Hartford Campus moved in 1970 to its present park-like location in West Hartford. The Greater Hartford Campus offers students from the Hartford Metropolitan Region the flexibility of balancing family, work, and other personal commitments while receiving the full benefit of the University of Connecticut's high quality education and resources.

The Greater Hartford Campus offers a wide range of Liberal Arts and Sciences courses and degrees to over 1430 undergraduate and more than 600 graduate students. Students pursue undergraduate degrees in American Studies, Business and Technology, General Studies, Human Development and Family Studies, Individualized Studies, Psychology, and Urban and Community Studies. The Center for Continuing Studies provides a number of certificate program options, in addition to the Bachelor of General Studies, an interdisciplinary degree program tailored to meet individual needs and goals of returning, non-traditional, part-time adult students. Due to the Greater Hartford Campus' proximity to the State Capitol and legislative offices, the University's Department of Public Policy is based on the Greater Hartford Campus and offers a Master of Arts in Survey Research and a Master of Public Administration, as well as certificate programs. The University's School of Social Work is also located at the Greater Hartford Campus and offers a Master of Social Work and Ph.D in Social Work. GHC also offers the popular one-year Master of Education with Teacher Certification Program for College Graduates.

Located in a beautiful, 58-acre setting, the Greater Hartford campus facilities include the Harleigh B. Trecker Library, which is fully integrated with and linked to the University Library System, including Storrs, all Regional Campuses, the Law School, and the UConn Health Center; a state-of-the-art Information Technology Center which features high-tech computer labs and distance learning facilities; the Writing and Quantitative Center, a peaceful study environment for tutorial help and assistance in Writing, Math, Accounting, Chemistry, Biology and Statistics; the UConn Co-op; and an art gallery. The Hartford County Cooperative Extension Center delivers objective, research-based information to help manage resources in the community.

The Greater Hartford Campus serves the Metropolitan Region through extensive community outreach programs which connect the university with those who are underrepresented or disadvantaged in the community. Through on-going partnerships with schools, businesses, government, national and neighborhood organizations, GHC outreach provides hands-on learning experiences and serves as a model of community service, opportunity, and success for urban campuses.

Torrington Campus

Michael Menard, Ph.D., *Director*
www.torrington.uconn.edu

In the Fall of 1957 the University of Connecticut began offering late afternoon classes at Torrington High School. The popular program grew rapidly, and the University of Connecticut Torrington Regional Campus was established in 1965 as a result of a generous bequest from Julia Brooker Thompson.

The Torrington Campus has traditionally provided students with the opportunity to begin coursework towards many of the University of Connecticut's approximately 100 majors, or complete a four-year Bachelor's Degree in General Studies. Now, in partnership with the regional campuses in Waterbury and Greater Hartford, the Torrington Campus is also able to offer baccalaureate degrees in American Studies, Business and Technology, Human Development and Family Studies, Psychology, and Urban and Community Studies. Students can even design their own majors by working with faculty from two or more academic departments and complete an Individualized Major program.

Quality of instruction, small class size, and the accessibility of faculty set the Torrington Campus apart from other institutions. On average, the instructor to student ratio is 1 to 20. This learning environment, not common at the university level, leads to close faculty-student relationships where students receive individual guidance and personal encouragement from their instructors. Day and evening courses are available to meet the diverse needs of both traditional and returning adult students. In addition to academics, students are offered a wide variety of social events sponsored by the Associated Student Government

Senate, an organization which promotes and develops student leadership on campus.

The 100-acre Torrington Campus is located on a quiet, rural hilltop on the outskirts of the City of Torrington. It is the first fully wireless campus in the University system. The M. Adela Eads Classroom Building hosts a 17,000-volume library, electronically linked with all University libraries, a high tech classroom, an art studio, a computer lab, a Distance Learning Classroom, a University Co-Op Bookstore, a large auditorium, and a café and lounge where the campus community gathers. The Distance Learning Classroom links UConn Torrington to Storrs and the other regional campuses for extended instructional opportunities. The Learning Center is an active and popular resource where students go to hone their study skills and for supplemental writing instruction, math tutoring, and collaborative study.

The Torrington Campus continues its long-standing and active involvement in the neighboring community. It is home to the University's Litchfield County Writers Project, which houses a collection of more than 1100 published works by Litchfield County authors. Through the efforts by the Litchfield County Writers Project, local authors are regularly brought to the campus as part of special courses that are open to the community.

In 2001, a Cooperative Extension Service building was added to the Torrington Campus. The Litchfield County Extension Service is an outreach of the College of Agriculture and Natural Resources and provides knowledge through economic and community development for an improved quality of life. The Extension Service supplies information that is researched-based, unbiased, affordable, and practical. Programs include a Master Gardening Program, 4-H Programs for children ages 7 - 19, a court-mandated Parenting Apart program, and a variety of other offerings serving the agricultural community.

Waterbury Campus

William J. Pizzuto, Ph.D., *Director*
www.waterbury.uconn.edu

The University of Connecticut at Waterbury was established in 1942 as an Extension Center to address the educational needs of students in the surrounding areas. It has grown steadily to become a full-service regional campus that meets the continued and varying demands of more than 1100 area students. The campus is located in a state-of-the-art facility in downtown Waterbury where it serves as the flagship institution of Waterbury's economic and educational urban development.

The Waterbury campus provides educational access and excellence to hundreds of students annually from the greater Naugatuck Valley. The campus offers an extensive array of programs including undergraduate degrees in American Studies, Business and Technology, General Studies, Human Development and Family Studies, Psychology, and Urban and Community Studies. In addition to these degree options, students bound for undergraduate degree programs at Storrs may complete the first or second year of course work at the Waterbury campus, including their general education requirements. At the Waterbury campus, the Center for Continuing Studies offers the Bachelor of General Studies degree which is a customized, interdisciplinary degree that provides returning adult students with options to choose the right academic program for their lifestyle.

The Waterbury campus also offers a wide range of options at the graduate level. The campus offers the Masters of Business Administration as well as course work toward the Master of Social Work. The School of Nursing provides the Master of Science at the Waterbury campus in addition to the Master's Entry into Nursing (MbEIN) which is an accelerated pre-licensure program for those with a bachelor's degree in a non-nursing field. The Teacher Certification Program for College Graduates (TCPCG) is available in Waterbury and allows students the opportunity to complete a Master's Degree in Education and become eligible for teacher certification in the State of Connecticut.

The Waterbury Campus includes multi-purpose classrooms, science labs, seminar rooms and lecture halls, high-tech computer labs, a three-floor atrium library linked electronically to the University Library, the University's Co-Op Book Store, and a parking garage. On-street public transportation offers an additional convenience to the campus community.

The campus has been designed not only to facilitate the highest quality contemporary learning opportunities but also to maximize community outreach through numerous partnerships with many local organizations for the shared benefit of students, faculty, and the community.

Directory of Courses

The following directory lists the undergraduate courses which the University expects to offer, although the University in no way guarantees that all such courses will be offered in any given academic year, and reserves the right to alter the list if conditions warrant. Students may ordinarily determine when courses are to be offered by consulting the Student Administration system's search feature via the internet.

Numbering System. Students are referred to the condensed curricula of the several colleges for information concerning the semester and year in which required courses should be taken. 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 freshmen 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*. University regulations allow undergraduates to take courses at the 5000's 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.

The University's course numbering systems changed with the 2008-2009 Catalog. If a course was formerly given under another number the fact is listed in the course description. In such cases the course cannot be taken for credit by students who have received credit for it under the old number.

Skill Codes. W, Q, and C 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 Academic Regulations section of this publication. C skill code courses are applicable only to students who entered the University before fall of 2005 and are following requirements of an earlier *Undergraduate Catalog*. Note: The same 4-digit numerics are not repeatable, i.e. 1107, 1107W.

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 Academic Regulations section of this publication.

Course Semester. Single semester courses designated as "either semester" are given in the first semester and repeated in the second semester. Such courses may be taken in either semester but may be taken for credit only once.

Courses carrying hyphenated numbers are full year courses extending over the two semesters. The first semester of such courses is always prerequisite to the second, but the student may receive credit for the first semester without continuing with the second. If a

course with hyphenated numbers is designated as "either semester," the student may start the year's work in either semester; if it is designated as "both semesters," the course starts in the first semester and runs through the academic year.

A few advanced courses, usually of a seminar or special problems nature, are labeled "either or both semesters." Students may take such courses in either semester alone or they may repeat them for credit. Only in these cases unless the course description carries a specific statement to the contrary, may a student take the course more than once for credit.

Course Hours. Classes meet for the equivalent of three 50-minute periods, unless otherwise specified. Information about the specific times that a course will meet may be obtained through the Student Administration system's search feature via the internet before the opening of each semester.

Refer to the "Academic Regulations" section of this *Catalog* for further information regarding registration for courses.

Course Fees. Extra fees may be applied to courses. Those costs may be found in the descriptions of courses listed throughout this section of the *Catalog*. The fees serve as a guide, but are subject to change.

Accounting (ACCT)

Acting Head of Department: Professor Mohammed Hussein

Department Office: Room 417, School of Business

For major requirements, see the School of Business section of this *Catalog*.

The School of Business requires students at the Storrs campus to participate in the Mobile Computing Initiative before registering for the courses listed below. See the School of Business *Catalog* section for details about how this program operates. Students not participating in the initiative may be able to register for the following classes: 2001, 2101, 3005.

Accounting majors are required to achieve a 2.0 grade point average in all accounting courses taken at the University of Connecticut, excluding grades and credits for independent studies (ACCT 4899's) and internships (ACCT 4891's) as a requirement for graduation.

2001. Principles of Financial Accounting

(131) Either semester. Three credits. Not recommended for freshmen.

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

(200) Either semester. Three credits. Prerequisite: ACCT 2001. Not open to students who have passed or are taking BADM 3710.

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.

3005. Introduction to a Profession

(205) First semester. One credit. Prerequisite: ACCT 2001; open to juniors or higher. 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: alternative accounting careers, accounting standard setting, professional certification for accountants, and analysis and interpretation of accounting information. A major course project involves the analysis of the annual report of a real-life company. The course will also introduce and allow students to interact with UConn accounting alumni in a variety of accounting careers.

3201. Intermediate Accounting I

(201) Either semester. Three credits. Prerequisite: ACCT 2101; ECON 1200 or ECON 1201 and 1202; open to juniors or higher.

An in-depth study of financial accounting, giving particular emphasis to balance sheet valuations and their relationship to income determination.

3202. Intermediate Accounting II

(202) Either semester. Three credits. Prerequisite: ACCT 3201; open to juniors or higher.

A continuation of ACCT 3201.

3221. Cost Accounting

(221) Either semester. Three credits. Prerequisite: ACCT 2101 and OPIM 3103 (may be taken concurrently); open to juniors or higher.

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

(260) Either semester. Three credits. Prerequisite: ACCT 2001; open to juniors or higher.

A study of the underlying concepts of federal income taxation. Emphasis to be placed upon the impact of taxes on business decisions.

4203. Advanced Accounting

(203) (Also offered as ACCT 5603.) Either semester. Three credits. Prerequisite: ACCT 3202; open to juniors or higher.

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.

4243. Assurance Services

(243) (Also offered as ACCT 5604.) Either semester. Three credits. Prerequisite: ACCT 3202; open to juniors or higher.

This course 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.

4891. Field Study Internship

(289) Either or both semesters. Six credits. Hours by arrangement. Prerequisite: courses in Principles of Managerial Accounting, Cost Accounting and Intermediate Accounting; consent of instructor and department head; open to juniors or higher. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

Designed to provide students with an opportunity for supervised field work. 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.

4893. Foreign Study

(293) Either or both semesters. Credits and hours by arrangement, up to a maximum of six credits. Prerequisite: Open to juniors or higher. Consent of de-

partment head required, prior to the student's department.

Special topics taken in a foreign study program.

4895. Special Topics

(298) Either semester. Credits and hours by arrangement. Prerequisite: Announced separately for each offering; open to juniors or higher. With a change in content, may be repeated for credit.

Classroom course in special topics as announced in advance for each semester.

4899. Independent Study

(299) Either or both semesters. Credits by arrangement, not to exceed six in any semester. Prerequisite: Open to juniors or higher; open only with consent of instructor and Department Head.

Individual study of special topics as mutually arranged between a student and an instructor.

4997W. Senior Thesis in Accounting

(296W) Either semester. Three credits. Hours by arrangement. Open only to Accounting Department Honors Students with consent of instructor and Department Head. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher.

African American Studies Institute (AFAM)

Director: Professor Jeffrey O. G. Ogbar
Office: Wood Hall

1100. Afrocentric Perspectives in the Arts

(183) (Also offered as FINA 1100.) Either or both semesters. Three credits. *Molette*

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.

3025. Contemporary Africa

(225) (Also offered as ANTH 3025.) Either semester. Three credits. *Handwerker*

Africa since its partition in 1884. Urbanization, social stratification, racial and ethnic conflict.

3106. Black Psychology

(270) (Also offered as PSYC 3106.) First semester. Three credits. Prerequisite: PSYC 1100 and either 1101 or 1103.

Empirical and theoretical literature on psychological experiences of African Americans. Impact of race, culture, and ethnicity on psychological development. CA 4.

3106W. Black Psychology

(270W) (Also offered as PSYC 3106W.) Prerequisite: PSYC 1100 and either 1101 or 1103; ENGL 1010 or 1011 or 3800. CA 4.

3131. African-American Theatre

(231) (Also offered as DRAM 3131.) Either semester. Three credits. *Molette*

The significant developments in African American theatre and its antecedents and an examination of selected play scripts that exemplify those developments. CA 4.

3131W. African-American Theatre

(231W) (Also offered as DRAM 3131W.) Prerequisite: ENGL 1010 or 1011 or 3800. CA 4.

3152. Race, Ethnicity, and Nationalism

(275) (Also offered as ANTH 3152.) Either semester. 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.

3206. Black Experience in the Americas

(266) (Also offered as HIST 3206.) Either semester. Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: AFAM/HIST 3564, 3620; AFAM/HIST/HRTS 3563; or HIST 3609. *Pappademos*

Major themes in recent scholarship of African-descended communities in the Americas and their interconnection beyond geopolitical boundaries; race, gender, class, religion, cultural movements and practices, slavery, political economy, political movements, and African consciousness, from historical perspective.

3211. Introduction to African American Studies

(211) Either semester. Three credits.

Interdisciplinary overview of African American studies, giving consideration to the artistic, intellectual, political and cultural experiences of black people in the United States. Relies on a wide range of materials and perspectives with particular focus on significant movements, ideas, people and events that have shaped and continue to shape Black America.

3214W. Black American Writers I

(276W) (Also offered as ENGL 3214W.) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher. *Spencer*

Critical and historical examination of the literature of black American writers from Phyllis Wheatley to the present. CA 4.

3216W. Black American Writers II

(277W) (Also offered as ENGL 3216W.) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher. *Spencer*

Extensive readings in the works of four or five contemporary black American writers.

3224. History of Pan-Africanism

(224) (Also offered as HIST 3770.) Either semester. Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: At least one of the following, HIST 3752, 3753, 3563, or 3564. *Omara-Otunnu*

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

(239) (Also offered as POLS 3252.) Either semester. 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

(298) Either semester. Variable credits. Prerequisites and recommended preparation vary. With a change in content, may be repeated for credit.

3299. Independent Study

(299) Either semester. Credits and hours by arrangement. Open only with consent of instructor. Supervised reading and writing on a subject of special interest to the student.

3501. Ethnicity and Race

(240) (Also offered as SOCI 3501.) Either semester. Three credits. Prerequisite: Open to juniors or higher. *Villemez*

Ethnic groups, their interrelations, assimilation, and pluralism. Culture, and identity that arise from differences in race, religion, nationality, region, and language.

3505. White Racism

(236) (Also offered as HRTS 3505 and SOCI 3505.) Either semester. Three credits. Prerequisite: Open to juniors or higher. *Cazenave*

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. CA 4.

3563. African American History to 1865

(238) (Also offered as HIST 3563 and HRTS 3563.) Either semester. Three credits. Prerequisite: Open to juniors or higher. *Campbell, Ogbar*

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

(246) (Also offered as HIST 3564.) Either semester. Three credits. Prerequisite: Open to juniors or higher. *Ogbar*

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

(260) (Also offered as HIST 3568.) Either semester. Three credits. Prerequisite: Open to juniors or higher. *Ogbar*

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.

3620. Cuba, Puerto Rico, and the Spanish Caribbean

(285) (Also offered as HIST 3620.) Either semester. Three credits. Prerequisite: Open to juniors or higher. *Silvestrini*

Discovery and settlement, slavery and plantation economy, recent political and economic developments, and United States relations with the Spanish Caribbean.

3642. African-American Politics

(248) (Also offered as POLS 3642.) Either semester. 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

(245) (Also offered as POLS 3647.) Either semester. Three credits. Prerequisite: Open to juniors or higher. *Simien*

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

(247) (Also offered as POLS 3652 and WS 3652.) Either semester. Three credits. Prerequisite: Open to juniors or higher. *Simien*

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.

3703. Modern Africa

(226) (Also offered as SOCI 3703.) Either semester. Three credits. Prerequisite: Open to juniors or higher. *Gugler*

Cultural patterns, social structure, and political conflict in sub-Saharan Africa.

3752. History of Pre-Colonial Africa

(222) (Also offered as HIST 3752.) Either semester. Three credits. Prerequisite: Open to juniors or higher. *Omara-Otunnu*

The history of pre-colonial Africa with particular attention to the rise and fall of African Kingdoms, interaction between different ethnic groups, African trade with other continents, and the impact of foreigners on African societies.

3753. History of Modern Africa

(223) (Also offered as HIST 3753.) Either semester. Three credits. Prerequisite: Open to juniors or higher. *Omara-Otunnu*

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.

3825. African Americans and Social Protest

(235) (Also offered as HRTS 3825 and SOCI 3825.) Either semester. Three credits. Prerequisite: Open to juniors or higher. *Cazenave*

Social and economic-justice movements, from the beginning of the Civil Rights movement to the present.

African Studies (AFRI)

Director, Center for Contemporary African Studies:

Josef Gugler
Office: Room 320, Manchester Hall

3293. Foreign Study

(293) Either or both semesters. Credits and hours by arrangement. May be repeated for credit. Consent of director required, normally to be granted prior to student's departure.

3995. Special Topics

(298) Either or both semesters. Credits up to a maximum of three. With a change in topic, may be repeated for credit.

3999. Independent Study

(299) Either semester. Credits and hours by arrangement. Open only with consent of instructor. With a change in content, may be repeated for credit.

Agricultural and Resource Economics (ARE)

Head of Department: Professor Rigoberto Lopez
Department Office: Room 321, W.B. Young Building

For major requirements, see the College of Agriculture and Natural Resources section of this *Catalog*.

1110. Population, Food, and the Environment

(110) Either semester. Three credits.

The role of agriculture in the growth and development of societies throughout the world. Economic and social problems of food and fiber needs and production in the developing and the advanced societies. CA 2.

1150. Principles of Agricultural and Resource Economics

(150) Either semester. Three credits. Taught concurrently with SARE 450.

An introduction to agricultural economics, the role of agriculture in today's United States economic system, and relationships that regulate the entire economic environment. CA 2.

3210. Fundamentals of Accounting and Management for the Agribusiness Firm
(210) Second semester. Three credits. (Taught jointly with SARE 460.) *Bonelli*

An analysis of basic business principles, fundamentals and concepts for agribusiness entrepreneurs.

3215. Business Management

(215) First semester. Three credits. Prerequisite: Open to juniors or higher. *L. Lee*

Analysis of marketing, management, and financial decision-making tools in agribusiness.

3221. Business Strategies and Policy in Food Industries

(221) Second semester. Three credits. Recommended preparation: ARE 1150 or ECON 1200 or ECON 1201. *Cotterill*

Market structure and business strategies of firms, including pricing, advertising, entry and new products. Analysis of mergers and other antitrust issues from a public as well as firm perspective. Case studies of actual events.

3222. Food Trends and the Changing Consumer

(222) Second semester. Three credits.

Determinants of food consumption trends. Particular attention to demographic and economic factors and to changing concerns regarding health and food safety.

3225. Marketing and Futures Trading

(225) Second semester. Three credits. Recommended preparation: ARE 1150 or ECON 1200 or ECON 1201. *Lopez*

Principles and applications of marketing, with special emphasis on the use of futures markets for profit and price risk management. Includes marketing case studies, internet applications, and a futures simulation exercise.

3235. Marine Resource and Environmental Economics

(239) Second semester. Three credits. Recommended preparation: ARE 1150 or ECON 1200 or ECON 1201. *Johnston*

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.

3255. The Role of Agriculture in Economic Development

(255) First semester. Three credits. Recommended preparation: ARE 1150 or ECON 1200 or ECON 1201. Credit may not be received for both ARE 3255 and 5305.

The role of agriculture in the economic development of less developed countries. Population and rural employment, the economics of food consumption and nutrition, international food aid, agricultural marketing and trade, land tenure, agrarian reform, and appropriate agricultural technology.

3260. Food Policy

(260) Second semester. Three credits. Recommended preparation: ARE 1150 or ECON 1200 or ECON 1201; open to juniors or higher. *Lopez*

Analysis of food and agricultural policies in the United States and abroad. Designed for students with diverse departmental affiliations.

3260W. Food Policy

(260W) Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher. Recommended preparation: ARE 1150 or ECON 1200 or ECON 1201.

3434. Environmental and Resource Policy

(234) Either semester. Three credits. Prerequisite: Open to juniors or higher. *Altobello*

Economic and policy aspects of natural resource use and environmental quality issues. Designed for students with diverse departmental affiliations.

3434W. Environmental and Resource Policy

(234W) Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher.

3436. The Economics of Integrated Coastal Management

(236) Either semester. Three credits. Recommended preparation: ARE 1150 or ECON 1201. *R. Pomeroy*

Explores the theory and practice of integrated coastal management (ICM); introduce major concepts, processes, tools and methods of ICM; and analyze United States and international experiences with ICM.

3437. Marine Fisheries Economics and Policy

(237) Second semester. Three credits. Recommended preparation: ARE 1150 or ECON 1201. *R. Pomeroy*

Explores the various natural, human and management components of the fishery system and present the application of economic and policy analysis for the optimal allocation of resources to a fishery.

3450. Aquaculture Economics

(250) Second semester. Three credits. Prerequisite: ARE 1150 or ECON 1200 or ECON 1201; open to juniors or higher. *Pomeroy*

Application of economic and business principles by firms engaged in aquaculture. Focus on production economics, managerial analysis, investment analysis, marketing and public policy related to aquaculture systems.

4081. Agribusiness Internship

(296) Either semester or summer. Variable credits (1-6). Repeatable for a total of six credits. Prerequisite: Open only to Junior - Senior Resource Economics majors with Independent Study Authorization.

Provides students with an educational experience in agribusiness firms or agribusiness-related institutions. Each student taking this course must submit a formal written report for evaluation and meet all other course requirements as specified by the instructor.

4091. Resource Economics Internship

(297) Either semester or summer. Variable credits (1-6). Repeatable for a total of six credits. Prerequisite: Open only to Junior - Senior students majoring in Resource Economics who have demonstrated outstanding academic ability and possess excellent professional potential. Requires Independent Study Authorization with consent of department head and advisor.

Provides students with a meaningful experience in a formalized agribusiness 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.

4093. Foreign Study

(293) Either semester. Variable credits (1-15). Hours by arrangement. 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 the advisor and Department Head.

Special topics taken in a foreign study program.

4094. Seminar

(295) Either or both semesters. Credits and hours by arrangement. May be repeated for credit with a change of topic. Open only with consent of instructor.

Participation in staff conferences and discussions, reviews of important books, and reports on recent developments in economic theory and research.

4095. Special Topics

(298) Either semester. Credits and hours by arrangement. May be repeated for credit with a change of topic. Open only with consent of instructor.

Topics and credits to be published prior to the registration period preceding the semester offerings.

4099. Independent Study

(299) Either or both semesters. Credit and hours by arrangement. Prerequisite: Open to students with Independent Study Authorization.

Designed primarily for Resource Economics majors.

4217. Business Finance in Food and Resource Industries

(217) Second semester. Three credits. Prerequisite: ARE 1150 or ECON 1201; open to juniors or higher. *L. Lee*

Analysis of financial statements, credit, risk, and investment decision-making.

4275. Agribusiness Management and Entrepreneurship

(275) First semester. Three credits. Prerequisite: ARE 1150 or ECON 1201; open to juniors or higher. *Cotterill*

Management techniques for achieving the merchandising objective and standards of the firm, with maximum efficiency in the use of capital, personnel, facilities and equipment. Directed toward those students who plan to enter agribusiness.

4279. International Commodity Trade

(285) First semester. Three credits. Recommended Preparation: ARE 1150 or ECON 1200 or ECON 1201. *Pagoulatos*

The basic principles of international commodity trade and market institutions. Applications to current problems of international commodity trade and policy.

4438. Valuing the Environment

(238) Second semester. Three credits. Prerequisite: ARE 1150 or ECON 1201. *Larson*

Conceptual and practical understanding of main methods used to evaluate economics 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.

4462. Environmental and Resource Economics

(235) Either semester. Three credits. Prerequisite: ARE 1150 or ECON 1200 or ECON 1201; 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.

4464. Benefit Cost Analysis and Resource Management

(257) Second semester. Three credits. Prerequisite: ARE 1150 or ECON 1201; open to juniors or higher. Credit may not be received for both ARE 4464 and 5464.

Theoretical foundations and applications of benefit-cost analysis in project appraisal and in evaluation of public policies regarding resource management and environmental protection.

Agriculture and Natural Resources (AGNR)

1089. Introduction to Research in Agriculture and Natural Resources

(199) Either semester. One to three credits. Credits and hours by arrangement. Prerequisite: Open to freshmen and sophomores only; instructor and department head consent. May be repeated for credit with a change of topic for a maximum of six credits. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

Supervised student involvement with faculty projects to introduce students to current areas of research in their field of interest.

1093. Foreign Study

(193) Either or both semesters. Credits and topics must be approved by department head or dean of the College of Agriculture and Natural Resources. May be repeated for credit with change of topic.

Courses taken in agriculture, natural resources, and related areas as part of approved Study Abroad programs.

1098. Current Topics in Agriculture and Natural Resources

(198) Either semester. One credit. Prerequisite: Open to freshmen and sophomores only, others by instructor consent. May be repeated for credit with a change of topic for a maximum of 4 credits. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

Readings, lectures, seminars, and field applications exploring content and associated scientific and social implications of current topics in agricultural, environmental, nutritional and health sciences.

3091. Agriculture and Natural Resources Internship

(293) Either semester or summer. One to six credits. Open to Junior - Senior students in the College of Agriculture and Natural Resources with consent of the Dean, the student's department head and advisor. May be repeated for credit with the total credits earned not to exceed six.

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

(294) Either or both semesters. Credits and topics must be approved by department head or dean of the College of Agriculture and Natural Resources. May be repeated for credit with change of topic.

Courses taken in agriculture, natural resources, and related areas as part of approved Study Abroad programs.

3095. Special Topics

(298) Either semester. Credits and hours by arrangement. Open only with consent of instructor. May be repeated for credit with a change of topic.

3099. Independent Study

(299) Either or both semesters. Credits and hours by arrangement. May be repeated for credit with a change of topic. Prerequisite: Open only to students with Independent Study Authorization.

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.

Air Force Studies (AIRF)

Head of Department: Lieutenant Colonel Roy J. Fullerton, Jr.

Department Office: 362 Fairfield Road

For departmental description, see the College of Liberal Arts and Sciences section of this *Catalog*.

1000. Air Force Studies I

(113) First semester. One credit. One class period and one 2-hour leadership seminar.

Military customs/courtesies, officership/leadership. Air Force mission, military as a profession, and basics of flight.

1200. Air Force Studies I

(114) Second semester. One credit. One class period and one 2-hour leadership seminar.

The organization, mission, and functions of the Department of Defense and the military services. Emphasis is on the U.S. Air Force.

2000. Air Force Studies II

(123) First semester. One credit. One class period and one 2-hour leadership seminar.

Study of air power from balloons through World War II; WW I, Interwar Years, WW II. Principles of war, Berlin Airlift. Development of communication skills.

2200. Air Force Studies II

(124) Second semester. One credit. One class period and one 2-hour leadership seminar.

Air power from post World War II to the present; Korean Conflict, War in Vietnam, force modernization. Development of communication skills.

3000-3200. Air Force Studies III

(235-236) First semester: AIRF 3000. Second semester: AIRF 3200. Three credits each semester. One class period, and a 2-hour leadership seminar. Prerequisite: AIRF 1200 and 2200, or six weeks field training. Open only with consent of instructor. May not be taken concurrently with AIRF 4000-4200.

Management fundamentals, motivational processes, leadership, group dynamics, organizational power, managerial strategy. Development of communication skills.

3000W-3200W. Air Force Studies III

(235W-236W) First semester: AIRF 3000W. Second semester: AIRF 3200W. Prerequisite: AIRF 1200 and 2200, or six weeks field training; ENGL 1010 or 1011 or 3800. Open only with consent of instructor. May not be taken concurrently with AIRF 4000-4200.

3500. Aviation Ground School

(201) Both semesters. 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.

4000-4200. Air Force Studies IV

(245-246) First semester: AIRF 4000. Second semester: AIRF 4200. Both semesters. Three credits each semester. One class period, and a 2-hour leadership seminar. Prerequisite: AIRF 3000-3200. Open only with consent of instructor. May not be taken concurrently with AIRF 3000-3200.

American civil-military relations, defense policy formulation, role of the professional officer, military justice system, Air Force Commands.

Allied Health (AH)

Department Head: Professor Lawrence Silbart
Department Office: Room 227-A, Koons Hall

For major requirements see the College of Agriculture and Natural Resources, Department of Allied Health Sciences section of this *Catalog*.

For course descriptions of Allied Health Sciences, see these topics listed alphabetically throughout this *Directory of Courses*:

Allied Health (AH)
Cytotechnology (CYTO)
Diagnostic Genetic Sciences (DGS)
Dietetics (DIET)
Health Sciences (HESC)
Medical Laboratory Sciences (MLS)
Medical Technology (MT)

1030. Interdisciplinary Approach to Obesity Prevention

(130) (Also offered as NUSC 1030). Second semester. Three credits. Open to freshman 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.

1095. Special Topics Lecture

(195) Either semester. Credits, prerequisites, and hours as determined by the Senate Curricula and Courses Committee. May be repeated for credit with a change in topic.

1100. Introduction to Allied Health Professions

(100) Semester and hours by arrangement. One credit. Open only with consent of instructor.

Overview of health professions, team approach to health care delivery.

1201. Health and Wellness

(101) Either semester. Three credits. Open to all students in the University.

Wellness, holistic health, mind-body connection, health and wellness models, mental wellness, positive self-concept, preventing heart disease and cancer, licit and illicit lifestyle drugs, stress management, diet, nutrition, weight control, aerobic and anaerobic exercise, healthy lifestyle behaviors, applications to life.

1205. Introduction to Karate

(105) Either semester. One credit.

Introduction to the techniques and philosophy of traditional Shotokan karate.

1207. Introduction to Aikido

(107) Either semester. One credit.

Introduction to the philosophical principles and practice of Aikido, emphasizing the development of practical Aikido skills.

3021. Environment, Genetics and Cancer

(221) (Formerly offered as ANSC 221.) Second semester, alternate years (even numbered). Three credits. Prerequisites: BIOL 1107; CHEM 2241 or 2443; open to Environmental Sciences and Allied Health Sciences majors, others with instructor consent; open to juniors or higher. Concurrent enrollment in one of the following is strongly recommended: MCB 2000, 3010, 2410, 2413 or 2210. *Silbart*

Basic principles in tumor biology will be presented with an emphasis on phenotypic changes in transformed cell morphology and behavior. The

biochemical basis of cell transformation, proliferation, and metastasis will be covered, followed by discussions of molecular mechanisms by which environmental chemicals interact with DNA and other cellular components. Metabolic activation of genotoxic carcinogens will be covered in detail, and the importance of polymorphisms in activating enzymes among human sub-populations will be discussed in terms of individual risks of cancer. Activation of proto-oncogenes, inactivation of tumor suppressor genes, and the role of these proteins in regulating the cell cycle will be covered in detail. Approaches for estimating human risk of cancer based on exposure estimates and biological markers will also be presented.

3091. Allied Health Sciences Internship

(291) Either semester or summer. Variable (1-6) credits. Hours by arrangement. Prerequisite: Open to juniors or higher. Open to Department of Allied Health Sciences students with consent of advisor and department head. May be repeated for credit with 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).

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.

3099. Independent Study for Undergraduates

(299) Either semester. Credits and hours by arrangement, not to exceed four. Open only with consent of instructor. May be repeated for credit.

Individualized study in a specialized area in the field of allied health.

3120. Clinical Biomechanics

(202) First semester. Three credits. Open only to Orthotics and Prosthetics Students.

An introduction to fundamental biomechanical principles through a review of concepts from applied physics with an application to technically relevant problems.

3133. Cancer and Your Health

(220) (Formerly offered as CYTO 220.) First semester. Three credits. Three hours of lecture. Prerequisite: One course in Biology or concurrent enrollment in a Biology course.

Introduces cancer risk education, causes, early detection, prevention, and public education.

3175. Environmental Health

(226) (Formerly offered as ANSC 226.) First semester. Three credits. Prerequisite: BIOL 1102 or equivalent; CHEM 1122 or equivalent; open to Environmental Sciences and Allied Health Sciences majors, others with instructor consent; open to juniors or higher. *Silbart*

Course will focus on the environmental health consequences of exposure to toxic chemicals, food contaminants and radiation. Basic principles of toxicology will be discussed, followed by lectures on specific 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

(203) Second semester. Three credits. Three hours of lecture. Prerequisite: Open to Allied Health Sciences majors, others with instructor consent; open to juniors or higher. Course requirements include student participation in a health education field work experience off-campus.

Age-related physiological changes and pathologies, psychological function in health behaviors and care, role change and transition, health care issues, therapeutic relationships.

3231. Program Planning for Health Promotion

(231) Second semester. Three credits. Three hours of lecture. Prerequisite: Open only to Health Promotion students; others by consent; 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

(208) Either semester. 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.

3237. Women's Health and Health Care

(237) Either semester. Three credits.

Exploration of topics in women's health from a holistic interdisciplinary perspective. Consumer and provider focused.

3271. Fundamentals of Industrial Hygiene

(281) First semester, alternate years. Three credits. Three hours of lecture. Prerequisite: Open to BGS students and Allied Health Sciences majors, others with instructor consent; open to juniors or higher.

Introduction to the principles of industrial hygiene with emphasis on protecting workers' health through evaluation and intervention within the workplace.

3273. Safety and Health Hazards, Laws and Regulations

(283) First semester, alternate years. Three credits. Three hours of lecture. Prerequisite: Open to BGS students and Allied Health Sciences majors, others with instructor consent; open to juniors or higher.

Provides a comprehensive overview of the occupational safety and health regulatory process and standards.

3274. Ergonomics

(284) First semester, alternate years. Three credits. Three hours of lecture. Prerequisite: Open to BGS students and Allied Health Sciences majors, others with instructor consent; open to juniors or higher.

Concerns the achievement of an optimal relationship between humans and their work.

3275. HAZWOPER

(285) First semester. Three credits. Prerequisite: Open only to Allied Health Sciences majors, Environmental Science majors, and students in the Occupational Safety and Health program, 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 experience required.

3501. Diagnostic Techniques for the Biomedical Sciences

(260) (Also offered as PVS 3501.) Second semester. Two credits. One 1-hour lecture and one 3-hour laboratory. Prerequisite: Open to juniors or higher; instructor consent required; open only to students who have declared the Agricultural Biotechnology minor and passed MCB 3414. Recommended preparation: MCB 2000. *Anamani, Frasca, Lipcius, Risatti*

Theoretical basis and practical exposure to modern laboratory methods used in the biomedical sciences for disease diagnosis.

4095. Special Topics

(298) Either or both semesters and summer. Credits and hours by arrangement. Open only with consent of instructor. May be repeated for credit.

Investigation of a special topic in allied health related to the basic core or interdisciplinary areas.

4241. Research for the Health Professional

(241) Either semester. Three credits. Three hours of lecture. Prerequisite: A course in statistics; open only to Allied Health Sciences, Dietetics, Diagnostic Genetic Sciences and Medical Technology majors; others with consent of instructor; open to juniors or higher.

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.

4241W. Research for the Health Professional

(241W) Prerequisite: ENGL 1010 or 1011 or 3800; a statistics course; open to Allied Health Sciences, Dietetics, Medical Technology and Diagnostic Genetic Sciences majors, others with consent of instructor; open to juniors or higher.

4242. Counseling and Teaching for the Health Professional

(242) Either semester. Three credits. Three hours of lecture. Prerequisite: Open to Allied Health Sciences, Dietetics, Medical Technology, Diagnostic Genetic Sciences and Nutritional Sciences majors, others with consent of instructor; 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. Health Care Issues for the Health Professional

(243) Either semester. Three credits. Three hours of lecture. Prerequisite: Open to Allied Health Sciences, Dietetics, Medical Technology, Diagnostic Genetic Sciences and Nutritional Sciences 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. The health care delivery system; health and its relationship to poverty, ethnicity, life-cycle events, ethics, etc.

4244. Management for the Health Professional

(244) Either semester. Three credits. Three hours of lecture. Prerequisite: Open to Allied Health Sciences, Dietetics, Medical Technology, Diagnostic Genetic Sciences and Nutritional Sciences majors, others with consent of instructor; 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.

4244W. Management for the Health Professional

(244W) Prerequisite: ENGL 1010 or 1011 or 3800; open to Allied Health Sciences, Dietetics, Medical Technology, Diagnostic Genetic Sciences and Nutritional Sciences majors, others with consent of instructor; open to juniors or higher.

American Sign Language (ASLN)

Head of Department: Associate Professor Norma Bouchard

Department Office: Room 228, J.H. Arjona Building

1101-1102. Elementary Levels I and II**1103-1104. Intermediate Levels I and II**

(101-104) 1101 and 1103 are offered in the first semester, and 1102 and 1104 in the second. Please refer to the Critical Languages course descriptions in this publication. Consult the Program Director in Arjona 128 or at manuela.m.wagner@UConn.edu for more information.

American Studies (AMST)

Director: Professor Wayne Franklin

Office: College of Liberal Arts and Sciences Building, Room 227

1201. Introduction to American Studies

(165) (Also offered as ENGL 1201 and HIST 1503.) First semester. Three credits. Not open to students who have passed INTD 276.

What is an American? A multi-disciplinary inquiry into the diversity of American societies and cultures. CA 4.

3265W. Seminar in American Studies

(265W) (Also offered as ENGL 3265W.) (Formerly offered as INTD 265W.) Second semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher.

An in-depth study of an event, historical period, or cultural production from an interdisciplinary perspective.

Animal Science (ANSC)

Head of Department: Professor Daniel Fletcher

Department Office: Room 107, George White Building (Animal Science)

For major requirements, see the College of Agriculture and Natural Resources section of this *Catalog*.

For 2-year course listing, refer to Ratcliffe Hicks School of Agriculture (SAAS).

1001. Introduction to Animal Science

(120) First semester. Three credits. Two class periods and one 2-hour discussion or laboratory period. Taught concurrently with SAAS 101. *Darre*

The biological, physical, and social factors that influence animal production and utilization.

1602. Behavior and Training of Domestic Animals

(125) Second semester. Three credits. Two class periods and one 2-hour laboratory. Taught concurrently with SAAS 202. *Darre*

Application of behavior of cattle, horses, sheep, goats, swine 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.

1645. The Science of Food

(160) (Also offered as NUSC 1645.) Either semester. 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

(127) Second semester. Three credits. Taught concurrently with SAAS 276.

Basic concepts of the nutrition, physiology, health and management of companion animals.

1693. Foreign Studies in Animal Science

(193) Either semester. Variable credits (1-15). Hours by arrangement. May be repeated for credit. Open only by instructor consent.

Variable topics.

1695. Special Topics Lecture

(195) Either semester. Credits, prerequisites, and hours as determined by the Senate Curricula and Courses Committee. May be repeated for credit with a change in topic.

2111. Principles of Animal Nutrition

(216) First semester. Three credits. Two class periods and one 2-hour discussion and laboratory period. Recommended preparation: Introductory chemistry and an animal anatomy and physiology course. *Nadeau*

Focuses on digestive anatomy; the classes of nutrients including their digestion, use and sources. Nutrient requirements and feeding standards for various classes of livestock for reproduction, lactation, growth, work and maintenance are included. Feed requirements, feed laws, feed additives and labeling requirements are also discussed. Attention will also be given to characteristics of common feedstuffs and to formulating rations and nutritional programs for animal enterprise.

2251. Horse Science

(235) First semester. Three credits. Two class periods and one 2-hour laboratory or discussion period. *Dinger*

Valuable to animal science majors. 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.

2271. Principles of Poultry Science

(254) Second semester. Three credits. Two class periods and one 2-hour laboratory period. *Darre*

The application of the basic scientific principles to the management of poultry, egg and meat production systems. Field trips are required.

2690. Animal Science Field Excursions

(291) Either semester. One credit. Open only with instructor consent. May be repeated for credit with a change of topic.

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.

2695. Special Topics

(298) Either semester. Credits and hours by arrangement. Open only with instructor consent. May be repeated for credit with a change of topic. Contact Department Main Office for list of current topics and instructors.

2699. Independent Study

(299) Either or both semesters. Credits and hours by arrangement of instructor. May be repeated for credit. Instructor consent required.

3121. Principles of Animal Genetics

(217) First semester. Three credits. Prerequisite: BIOL 1107; open to juniors or higher. Recommended preparation: BIOL 1108. *Rasmussen*

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

(219) Second semester. Four credits. Three class periods and one 2-hour laboratory period. Prerequisite: Open to juniors or higher. *Milvae*

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. A fee of \$75 is charged for this course.

3194. Seminar

(295) Second semester. One credit. One 2-hour discussion period. Prerequisite: Open to juniors or higher. *Zinn*

A discussion of current employment opportunities in animal agriculture. In addition, students will prepare resumes and present oral talks.

3261. Dairy Cattle Management

(275) First semester of even numbered years. Three credits. Two class periods and one 2-hour laboratory period. Prerequisite: Open to juniors or higher. Taught concurrently with SAAS 261. *Kazmer*

Management of dairy cattle including milking procedures, sanitation, selection, nutrition, reproduction, physiology and anatomy of milk secretion and record keeping. Field trips required.

3272. Laboratory Animal Science

(269) Second semester. Three credits. Two class periods and one 2-hour laboratory or discussion period. Prerequisite: BIOL 1107. Recommended preparation: BIOL 1108 or equivalent. *Milvae*

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. A \$75 fee is charged for this course.

3273. Livestock Management

(273) First semester. Four credits. Three class periods and one 2-hour laboratory period. Taught jointly with SAAS 273. *Hoagland*

The production and management of beef cattle, sheep, and swine. Laboratories involve theory and practice in livestock management, skills, and techniques.

3313. Growth Biology and Metabolism in Domestic Livestock

(222) Second semester. Three credits. Two class periods and one 2-hour discussion period. Prerequisite: Open to juniors or higher. Recommended preparation: PVS 2100. *Zinn*

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

(223W) Second semester. One credit. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher. Corequisite: ANSC 3313. *Zinn*

A writing intensive class integrated with course content in ANSC 3313.

3323. Animal Embryology and Biotechnology

(229) First semester. Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: ANSC 3122 or MCB 4219. *Tian*

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. Lab tours, hands-on experience.

3343. Animal Food Products

(253) First semester. Three credits. Two class periods and one 3-hour laboratory. Prerequisite: Open to juniors or higher. *Mancini*

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. A fee of \$50 is charged for this course.

3344W. Scientific Writing in Animal Food Products

(255W) First semester. One credit. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher. Corequisite: ANSC 3343. *Mancini*

A writing intensive class integrated with course content in ANSC 3343.

3452. Horse Breeding Farm Management

(238) Second semester. Three credits. One class period and two 2-hour laboratory or discussion periods. Prerequisite: Open to juniors or higher. Recommended preparation: ANSC 2251. *Dinger*

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

(234) Either semester. One credit. One 1-hour lecture and one 1-hour laboratory. Not open to students who have passed ANSC 3456. *Rademacher*

Open to all University students interested in pleasure horses. The principles of horse management and horsemanship. A \$75 fee is charged for this course.

3454. Horse Selection and Evaluation

(281) Second semester. Two credits. One 4-hour laboratory or discussion period. Taught concurrently with SAAS 254. Not open for credit to graduate students. Consent of instructor is required. *Bennett*

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.

3455. Developing the Driving Horse

(231) First semester. Two credits. One 1-hour lecture and two 1-hour laboratories. Prerequisite: Open to juniors or higher; open by consent only. *Bennett*

Techniques related to training the driving horse will be described. Prior working experience with horses is recommended.

3456. Light Horse Training and Management

(236) Second semester. Two credits. Three 1-hour laboratory and one 1-hour lecture period. Prerequisite: ANSC 2251; open only with consent of instructor. *Rademacher*

The theory, fundamentals and practice of breaking, training, fitting, showing, and the use of horses for riding. Primarily for Animal Science majors.

3621. Animal Biotechnology Laboratory

First semester. One credit. One 4-hour class period every other week. Prerequisite: ANSC 3121 or equivalent.

lent. Recommended preparation: ANSC 3122 or equivalent. Instructor consent required. *Tian*

Focuses on the use of basic methods used in agricultural biotechnology research, including embryo manipulation, real-time PCR, karyotyping, SNP analysis and gene database searches and sequence alignment techniques.

3641. Animal Food Products: Dairy Technology

(252) Second semester. Three credits. Consent of instructor required.

The study of milk and milk-products from a food science perspective including production and processing, the chemical, physical and microbiological components, the 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

(256W) Second semester. One credit. Prerequisite: ENGL 1010 or 1011 or 3800. Corequisite: ANSC 3641.

A writing intensive course integrated with course content in ANSC 3641.

3663. Dairy Management Decision-making

(278) Both semesters. One credit. One 2-hour discussion period. Prerequisite: Open to juniors or higher. Consent of instructor required. May be repeated twice for credit. *Kazmer*

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.

3664. Dairy Cattle Evaluation

(284) Second semester. One credit. One 2-hour laboratory or discussion period. Prerequisite: Open to juniors or higher. *Kazmer*

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

(283) Second semester. Two credits. Two 2-hour laboratory periods. Taught concurrently with SAAS 274. Not open for credit to graduate students. *Hoagland*

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.

3675. Advanced Animal and Product Evaluation

(288) First semester. One credit. One 2-hour laboratory or discussion period. Prerequisite: Open to juniors or higher. Taught concurrently with SAAS 275. Not open for credit to graduate students. May be repeated once for credit. Open only with instructor consent.

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.

3691. Professional Internship

(296) Either semester. Credits and hours by arrangement. Prerequisite: Open only to juniors and seniors with instructor consent. Students taking this course will

be assigned a final grade of S (satisfactory) or U (unsatisfactory). *Andrew, Darre*

3693. Foreign Studies in Animal Science (293) Either semester. Variable credits, 1-15. Hours by arrangement. May be repeated for credit. Open only by instructor consent.

Variable topics.

4341. Food Microbiology and Safety (224) Second semester. Three credits. Prerequisite: BIOL 1107; open to juniors or higher. A one semester course in organic chemistry is recommended. *Venkitanarayanan*

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.

4457. Methods of Equitation Instruction (237) Second semester. Two credits. One class period and one 2-hour laboratory or discussion period. Taught concurrently with SAAS 257. Consent of instructor required. Intermediate II or above riding experience required. *Rademacher*

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.

4642. Food Microbiology Laboratory (227) Second semester. Even numbered years. One credit. One three-hour laboratory session. Prerequisite: Open to juniors or higher. Recommended preparation: MCB 2610. *Venkitanarayanan*

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.

4662WC. Dairy Herd Management (277WC) Second semester, odd numbered years. Three credits. Two class periods and one 2-hour discussion period. Taught concurrently with SAAS 262. Prerequisite: ANSC 3261; ENGL 1010 or 1011 or 3800; open to juniors or higher. *Kazmer*

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 and must fulfill requirements for "W" and "C" skill course designations to successfully complete the course. Field trips are required.

4697W. Undergraduate Honors Thesis Writing in Animal Science (297W) Either semester. One credit. Hours by arrangement. Prerequisite: Three credits of ANSC 2699 which may be taken concurrently; ENGL 1010 or 1011 or 3800; 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.

Anthropology (ANTH)

Head of Department: Associate Professor John Manning

Department Office: Room 438, Beach Hall

For major requirements, see the College of Liberal Arts and Sciences section of this *Catalog*.

1000. Other People's Worlds (100) Either semester. Three credits.

A survey of the development, contributions, and contemporary social problems of selected non-Euroamerican peoples and cultures. CA 2. CA 4-INT.

1000W. Other People's Worlds (100W) Prerequisite: ENGL 1010 or 1011 or 3800. CA 2. CA 4-INT.

1001W. Anthropology through Film (101W) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800.

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 (106) Either semester. Three credits. Two class periods and one 1-hour discussion.

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.

1093. Foreign Study (193) Either semester. Credits and hours by arrangement. May be repeated for credit (to a maximum of 17). Consent of Department Head is required before departure. May count toward the major with the consent of the advisor.

Special topics taken in a foreign study program.

1095. Special Topics Lecture (195) Either semester. Credits, prerequisites, and hours as determined by the Senate Curricula and Courses Committee. May be repeated for credit with a change in topic.

1500. Great Discoveries in Archaeology (102) Either semester. 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 (220) Either semester. Three credits. 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 (220W) Prerequisite: ENGL 1010 or 1011 or 3800. CA 2. CA 4.

2501. Introduction to Archaeology (214) Either semester. Three credits. The concepts, methods and practice of anthropological archaeology.

2502. Human Evolution (233) Either semester. 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 (289) Either semester. 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.

3002. Culture, Language, and Thought (244) Either semester. 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 (249) Either semester. 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 (268) Either semester. Variable (one to three) credits. The theoretical foundations and basic methods used to collect and analyze cultural data.

3021. Contemporary Latin America (221) Either semester. 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.

3022. Peoples and Cultures of South America (222) Either semester. Three credits. The history, ecology, and culture of the native peoples of South America.

3023. Pre-Colonial Africa (223) Either semester. Three credits. A survey of African society and history prior to and including the Atlantic slave trade.

3025. Contemporary Africa (225) (Also offered as AFAM 3025.) Either semester. Three credits. Africa since its partition in 1884. Urbanization, social stratification, racial and ethnic conflict.

3026. Peoples and Cultures of North America (226) Either semester. 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 (270) Either semester. 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 (228) (Also offered as HRTS 3028.) Either semester. 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.

3029. Caribbean Cultures

(229) Either semester. Three credits.
Peoples and cultures of the Caribbean region.

3030. Peoples of the Pacific Islands

(230) Either semester. 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

(238) Either semester. 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

(241) (Also offered as PRLS 3241.) Either semester. 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

(227) Either semester. 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.

3090. Directed Field Research in Anthropology

(296) Either semester. Course may be repeated, but credits may not exceed 12 by graduation. Hours by arrangement. Prerequisite: ANTH 3003 or instructor consent.

The investigation of a sociocultural and/or archaeological problem in some domestic or foreign field location.

3093. Foreign Study

(293) Either semester. Credits and hours by arrangement. 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 the advisor.

Special topics taken in a foreign study program.

3095. Special Topics

(298) Either semester. Credits and hours by arrangement. Open only with consent of instructor. With a change of content, may be repeated for credit.

3098. Variable Topics

(295) Either semester. Three credits. With a change in topic, may be repeated for credit. Prerequisites, required preparation, and recommended preparation vary.

3099. Independent Study

(299) Either semester. Credits and hours by arrangement. Open only with consent of instructor. With a change in content, may be repeated for credit.

3100. Theories of Society

(283) Either semester. Three credits. Recommended preparation: 2000-level or above social science course work.

Theories about human culture and society. Attempts to formulate general theories that integrate cultural, social, and psychological factors in the ethnographic investigation of human life.

3101. Culture, Power, and Social Relations

(247) Either semester. Three credits.
Comparative and historical analysis of the sources and consequences of power in human populations.

3102. Cultural Dynamics

(239) Either semester. Three credits.
Interrelations among cultural, social and psychological factors influencing the process of cultural growth and change.

3150. Migration

(215) Either semester. Three credits. Recommended preparation: ANTH 1000 or ANTH 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.

3151. Economic Anthropology

(235) Either semester. Three credits.
An introduction to the comparative study of economic life in contrasting pre-industrial, tribal and peasant economies.

3152. Race, Ethnicity, and Nationalism

(275) (Also offered as AFAM 3152.) Either semester. 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

(280W) (Also offered as HRTS 3153W.) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800; Open only with consent of instructor.

Human rights, political violence, political and legal anthropology, prosecutions of human rights offenders, truth and memory, reconciliation, international justice. CA 4-INT.

3200. Human Behavioral Ecology

(236) Either semester. 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.

3201. People and the Conservation of Nature

(282) Either semester. Three credits.
Local communities and their environments, resource use, land tenure and conservation of healthy landscapes.

3202W. Illness and Curing

(246W) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800.

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.

3250. Cognitive Anthropology

(232) Either semester. 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

(237) Either semester. 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

(277) Either semester. Three credits.
An introduction to the theory, method, and content of medical anthropology.

3302. Medical Ecology

(261) Either semester. Three credits. Recommended preparation: ANTH 3300.

Anthropological perspectives on the interrelationships between 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.

3303. Parent-Child Relations in Cross-Cultural Perspective

(245) (Also offered as HDFS 3310.) Either semester. 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.

3350. Anthropological Perspectives on Women

(231) (Also offered as WS 3350.) Either semester. 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

(281) Either semester. Three credits.
Cross-cultural and interdisciplinary analysis of biological sex, gender, sex roles, and sexuality.

3400. Culture and Religion

(234) Either semester. 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

(269) Either semester. 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

(273) (Also offered as WS 3402.) Either semester. Three credits. Prerequisite: INTD 3260.

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

(274) (Also offered as WS 3403.) Either semester. 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.

3450. Anthropological Perspectives on Art

(285) Either semester. Three credits.
Approaches to cultural creativity and aesthetics in the graphic and plastic arts of pre-state societies. Examples from North America, Oceania, and Africa.

3451. Native American Arts

(252) (Also offered as ARTH 3715.) Either semester. Three credits. Prerequisite: Open to juniors or higher.

A topical survey of the arts of Native American culture in the United States and Canada.

3503. Old World Prehistory

(217) Either semester. 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.

3504. New World Prehistory

(218) Either semester. Three credits.

The entry of early hunters into the New World, the origins of agriculture and sedentary life, and the rise of complex civilization in Mesoamerica and South America. CA 4-INT.

3506W. Laboratory Techniques in Archaeology

(262W) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800.

The analysis, interpretation, and presentation of archaeological data sets including lithics, ceramics, floral and faunal remains and spatial information from excavated sites.

3512. African Prehistory

(264) Either semester. Three credits.

The African archaeological record from first artifacts to historic times. The stone age, the domestication of crops, the ways of life of early herding societies, the development of metal working, and the rise of early African kingdoms.

3513. Near Eastern Prehistory

(257) (Also offered as HIST 3300.) Either semester. Three credits. Prerequisite: Open to juniors or higher.

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

(209) Either semester. 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.

3521W. Seminar in Archaeology

(294W) Either semester. Three credits. Prerequisite: ANTH 2501; ENGL 1010 or 1011 or 3800. Consent of instructor required.

Historical development of archaeology and theoretical controversies, past and present, that shape the field.

3522W. Ecological Anthropology Seminar

(292W) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800.

Interdisciplinary study of the ecology of humans, integrating ecological and anthropological theory with archaeological, historical, and contemporary case-studies.

3523. The Origins of Agriculture

(287) Either semester. Three credits.

The origins and spread of agriculture worldwide. Economic, social and ideological ramifications of the agricultural transition. Processes of plant and animal domestication.

3701. Lithic Technology

(267) Either semester. 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

(266) Either semester. 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

(286) Either semester. 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

(288) Either semester. Three credits. Prerequisite: ANTH 2501.

Method and theory of experimental archaeology, including hands-on study of past human behavior through experimentation with modern material cultural, and the execution of an experimental research project addressing an archaeological question.

3704W. Experimental Archaeology

(288W) Prerequisite: ANTH 2501; ENGL 1010 or 1011 or 3800.

3705. Paleoanthropology

(265) Either semester. 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.

3902. North American Prehistory

(253) Either semester. 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

3903. Archaeology of Eastern North America

(254) Either semester. Three credits. Prerequisite: ANTH 3902 or instructor consent.

Prehistoric cultures of the eastern United States and Canada from their earliest appearances to the arrival of the Europeans. Laboratory and field work projects.

3904. Ethnohistory of Native New England

(263) Either semester. 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.

3904W. Ethnohistory of Native New England

(263W) Prerequisite: ENGL 1010 or 1011 or 3800. CA 4.

3990. Field Work in Archaeology

(297) Summer session. Variable credits. Open only with consent of instructor.

Training in the techniques of archaeological site excavation; mapping; recording; field conservation, and preliminary analysis of materials.

4001W. The Development of Anthropological Theory

(212W) Either semester. Three credits. Prerequisite: ANTH 2000; ENGL 1010 or 1011 or 3800. Recommended for seniors.

Historical and contemporary theories in social and cultural anthropology.

4510. The Neanderthals(216) Either semester. Three credits. Recommended preparation: ANTH 1500, 2501, or 2502. *Adler*

An interdisciplinary consideration of the biological, cultural, technological, and behavioral evolution of the Neanderthals and their societies.

4801. Quantitative Methods for Archaeologists

(279) Either semester. Three credits.

Quantitative methods appropriate to the analysis of artifacts data, radiocarbon dating, and the spatial distribution of sites.

Arabic (ARAB)

Head of Department: Associate Professor Norma Bouchard

Department Office: Room 228, J.H. Arjona Building

1101-1102. Elementary Levels I and II

(101-102)

1103-1104. Intermediate Levels I and II

(103-104)

1111. Elementary Arabic I

(111) First semester. Four credits each semester. Four class periods and additional laboratory practice. Not open for credit to students who have had three or more years of Arabic in high school.

Development of ability to communicate in Arabic, orally and in writing.

1112. Elementary Arabic II

(112) Second semester. Four credits each semester. Four class periods and additional laboratory practice. Not open for credit to students who have had three or more years of Arabic in high school. Prerequisite ARAB 1111.

Development of ability to communicate in Arabic, orally and in writing.

1113. Intermediate Arabic I

(113) First semester. Four credits each semester. Four class periods and additional laboratory practice. Prerequisite ARAB 1112.

Development of ability to communicate in Arabic, orally and in writing.

1114. Intermediate Arabic II

(114) Second semester. Four credits each semester. Four class periods and additional laboratory practice. Prerequisite ARAB 1113.

Development of ability to communicate in Arabic, orally and in writing.

1121. Traditional Arab Literatures, Cultures, and Civilizations

(121) Either semester. Three credits. Taught in English.

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. CA 1. CA 4-INT.

1122. Modern Arabic Culture

(122) Either semester. Three credits. Taught in English.

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. CA 1. CA 4-INT.

3293. Foreign Study

(293) Either or both semesters. Credits and hours by arrangement. 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 the advisor.

Special topics taken in a foreign study program.

3295. Special Topics

(298) Either semester. Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary.

3299. Independent Study

(299) Either or both semesters. Credits and hours by arrangement. Open only with consent of instructor. With a change in content, may be repeated for credit.

Art (ART)

Head of Department: Professor Judith Thorpe
Department Office: Room 100, Art Building

1000. Art Appreciation

(135) Either semester. Three credits. Not open to Art majors. Intended primarily for students who are not art majors.

Introduction to the visual arts, past and present. The visual language of artists, historical and cultural significance of works of art. CA 1.

Studio Courses

1010. Foundation: Studio Concepts

(111) Either semester. Three credits. Two 3-hour studio periods.

Introduction to key concepts and practice in art making. A fee of \$20 is charged for this course.

1020. Foundation: Criticism and Interpretation

(113) First semester. Three credits. One 3-hour class period.

An introduction to various current critical approaches to the producers, contexts, audiences, and histories of contemporary visual culture.

1030. Drawing I

(130) Either semester. Three credits. Two 3-hour or three 2-hour studio periods.

Fundamental principles of drawing based on observation. A fee of \$10 is charged for this course.

1040. Drawing II

(152) Either semester. Three credits. Two 3-hour or three 2-hour studio periods. Prerequisite: ART 1030.

Observational drawing; emphasis on spatial organization and structure. A fee of \$10 is charged for this course.

2000. Architectural Graphics I

(195) First semester. Three credits. Two 3-hour class periods.

Architectural graphics. Basic two- and three-dimensional delineation: axonometric, isometric and perspective drawing. A fee of \$35 is charged for this course.

2010. Life Drawing I

(153) Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 1040.

Introduction to figure drawing. A fee of \$20 is charged for this course.

2011C. Introduction to Digital Media

(261C) Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 1010 and ART 1030.

Introduction to digital media. A fee of \$35 is charged for this course.

2110. Design Process

(165) Either semester. Three credits. Two 3-hour periods. Prerequisite: ART 1010 and 1030.

Introduction to content, meaning, form, and structure in communication design, emphasizing conceptual analysis and approaches to visualization. A fee of \$35 is charged for this course.

2120. Communication Design I

(260) Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 2110, portfolio review and consent of instructor.

Fundamentals of communication design. A fee of \$35 is charged for this course.

2210. Illustration

(271) Either semester. Three credits. Two 3-hour or three 2-hour studio periods. Prerequisite: ART 2010 and 2310.

Introduction to principles of illustration, media, and techniques. A fee of \$35 is charged for this course.

2310. Basic Studio, Painting

(164) Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 1010 and 1030.

Introduction to the principles and techniques of painting media. A fee of \$20 is charged for this course.

2410. Basic Studio, Photography

(166) Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 1010 and 1030.

Introduction to techniques and aesthetics of photography, with emphasis on the camera. A fee of \$20 is charged for this course.

2420. Intermediate Photography

(265) Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 2410.

Principles and techniques of black-and-white photography in fine-art applications, with emphasis on darkroom work. A fee of \$35 is charged for this course.

2510. Basic Studio, Printmaking

(160) Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 1010 and 1030.

Introduction to practice and principles of printmaking, including intaglio, relief and lithographic processes. A fee of \$35 is charged for this course.

2610. Basic Studio, Sculpture

(163) Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 1010 and 1030.

Introduction to principles and techniques of sculpture. A fee of \$50 is charged for this course.

2993. Foreign Study

(193) Either or both semesters. Credits and hours by arrangement. Consent of Department Head required, normally before the student's departure to study abroad. May be repeated with a change in course content.

Special topics taken in a foreign study program.

2995. Special Topics Seminar

(196) Either semester. Credits and hours as determined by the Senate Curricula and Courses Committee. Open only with consent of instructor. May be repeated for credit with a change in topic. 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

(204) Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 2010.

Drawing from the figure. A fee of \$20 is charged for this course.

3020. Advanced Figure Drawing

(255) Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 3010; open to juniors or higher. May be repeated once.

Advanced studies in figure drawing. A fee of \$20 is charged for this course.

3030. Advanced Drawing

(257) Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 3010 and consent of instructor; open to juniors or higher. May be repeated with a change in course content to a maximum of 9 credits.

Advanced studies in drawing. Course content varies with instructor. A fee of \$10 is charged for this course.

3060. Art Outside the Mainstream

(279) Either semester. Three credits. One 3-hour seminar period. Prerequisite: Open to juniors or higher.

An examination of the range of contemporary art produced by self-taught artists working outside the mainstream in the United States, Europe, and selected global areas.

3110. Communication Design II

(264) Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 2120; open to juniors or higher.

Creative, appropriate and effective communication design through the use of type and image. A fee of \$35 is charged for this course.

3120. Communication Design III

(267) Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 2120; open to juniors or higher. Prerequisite or corequisite: 3110.

Exploration of form, content, and function using various communication design methodologies. A fee of \$35 is charged for this course.

3130. Digital Multimedia

(278) Second semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 3110; open to juniors or higher.

Introduction to time-based communication design. A fee of \$35 is charged for this course.

3210. Topics in Illustration

(272) Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 3010 and 2210; open to juniors or higher. May be repeated with a change of course content up to 9 credits.

Continuing problems in illustration. Projects may include book, editorial, reportage, or self-promotion illustration. A fee of \$10 is charged for this course.

3310. Intermediate Painting I

(235) Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 2310. A fee of \$10 is charged for this course.

3320. Intermediate Painting II

(236) Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 3310.

Conceptually-oriented painting projects.

3330. Advanced Painting I

(237) Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 3320; open to juniors or higher.

Individually determined painting projects. A fee of \$35 is charged for this course.

3340. Advanced Painting II

(238) Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 3330; open to juniors or higher. May be repeated once with change in course content.

Continuation of ART 3330. A fee of \$35 is charged for this course.

3350. Aqua Media I

(239) Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 1040.

Introduction to the materials and methods of painting in aqua media. A fee of \$35 is charged for this course.

3360. Aqua Media II

(240) Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 3350.

Continuing study in aqua media. A fee of \$20 is charged for this course.

3370. Figure Painting

(241) Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 2010, 3010, 2310; open to juniors or higher. May be repeated for up to six credits with a change in course content.

Investigations in figurative/narrative painting. A fee of \$20 is charged for this course.

3375. Indian Art and Popular Culture: Independence to the Present

(244) Either semester. Three credits. Prerequisite: Open to juniors or higher. *Myers*

An interdisciplinary studio art course introducing modern, contemporary, folk, and popular art from India and the South Asian Diaspora.

3410. Introduction to Video Art

(281) Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 2410; open to juniors or higher.

Introduction to techniques and aesthetics of video art. A fee of \$35 is charged for this course.

3420. Digital Imaging

(256) Either semester. Three credits. Prerequisite: ART 2410 and 2011C; open to juniors or higher.

Introduction to the use of the computer to digitize and manipulate photographic imagery. A fee of \$50 is charged for this course.

3430. Alternative Processes (Photography)

(262) Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 2420. May be repeated once with a change of content. *Craig*

Photographic printmaking systems outside conventional silver imaging processes. A fee of \$75 is charged for this course.

3440. Color Photography

(263) Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 2410. May be repeated once with a change of content.

The processes and aesthetics of color photography. A fee of \$35 is charged for this course.

3510. Intaglio Printmaking

(221) Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 2510.

Investigation of black-and-white and color intaglio techniques. A fee of \$35 is charged for this course.

3520. Lithography

(222) Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 2510.

Investigation of lithographic techniques. A fee of \$35 is charged for this course.

3530. Printmaking Workshop

(226) Either semester. Variable credit. Two 3-hour studio periods. Prerequisite: ART 3510 or 3520. May be repeated for credit with a change in course content to a maximum of 18 credits.

Workshop for students to continue developing ideas in a print medium. A fee of \$35 is charged for this course.

3610. Pottery and the Vessel

(211) Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 2610. May be repeated for credit with a change in course content to a maximum of 9 credits.

Vessel-oriented ceramics, wheel-thrown and hand-built. Basic technical information on clay, glazes and kiln firings. A fee of \$50 is charged for this course.

3620. Sculpture: Clay

(212) Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 2610. May be repeated for credit with a change in course content to a maximum of 9 credits.

Basic principles and techniques of ceramic sculpture. Technical information on clay, glazes and kilns. A fee of \$50 is charged for this course.

3630. Sculpture: Wood

(216) Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 2610. May be repeated for credit with a change in course content to a maximum of 9 credits.

Investigation of sculptural form, process, and environment, using wood. A fee of \$75 is charged for this course.

3640. Sculpture: Metals

(217) Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 2610. May be repeated for a maximum of 9 credits.

Investigation of sculptural form, process, and environment, using metal fabrication techniques such as welding, forging, and casting. A fee of \$50 is charged for this course.

3650. Sculpture: Moldmaking/Casting

(219) Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 2610. May be repeated for credits with a change in course content to a maximum of 9 credits.

Investigation of mold-making techniques and casting processes, including ceramic slip casting, for students in any area of concentration. A fee of \$75 is charged for this course.

3660. Sculpture Seminar

(220) Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 2610 and 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. A fee of \$50 is charged for this course.

3990. Cooperative Education in Art

(296) Either semester. Three credits. Hours by arrangement. Prerequisite: Open to juniors or higher. Open only with consent of Department Head. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

Practicum for students participating in the off-campus Cooperative Education Program.

3991. Studio Internship

(295) Either semester. Three credits. Hours by arrangement. Prerequisite: Open to juniors or higher. Open only with consent of instructor. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

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.

3993. Foreign Study

(293) Either or both semesters. Credits and hours by arrangement. Prerequisite: Open to juniors or higher. Consent of department head required. May be repeated with a change in course content.

Special topics taken in a foreign study program.

3995. Investigation of Special Topics

(283) Either semester. Credits and hours by arrangement. Prerequisite: Consent of instructor; open to juniors or higher. May be repeated for credit with a change in course content.

Special topics. Field trips may be required. A fee of \$20 is charged for this course.

3999. Independent Study

(299) Either semester. Maximum of up to 6 credits. May be repeated for a total of 6 credits. Prerequisite: Open to juniors or higher. Limited to advanced 5th semester or higher standing and a GPA 3.0, with no

outstanding incompletes for any other 3999. Exceptions only by the approval of the department head.

For advanced students to develop a special project in advanced studio art.

4110. Communication Design IV

(269) Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 3120.

Exploration of communication design as a social, political, and cultural activity. A fee of \$35 is charged for this course.

4120. Publication Design

(277) First semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 3110; open to juniors or higher.

Introduction to publication design. A fee of \$50 is charged for this course.

4130. Design Center

(270) Either semester. Three credits. May be repeated to a maximum of six credits. Two 3-hour studio periods. Prerequisite: ART 3120, portfolio review, and consent of instructor; open to juniors or higher.

Introduction to professional design practice. A fee of \$35 is charged for this course.

4410. Advanced Photography

(266) Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 2420; open to juniors or higher. May be repeated once with a change of content.

Advanced problems in the use of photography as an art medium. A fee of \$35 is charged for this course.

4901. Senior Project

(297) Both semesters. Three credits. Hours by arrangement. Prerequisite: Open to juniors or higher. Open only by instructor consent. To fulfill graduation requirement for B.F.A. students, must be passed with grade of C or better.

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. A fee of \$35 is charged for this course.

Art History (ARTH)

Head of Department: Professor Judith Thorpe

Department Office: Room 100, Art Building

1128. Introduction to Western Art II: The Renaissance to the Present, a World Perspective (123) Either semester. Three credits. Lecture with discussion groups. *Greeley, Orwicz*

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 1. CA 4-INT.

1137. Introduction to Art History I

(137) First semester. Three credits.

Survey of art and architecture from prehistoric times through the fourteenth century. CA 1.

1138. Introduction to Art History II

(138) Second semester. Three credits.

Survey of art and architecture from the fifteenth century to the present day. CA 1.

1141. Introduction to Latin American Art

(141) Either semester. Three credits.

A thematic survey of Latin American art from 200 B.C. to the present. CA 1. CA 4-INT.

1162. Introduction to Architecture

(191) Either semester. Three credits.

An introduction to the history of architecture considered in its social, technological and urban context. CA 1.

1193. Foreign Study

(193) Either or both semesters. Credits and hours by arrangement. Consent of department head required, normally before the student's departure to study abroad.

Special topics taken in a foreign study program.

3005. Museums and the Interpretation of Culture

(210) Either semester. Three credits. Prerequisite: Open to juniors or higher.

The history and philosophy of museums.

3005W. Museums and the Interpretation of Culture

(210W) Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher; open to art history and art majors, others with consent of instructor.

3010. Art History's Feminisms

(211) Either semester. Three credits. Prerequisite: Open to juniors or higher.

Feminist approaches to the theory and practice of art history.

3010W. Art History's Feminisms

(211W) Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher, open to art history and art majors, others with consent of instructor.

3015W. Women and Body Art

(212W) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher; open to art history and art majors, others with consent of instructor.

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

(220) (Also offered as AASI 3220.) Either semester. Three credits. Prerequisite: Open to juniors or higher.

Topics in contemporary Asian American art and visual culture, 1960's to present.

3020W. Asian American Art and Visual Culture

(220W) Prerequisite: ENGL 1010 or 1011 or 3800; open to art history and art majors; open to juniors or higher; others with consent of instructor.

3030. The Artist and Society

(272) Either semester. Three credits. Prerequisite: Open to juniors or higher.

An investigation of the artist's professional function throughout history in different Western societies.

3035. History of the Print

(209) Either semester. Three credits. Prerequisite: Open to juniors or higher.

Survey of printmaking in Europe and America from the Renaissance to the present.

3040. Ethnicities, Sexualities, Modernisms

(290) (Also offered as WS 3209.) Either semester. Three credits. Prerequisite: Open to juniors or higher.

Topics in twentieth-century visual culture (film, advertising, fine arts, crafts, literatures), with emphasis upon matters related to social constructions of ethnicity and sexuality, and upon issues raised by feminist and postcolonial theories.

3140. Greek Art

(243) (Also offered as CAMS 3251.) Either semester, alternate years. Three credits. Prerequisite: Open to juniors or higher.

Greek art and architecture from the ninth century B.C. to the first-century A.D.

3140W. Greek Art

(243W) Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher. Open to art history and art majors; others with consent of instructor.

3150. Roman Art

(246) (Also offered as CAMS 3252.) Either semester, alternate years. Three credits. Prerequisite: Open to juniors or higher.

History of Roman art and architecture.

3150W. Roman Art

(246W) Prerequisite: ENGL 1010 or 1011 or 3800; open to art history and art majors, others with consent of instructor; open to juniors or higher.

3210. Late Antique and Byzantine Art

(280) Either semester. Three credits. Prerequisite: Open to juniors or higher.

Art and architecture of the late Roman empire and the Byzantine East.

3210W. Late Antique and Byzantine Art

(280W) Prerequisite: ENGL 1010 or 1011 or 3800; open to art history and art majors, others with consent of instructor; open to juniors or higher.

3220. Early Medieval Art

(257) Either semester, alternate years. Three credits. Prerequisite: 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.

3220W. Early Medieval Art

(257W) Prerequisite: ENGL 1010 or 1011 or 3800; open to art history and art majors, others with consent of instructor; open to juniors or higher.

3230. Romanesque Art

(258) Either semester, alternate years. Three credits. Prerequisite: Open to juniors or higher.

Topics in medieval painting, architecture and sculpture through the twelfth century.

3230W. Romanesque Art

(258W) Prerequisite: ENGL 1010 or 1011 or 3800; open to art history and art majors, others with consent of instructor; open to juniors or higher.

3240. Gothic Art

(259) Either semester. Three credits. Prerequisite: Open to juniors or higher.

Gothic art and architecture, with emphasis on the court styles of England and France.

3240W. Gothic Art

(259W) Prerequisite: ENGL 1010 or 1011 or 3800; open to art history and art majors, others with consent of instructor; open to juniors or higher.

3260. The Early Illustrated Book

(262) Either semester. Three credits. Prerequisite: Open to juniors or higher.

The early history of the illustrated book, from antiquity through the introduction of printing.

3260W. The Early Illustrated Book

(262W) Prerequisite: ENGL 1010 or 1011 or 3800. Open to art history and art majors, others with consent of instructor; open to juniors or higher.

3320. Art of the Italian Renaissance

(273) Either semester. Three credits. Prerequisite: Open to juniors or higher.

Italian art and architecture 1400-1600.

3320W. Art of the Italian Renaissance

(273W) Prerequisite: ENGL 1010 or 1011 or 3800; open to art history and art majors, others with consent of instructor; open to juniors or higher.

3330. Art of the Northern Renaissance

(250) Either semester, alternate years. Three credits. Prerequisite: Open to juniors or higher.

Painting, sculpture, graphic arts of the Lowlands and Germany, 1400-1600.

3330W. Art of the Northern Renaissance

(250W) Prerequisite: ENGL 1010 or 1011 or 3800; open to art history and art majors, others with consent of instructor; open to juniors or higher.

3340. Baroque Art

(251) Either semester. Three credits. Prerequisite: Open to juniors or higher.

Art and architecture of the seventeenth and early eighteenth centuries with emphasis on Italy, Netherlands, France and Spain.

3340W. Baroque Art

(251W) Prerequisite: ENGL 1010 or 1011 or 3800; open to art history and art majors, others with consent of instructor; open to juniors or higher.

3430. Nineteenth Century European Art

(252) Either semester. Three credits. Prerequisite: Open to juniors or higher.

European art from Neo-Classicism to Realism.

3430W. Nineteenth Century European Art

(252W) Prerequisite: ENGL 1010 or 1011 or 3800; open to art history and art majors, others with consent of instructor; open to juniors or higher.

3440. Nineteenth Century American Art

(254) Either semester. Three credits. Prerequisite: Open to juniors or higher.

Topics in American Art, 1770-1900.

3440W. Nineteenth Century American Art

(254W) Prerequisite: ENGL 1010 or 1011 or 3800; open to art history and art majors, others with consent of instructor; open to juniors or higher.

3445. Impressionism and Post-Impressionism

(292) Either semester. Three credits. Prerequisite: Open to juniors or higher.

Topics in French Painting, 1860-1900.

3445W. Impressionism and Post-Impressionism

(292W) Prerequisite: ENGL 1010 or 1011 or 3800; open to art history and art majors, others with consent of instructor; open to juniors or higher.

3450. American Architecture

(253) Either semester. Three credits. Prerequisite: Open to juniors or higher.

American architecture from the colonial era to the present. Field trips may be required.

3460. History of Photography I

(267) Either semester. Three credits. Prerequisite: Open to juniors or higher.

Topics in the history of photography from 1839 to World War I.

3510. Modern Art

(281) Either semester. Three credits. Prerequisite: Open to juniors or higher.

Topics in the art of the first half of the twentieth century.

3510W. Modern Art

(281W) Prerequisite: ENGL 1010 or 1011 or 3800; open to art history and art majors, others with consent of instructor; open to juniors or higher.

3520. Architecture of the Twentieth Century

(282) Either semester. Three credits. Prerequisite: Open to juniors or higher.

3530. Contemporary Art

(291) Either semester. Three credits. Prerequisite: Open to juniors or higher.

Topics in the art of the second half of the twentieth century.

3530W. Contemporary Art

(291W) Prerequisite: ENGL 1010 or 1011 or 3800; open to art history and art majors, others with consent of instructor; open to juniors or higher.

3560. History of Photography II

(268) Either semester. Three credits. Prerequisite: Open to juniors or higher.

Topics in the history of photography from World War I to the present.

3560W. History of Photography II

(268W) Prerequisite: ENGL 1010 or 1011 or 3800; open to art history and art majors, others with consent of instructor; open to juniors or higher.

3610. Art of Mesoamerica

(277) Either semester, alternate years. Three credits. Prerequisite: Open to juniors or higher.

A survey of art from Mexico and Central America 2000 BS-CE 1500. Cultures covered include Olmec, Zapotec, Maya, Toltec, and Aztec.

3610W. Art of Mesoamerica

(277W) Prerequisite: ENGL 1010 or 1011 or 3800; open to art history and art majors, others with consent of instructor; open to juniors or higher.

3620. Colonial Mexican Art

(278) Either semester, alternate years. Three credits. Prerequisite: Open to juniors or higher.

3620W. Colonial Mexican Art

(278W) Prerequisite: ENGL 1010 or 1011 or 3800; open to art history and art majors, others with consent of instructor; open to juniors or higher.

3630. Modern Latin American Art

(279) Either semester. Three credits. Prerequisite: Open to juniors or higher.

A thematic survey of Latin American art from the nineteenth century to present.

3630W. Modern Latin American Art

(279W) Prerequisite: ENGL 1010 or 1011 or 3800; open to art history and art majors, others with consent of instructor; open to juniors or higher.

3640. Mexican and Chicano Art, 19th Century - Present

(275) Either semester. Three credits. Prerequisite: Open to juniors or higher.

Topics in Mexican and Chicano art from Mexican Independence to the present.

3640W. Mexican and Chicano Art, 19th Century - Present

(275W) Prerequisite: ENGL 1010 or 1011 or 3800; open to art history and art majors, others with consent of instructor; open to juniors or higher.

3645. Caribbean Art, 19th and 20th Centuries

(276) Either semester. Three credits. Prerequisite: Open to juniors or higher.

A survey of art and visual production in the Caribbean from the 1804 Haitian Revolution to the present.

3645W. Caribbean Art, 19th and 20th Centuries

(276W) Prerequisite: ENGL 1010 or 1011 or 3800; open to art history and art majors, others with consent of instructor; open to juniors or higher.

3715. Native American Arts

(256) (Also offered as ANTH 3451.) Either semester. Three credits. Prerequisite: Open to juniors or higher.

A topical survey of the arts of Native American cultures in the United States and Canada.

3745. Buddhist Art in the Orient

(289) Either semester, alternate years. Three credits. Prerequisite: Open to juniors or higher.

Buddhist sculpture, painting, and architecture in India, China and Japan.

3991. Field Studies Internship in Art History

(294) Both semesters. Variable credit to a maximum of 12 credits. May be repeated for credit. Prerequisite: two 1000-level Art History courses, two 3000-4000 level Art History courses and consent of instructor; open to juniors or higher.

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 November for second semester.

3992. Cooperative Education in Art

(296) Either semester. Three credits. Hours by arrangement. Prerequisite: Open to juniors or higher. Open only with consent of Department Head. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory);

Practicum for students participating in the off-campus Cooperative Education Program.

3993. Foreign Study

(293) Either or both semesters. Credits and hours by arrangement. Prerequisite: Open to juniors or higher. Consent of Department Head required.

Special topics taken in a foreign study program.

3995. Investigation of Special Topics

(283) Either semester. Credits and hours by arrangement. May be repeated for credit with a change in course content. Prerequisite: Open to juniors or higher.

Special topics.

4010. Art Historical Methods

(297) Either semester. Three credits. Prerequisite: Two 3000-4000 level courses in Art History; open to juniors or higher.

An introduction to the methods of Art Historical analysis.

4099. Independent Study

(299) Either semester. Variable credit to a maximum of 6 credits. May be repeated for a total of 6 credits. Limited to advanced students 7th semester or higher with a departmental G.P.A. of 3.0 or higher. Prerequisite: Open to juniors or higher. Consent of instructor required. Exceptions only by approval of Department Head.

Designed for advanced students who wish to pursue the study of a special topic, culminating in a project in art history.

Asian American Studies Institute (AASI)

Director, Asian American Studies Institute:

Roger N. Buckley

Office: Room 416, Beach Hall

3201. Introduction to Asian American Studies

(201) Either semester. Three credits. Prerequisite: Open to juniors or higher. *Machida*

A multidisciplinary 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.

3212. Asian American Literature

(274) (Also offered as ENGL 3212.) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher. *Chow*

Literature, theatre, film about Asian American communities and culture in the United States from the mid-nineteenth century to the present. CA 4.

3214. Medicinal Plants of Asian Origin and Culture

(214) First semester. Three credits. Prerequisite: Open to juniors or higher.

A review of the plant species of Asian origin and culture currently studied for nutraceutical and functional properties by biomedical and agricultural researchers. Strategies for successful cultivation and use of these "green immigrants" in North America.

3215. Critical Health Issues of Asian Americans

(215) First semester. Three credits. Prerequisite: Open to juniors or higher.

Examination of critical health issues affecting Asian American sub populations. Topics to include gender specific health problems; cultural issues; and health care issues. CA 4.

3216. Asian Medical Systems

(216) Second semester. Three credits. Prerequisite: Open to juniors or higher.

Examination of traditional medical systems of Asian origin and their prevalence in the United States. Topics to include popular medical systems: Ayurveda, Traditional Chinese Medicine, Chinese, Indian and Japanese Herbal Medicine; the values and beliefs of different models. CA 4-INT.

3220. Asian American Art and Visual Culture

(220) (Also offered as ARTH 3020.) Either semester. Three credits. Prerequisite: Open to juniors or higher.

Topics in contemporary Asian American art and visual culture, 1960's to present.

3221. Sociological Perspectives on Asian American Women

(221) (Also offered as HRTS 3571 and SOCI 3221.) Either semester. Three credits. Prerequisite: Open to juniors or higher. *Purkayastha*

An overview of social structures, inter-group relations, and women's rights, focusing on the experience of Asian American women. CA 4.

3222. Asian Indian Women: Activism and Social Change in India and the United States

(222) (Also offered as HRTS 3573 and SOCI 3222.) First semester. Three credits. Prerequisites: SOCI 1001, 1251 or 1501; open to juniors or higher.

How gender, class and ethnicity/race structure everyday lives of Asian Indian women in both India and the United States.

3295. Special Topics in Asian American Studies

(298) Either semester. Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary; open to juniors or higher.

3531. Japanese Americans and World War II

(268) (Also offered as HIST 3531.) First semester. Three credits. Prerequisite: Open to juniors or higher.

Buckley

The events leading to martial law and executive order 9066, the wartime experience of Japanese Americans, and national consequences. CA 1. CA 4.

3578. Asian American Experience Since 1850

(294) (Also offered as HIST 3530.) Either semester. Three credits. Prerequisite: Open to juniors or higher.

Wang

Survey of Asian-American experiences in the United States since 1850. Responses by Asian-Americans to both opportunities and discrimination.

3808. East Asia to the Mid-Nineteenth Century (287) (Also offered as HIST 3808.) First semester. Three credits. Prerequisite: Open to juniors or higher. *Wang*

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 (288) (Also offered as HIST 3809.) Second semester. Three credits. Prerequisite: Open to juniors or higher. *Wang*

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 (277) (Also offered as HIST 3812.) Either semester. Three credits. Prerequisite: Open to juniors or higher. *Buckley*

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.

4999. Independent Study (299) Either or both semesters. Credits, not to exceed 3 per semester, and hours by arrangement. Prerequisite: Open to juniors or higher. Open only with consent of instructor. With a change of subject, this course may be repeated for credit.

Biology (BIOL)

Students with inquiries about an undergraduate major should go to Torrey Life Sciences Building, Room 161.

For major requirements, see the College of Liberal Arts and Sciences section of this *Catalog*.

For course descriptions of Biological Sciences, see these topics listed alphabetically throughout this *Directory of Courses*:

Ecological and Evolutionary Biology (EEB)
Molecular and Cellular Biology (MCB)
Physiology and Neurobiology (PNB)

1102. Foundations of Biology (102) Either semester. Four credits. Three class periods and one 2-hour laboratory period. Not open for credit to students who have completed a year of advanced biology in high school. Students may not receive more than 12 credits for courses in Biology at the 1000's level.

A laboratory course designed for non-science majors; surveys major biological principles with emphasis on their importance to humans and modern society. A fee of \$10 is charged for this course. CA 3-LAB.

1103. The Biology of Human Health and Disease (103) Second semester. Four credits. Three lecture periods and one 2-hour laboratory. Not open for credit to students who have passed PVS 103. *Smolin, Terry*

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. A fee of \$10 is charged for this course. CA 3-LAB.

1107, 1108. Principles of Biology (107, 108) Either semester. May be taken in either order. Four credits. Three class periods and one 3-hour laboratory period. Students may not receive more than 12 credits for courses in biology at the 1000's level. A course in high school level chemistry or concurrent

enrollment in CHEM 1127 are recommended for students enrolling in 1107.

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 (BIOL 1107); ecology, evolution, genetics, and plant biology, (BIOL 1108). Laboratory exercises in BIOL 1107 include dissection of preserved animals. A fee of \$10 is charged for this course. CA 3-LAB.

1109. Topics in Modern Biology (196) Either semester. One credit. One class period. Current enrollment in BIOL 1107 or 1108 required. May be repeated for credit with a change in content. Designed primarily for, but not restricted to, honors students. Students may not receive more than 12 credits for courses in Biology at the 1000's level.

Readings, lectures, seminars, films and field trips exploring current developments in biology and their social and scientific implications.

1110. Introduction to Botany (110) First semester. Four credits. Three class periods and one 3-hour laboratory period. Students may not receive more than 12 credits for courses in biology at the 1000's level. *Goffinet*

Structure, physiology and reproduction of seed plants as a basis for an understanding of the broader principles of biology as well as the relation of plants to human life. Includes a survey of the important groups throughout the plant kingdom. A fee of \$10 is charged for this course. CA 3-LAB.

1195. Special Topics Lecture (195) Either semester. Credits, prerequisites, and hours as determined by the Senate Curricula and Courses Committee. May be repeated for credit with a change in topic.

1199. Introduction to Biological Research (199) Either semester. Credits not to exceed 3. Hours by arrangement; three laboratory hours for each credit. May be repeated for credit with a change in content. Prerequisite: BIOL 1107 or 1108 and consent of instructor.

Internship in Biology research.

2289. Introduction to Undergraduate Research (295) (Formerly offered as MCB 295.) Either or both semesters. One credit. Recommended preparation: BIOL 1107 and 1108, or equivalent. With a change in content, this course 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.

Biomedical Engineering (BME)

Program Director: Professor John Enderle
Department Office: 217 Bronwell Building

1401. Honors Core: Computational Molecular Biology (120) (Also offered as CSE 1401 and MCB 1401.) Either semester. Three credits. *Mandou, Nelson*

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.

3100. Physiological Modeling (211) First semester. Three credits. Prerequisite or corequisite: MATH 1132Q. 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.

3101. Introduction to Biomedical Engineering (210) (Also offered as ECE 3301.) First semester. Three credits. Prerequisite: BIOL 1107. Corequisite: PHYS 1501Q and MATH 2110Q.

Survey of the ways engineering and medical science interact. The art and science of medicine, and the process of medical diagnosis and treatment. Diagnostic instrumentation and measurements including medical imaging. Introduction to bioelectric phenomena, biomechanics, and biomaterials. Biochemical engineering. Computers in medicine. Molecular medicine and biotechnology.

3120. LabVIEW Basics for Biomedical Engineers (210) First semester. One credit. One 3-hour laboratory period. Prerequisite: CSE 1100.

Introduces the 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.

3130. LabVIEW Intermediate for Biomedical Engineers (210) First semester. One credit. Prerequisite: BME 3120. One 3-hour laboratory period.

Introduces structured practices to design, test, and use LabVIEW applications. Recommended development techniques for hierarchical VI development, event-based architectures, user-interface design, error handling and documentation are covered. Learn to extend application functionality and reduce development time by using connectivity technologies such as DLLs, ActiveX, and the Internet.

3150. Statics and Dynamics for Biomedical Engineers (210) First semester. Three credits. Corequisite: MATH 2110 or 2130.

Fundamentals of statics and dynamics using vector methods on physiological systems. Resolution and composition of forces; equilibrium of force systems; rectilinear and curvilinear motion, translation, rotation, plane motion, work, energy and power.

3300. Biochemical Engineering for Biomedical Engineers (220) First semester. Three credits. Prerequisite: BME 3100. Corequisite: CHEM 2443.

Introduction to chemical reaction kinetics; enzyme and fermentation technology; microbiology, biochemistry, and cellular concepts; biomass production; organ analysis; viral dynamics.

3301. Introduction to Biochemical Engineering (221) (Also offered as CHEG 3173 and as ENVE 3250.) First semester. Three credits. Recommended preparation: CHEG 3151.

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.

3310. Fermentation and Separation Technologies Laboratory

(223) Second semester. Three credits. One class and two 3-hour laboratories. Prerequisite: BME 3301.

Introduction to techniques used for industrial mass culture of prokaryotic and eukaryotic cells, and methods used to extract useful products from these cultures. Metabolic processes, energetics, growth kinetics and nutrition of microorganisms. Synthesis of cellular material and end products. Heat exchange, oxygen transfer, pH control, sterilization and design of fermentors. Culture of eukaryotic cell mass. Immobilized enzyme and cell reactors. Product recovery methods of precipitation centrifugation, extraction filtration and chromatography.

3400. Biosystem Analysis

(251) Second semester. Four credits. Prerequisite: BME 3100. This course and ECE 3101 may not be both taken for credit.

A lecture and laboratory 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.

3500. Biomedical Engineering Measurements

(252) First semester. Four credits. Prerequisite: BME 3400; ECE 2001W.

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.

3600W. Biomechanics

(261W) First semester. Four credits. Prerequisite: BME 3100 and CE 2110; ENGL 1010 or 1011 or 3800.

A lecture and laboratory course that covers mechanics of bone and soft tissues. Biosolids and biofluids. Simple and combined stress and strain, torsion and flexure. Tissue strength and constitutive equations. Fatigue and fracture resistance of bone. Synovial joint mechanics, friction and wear.

3700. Biomaterials

(271) Second semester. Four credits. Prerequisite: MSE 2001 or 2101 and BME 3100.

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.

4300. Physiological Control Systems

(253) Semester by arrangement. Three credits. Prerequisite: BME 3400 or ECE 3111.

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.

4500. Bioinstrumentation

(255) Either semester. Three credits. Prerequisite: BME 3500.

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.

4600. Biosolid Mechanics

(262) Either semester. Three credits. Prerequisite: BME 3600W.

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. Advanced Biomaterials

(273) Second semester. Three credits. Prerequisite: BME 3700. Not open to students who have passed BME 272.

Offers opportunity to gain in-depth knowledge of a series of biomaterials for various applications. Topics include calcium phosphates and composites for hard tissue replacement, drug delivery systems, issues unique to the biomedical field, and regulations for new products and standards.

4710. Introduction to Tissue Engineering

(274) Second semester. Three credits. Prerequisite: BME 3700.

Presents basic principles of biological, medical, and material science as applied to implantable medical devices, drug delivery systems and artificial organs.

4800. Bioinformatics

(280) (Also offered as CSE 3800.) Either semester. Three credits. Prerequisite: BIOL 1107, CSE 2500, and either STAT 3025Q or STAT 3345Q.

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.

4900. Biomedical Engineering Design I

(290) Both semesters. Three credits. This course is taken by seniors in the semester before BME 4910.

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.

4910. Biomedical Engineering Design II

(291) Both semesters. Three credits. Prerequisite: BME 4900.

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

(295) Semester, credits and hours by arrangement or as announced. Prerequisite and/or consent: Announced separately for each course. With a change in topic, this course may be repeated for credit.

Classroom and/or laboratory courses in special topics as announced for each semester.

4999. Independent Study

(299) Either semester. Credits and hours by arrangement or as announced. Prerequisite: Consent of instructor. With a change in content, this course may be repeated for credit.

Individual exploration of special topics as arranged by the student with an instructor of his or her choice.

Business Administration (BADM)

1801. Contemporary Issues in the World of Business

(198) Either semester. One credit. May be repeated in different sections for up to three credits maximum. Open to freshmen and sophomores; others with consent of instructor. May not be used to satisfy Junior-Senior level major requirements of the School of Business.

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.

2893. Foreign Study

(193) Either or both semesters. Credits and hours by arrangement. Consent of the Associate Dean is required prior to the student's departure. With a change in content, may be repeated for credit.

Special topics taken in a foreign study program.

3001. Mobile Computing Lab I

(291) Either semester. One credit. Open only to students admitted to the School of Business. Prerequisite: Open to juniors or higher. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

Registering for this course enters the student into the Mobile Computing Program for the School of Business. The student will be provided with a leased notebook computer that is configured for use with the network in the School. To receive credit for the course, the student must attend an orientation session at the beginning of the semester and pass a laboratory practical examination covering prescribed software tasks. Lectures and help sessions will be provided during the semester to prepare students for the examination. Consult the website: <http://www.business.uconn.edu/its> for details about the examination, the computer, and the associated fees and policies.

3002. Mobile Computing Lab II

(292) Either semester. Zero credits. Prerequisite: BADM 3001; open to juniors or higher. May be repeated. May not be used to satisfy Junior-Senior level major requirements of the School of Business.

Registering for this course continues the student's participation in the Mobile Computing Initiative for the School of Business. The student will continue to have access to the leased computer provided in the semester they registered for BADM 3001.

3005. Mobile Computing Lab III

(295) Either semester. Zero credits. Prerequisite: Open to juniors or higher; open only with consent.

Students from outside the School of Business who wish to register for courses within the School must register for this course to participate in the

Mobile Computing Initiative. The student will need to present their notebook computer for certification to the Information Technology Services department at the School and make it compatible with the School's network prior to receiving permission to enroll in this course. Consult the website: <http://www.business.uconn.edu/its> for the current requirements.

3006. Mobile Computing Lab IV

(296) Either semester. Zero credits. Prerequisite: BADM 3005; open to juniors or higher. May be repeated. May not be used to satisfy Junior-Senior level major requirements of the School of Business.

Registering for this course continues the student's participation in the Mobile Computing Initiative for the School of Business. The student will continue to have access to the computer they had certified in the semester they registered for BADM 3005.

3170. Principles of Managerial Accounting

(210) Either semester. Three credits. Prerequisite: ACCT 2001; open to juniors or higher. Not open to students who have passed or are taking ACCT 2101. Will not substitute for ACCT 2101 for students who enter the School of Business. May not be used to satisfy Junior-Senior level major requirements of the School of Business.

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.

3720. Business Law

(220) Either semester. Three credits. Prerequisite: Open to juniors or higher. Not open to students who have passed or are taking BLAW 3175. Will not substitute for BLAW 3175 for students who enter the School of Business. May not be used to satisfy Junior-Senior level major requirements of the School of Business.

The meaning of law and the structure of the American legal system are studied with a view toward the impact of law upon the operation of American business. Key philosophies of ethics and social responsibility are examined through the lens of stakeholder analysis and other analytical tools. Major aspects of government regulation of business such as products liability, securities regulation, worker protection, and intellectual property issues are also explored. Also examines fiduciary duty and tort liability.

3730. Financial Management

(230) Either semester. Three credits. Prerequisite: ACCT 2101 or BADM 3710, which may be taken concurrently; ECON 1200 or both 1201 and 1202; MATH 1070; STAT 1000 or 1100; open to juniors or higher. Not open to students who have passed or are taking FNCE 3101. 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.

An introductory examination of how a business plans its needs for funds, raises the necessary funds, and invests them to attain its goals.

3740. Managerial and Interpersonal Behavior

(240) Either semester. Three credits. Prerequisite: Open to juniors or higher. Not open to students who have passed or are taking MGMT 3101. Will not substitute for MGMT 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.

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.

3741. Risks and Rewards of Entrepreneurship

(241) Semester by arrangement. Three credits. Prerequisite: Open to juniors or higher. Not open to Business majors. Not open to students who have passed or are taking MGMT 3234. May not be used to meet Junior-Senior level major requirements of the School of Business.

Emphasis on gaining an in-depth understanding of the entrepreneurial mindset. Students explore what makes an individual a successful entrepreneur. Examines the risks and rewards of pursuing a new business and a career as an entrepreneur, via case study and invited speakers.

3742. New Venture Management

(242) Semester by arrangement. Three credits. Prerequisite: Open to juniors or higher. Not open to Business majors. Not open to students who have passed or are taking MGMT 3235. May not be used to meet Junior-Senior level major requirements of the School of Business.

Examines the process of getting a new venture started, growing the venture, successfully harvesting it and starting again. Students investigate the special problems of newly formed firms via case study and analysis of successful and unsuccessful business plans. Acquaints students with the unique strategic problems faced by new ventures and prepares them to evaluate new venture plans.

3750. Introduction to Marketing Management

(250) Either semester. Three credits. Prerequisites: ACCT 2001, ECON 1200 or both 1201 and 1202; MATH 1070 or MATH 1071; STAT 1000 or 1100; open to juniors or higher. Not open to students who have passed or are taking MKTG 3101. Will not substitute for MKTG 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.

An introduction to the marketing system, its foundations and institutions. Students are exposed to product, promotion, price, and distribution decision areas, strategic alliances, relationship marketing, and total marketing quality.

3752. Professional Selling

Either semester. Three credits. Prerequisite: MKTG 3101 or BADM 3750; open to juniors or higher. Not open to students who have passed or are taking MKTG 3452. May not be used to satisfy Junior-Senior level major requirements of the School of Business.

Focuses on the tactical and strategic aspects of the professional selling process with particular emphasis upon managing the complex sale. Topics include account entry strategies, effective investigative techniques, objection prevention, the client decision process, negotiation skills, and account development strategies. Learning tools will include: participant interaction, role plays, work groups, and case studies.

3755. Marketing on the Internet

(265) Either semester. Three credits. Prerequisite: MKTG 3101 or BADM 3750; open to juniors or higher. Not open to students who have passed or are taking MKTG 3665. May not be used to satisfy Junior-Senior level major requirements of the School of Business.

Topics include comparisons of business models in physical space and cyberspace and integration of marketing efforts among the world-wide-web, and other means of communications, distribution, and sell-

ing. Relies on the Internet as a teaching tool. Students need access to a computer with an Internet Browser.

3756. Product and Price Policies

(227) Either semester. Three credits. Prerequisites: MATH 1071 or 1122 or 1132; STAT 1000 or 1100; MKTG 3101 or BADM 3750; open to juniors or higher. Not open to students who have passed or are taking MKTG 3627. May not be used to satisfy Junior-Senior level major requirements of the School of Business.

Consideration in depth of the product and price variables as elements of marketing strategy and tactics. Emphasis will be placed on conceptual as well as decision-making aspects. The roles of technology, social change, innovation and creativity are included in the treatment of product. Institutional, behavioral, governmental and economic factors are included in the treatment of price.

3760. Business Information Systems

(260) Either semester. Three credits. Prerequisite: Open to juniors or higher. Not open to students who have passed or are taking OPIM 3103C. Will not substitute for OPIM 3103C for students who enter the School of Business. May not be used to satisfy Junior-Senior level major requirements of the School of Business.

An introduction to the information needs of managers, the structure of the information systems required to fill these needs, systems development, and business computing technology. Also covers selected management applications within the major business functions.

4753. Advanced Professional Sales

(253) Either semester. Three credits. Prerequisite: MKTG 3101 or BADM 3750 and BADM 3752; open to juniors or higher. Not open to students who have passed or are taking MKTG 3453. May not be used to satisfy Junior-Senior level major requirements of the School of Business.

Focuses on three major issues: using current technology to maximize sales efforts' effectiveness and efficiency, introducing the concepts of Customer Relationship Management (CRM) and team selling concepts and practices. As an experiential course, its focus is on using the tools to enhance the selling process and includes such topics as: customer databases, communicating with diverse and widely distributed customers efficiently, using CRM technology, concepts of team selling and expanding on the concepts mastered in Professional Sales I. Learning tools will include: work groups, case studies, and special projects and a team selling role-play.

4754. Sales Management and Leadership

Either semester. Three credits. Prerequisite: MKTG 3101 or BADM 3750 and BADM 3752; open to juniors or higher. Not open to students who have passed or are taking MKTG 3454. May not be used to satisfy Junior-Senior level major requirements of the School of Business.

Focuses on two major areas: the activities and problems of sales force management (with particular emphasis placed on organizing the sales force, recruiting, training, compensation, motivation, forecasting, territory design, evaluation, and control) and the distinction between management and leadership (with emphasis on the common characteristics of well-known leaders and how they developed into leadership roles). Learning tools include: interaction, experiential learning (actual management of a student sales force), work groups, case studies, and special projects and presentations.

4891. Field Study Internship

(289) Either or both semesters. One to six credits. Hours by arrangement. 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. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

Provides students with an opportunity for field work 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.

4893. Foreign Study

(293) Either or both semesters. Credits and hours by arrangement, up to a maximum of six credits. Prerequisite: Open to juniors or higher; consent of the Associate Dean for Undergraduate Programs is required. Open only to students admitted to the School of Business.

Special topics taken in a foreign study program.

4895. Special Topics

(298) Either semester. Credits and hours by arrangement. Prerequisite: Announced separately for each offering; open to juniors or higher; consent of the Associate Dean for Undergraduate Programs is required. Not open to Business majors. 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.

Classroom course in special topics in business administration as announced in advance for each semester.

Business Law (BLAW)

The School of Business requires students at the Storrs campus to participate in the Mobile Computing Initiative before registering for the courses listed below. See the School of Business Catalog section for details about how this program operates. Students not participating in the initiative may be able to register for BLAW 3660.

3175. Legal and Ethical Environment of Business

(275) Either semester. Three credits. This course is required for all School of Business students. Prerequisite: Open to juniors or higher. Not open to students who have passed or are taking BADM 3720.

The meaning of law and the structure of the American legal system are studied with a view toward the impact of law upon the operation of American business. Key philosophies of ethics and social responsibility are examined through the lens of stakeholder analysis and other analytical tools. Major aspects of government regulation of business such as products liability, securities regulation, worker protection, and intellectual property issues are also explored. Also examines fiduciary duty and tort liability.

3274. Real Estate Law

(274) Alternate semesters. Three credits. Prerequisite: BLAW 3175 or BADM 3720; open to juniors or higher.

Examines the legal aspects of real property interests, transactions, and development. A study is made of present and future land interests, non-possessory interests, fixtures, liens, co-ownership of real estate, residential and commercial landlord-tenant relationships, multi-unit real estate interests, real estate brokerage in transfers, transfer and financing methods, transfers after death, zoning, environmental law, and taxation of real estate transactions.

3277. Commercial Law: Legal and Ethical Aspects

(277) Either semester. Three credits. Prerequisite: BLAW 3175; open to juniors or higher. This course is required for all Accounting majors.

Provides a framework of the legal and ethical considerations impacting many basic commercial transactions. Specific topics included are contracts and the Uniform Commercial Code, including sales, secured transactions, and negotiable instruments. Also covered are aspects of agency, partnerships, corporations, limited partnership, limited liability companies and bankruptcy. Open to all business students.

3660. International Business Law

(280) Either semester. Three credits. Prerequisite: BLAW 3175; open to juniors or higher.

Designed to acquaint the student with international business law and with the legal environment of conducting international business. In examining the legal considerations involved in doing business internationally, this course explores the law surrounding international dispute resolution, the international sale of goods, international labor and employment law, international intellectual property law, and other issues. Also explores major treaties and international entities such as the North American Free Trade Agreement, the General Agreement on Tariffs and Trade, the European Union, and related topics.

3671. Fundamentals of Business Law

(271) Either semester. Three credits. Prerequisite: BLAW 3175 or BADM 3720; open to juniors or higher. Not open to students who have passed BLAW 3277.

Explores the fundamentals of business law and examines contracts in depth. Topics to be studied include contract types, formation, legality, performance, interpretation and remedies. Criminal law, consumer protection, e-commerce, cyberlaw, anti-trust and property interests will be covered.

3673. Business Organizations and Governance

(273) Alternate semesters. Three credits. Prerequisite: BLAW 3175 or BADM 3720; open to juniors or higher.

Examines the fundamental concepts of fiduciary duties and the law of agency in the context of the governance of a variety of business organizations (partnerships, corporations, limited liability companies, and joint ventures). In the study of each of these organizations, emphasis is placed on ethics and social responsibility as well as more recent legislative enactments such as the Sarbanes-Oxley Act. In addition, securities regulation and the legal relationships in suretyships and trusts are covered.

4891. Field Study Internship

(289) Either or both semesters. One to six credits. Hours by arrangement. Prerequisite: Open to juniors or higher; completion of freshman-sophomore level School of Business Requirements and consent of instructor and Department Head. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

Designed to provide students with an opportunity for supervised field work relevant to one or more areas in business law. 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.

4893. Foreign Study

(293) Either or both semesters. Credits and hours by arrangement, up to a maximum of six credits. Prerequisite: Open to juniors or higher; consent of Department Head required prior to student's departure.

Special topics taken in a foreign study program.

4895. Special Topics

(298) Either semester. Credits and hours by arrangement. Prerequisite: Announced separately for each offering; open to juniors or higher. With a change in content, may be repeated for credit.

Classroom course in special topics in law as announced in advance for each semester.

4899. Independent Study

(299) Either or both semesters. Credits by arrangement, not to exceed six in any semester. Prerequisite: Open to juniors or higher; instructor consent required.

Individual study of special topics in law as mutually arranged between student and instructor.

Chemical Engineering (CHEG)

Program Director: Associate Professor Richard Parnas

Department Office: Room 204, Engineering II

For major requirements, see the School of Engineering section of this *Catalog*.

Students who do not have the suggested preparation for a course in the Chemical Engineering department are strongly advised to discuss their preparation with the instructor or the department Head before registering for the course.

2103. Introduction to Chemical Engineering

(203) First semester. Three credits. Recommended preparation: CHEM 1128 or CHEM 1125 and 1126; MATH 1122 or MATH 1132 or CSE 1100C.

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

(211) Either semester. Three credits. Three class periods and one discussion period. Recommended preparation: MATH 2110, CHEM 1128, and CHEG 2103, or consent of Chemical Engineering Program Director. CHEG 2111 and ME 2233 may not both be taken for credit.

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.

3112. Chemical Engineering Thermodynamics II

(214) (Formerly offered as CHEG 212.) Either semester. Four credits. Three class periods and one discussion period. Prerequisite: MATH 2410, CHEG 2111, or consent of Chemical Engineering Program Director.

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.

3123. Transfer Operations I

(223) Either semester. Three credits. Three class periods and one discussion period. Recommended preparation: MATH 2110 and 2410, CHEM 1128, and CHEG 2103, or consent of Chemical Engineering Program Director.

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.

3124. Transfer Operations II

(226) (Formerly offered as CHEG 3124.) Either semester. Four credits. Three class periods and one discussion period. Prerequisite: MATH 2410, CHEG 3123, or consent of Chemical Engineering Program Director.

Radiation heat transfer, design of heat exchange equipment; 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.

3145. Chemical Engineering Analysis

(245) First semester. Three credits. Recommended preparation: CHEG 2103 and MATH 2110 and 2410.

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

(251) Second semester. Recommended preparation: CHEG 3112.

Theory of chemical rate; homogenous, heterogenous 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

(256) Either semester. Three credits. Recommended preparation: CHEM 2444. Not open for credit 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.

3161. Introduction to Nuclear Engineering

(261) First semester. Three credits. Recommended preparation: CHEG 2111 and 3123.

Nuclear physics, reactor kinetics, and the nuclear fuel cycle; classification and analysis of nuclear power reactors; environmental effects of nuclear power; analysis of severe nuclear accidents.

3173. Introduction to Biochemical Engineering

(273) (Formerly offered as CHEG 283.) (Also offered as BME 3301 and ENVE 3250.) First semester. Three credits. Recommended preparation: CHEG 3151.

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.

3174. Bioremediation

(274) Either semester. Three credits. Recommended preparation: CHEG 3151 and 3173.

Application of engineering and biological principles toward remediation of hazardous waste; degradation of toxic chemicals using genetically-engineered microorganisms; and biological contacting devices for waste remediation.

3230. Introduction to Air Pollution

(285) (Also offered as ENVE 3230.) Second semester. Three credits. Recommended preparation: CHEG 2111 or ME 2233 or ME 238.

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.

3260. Introduction to Environmental Rate Processes

(280) (Also offered as ENVE 3260.) First semester. Three credits. Recommended preparation: CHEM 1128.

Application of thermodynamics, chemical kinetics and transfer operations to environmental problems; water pollution control. Open only to students not majoring in chemical engineering.

4137W. Chemical Engineering Laboratory

(237W) First semester. Three credits. Two 1-hour discussion periods. Two 3-hour laboratories. Prerequisite: CHEG 3112, 3123, and 3124; ENGL 1010 or 1011 or 3800

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.

4139W. Chemical Engineering Laboratory

(239W) Second semester. Three credits. Two 1-hour discussion periods. Two 3-hour laboratories. Prerequisite: CHEG 3112, 3123, and 3124; ENGL 1010 or 1011 or 3800. Recommended preparation: CHEG 3151, 4137W, 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.

4141. Process Design and Economics

(241) First semester. Three credits. Recommended preparation: CHEG 3112, 3124, and 3151. May not be substituted for CHEG 4143.

Chemical engineering process synthesis and design; comparison of alternative processing steps; instrumentation; cost estimation; economic analysis; process optimization; emphasis on conceptual design in application of chemical engineering principles.

4143. Process Design and Economics

(243) Second semester. Four credits. Prerequisite: CHEG 3112, 3123, 3124, and 3151.

Chemical engineering process synthesis and design; comparison of alternative processing steps; instrumentation; cost estimation; economic analysis; process optimization; emphasis on conceptual design in application of chemical engineering principles; design of process equipment, computer-aided design of equipment and flow sheets; design and analysis of complete process plants.

4147. Introduction to Process Dynamics and Control

(247) First semester. Three credits. Recommended preparation: CHEG 3112 and 3124 and MATH 2110 and 2410.

Chemical process modeling, dynamics, and analysis; measurement and control of process variables; design, and computer simulation of simple processes and control systems.

4162. Engineering Entrepreneurship

(262) Either semester. Three credits.

Students assume the role of engineer as entrepreneur and develop a business plan to launch a new technology as a business; course includes topics on intellectual property, venture capital, market analysis, advertising, incorporation, contracts and web development.

4175. Fermentation and Separation Laboratory

(275) Either semester. Three credits. Recommended preparation: Course work in biochemistry or microbiology.

Introduction to industrial mass culture of prokaryotic and eukaryotic cells and methods used to extract useful products from these cultures. Metabolic processes, energetics, growth kinetics and nutrition of microorganisms. Heat exchange, oxygen transfer, pH control, sterilization, design of fermenters and product recovery.

4989. Introduction to Research

(299) Either semester. Credits and hours by arrangement or as announced. Prerequisite: Consent of instructor. This course 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

(295) Semester. credits and hours by arrangement or as announced. Prerequisite and/or consent: Announced separately for each course. This course, with a change in topic, may be repeated for credit.

A classroom course on special topics as announced.

Chemistry (CHEM)

Head of Department: Professor Steven Suib
Department Office: Room A100, Chemistry Building

For major requirements, see the College of Liberal Arts and Sciences section of this *Catalog*.

1101. Chemistry for an Informed Electorate

(101) Either semester. Three credits. Three class periods. Not open to students who have passed CHEM 1122, 1124, 1127, 1137, or 1147. *Knox*

Basic concepts and applications of chemistry. Contributions of chemistry to our everyday lives. Chemical issues and problems in our society. Designed for students in fields outside of science. Assumes no prior knowledge of chemistry. CA 3.

1122. Chemical Principles and Applications

(122) Either semester. Four credits. Three class periods and one 1-hour discussion and one 2-hour laboratory per week. Not open for credit to students who have passed CHEM 1124, 1127 or 1137 or 1147.

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. A fee of \$10 is charged for this course. CA 3-LAB.

1124Q. Fundamentals of General Chemistry I

(124Q) Either semester. Four credits. Three class periods and one 3-hour laboratory period. Not open to students who have passed CHEM 1127Q, 1137Q, or 1147Q. Recommended preparation: MATH 1010, 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. A fee of \$10 is charged for this course. CA 3-LAB

1125Q. Fundamentals of General Chemistry II

(125Q) Either semester. Three credits. Prerequisite: CHEM 1124Q. Two class periods and one 3-hour laboratory period. Open by consent of instructor for only 1 credit to students who have passed CHEM 1127Q, 1137Q, or 1147Q. Not open to students who have passed CHEM 1128Q, 1138Q, or 1148Q.

Follows CHEM 1124Q. Topics include the properties of aqueous solutions and chemical equilibria. A fee of \$10 is charged for this course.

1126Q. Fundamentals of General Chemistry III

(126Q) Either semester. Three credits. Prerequisite: CHEM 1125Q. Two class periods and one 3-hour laboratory period. Not open to students who have passed CHEM 1128Q, 1138Q, or 1148Q.

Follows CHEM 1125Q. Topics include the properties of kinetics, complex ions, thermodynamics and electrochemistry. A fee of \$10 is charged for this course.

1127Q-1128Q. General Chemistry

(127Q-128Q) Either semester. Four credits. Three class periods and one 3-hour laboratory period. Students who have passed CHEM 1122 will receive only 2 credits for CHEM 1127 but 4 credits will be used for calculating the GPA. CHEM 1127 is not open for credit to students who have passed CHEM 1124 or 1137 or 1147; CHEM 1128 is not open to students who have passed CHEM 1126 or 1138 or 1148. Recommended preparation for CHEM 1127Q; MATH 1010 or equivalent.

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. Properties of some of the more familiar elements and their compounds. Quantitative measurements illustrating the laws of chemical combination in the first semester lab. Equilibrium in solutions and qualitative reactions of the common cations and anions in the second semester lab. A fee of \$10 is charged for this course each semester. CA 3-LAB.

1137Q-1138Q. Enhanced General Chemistry

(137Q-138Q) Both semesters. Four credits each semester. Three class periods and one 3-hour laboratory period. Prerequisite: One year of high school chemistry. Prerequisite or corequisite: MATH 1120 or 1131; or consent of instructor. Primarily for majors in chemistry and related disciplines. This course can be used as an alternate wherever CHEM 1127Q-1128Q is listed as a prerequisite. Not open for credit to students who have passed CHEM 1147Q-1148Q. Recommended preparation for CHEM 1137Q; MATH 1010 or equivalent.

Atoms, molecules, ions, chemical bonding. Gases, liquids, solids, solutions, equilibrium, thermodynamics, nuclear chemistry, kinetics and organic chemistry. May include modern materials, environmental chemistry, metallurgy, and biochemistry. A fee of \$10 is charged for this course each semester. CA 3-LAB.

1147Q-1148Q. Honors General Chemistry

(129Q-130Q) (Honors Course.) Both semesters. Four credits each semester. Three class periods and one 3-hour laboratory period. Prerequisite: Strong background in high school chemistry and physics. Prerequisite or corequisite: MATH 1120 or 1131; consent of instructor. Designed primarily for exceptionally well-prepared science and engineering students, although any qualified honors student may take it. This course can be used as an alternate wherever CHEM 1127Q-1128Q is listed as a prerequisite. Not open for credit to students who have passed CHEM 1124Q-1125Q-1126Q or 1137Q-1138Q. Recommended preparation for CHEM 1147Q; MATH 1010 or equivalent.

Atomic and molecular theory and the properties of gases, liquids, solids, and solutions. Topics which may be covered in depth are the nature of the chemical bond, chemical equilibria, thermodynamics, electrochemistry and nuclear chemistry. The laboratory work is primarily quantitative in nature. Considerable personal initiative will be demanded of students in carrying out laboratory assignments. A fee of \$10 is charged for this course each semester. CA 3-LAB.

1189. Introduction to Chemical Research

(155) Either semester. Credits, not to exceed 3 and hours by arrangement; three laboratory hours for each credit. Prerequisite: CHEM 1127 or 1137 or 1147 and instructor consent.

Internship in research laboratories.

1194. The Science of Chemistry

(195) Second semester. One credit. One 1-hour class period.

Readings, lectures, films and field trips exploring the field of chemistry and its scientific and social implications.

2241. Organic Chemistry

(141) First semester. Three credits. Prerequisite: CHEM 1122 or 1124 or 1127 or 1137 or 1147. Not open for credit to students who have passed 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

(142) First semester. One credit. One 4-hour laboratory period including discussion. Prerequisite or corequisite: CHEM 2241. Not open to students who have passed CHEM 2443.

A fee of \$20 is charged for this course.

2443. Organic Chemistry

(243) Either semester. Three credits. (Two credits for students who have passed CHEM 2241.) Prerequisite: CHEM 1128Q or 1138Q or 1148Q. Corequisite: CHEM 1126Q.

Structure and reactions of the simpler classes of the compounds of carbon.

2444. Organic Chemistry

(244) Either semester. Three credits. Prerequisite: CHEM 2443.

A continuation of CHEM 2443.

2445. Organic Chemistry Laboratory

(245) Either semester. Three credits. (Students who have passed CHEM 2446 will receive only 2 credits for CHEM 2445. Students who have passed CHEM 2242 will receive only 2 credits for CHEM 2445, but 3 credits will be used for calculating GPA scores.) Two 3-hour laboratory periods and one 1-hour discussion period. Prerequisite or corequisite: CHEM 2444.

A fee of \$20 is charged for this course.

2446. Organic Chemistry Laboratory

(240) Either semester. One credit. One 4-hour laboratory period. Not open for credit to students who have passed CHEM 2445. Prerequisite: CHEM 2443. This course is open only to Chemical Engineering or Biomedical Engineering majors or by consent of instructor.

Introduction to techniques, manipulations, calculations and spectroscopy. A fee of \$20 is charged for this course.

3170W. Technical Communications

(270W) First or second semester. Three credits. Prerequisite: CHEM 2443; ENGL 1010 or 1011 or 3800.

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

(296) Either or both semesters. Credits, not to exceed 3 each semester, and hours by arrangement (three laboratory hours for each credit). Open only with consent of instructor.

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

(293) Either or both semesters. Credits and hours by arrangement up to a maximum of six credits. May be repeated for credit. Consent of Department head required prior to student's departure. May count toward the major with consent of the Department Head.

3194. Undergraduate Seminar

(295) First semester. One credit. Open only to chemistry majors or by consent of instructor. With a change of subject, this course may be repeated once for credit. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

Discussion of topics relevant to further study and work in the field of chemistry.

3195. Special Topics

(298) Either semester. Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary.

3198. Variable Topics

(291) Either semester. Three credits. With a change in topic, may be repeated for credit. Prerequisites, required preparation, and recommended preparation vary.

3199. Independent Study

(299) Either or both semesters. Credits, not to exceed 3 per semester, and hours by arrangement. Open only with consent of instructor. With a change of subject, this course may be repeated for credit.

3210. Descriptive Inorganic Chemistry

(210) First semester. Two credits. Two class periods. Prerequisite: CHEM 1126 or 1128 or 1138 or 1148.

Introduction to bonding, structure, spectroscopy, physical properties, and reactivity of inorganic compounds.

3214. Intermediate Inorganic Chemistry

(214) Second semester. 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

(215) Second semester. Three credits. One class period and two 3-hour laboratory periods. Prerequisite or corequisite: CHEM 3214.

The preparation, isolation, purification, and characterization of inorganic compounds; special techniques and instrumentation may be required. A fee of \$20 is charged for this course.

3216. Selected Topics in Inorganic Chemistry

(216) Second semester. Three credits. Prerequisite: CHEM 3214.

A systematic study in special topics format of the theory, bonding, and structure of the transition metals and their compounds. The correlation of structure and

electronic states with physical properties will be developed.

3332. Quantitative Analytical Chemistry

(232) Second semester. Four credits. Two class periods and two 3-hour laboratory periods. Prerequisite: CHEM 1126 or 1128 or 1138 or 1148. Recommended preparation: CHEM 3563.

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. A fee of \$20 is charged for this course.

3334. Instrumental Analysis I

(234) First semester. Four credits. Two class periods and two 3-hour laboratory periods. 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. A fee of \$20 is charged for this course.

3335. Instrumental Analysis II

(235) Second semester. Four credits. Three class periods and one 3-hour laboratory period. Prerequisite: CHEM 3334.

Analytical aspects of electron, X-ray, vibrational, and other spectroscopic methods. Analysis of surfaces. Advanced topics in data analysis and modern analytical methodology. A fee of \$20 is charged for this course.

3442W. Advanced Organic Chemistry Laboratory

(242W) Either semester. Three credits. One class period and two 3-hour laboratory periods. Prerequisite: CHEM 2445; ENGL 1010 or 1011 or 3800.

Advanced techniques and fundamentals of organic synthesis and identification. A fee of \$20 is charged for this course.

3563-3564. Physical Chemistry

(263-264) Both semesters. Four credits each semester. Prerequisite: CHEM 1126 or 1128 or 1138 or 1148; PHYS 1230, or 1402, or 1502, or 1602; MATH 2110 or 2130 for CHEM 3563; and MATH 2410 or 2420 for CHEM 3564.

A study of gases, liquids, solids, solutions, and thermodynamics in CHEM 3563 and kinetics, atomic and molecular theory and spectroscopy in CHEM 3564.

3565WC. Physical Chemistry Laboratory

(265WC) Either semester. Two credits. Two 3-hour laboratory periods. Prerequisite: CHEM 3564, may be taken concurrently; ENGL 1010 or 1011 or 3800.

A fee of \$20 is charged for this course.

3566. Physical Chemistry Laboratory

(256) First semester. One credit. One 3-hour laboratory period. Prerequisite or corequisite: CHEM 3563. Not open for credit to students who have passed CHEM 3565. This laboratory course is for students majoring in chemical engineering and cannot be counted toward the chemistry major group.

Laboratory experiments in thermodynamics, kinetics and spectroscopy. A fee of \$20 is charged for this course.

3661. Polymeric Materials

(280) Second semester. Three credits. Prerequisite: CHEM 2444. Not open for credit to students who have passed CHEM 3156.

Structure, properties and chemistry of high polymers. Methods of production and applications.

4196W. Thesis for Undergraduate Chemistry Majors

(297W) Either semester. Three credits. Hours by arrangement. Prerequisite: A minimum of three credits in CHEM 3189 or 3199; ENGL 1010 or 1011 or 3800. Open only with consent of instructor.

A formal thesis is required, based on original investigation carried on by the student.

4551. Introduction to Quantum Chemistry

(251) First semester. Three credits. Prerequisite: CHEM 3564.

An introduction to quantum theory and its applications to atomic and molecular structure and spectroscopy.

Chinese (CHIN)

Head of Department: Associate Professor Norma Bouchard

Department Office: Room 228, J.H. Arjona Building

1101-1102. Elementary Levels I and II (101-102)

1103-1104. Intermediate Levels I and II (103-104)

1111. Elementary Chinese I

(111) First semester. Four credits each semester. Four class periods and additional laboratory practice. Not open for credit to students who have had three or more years of Chinese in high school.

Development of ability to communicate in Chinese, orally and in writing.

1112. Elementary Chinese II

(112) Second semester. Four credits each semester. Four class periods and additional laboratory practice. Not open for credit to students who have had three or more years of Chinese in high school. Prerequisite: CHIN 1111.

Development of ability to communicate in Chinese, orally and in writing.

1113. Intermediate Chinese I

(113) First semester. Four credits each semester. Four class periods and additional laboratory practice. Prerequisite: CHIN 1112.

Development of ability to communicate in Chinese, orally and in writing.

1114. Intermediate Chinese II

(114) Second semester. Four credits each semester. Four class periods and additional laboratory practice. Prerequisite: CHIN 1113.

Development of ability to communicate in Chinese, orally and in writing.

1121. Traditional Chinese Culture

(121) Either semester. Three credits. Taught in English.

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. CA 1. CA 4-INT.

1122. Modern Chinese Culture

(122) Either semester. Three credits. Taught in English.

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. CA 1. CA 4-INT.

3293. Foreign Study

(293) Either or both semesters. Credits and hours by arrangement. 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 the advisor.

Special topics taken in a foreign study program.

3295. Special Topics

(298) Either semester. Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary.

3299. Independent Study

(299) Either or both semesters. Credits and hours by arrangement. Open only with consent of instructor. With a change in content, may be repeated for credit.

Civil & Environmental Engineering (CE)

Head of Department: Professor Michael Accorsi

Associate Head of Department: Associate Professor John N. Ivan

Department Office: Room 302, F.L. Castleman Bldg.

For major requirements, see the School of Engineering section of this *Catalog*.

Courses in Applied Mechanics are listed as CE 2110, 2120, 3110, and 3120.

2010. Civil and Environmental Engineering Professional Issues Seminar

(291) Either semester. No credits. One 1-hour period. May be repeated. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

Issues in the practice of Civil & Environmental Engineering: professional ethics, law/contracts, insurance/liability, global/societal issues (e.g., sustainable development, product life cycle), construction management and professional development.

2110. Applied Mechanics I

(211) Either semester. Three credits. Prerequisite or corequisite: MATH 2110 or MATH 2130. *Accorsi, Demars, DeWolf, Frantz, Kim, Malla, Smith*

Fundamentals of statics using vector methods. Resolution and composition of forces; equilibrium of force systems; analysis of forces acting on structures and machines; centroids; moment of inertia.

2120. Applied Mechanics II

(212) Either semester. Three credits. Prerequisite: CE 2110 and MATH 2110 or MATH 2130. *Epstein, Kim, Malla*

Fundamentals of dynamics using vector methods. Rectilinear and curvilinear motion, translation, rotation, plane motion; work, energy and power; impulse and momentum.

2201. Decision Analysis in Civil and Environmental Engineering

(201) (Also offered as ENVE 2330.) First semester. Three credits. Prerequisite: MATH 1122 or 1132. May not be taken for credit if the student has taken CE 2251, 281, or ENVE 2251. *Anagnostou, Ivan*

Time value of money. Evaluation of alternative projects. Fundamentals of probability theory and statistics. Introduction to critical path method for project scheduling and optimization using linear mathematical models.

2251. Probability and Statistics in Civil Engineering

(251) (Also offered as ENVE 2251.) First semester. Three credits. Recommended preparation: MATH 1121Q or 1131Q/1131QC. This course and CE 2210 or ENVE 2330 may not both be taken for credit. *Anagnostou, Aultman-Hall, Garrick, Ivan*

Application of statistical principles to the analysis of civil engineering problems. Topics include probability, random variable distributions, hypothesis testing, and linear regression analysis.

2310. Environmental Engineering Fundamentals (263) (Also offered as ENVE 2310.) First semester. Three credits. Prerequisite: CHEM 1128 or 1148. *MacKay*

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. Geomatics and Spatial Measurement

(271) First semester. Four credits. Three lecture periods and one 3-hour laboratory. Recommended preparation: MATH 1060 or 1120 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 photogrammetry and land-surface remote sensing in the context of civil and environmental engineering.

2710. Transportation Engineering

(254) Second semester. Three credits. Prerequisite: CE 2410. Recommended preparation: CE 2120. *Aultman-Hall, Garrick, Ivan*

Design of transportation facilities. Traffic flow and capacity analysis. Travel demand analysis.

3110. Mechanics of Materials

(287) Either semester. Three credits. Prerequisite: CE 2110. *Accorsi, Davis, DeWolf, Epstein, Kim, Malla, Smith*

Simple and combined stress, torsion, flexure and deflection of beams, continuous and restrained beams, combined axial and bending loads, columns.

3120. Fluid Mechanics

(297) Either semester. Three credits. Prerequisite or corequisite: CE 2120; and prerequisite: (MATH 2110 or MATH 2130) and MATH 2410. This course and ME 3250 may not both be taken for credit. *Anagnostou, Ogden*

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.

3300. Environmental Engineering Laboratory

(262) (Formerly offered as CE 264.) (Also offered as ENVE 3200.) Second semester. Three credits. Two class periods and one 3-hour laboratory period. Prerequisite: CE 2310; and prerequisite or corequisite: CE 3120 or CHEG 3123. *Abboud, Holmen*

Aqueous analytical chemical techniques, absorption, coagulation/flocculation, fluidization, gas stripping, biokinetics, interpretation of analytical results, bench-scale design projects, written and oral reports.

3320. Water Quality Engineering

(260) (Also offered as ENVE 3220.) Second semester. Three credits. Prerequisite: CE 2310 and (CE 3120 or CHEG 3123). *Abboud*

Physical, chemical, and biological principles for the treatment of aqueous phase contaminants; reactor dynamics and kinetics. Design projects.

3510. Soil Mechanics and Foundations

(240) First semester. Four credits. Three class periods and one 3-hour laboratory period. Prerequisite or corequisite: CE 3110 and CE 3120. *Demars*

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

(222) Second semester. Three credits. Two lectures. One 3-hour laboratory. Prerequisite or corequisite: CE 3110. *Accorsi, Davis, Frantz, Smith*

Engineering properties of steel, Portland cement concrete, bituminous cement concrete, and timber; laboratory measurement of properties; interpretation of results. Written reports.

3610. Basic Structural Analysis

(234) Second semester. Three credits. Prerequisite: CE 3110. *Accorsi, DeWolf, Epstein, Frantz, Malla*

Analysis of statically determinate structures; influence lines; deflection of trusses, beams, and frames; introduction to indeterminate analysis using consistent deformation and moment distribution; computer programming.

3620. Basic Structural Design

(236) Second semester. Four credits. Three class periods and one 3-hour Laboratory. Prerequisite: CE 3110. *DeWolf, Epstein, Frantz, Malla, Smith*

Loads; design of principal components – beams, columns and simple connections – of steel and reinforced concrete structures. Design projects.

3995. Special Topics in Civil Engineering

(294) Semester, credits, and hours by arrangement as announced. Prerequisite and/or consent: Announced separately for each course. Course may be repeated for credit.

Classroom or laboratory courses as announced for each semester. For independent study see Civil Engineering 4999.

4210. Operations Research in Civil and Environmental Engineering

(202) Second semester. Three credits. Prerequisite: CE 2210. This course and CE 256 may not both be taken for credit.

Critical path method for scheduling and managing engineering project tasks. Resource allocation subject to constraints. One and two-phase simplex method for linear programming. Optimization of non-linear problems.

4310. Environmental Modeling

(279) (Also offered as ENVE 4310.) Second semester. Three credits. Prerequisite: CE 2310 and (CHEG 3123 or CE 3120).

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.

4410. Computer Aided Site Design

(276) Second semester. Three credits. Two lecture periods and one two-hour laboratory period. Prerequisite: CE 2410 and CE 2710.

Roadway and street network design and site development using computer software, including grading and earthwork, runoff and drainage structures.

4510. Foundation Design

(241) First semester. Three credits. Prerequisite: CE 3510 and 3620. *Demars*

Application of soil properties to design of foundations, retaining structures, excavation drainage, shallow footings, deep foundations, specifications, subsurface exploration.

4520. Soils Engineering

(242) Second semester. Three credits. Prerequisite: CE 3510.

Earth structures, slope stability, consolidation and settlement of soil, vertical drains, surcharging, pressures on buried pipes, and tunnels, numerical solutions.

4610. Advanced Structural Analysis

(237) First semester. Three credits. Prerequisite: CE 3610. *DeWolf, Epstein, Malla*

Approximate analysis techniques, analysis of indeterminate elastic structures using classical and matrix methods of analysis. Computer programming.

4620. Reinforced Concrete Structures Design

(238) First semester. Three credits. Prerequisite: CE 3610 and 3620. *DeWolf, Epstein, Frantz*

Design for flexure, shear, torsion, and axial loads; two-way slabs; serviceability considerations. Applications to buildings.

4630. Steel Structures Design

(239) Second semester. Three credits. Prerequisite: CE 3610 and 3620. *DeWolf, Frantz*

Beam columns, composite members, plate girders, connections; introduction to plastic design. Applications to buildings. Written reports.

4710. Case Studies in Transportation Engineering

(255) (Also offered as CE 5710.) First semester. Three credits. Prerequisite: CE 2710. *Garrick, Ivan*

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.

4800. Hydraulic Engineering Laboratory

(266) (Also offered as ENVE 4800.) Second semester. Two credits. One class period. One 2-hour Laboratory. Prerequisite CE 3120.

Tests of the flow of water in pipes and open channels. Theory and calibration of flow measurement devices. Generation of flow measurement devices. Study of velocity profiles. Generation of pump performance curves. Physical hydraulic modeling and similtude.

4810. Engineering Hydrology

(267) (Also offered as ENVE 4810.) First semester. Three credits. Prerequisite: CE 3120 or (CHEG 3123 and 3124). *Anagnostou, Ogden*

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

(265) (Also offered as ENVE 4820.) Second semester. Three credits. Prerequisite: CE 3120 or (CHEG 3123 and 3124). *Anagnostou, Ogden*

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.

4910W. Civil Engineering Projects

(280W) Either semester. Three credits. Two 3-hour laboratory periods. Prerequisite: Departmental consent required; ENGL 1010 or 1011 or 3800. This course can be taken no sooner than the semester in which the student completes the Professional Requirements for the B.S. degree.

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.

4999. Independent Study for Undergraduates

(299) Either or both semesters by arrangement. Credits by arrangement, not to exceed 4 per semester. Open only with consent of supervising instructor. Course may be repeated for credit.

Designed for students who wish to extend their knowledge in some specialized area of civil engineering.

Classics and Ancient Mediterranean Studies (CAMS)

Head of Department: Associate Professor Norma Bouchard

Department Office: Room 228, J.H. Arjona Building
Consult the Modern and Classical Languages Department section of this *Catalog* for requirements for Majors in Classics and Ancient Mediterranean Studies.

1101. Greek Civilization

(101) (Formerly offered as CLAS 101.) First semester. Three credits. A knowledge of Greek is not required. *Travis*

A survey of classical Greece, with emphasis on literature, thought, and influence on contemporary culture. CA 1.

1102. Roman Civilization

(102) (Formerly offered as CLAS 102.) Second semester. Three credits. A knowledge of Latin is not required. *Johnson*

A survey of classical Rome, with emphasis on literature, thought, and influence on contemporary culture. CA 1.

1103. Classical Mythology

(103) (Formerly offered as CLAS 103.) Either semester. Three credits. A knowledge of Greek or Latin is not required. *Travis*

Origin, nature, and function of myth in the literature and art of Greece and Rome and the reinterpretation of classical myth in modern art forms. CA 1.

1105. Greek and Latin in Bioscientific Terminology

(105) (Formerly offered as CLAS 105.) Either semester. Three credits. A knowledge of Greek or Latin is not required.

The Greek and Latin elements most used in the technical vocabulary of the biological and health sciences, with practice in the analysis of representative terms.

1121-1122. Elementary Latin I and II

(121-122) (Formerly offered as CLAS 121-122.) Both semesters. Four credits each semester. Four class periods. Not open for credit to students who have had three or more years of Latin in high school, except with Departmental consent.

A study of the essentials of Latin grammar designed to prepare the student to read simple classical Latin prose.

1123-1124. Intermediate Latin I and II

(123-124) (Formerly offered as CLAS 123-124.) Both semesters. Three credits each semester. Prerequisite: CAMS 1122 or two years of Latin in high school.

Review of the essentials of grammar. Reading of classical Latin prose and poetry with emphasis on Cicero and Ovid or Vergil.

1171-1172. Elementary Greek I and II

(171-172) (Formerly offered as CLAS 171-172.) Both semesters. Four credits each semester. Four class periods. Not open for credit to students who have had three or more years of Greek in high school, except with Departmental consent.

Intensive introduction to ancient Greek. First semester: basic morphology, syntax, and vocabulary through simple readings from the *New Testament*; second semester: transition to classical Greek through

selections from Xenophon, reading of Plato's *Apology* complete.

1193. Foreign Study

(193) (Formerly offered as CLAS 193.) Either or both semesters. Credits and hours by arrangement. May be repeated for credit. Consent of Department Head required, normally before the student's departure.

Special topics taken in a foreign study program.

3101. Topics in Advanced Greek

(281) Either semester. Credits and hours by arrangement. Prerequisite: CAMS 1172. With a change in content, may be repeated for credit.

Reading of Ancient Greek texts in the original.

3102. Topics in Advanced Latin

(282) Either semester. Credits and hours by arrangement. Prerequisite: CAMS 1124 or three or more years of Latin in high school. With a change in content, may be repeated for credit.

Reading of Latin texts in the original.

3207. Greek Philosophical Writings

(207) (Formerly offered as CLAS 207.) Either semester, alternate years. Three credits.

Selections from Plato and Aristotle.

3211. Greek Drama

(211) (Formerly offered as CLAS 211.) Either semester, alternate years. Three credits.

Selected plays of Aeschylus, Sophocles, Euripides, and Aristophanes.

3212. Greek Historical Writings

(212) (Formerly offered as CLAS 212.) Either semester, alternate years. Three credits.

Selections from Herodotus and Thucydides.

3213. Ovid and Mythology

(213) (Formerly offered as CLAS 213.) Either semester, alternate years. Three credits.

Selections from Ovid, mainly from the *Metamorphoses*, and a study of the myths of Greece and Rome.

3214. Greek Lyric Poetry

(214) (Formerly offered as CLAS 214.) Either semester, alternate years. Three credits.

Selections from the early Greek lyric, elegiac, and iambic poets, including but not limited to Archilochus, Mimnermus, Solon, Sappho, Alcaeus, Anacreon, Xenophanes, Theognis, and Simonides.

3221. Survey of Classical Latin Literature

(221) (Formerly offered as CLAS 221.) Either semester, alternate years. Three credits.

Extensive reading of a relatively wide range of authors of representative classical Latin prose and poetry.

3224. Vergil and the Roman Epic

(224) (Formerly offered as CLAS 224.) Either semester, alternate years. 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

(225) (Formerly offered as CLAS 225.) Either semester, alternate years. Three credits.

Selected plays of Plautus, Terence, and Seneca, with lectures on Roman theatre and the development of drama.

3226. Latin Lyric Poetry

(226) (Formerly offered as CLAS 226.) Either semester, alternate years. 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

(227) (Formerly offered as CLAS 227.) Either semester, alternate years. Three credits.

Selections from Sallust, Livy, and Tacitus.

3232. Medieval Latin

(232) (Formerly offered as CLAS 232.) Either semester, alternate years. Three credits. Prerequisite: CAMS 1124, or three or more years of Latin in high school. Taught in Latin.

Reading of texts from a number of periods and in a variety of styles, with consideration of morphological, syntactical, and semantic developments.

3241W. Greek and Roman Epic

(241W) (Formerly offered as CLAS 241W.) Either semester, alternate years. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800. Recommended preparation: CAMS 1101 or 1102 or 1103. A knowledge of Greek or Latin 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.

3242W. Greek and Roman Drama

(242W) (Formerly offered as CLAS 242W.) Either semester, alternate years. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800. Recommended preparation: CAMS 1101 or 1102 or 1103. A knowledge of Greek or Latin 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.

3243. World of Late Antiquity

(243) (Also offered as HIST 3340.) (Formerly offered as CLAS 243.) Either semester. Three credits. Prerequisite: Open to juniors or higher.

The profound social and cultural changes that redefined the cities, the frontiers, and the economies of the classical world and led to the Middle Ages. Developments in the eastern and western Mediterranean lands between the second and seventh centuries, including: Neo-Platonism, the spread of Christianity, Rabbinic Judaism, and Islam.

3244. Ancient Fictions

(244) (Formerly offered as CLAS 244.) Either semester. Three credits. A knowledge of Greek and Latin is not required. *Johnson*

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.

3245. The Ancient World in Cinema

(245) Either semester. Three credits.

Representations of the ancient Mediterranean world in contemporary cinema.

3250. The Early Church and Christian Thought

(250) (Also offered as HIST 3335.) Either semester. Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: HIST 3325 or CAMS 3255. *Caner*

A critical approach to the evolution of Christian thought, social organization and institutions ca. 50-450 C.E. Topics include gnosticism, apostolic succession, heresy, orthodoxy.

3251. Greek Art

(251) (Also offered as ARTH 3140.) (Formerly offered as CLAS 251.) Either semester, alternate years. Three credits. Prerequisite: Open to juniors or higher.

Greek art and architecture from the ninth century B.C. to the first-century A.D.

3252. Roman Art

(252) (Also offered as ARTH 3150.) (Formerly offered as CLAS 252.) Either semester, alternate years. Three credits. Prerequisite: Open to juniors or higher.

History of Roman art and architecture.

3253. Ancient Near East

(253) (Also offered as HIST 3301.) (Formerly offered as CLAS 253.) Either semester. Three credits. Prerequisite: Open to juniors or higher. *Miller*

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.

3254. Ancient Greece

(254) (Also offered as HIST 3320.) (Formerly offered as CLAS 254.) Either semester. Three credits. Prerequisite: Open to juniors or higher.

The history of Greece from Minoan and Mycenaean times into the Hellenistic period with special emphasis on the Fifth Century and the *Golden Age* of Athens.

3255. Ancient Rome

(255) (Also offered as HIST 3325.) (Formerly offered as CLAS 255.) Either semester. Three credits. Prerequisite: Open to juniors or higher.

From the beginning of Rome to the reign of Justinian. The growth of the Roman Republic and Empire. Roman civilization and its influence upon later history.

3256. Palestine under the Greeks and Romans

(256) (Formerly offered as CLAS 256.) (Also offered as HEB 3218, HIST 3330, and JUDS 3218.) Either semester. Three credits. Prerequisite: CAMS 1101 or 1102 or CAMS 3253/HIST 3301 or HIST 3320 or 3325 or INTD 3260 or HEB 1103 or JUDS 3202 or instructor consent; open to juniors or higher. Taught in English. May not be used to meet the foreign language requirement. *Miller*

The political, historical and religious currents in Greco-Roman Palestine. Includes the Jewish Revolts, sectarian developments, the rise of Christianity and the Talmudic academics.

3257. Ancient Philosophy

(257) (Also offered as PHIL 2221.) Either semester. Three credits. Prerequisite: At least one of PHIL 1101, 1102, 1103, 1104, 1105, 1106, 1107.

Greek philosophy from its origin in the Pre-Socratics through its influence on early Christianity. Readings from the works of Plato and Aristotle.

3293. Foreign Study

(293) (Formerly offered as CLAS 293.) Either or both semesters. Credits and hours by arrangement. May be repeated for credit. Consent of Department Head required, normally granted prior to the student's departure. May count toward the major with consent of the advisor.

Special topics taken in a foreign study program.

3295. Special Topics

(298) (Formerly offered as CLAS 298.) Either semester. Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary.

3298. Variable Topics

(295) (Formerly offered as CLAS 295.) Either semester. Three credits. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary.

3299. Independent Study

(299) (Formerly offered as CLAS 299.) Either or both semesters. Credits and hours by arrangement. Open only with consent of instructor. With a change in content, may be repeated for credit.

Cognitive Science (COGS)

Director: Thomas Bontly

Office: 203 Manchester Hall

Director of Undergraduate Studies: Letitia Naigles

Office: 141 Bousfield Building

For major requirements, see the Cognitive Science listing in the College of Liberal Arts and Sciences section of this *Catalog*.

2201. Foundations of Cognitive Science

(201) Either semester. Three credits.

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.

3584. Seminar in Cognitive Science

(295) Either semester. One to three credits. Hours by arrangement. Prerequisite: COGS 2201. Recommended preparation: At least two of ANTH 3002, CSE 4705, LING 2020, PHIL 3250, PSYC 2501. Open only with consent of instructor. With a change of content, may be repeated for credit.

Recent developments in cognitive science.

3589. Undergraduate Research

(297) Both semesters. Credits not to exceed six per semester. Hours by arrangement. Prerequisite: COGS 2201. Recommended preparation: At least two of ANTH 3002, CSE 4705, LING 2020, PHIL 3250, PSYC 2501. Open only with consent of instructor and program director of undergraduate studies. With a change of content, may be repeated for credit.

Participation in activities related to cognitive science research.

3599. Independent Study

(299) Either semester. Three credits. Hours by arrangement. Prerequisite: COGS 2201. Recommended preparation: At least two of ANTH 3002, CSE 4705, LING 2020, PHIL 3250, PSYC 2501. Open only with consent of instructor. With a change of content, may be repeated for credit.

Knowledge and skills necessary to perform a research project.

Communication (COMM)

Head of Department: Professor Carl A. Coelho

Department Office: Room 213, Communication

Sciences Building

For major requirements, see the Communications Sciences Department listing in the College of Liberal Arts and Sciences section of this *Catalog*.

1000. The Process of Communication

(100) (Formerly offered as COMS 102.) Either semester. 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

(105) (Formerly offered as COMS 105.) Either semester. 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.

1300. Mass Communication Systems

(130) (Formerly offered as COMS 135.) Either semester. Three credits.

The history, organizational structure, economics and functioning of technologically-based communication systems and the relationship of these factors to mass communication issues and effects.

2310W. Media Literacy and Criticism

(231W) Either semester. Three credits. Prerequisite: COMM 1000; ENGL 1010 or 1011 or 3800. Recommended preparation: COMM 1300, 3400, 3600.

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.

3000Q. Research Methods in Communication

(200Q) (Formerly offered as COMS 231Q.) Either semester. Three credits. Prerequisite: COMM 1000 or instructor consent. Recommended preparation: MATH 1010 or equivalent.

The scientific approach as it specifically applies to communication.

3100. Persuasion

(210) (Formerly offered as COMS 210.) Either semester. Three credits. Three class periods or two class periods with one discussion period. Prerequisite: COMM 1000 or instructor consent.

Introduction to theories of attitude formation, change and reinforcement. Research is used to evaluate past and present models of persuasion.

3103. Motivation and Emotion

(255) (Formerly offered as COMS 255.) (Also offered as PSYC 3103.) Either semester. Three credits. Prerequisite: PSYC 1100 and PSYC 1101 or 1103; open to juniors or higher.

Cognition, brain mechanisms, biofeedback, aggression, sex, competence, social influence, and conformity.

3170. Introduction to Semantics

(224) (Formerly offered as COMS 224.) Either semester. Three credits. Prerequisite: COMM 1000 or instructor consent; open to juniors or higher.

The relationship among people, words, and meaning.

3200. Interpersonal Communication

(220) (Formerly offered as COMS 205.) Either semester. Three credits. Prerequisite: COMM 1000 or instructor consent.

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.

3300. Effects of Mass Media

(230) (Formerly offered as COMS 235.) Either semester. Three credits. Prerequisite: COMM 1000 or instructor consent.

An analysis of the roles of the mass media and of the effects they exert on individuals and society.

3321. Latinas and Media

(233) (Also offered as PRLS 3264 and WS 3260.) Second semester. 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.

3400. Mass Media and Political Process

(241) (Formerly offered as COMS 238.) Either semester. Three credits. Prerequisite: COMM 1300, 3100 and 3300; open to juniors or higher.

An introduction to the role of the mass media in the American political process. Topics include the relationships among the media, major political institutions, and citizenry; the interplay of the media, interest groups, and policymaking process; and the role of the media in elections and international crises.

3440W. Communication Law and Policy

(244W) Either semester. Three credits. Prerequisite: COMM 1000; ENGL 1010 or 1011 or 3800; open to juniors or higher. Recommended preparation: COMM 1300, 3400, 3600.

The development of American communication laws and policies, from their constitutional base through federal law, regulatory agencies and the judicial system. Exploration of rights and responsibilities of communication organizations and the public.

3450. Gender and Communication

(245) (Formerly offered as COMS 226.) (Also offered as WS 3268.) Either semester. Three credits. Prerequisite: COMM 1000 or instructor consent; open to juniors or higher.

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.

3600. New Communication Technologies

(262) (Formerly offered as COMS 239.) Either semester. Three credits. Prerequisite: COMM 1300. Recommended preparation: COMM 3300.

An overview of new communication technologies. Topics include the uses, evolution, diffusion, operation, and effects of new communication technologies.

4035. Advanced Study of Media Effects: Sex, Drugs and Rock N Roll

(235) Second semester. Three credits. Prerequisite: COMM 1000; open to juniors or higher.

Contentious topics in current media effects research, and their theoretical implications. Topics include, but are not limited to, sexual content on television, pornography, alcohol on television, video games, and media impact on body image.

4089. Introduction to Research Literature in Communication

(205) (Formerly offered as COMS 230.) First semester. Three credits. Prerequisite: COMM 3000Q, 3100, 3200, and 3300.

A survey of research in major sub-areas of communication.

4100. Advanced Persuasion and Communication

(211) (Formerly offered as COMS 219.) Either semester. Three credits. Prerequisite: COMM 3100. Recommended preparation: COMM 3000Q and 3300 or instructor consent.

Advanced consideration and criticism of selected modern persuasion theories and research in communications.

4120. Communication Campaigns and Applied Research

(215) (Formerly offered as COMS 218.) Second semester. Three credits. Prerequisite: COMM 3000Q or STAT 1000QC or 1100QC; open to juniors or higher. Recommended preparation: COMM 1300, 3100, and 3300. *Snyder*

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.

4220W. Small Group Communication

(225W) (Formerly offered as COMS 216W.) Either semester. Three credits. Prerequisite: COMM 3200 or instructor consent; ENGL 1010 or 1011 or 3800; open to juniors or higher. Recommended preparation: COMM 3100.

Approaches, methods, and findings of research in small group communication and development of an ability to engage effectively in small group situations.

4230. Organizational Communication

(226) (Formerly offered as COMS 217.) Second semester. Three credits. Prerequisite: COMM 3000Q and 3200 or instructor consent; open to juniors or higher.

Communication in formal organizations; horizontal and vertical communication; effectiveness of different organizational structures and channels; feedback; networks; norms and roles.

4320. Media and Special Audiences

(232) (Formerly offered as COMS 260.) (Also offered as PRLS 4320.) Either semester. Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: COMM 1000.

Media content and audience responses. Ethnic, racial, and gender issues in mainstream and ethnic media. Special audiences include Latina/os, African Americans, Asian Americans, Women, Gays, Lesbians.

4330. Children and Mass Media

(234) Either semester. Three credits. Prerequisite: COMM 1000; open to juniors or higher.

Child development and the effects of mass media on young children. Educational television, frightening media, violent television, computer games, the Internet and media policy.

4340. Visual Communications

(212) (Formerly offered as COMS 240.) Second semester. Three credits. Prerequisite: COMM 1000, completion of at least one C course. Recommended preparation: Completion of at least one Q course.

Theory of design and creation of graphics for professional and technical purposes, to complement or supplement written and spoken communications.

4410W. Government Communication

(242W) (Formerly offered as COMS 222W.) Either semester. Three credits. Prerequisite: COMM 1000; ENGL 1010 or 1011 or 3800; open to juniors or higher.

Communication in government processes. Communication theory and practical applications. Issue management, lobbying, interest-group strategies, government relations, grassroots action, and coalition building. Students may not pass this course without passing the written work.

4420. Communication and Change

(271) (Formerly offered as COMS 208.) First semester. Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: COMM 3100 and 3300.

The role of communication and communication technologies in social change, diffusion of new ideas, and education. Special application to third world development.

4422. Protest and Communication

(243) (Formerly offered as COMS 236.) Either semester. Three credits. Prerequisite or corequisite: COMM 3300; open to juniors or higher. With a change in content, this course may be repeated once for credit.

Protest movement – past and current – in light of principles, models, and theories of communication.

4450W. Global Communication

(270W) (Formerly offered as COMS 206W.) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher. Recommended preparation: COMM 1300.

International communication patterns; globalization of media industries; new technologies; communication in war and peace; political, economic, social and cultural effects.

4451W. Media, State, and Society

(273W) (Formerly offered as COMS 213W.) Either semester. Three credits. Prerequisite: COMM 1300 and 3300, which may be taken concurrently; ENGL 1010 or 1011 or 3800; open to juniors or higher.

Forms of, rationales for, and effects of state involvement in mass media. The development of alternative media. Cultural implications of transnational media influences.

4460. Cross-Cultural Communication

(272) (Formerly offered as COMS 209.) Either semester. Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: COMM 3200.

Communication behavior within and across cultures and subcultures.

4500. Nonverbal Communication

(250) (Formerly offered as COMS 207.) First semester. Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: COMM 3000Q.

Facial expression, body movement, spatial behavior and para-language, with a consideration of applications for information theory.

4511W. Advanced Nonverbal Communication

(251W) (Formerly offered as COMS 214W.) Second semester. Three credits. Prerequisite: COMM 4500 or instructor consent; ENGL 1010 or 1011 or 3800; open to juniors or higher. Recommended preparation: COMM 3200.

Selected issues and research techniques current in the literature. Research projects of kinesic, proxemic, and/or paralinguistic behaviors involved in communication.

4620. Information and Communication

(260) (Formerly offered as COMS 234.) Either semester. Three credits. Prerequisite: COMM 3000Q or instructor consent; open to juniors or higher.

Approaches to studying communication including cybernetics, general systems theory, information theory, and human information processing.

4630. Communication Technology and Social Change

(265) Either semester. Three credits. Prerequisite: COMM 1000; open to juniors or higher.

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.

4660. Computer Mediated Communication

(261) Either semester. Three credits. Prerequisite: COMM 1000 and 1300; open to juniors or higher.

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.

4660W. Computer Mediated Communication

(261W) Either semester. Three credits. Prerequisite: COMM 1000, 1300; ENGL 1010 or 1011 or 3800; open to juniors or higher. With a change in content this course may be repeated for credit.

4650. Design of Human Communication Systems

(264) (Formerly offered as COMS 237.) Either semester. Credits and hours by arrangement. Prerequisite: COMM 1300; open to juniors or higher. Recommended preparation: COMM 3300. With a change in content, this course may be repeated once for credit.

Application of communication theory and principles of information science to the design of modern systems of communication, with consideration given to the physical and social settings in which they will be used.

4700. Health Communication

(216) Either semester. Three credits. Prerequisite: COMM 1000, 1300, 3000Q or PSYC 2100Q; open to juniors or higher. Recommended preparation: COMM 3100, 3200, 3300. *Snyder*

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.

4800. Communication Processes in Advertising

(280) (Formerly offered as COMS 220.) Either semester. Three credits. Prerequisite: COMM 1300, 3100 and 3300; open to juniors or higher.

Covers communications theory relevant to advertising, with specific application to the creative elements of art and copy. Students create actual print advertisements and radio commercials.

4802. Cultural and Global Diversity in Advertising.

(281) Either semester. Three credits. Prerequisite: COMM 4800; open to juniors or higher. *Lin*.

Advertising and marketing strategies that incorporate cultural diversity and global marketing considerations.

4820. Public Relations

(282) (Formerly offered as COMS 215.) Either semester. Three credits. Prerequisite: COMM 1300, 3000Q, and 3300; open to juniors or higher.

Practical applications of major theories of communication and mass media to public relations practiced by organizations. Based on readings, student research, and case histories.

4930W. Public Relations Writing

(283W) Either semester. Three credits. Prerequisite: COMM 4820; ENGL 1010 or 1011 or 3800; open to juniors or higher.

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.

4940. Television Production

(288) (Formerly offered as COMS 233.) Either semester. Three credits. Prerequisite: COMM 1000 and 1300 and instructor consent; open to juniors or higher.

Provides hands-on broadcast and industrial video production. Students will rotate through all studio positions for a televised production and complete field shoots and editing for an electronic field production project. Preproduction skills such as proposal and script writing, storyboarding and budgeting will be included in each class project.

4991. Internship in Communication

(291) (Formerly offered as COMS 212.) Either semester. Credits and hours by arrangement, with a maximum of three credits per semester. Prerequisite: At least 12 credits of 2000-level or above Communication courses and consent of instructor; open to juniors or higher. Should be taken during the senior year. May be repeated once for credit. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

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.

4992. Research Practicum in Communication

(290) (Formerly offered as COMS 211.) Either semester. Credits and hours by arrangement, with a maximum of three credits per semester. Prerequisite: At least 12 credits of 2000-level or above Communication courses which must include COMM 3000Q and consent of instructor; open to juniors or higher. Should be taken during the senior year. May be repeated once for credit.

Provides students with an opportunity to participate in a variety of supervised research activities in communication.

4993. Foreign Study

(293) (Formerly offered as COMS 293.) Either or both semesters. Credits and hours by arrangement. Prerequisite: Open to juniors or higher. May be repeated for credit. Consent of Department Head required, normally granted prior to the student's departure. May count toward the major with consent of the advisor.

Special topics taken in foreign study program.

4995. Special Topics

(298) (Formerly offered as COMS 298.) Either semester. Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary; open to juniors or higher.

4996W. Senior Thesis

(296W) (Formerly offered as COMS 296W.) Either semester. Credits and hours by arrangement. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher. Open only with consent of instructor.

Preparation of a thesis and its presentation to the department.

4998. Variable Topics

(297) (Formerly offered as COMS 297.) Either semester. Three credits. Prerequisite: Open to juniors or higher. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary.

4999. Independent Study

(299) (Formerly offered as COMS 299.) Either or both semesters. Credits and hours by arrangement. Prerequisite: Open to juniors or higher. Open only with consent of instructor. With a change of content, may be repeated for credit.

The course, for superior students, includes independent reading, periodic conferences, and such other work as desired by the instructor.

Communication Disorders (CDIS)

Head of Department: Professor Carl A. Coelho
Department Office: Room 213, Communication Sciences Building

For major requirements, see the Communications Sciences Department listing in the College of Liberal Arts and Sciences section of this *Catalog*.

1150. Introduction to Communication Disorders

(150) (Formerly offered as COMS 150.) Either semester. Three credits.

Introduction to normal communicative processes and to disorders of communication. CA 2. CA 4.

1155Q. Applied Sound Science

(155Q) Either semester. Three credits. Recommended preparation: MATH 1060 or the equivalent.

Fundamentals of physical acoustics specifically oriented to speech and audiology: frequency, intensity, decibels, critical bands, filters, masking, noise and vibration. Introduction to acoustic instrumentation and software used in communication sciences, animal

science, biology, architectural acoustics and ecology, and bioacoustic analyses.

3201. Speech Science

(201) (Formerly offered as COMS 201.) First semester. Three credits. Prerequisite: Open to juniors or higher.

Acoustic, anatomical, neurological and physiological principles fundamental to the understanding of voice and speech production.

3202. Speech and Language Acquisition

(202) (Formerly offered as COMS 202.) Both semesters. Three credits. Prerequisite: Open to juniors or higher.

How children learn their first language; the effects of language on their thinking and behavior.

3202W. Speech and Language Acquisition

(202W) Four credits. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher.

3241. Sign Language: Theory and Practice

(241) (Formerly offered as COMS 241.) Second semester. Three credits. Prerequisite: Open to juniors or higher.

Information about the history, structure and use of sign languages, and instruction in the basics of American Sign Language (ASL) and Signed English.

3247. Introduction to Phonetic Principles

(247) (Formerly offered as COMS 247.) Second semester. Three credits. Prerequisite: CDIS 3201; open to juniors or higher.

The analysis of speech through the application of phonetic theory.

3248. Introduction to Audiology

(248) (Formerly offered as COMS 248.) Second semester. Three credits. Prerequisite: CDIS 3250; 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.

3250. Structure and Function of the Auditory System

(250) (Formerly offered as COMS 250.) First semester. Three credits. Prerequisite: Open to juniors or higher.

The response to sound, including methodology and instrumentation as well as the anatomy and physiology of hearing.

3293. Foreign Study

(293) (Formerly offered as COMS 293.) Either or both semesters. Credits and hours by arrangement. Prerequisite: Open to juniors or higher. May be repeated for credit. Consent of Department Head required, normally granted prior to the student's departure. May count toward the major with consent of the advisor.

Special topics taken in foreign study program.

3295. Special Topics

(298) (Formerly offered as COMS 298.) Either semester. Credits and hours by arrangement. Prerequisites and recommended preparation vary; open to juniors or higher. With a change in content, may be repeated for credit.

3298. Variable Topics

(297) (Formerly offered as COMS 297.) Either semester. Three credits. Prerequisites and recommended preparation vary; open to juniors or higher. With a change in topic, may be repeated for credit.

3299. Independent Study

(299) (Formerly offered as COMS 299.) Either or both semesters. Credits and hours by arrangement. Prerequisite: Open to juniors or higher. Open only with con-

sent of instructor. With a change of content, may be repeated for credit.

The course, for superior students, includes independent reading, periodic conferences, and such other work as desired by the instructor.

4204. Methods and Issues in Child Language Research

(204) (Formerly offered as COMS 204.) Second semester. Three credits. Two class periods, and child observations and individual conferences by arrangement. Prerequisite: CDIS 3202; open to juniors or higher. Open only with consent of instructor.

Critical discussion of recent research in child language, and supervised individual research projects.

4242. Directed Observations

(242) (Formerly offered as COMS 242.) Second semester. One credit. Prerequisite: Open to juniors or higher.

Directed observations of speech-language pathology and audiology diagnostic and treatment procedures. How such procedures change with various etiologies.

4244. Introduction to Neurogenic Communication Disorders

(244) (Formerly offered as COMS 244.) First semester. Three credits. Prerequisites: CDIS 3201 and 3202; open to juniors or higher.

Acquired and developmental neurogenic communication disorders. Brain mechanisms that underlie speech and language and their disorders.

4244W. Introduction to Neurogenic Communication Disorders

(244W) Four credits. Prerequisites: CDIS 3201 and 3202; ENGL 1010 or 1011 or 3800; open to juniors or higher.

4249. Introduction to Aural Rehabilitation

(249) (Formerly offered as COMS 249.) First semester. Three credits. Prerequisite: CDIS 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

(249W) Four credits. Prerequisite: CDIS 3248; ENGL 1010 or 1011 or 3800; open to juniors or higher.

4251. Introduction to Articulation, Voice, and Fluency Disorders

(251) (Formerly offered as COMS 251.) Second semester. Three credits. Prerequisites: CDIS 3201, 3202, and 3247; open to juniors or higher.

Communication problems resulting from disorders of speech, voice, and fluency. Assessment and management strategies in settings including public schools, hospitals, and rehabilitation centers.

4253. Introduction to Language Pathology in Children

(253) (Formerly offered as COMS 253.) First semester. Three credits. Prerequisite: CDIS 3202; open to juniors or higher.

Development, measurement, and function of language in children. Emphasis on child language disorders and their causes. Introduction to assessment and management strategies in settings including public schools and private clinics.

4296W. Senior Thesis

(296W) (Formerly offered as COMS 296W.) Either semester. Credits and hours by arrangement. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher. Open only with consent of instructor.

Preparation of a thesis and its presentation to the department.

Comparative Literary and Cultural Studies (CLCS)

Program Chair: Associate Professor Lucy McNeece

Office: Room 242, J.H. Arjona Building

1101. Classics of World Literature I

(101) Either semester. 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

(102) Either semester. 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

(103W) First semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800. *Urios-Aparisi, Wagner*

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

(110) Either semester. Three credits.

Introduction to film and film studies. Tools for analyzing and reading film. Techniques and language of film. Film theories. CA 1.

2214. Introduction to World Cinema and Comparative Film Theory

(214) Either semester. Three credits.

Introduction to the theory and criticism of film, applied to classics of world cinema. Comparative study of the development of cinematic techniques, and comparative approach to film as cultural production.

3201. Comparative Literary and Cultural Studies

(201) (Formerly offered as COML 201.) Either semester. Three credits. This course may be repeated for credit with a change of topic.

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.)

3203. Comparative Studies in Cultural History

(203) Either semester. Three credits. This course may be repeated for credit with a change of topic.

The comparative study of cultural movements in literature and the arts throughout history. The course 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 with change of topic.

3207. Film Genres

(207) Either semester. Three credits.

Conventions, history, and development of selected film genres.

3208. Studies in Film History

(208) Either semester. Three credits.

The history of cinema from its origins to the present in relation to relevant historical and cultural developments.

3888. Variable Topics

(297) Either semester. Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary.

Computer Science and Engineering (CSE)

Head of Department: Professor Reda Ammar

Department Office: Room 250, Information

Technologies Engineering Building

For major requirements, see the School of Engineering section of this *Catalog*.

(Computer Science and Engineering courses were formerly offered under the CS department abbreviation using the same course numbers.)

1000C. Computers in Modern Society

(101C) Second semester. Three credits. Two class periods and two 1-hour program design periods. Not open for credit to students who have passed CSE 110C or CSE 130 or CSE 1100C. Students who anticipate extensive study or use of computers in their future work should take CSE 1100C-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.

1100C. Introduction to Computing

(123C) Both semesters. Two credits. Two class periods of lecture and one 1-hour of laboratory period per week. Recommended preparation: MATH 1010Q or equivalent. No previous programming experience required. Not open for credit to students who have passed CSE 110C or 130C.

Problem solving with the computer, basics of data representation and computer organization, procedural and object-oriented programming in a modern language including control structures, functions and parameter passing, one and two dimensional arrays, numerical error and basic numerical methods. Examples taken from various disciplines. Programming projects required. Intellectual property issues discussed.

1102. Object Oriented Design and Programming

(133) Second semester. Three credits. Three class periods of lecture and one 75 minute laboratory period per week. Prerequisite: CSE 1100C. Not open to students who have passed CSE 124C.

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

(120) (Also offered as BME 1401 and MCB 1401.) Either semester. 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.

2100. Data Structures and Introduction to Algorithms

(134) First semester. Three credits. Three class periods of lecture. Prerequisite: CSE 1102. Students who have passed CSE 124C will receive only 2 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

(230) Either semester. Three credits. Three class periods and one problem session. Prerequisite: CSE 2100 and 2500; CSE 2500 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.

2300W. Digital Logic Design

(210W) First semester. Four credits. Three class periods and one two-hour laboratory period. Prerequisite: CSE 1100 or 1102 and secondary school physics or PHYS 1010 or 1501; ENGL 1010 or 1011 or 3800. Not open to students who have passed CSE 207 or 208W.

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

(201) Either semester. Three credits. Prerequisite: CSE 2100 and 2500. Not open to students who have credit for CSE 207 or CSE 241 or CSE 2300W.

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, CICS, and various parallel architectures.

2500. Introduction to Discrete Systems

(254) Either semester. Three credits. Prerequisite: CSE 1102. Not open for credit to students who have passed MATH 214Q.

Mathematical methods for characterizing and analyzing discrete systems. Modern algebraic concepts, logic theory, set theory, grammars and formal languages, and graph theory. Application to the analysis of computer systems and computational structures.

3000. Contemporary Issues in Computer Science and Engineering

(260) Second semester. One credit. Prerequisite: CSE 2102 and 3666.

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

(278) Either semester. Three credits. Prerequisite: CSE 2102.

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.

3300. Computer Networks and Data Communication

(245) Semester by arrangement. Three credits. Prerequisite: CSE 2304 or 3666; STAT 3025Q or STAT 3345Q or STAT 3375Q or MATH 3160.

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

(252) (Also offered as ECE 3401.) Second semester. Three credits. Prerequisite: CSE 2300W.

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

(280) (Also offered as ECE 4401.) Second semester. Three credits. Four hours of laboratory. Prerequisite or corequisite: Either CSE 3302 or ECE 3401.

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; PBC; design and manufacturing.

3500. Algorithms and Complexity

(259) Either semester. Three credits. Three class periods. Prerequisite: CSE 2100 and 2500.

Design and analysis of efficient computer algorithms. Algorithm design techniques, including divide-and-conquer, depth-first search, and greedy approaches. Worst-case and average-case analysis. Models of computation. NP-complete problems.

3502. Theory of Computation

(237) Either semester. Three credits. Prerequisite: CSE 2100 and 2500.

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

(221) Either semester. Three credits. Prerequisite: CSE 2100; and 2500; and one of STAT 3025Q or 3375Q or MATH 3160.

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.

3666. Introduction to Computer Architecture

(220) Either semester. Three credits. Three one-hour lectures and one one-hour laboratory period. Prerequisite: CSE 2100 and 2300W. Cannot be taken after CSE 4302 or 4901. This course and CSE 2304 may not both be taken for credit. This course and CSE 243 may not both be taken for credit.

Structure and operation of digital systems and computers. Machine organization, control and data paths, instruction sets, and addressing modes. Integer and floating-point arithmetic, the memory hierarchy, the I/O subsystem. Assembly language and basic program organization, interrupts, I/O, and memory allocation.

3800. Bioinformatics

(277) (Also offered as BME 4800.) Either semester. Three credits. Prerequisite: BIOL 1107, CSE 2500, and either STAT 3025Q or STAT 3345Q.

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

(257) (Also offered as ECE 3431.) First semester. Three credits. Prerequisite: CSE 1100C and MATH 2110Q and 2410Q and prerequisite or corequisite: MATH 2210Q. MATH 2210Q may be taken concurrently.

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.

4095. Special Topics in Computer Science and Engineering

(298) Semester and credits by arrangement. Prerequisite: Announced separately for each course. With a change in content, this course 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

(299) Semester by arrangement. Credits by arrangement, not to exceed 4 in any semester. Prerequisite: Consent of instructor and department head.

This course 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

(244) Either semester. Three credits. Prerequisite: CSE 2102 and 3502.

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

(233) Either semester. Three credits. Prerequisite: CSE 3502.

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

(258) Either semester. Three credits. Prerequisite: CSE 2102; CSE 2304 or 3666.

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

(249) Either semester. Three credits. Three one-hour lectures. Prerequisite: CSE 2300W; CSE 3666. This course and CSE 243 may not both be taken for credit. Cannot be taken after CSE 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.

4500. Parallel Systems

(228) Either semester. Three credits. Prerequisite: CSE 2304 or 3666, and CSE 3500.

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.

4701. Principles of Data Bases

(255) Either semester. Three credits. Prerequisite: CSE 3500.

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.

4703. Principles of Computer Graphics

(275) Semester by arrangement. Three credits. Prerequisite: CSE 3500 and MATH 2110Q and either MATH 2210Q or 3210Q. Not open for credit to students who have passed MATH 255.

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.

4705. Artificial Intelligence

(282) First semester. Three credits. Prerequisite: CSE 3500.

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. Programming will be done primarily in Lisp, which will be covered briefly at the beginning of the course.

4707. Computer Security

(281) Either semester. Three credits. Prerequisite: CSE 2102 and either 2304 or 3666.

Introduction to 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. Digital rights management, anonymity and privacy. Various attacks and countermeasures. Ethical, legal and business aspects.

4900. Independent Design Laboratory

(265) Either semester. Three credits. Prerequisite: CSE 2102. May be taken twice for credit. Instructor and department head consent.

Experimental design project undertaken by the student by special arrangement with a faculty member of the Department of Computer Science and Engineering.

4901. Digital Hardware Laboratory

(261) (Also offered as ECE 4402.) Second semester. Three credits. One 4-hour laboratory period. Prerequisite: CSE 4302; ECE 3401 or CSE 3302.

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.

4902. Software Engineering Laboratory

(262) Second semester. Three credits. Four program design periods. Prerequisite: CSE 2102.

A major software design project addresses specification through delivery phases of the lifecycle. The major focus of the course is utilization and application of concepts from CSE 2102 to a straightforward semester long project. This allows the student to explore programming-in-the-large with an emphasis on techniques for teamwork, walk through, design, documentation, implementation, and debugging. Data structures and algorithm alternatives for the design and implementation phases of the lifecycle are also stressed. Formal design presentations are required by all students.

4903. Microprocessor Laboratory

(268) First semester. Three credits. One lecture and one 3-hour laboratory period. Prerequisite: CSE 2304 or 3666.

The design of microcomputer systems, including both hardware and software, for solving application problems. Hardware and software design and implementation techniques for interfacing microcomputers to other systems. Use of modern microcomputer software/hardware development facilities. Projects to design and apply microcomputer systems.

4904. Computer Science Design Laboratory

(269) Either semester. Three credits. One 4-hour laboratory period. Prerequisite: Announced separately for each course. With a change in content this course 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

(263) Second semester. Three credits. Four hour laboratory. Prerequisite: CSE 3300; CSE 2304 or 3666.

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

(293W) Either semester. Three credits. Prerequisite: CSE 4300 and either CSE 4901 or 4902 or 4905 or 4900 or 4903 or 4904; ENGL 1010 or 1011 or 3800.

The second semester of the required major design experience. In one semester-long team project, students will propose, design, produce, and evaluate a software and/or hardware system. The project will culminate in the delivery of a working system, a formal public presentation, and written documentation. Oral and written progress reports are required.

4950. Electrical and Computer Engineering Design I

(290) (Also offered as ECE 4901.) Either semester. Two credits. Prerequisite: Senior standing.

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 report, a final report, and oral presentations are required.

4951. Electrical and Computer Engineering Design II

(291) (Also offered as ECE 4902.) Either semester. Three credits. Prerequisite: ECE 4901. Hours to be arranged.

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.

Critical Languages Program (CRLP)

Head of Department: Associate Professor Norma Bouchard

Department Office: Room 228, J.H. Arjona Building

The Critical Language Program is designed to offer basic language instruction (four semesters) in languages not currently offered as major fields of study in the Department of Modern and Classical Languages. The most common languages taught in the CRLP program at the University of Connecticut are listed at the end of this section. Other languages may be offered based upon student interest and the Program's ability to find the necessary personnel. Critical languages may be used to fulfill the foreign language requirement.

Note: Some critical languages, because of area study requirements or other specific circumstances, may be offered under the regular instructional method and the following course descriptions with four credits apply. These subject areas listed alphabetically throughout this course directory are: American Sign Language, Japanese, Modern Greek, and Polish.

1101. Elementary Level I

(101) First semester. Four credits. Prerequisite: Not open to students with prior contact with the language.

1102. Elementary Level II

(102) Second semester. Four credits. Prerequisite: 1101 or the equivalent.

1103. Intermediate Level I

(103) First semester. Four credits. Prerequisite: 1102 or the equivalent.

1104. Intermediate Level II

(104) Second semester. Four credits. Prerequisite: 1103 or the equivalent.

Note: 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 or three 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. When taught in this manner, the following course descriptions with three credits apply. These subject areas listed alphabetically throughout this course directory are: Arabic, Chinese, Critical Languages Program, Hindi, Korean, and Vietnamese.

1101. Elementary Level I

(101) First semester. Three credits. Prerequisite: Not open to students with prior contact with the language.

1102. Elementary Level II

(102) Second semester. Three credits. Prerequisite: 1101 or the equivalent.

1103. Intermediate Level I

(103) First semester. Three credits. Prerequisite: 1102 or the equivalent.

1104. Intermediate Level II

(104) Second semester. Three credits. Prerequisite: 1103 or the equivalent.

1193. Foreign Study

(193) Either or both semesters. Credits and hours by arrangement. May be repeated for credit. Consent of Department Head required, normally to be granted prior to the student's departure.

Special topics taken in a foreign study program.

3293. Foreign Study

(293) Either or both semesters. Credits and hours by arrangement. May be repeated for credit. Consent of Director required, normally to be granted prior to the student's departure. May count toward the major with consent of the advisor.

Special topics taken in a foreign study program.

3298. Variable Topics

(295) Either semester. Three credits. With a change of topic, may be repeated for credit. Prerequisites and recommended preparation vary.

3295. Special Topics

(298) Either semester. Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary.

3299. Independent Study

(299) Either or both semesters. Credits and hours by arrangement. Open only with consent of Director. With a change in content, may be repeated for credit.

If there is sufficient student interest, additional languages may be offered.

Cytotechnology (CYTO)

Information: Contact Dr. Lawrence Silbart
Room 227A, Koons Hall

Students are not being accepted to the Cytotechnology program at this time.

3099. Independent Study for Undergraduates

(299) Either semester. Credits and hours by arrangement. Open only with consent of instructor. May be repeated for credit.

Primarily for students who wish to extend their knowledge in some specialized area in the field of Cytotechnology.

3222. Diagnostic Cytology

(222) Second semester. Three credits. Prerequisite: To enroll in the course, a student must have earned a "C" or better in MLS 3101. Open only to Cytotechnology majors; others by consent.

This course provides students with a comprehensive knowledge of normal cytologic findings in the female genital tract and the skills necessary to accurately identify the cellular components.

4092. Clinical Practicum

(250) Second semester. Eight credits. Prerequisite: To enroll in the course, student must have earned a "B-" or better in CYTO 4248 and 4094. Open only to Cytotechnology majors.

This course provides the student with clinical experience to complete the integration of didactic and laboratory components of Cytotechnology.

4094. Senior Seminar in Cytotechnology

(249) Second semester. Three credits. Open only to Cytotechnology majors.

This course 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.

4095. Special Topics

(298) Either semester. Credits and hours by arrangement. Open only with consent of instructor. 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 Cytotechnology.

4143. Cytology of the Female Genital Tract

(243) First semester. Six credits. Prerequisite: To enroll in the course, a student must have earned a "B-" or better in CYTO 3222. Open only to Cytotechnology majors.

Provides the student with comprehensive knowledge of the female genital tract cytology and provides the skills necessary to identify accurately the cytologic changes associated with normal and abnormal cells of the female genital tract.

4144. Cytology of the Respiratory Tract

(244) First semester. Four credits. Prerequisite: To enroll in the course, a student must have earned a "B-" or better in CYTO 4143. Open only to Cytotechnology majors.

Provides the student with comprehensive knowledge of respiratory tract cytology and provides the skills necessary to identify accurately the cytologic changes associated with normal and abnormal cellular changes in the respiratory tract.

4145. Cytologic Techniques

(245) First semester. Three credits. Open only to Cytotechnology majors.

Provides the student with both didactic knowledge and technical skills necessary to ensure optimum specimen preparation.

4146. Cytology of the Alimentary Tract

(246) First semester. Three credits. Prerequisite: To enroll in this course, a student must have earned a "B-" or better in CYTO 4145. Open only to Cytotechnology majors.

Provides the student with comprehensive knowledge of alimentary tract cytology and provides the skills necessary to identify accurately the cytologic changes associated with normal and abnormal cellular changes in the alimentary tract.

4247. Cytology of Miscellaneous Fluids

(247) Second semester. Four credits. Prerequisite: To enroll in the course, a student must have earned a

"B-" or better in CYTO 4146. Open only to Cytotechnology majors.

This course provides the student with comprehensive knowledge of miscellaneous fluids cytology and provides the skills necessary to identify accurately the cytologic changes associated with normal and abnormal changes in miscellaneous fluids.

4248. Cytology Aspiration Biopsy

(248) Second semester. Three credits. Prerequisite: To enroll in the course, a student must have earned a "B-" or better in CYTO 4247. Open only to Cytotechnology majors.

This course provides the student with comprehensive cytology and provides the skills necessary to identify accurately the cytologic changes associated with normal and abnormal cellular changes in aspiration biopsies.

Diagnostic Genetic Sciences (DGS)

Diagnostic Genetic Sciences Program Director:

Martha B. Keagle

Program Office: Room 222, Koons Hall

For major requirements, see the College of Agriculture and Natural Resources, Department of Allied Health Sciences section of this *Catalog*.

3222. Medical Cytogenetics

(222) Both semesters. Four credits. Two 2-hour lectures. Prerequisite: MCB 2000 and 2410 or 2413; all of which may be concurrent. Open to students in the Diagnostic Genetic Sciences Program; others who have met the prerequisites.

Birth defects, prenatal assessment, cell culture and harvest, staining and banding techniques, mechanisms of numerical and structural chromosome abnormality, numerical syndromes, duplication and deletion syndromes, the sex chromosomes, sex chromosome abnormalities, human chromosome nomenclature, mosaicism, genetic imprinting, cancer cytogenetics, molecular cytogenetic testing.

3223. Laboratory in Cytogenetics

(223) Both semesters. Two credits. One 3-hour laboratory period and one 1-hour discussion. Four additional laboratory sessions are required during the first half of the semester. Prerequisite: DGS 3222 which may be taken concurrently. Open only to students enrolled in the Diagnostic Genetic Sciences Program; others with consent of instructor.

Human chromosome morphology and identification, aseptic technique, lymphocyte culture and harvest, chromosome banding, karyotyping and microscopic analysis of normal and abnormal cases. A fee of \$13 is charged for this course.

3225. Microscopy and Chromosome Imaging

(225) Either semester. One credit. Prerequisite: DGS 3223 which may be taken concurrently. Open only to students enrolled in the Diagnostic Genetic Sciences Program; others with consent of instructor.

Theory and techniques of brightfield and fluorescence microscopy, and computerized chromosome imaging.

3226. Current Genetic Research

(226) Either semester. Variable credits. Prerequisite: DGS 3222 or MCB 2410 or MCB 2413; instructor consent. May be repeated one time for credit.

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 (299) Either semester. Credits and hours by arrangement. Open only with consent of instructor. May be repeated for credit.

This course is designed primarily for students who wish to extend their knowledge in some specialized area in the field of diagnostic genetic sciences.

4095. Special Topics

(298) Either semester. Credits and hours by arrangement. Open only with consent of instructor. 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.

4224. Cancer Cytogenetics

(224) Offered summer. Two credits. Prerequisite: DGS 3223. Open only to students enrolled in the Diagnostic Genetic Sciences Program; others with consent of instructor.

Chromosome instability syndromes, genetic basis of cancer, cytogenetics of solid tumors and hematologic malignancies, and nomenclature of acquired changes.

4234. Diagnostic Molecular Technologies

(234) Both semesters. Three credits. Prerequisite: MCB 2410 or 2413; and MLS 3121 or MCB 3212 which may be taken concurrently. Open only to students enrolled in the Diagnostic Genetic Sciences Program. Others with instructor consent.

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

(234W) Prerequisite: MCB 2410 or 2413; and MLS 3121 or MCB 3212 which may be taken concurrently; ENGL 1010 or 1011 or 3800. Open only to students enrolled in the Diagnostic Genetic Sciences Program.

4235. Laboratory in Molecular Diagnostics

(235) Both semesters. Two credits. Prerequisite: DGS 4234 which may be taken concurrently. Open only to students enrolled in the Diagnostic Genetic Sciences Program.

DNA isolation, blotting techniques, fluorescent *in situ* hybridization, polymerase chain reaction and Genprobe assay. A fee of \$13 is charged for this course.

4246. Contemporary Issues in Human Genetics

(246) Both semesters. Three credits. Prerequisite: DGS 3223. Open only to students enrolled in the Diagnostic Genetic Sciences Program; others with consent of the instructor.

Advanced karyotyping and microscopic diagnosis; report writing; historical perspective; recent advances and future trends in human genetics; ethical issues of genetic research, technological advances, genetic diagnosis and the practice of medical genetics; exploration of the lay person's understanding of human genetics and genetic diagnosis.

4501. Specimen Processing

(250) Both semesters. Two credits. Prerequisite: In order to enroll in this course, a student must have earned a "C" or better in DGS 4234 and 4235. Open to DGS molecular students only.

Theory and methods for processing and evaluating specimens for nucleic acid isolation.

4502. Nucleic Acid Isolation

(251) Both semesters. Four credits. Prerequisite: In order to enroll in this course, a student must have earned a "C" or better in DGS 4234 and 4235. Open to DGS molecular students only.

Isolation, manipulation and evaluation of nucleic acids.

4503. Amplification Methods

(261) Both semesters. Six credits. Prerequisite: In order to enroll in this course, a student must have earned a "C" or better in DGS 4234 and 4235. Open to DGS molecular students only.

Practicum experience in DNA and/or RNA amplification stressing polymerase chain reaction.

4510. *In Situ* Hybridization Methods

(275) Both semesters. Two credits. Prerequisite: In order to enroll in this course, a student must have earned a "C" or better in DGS 4234 and 4235. Open to DGS molecular students only.

Practicum in fluorescence *in situ* hybridization or other *in situ* hybridization techniques.

4511. Topics in Molecular Genetics

(276) Both semesters. Two credits. Prerequisite: In order to enroll in this course, a student must have earned a "C" or better in DGS 4234 and 4235. Open to DGS molecular students only.

Exploration of an individual area of interest in molecular genetics.

4512. Cloning Techniques

(252) Both semesters. Two credits. Prerequisite: In order to enroll in this course, a student must have earned a "C" or better in DGS 4234 and 4235. Open to DGS molecular students only.

Theory and techniques of cloning.

4513. Blotting Applications

(253) Both semesters. Two credits. Prerequisite: In order to enroll in this course, a student must have earned a "C" or better in DGS 4234 and 4235. Open to DGS molecular students only.

Theory and techniques of nucleic acid and/or protein blotting (e.g. Southern blot, reverse dot blot).

4514. DNA Sequencing

(278) Both semesters. Two credits. Prerequisite: In order to enroll in this course, a student must have earned a "C" or better in DGS 4234 and 4235. Open to DGS molecular students only.

Practicum experience in DNA sequencing.

4515. Microbiological Applications of Molecular Diagnostics

(279) Both semesters. Two credits. Prerequisite: In order to enroll in this course, a student must have earned a "C" or better in DGS 4234 and 4235. Open only to students enrolled in the Molecular Diagnostic Sciences Program; others with consent of the instructor.

Practicum experience in the application of molecular technologies to microbiology.

4550. Research in Molecular Genetics

(273) Both semesters. One credit. Prerequisites: In order to enroll in this course, a student must have earned a "C" or better in AH 4241W, DGS 4234 and 4235. Open to DGS molecular students only.

Design and implementation of a research project in molecular genetics.

4650. DNA Technology in Forensic Science

(289) Either semester. Credits and hours by arrangement. Prerequisite: To enroll in this course, the student must have earned a "C" or better in DGS 4503 and 4550. Open only to Diagnostic Genetic Sciences molecular diagnostic sciences certificate students.

Practicum experience with forensic applications of DNA testing.

4701. Peripheral Blood Cytogenetics

(281) Both semesters. Four credits. Prerequisite: In order to enroll in this course, the student must have earned a "C" or better in DGS 3222 and DGS 3223. Open only to Diagnostic Genetic Sciences majors.

Culture, harvest, banding and analysis of peripheral blood samples.

4702. Prenatal Cytogenetics

(286) Both semesters. Four credits. Prerequisite: In order to enroll in this course, the student must have earned a "C" or better in DGS 3222 and DGS 3223. Open only to Diagnostic Genetic Sciences majors.

Culture, harvest, banding and analysis of amniotic fluids, products of conception, and other fetal samples.

4703. Bone Marrow Cytogenetics

(280) Both semesters. Four credits. Prerequisite: In order to enroll in this course, the student must have earned a "C" or better in DGS 3222, 3223 and 4224. Open only to Diagnostic Genetic Sciences majors.

Culture, harvest, banding and analysis of leukemic bone marrow samples; chromosomal abnormalities associated with hematologic malignancies.

4712. Fluorescence *in situ* Hybridization

(265) Both semesters. Two credits. Prerequisite: In order to enroll in this course, a student must have earned a grade of C or better in DGS 3222, 4234 and 4235. Open only to DGS students in the Cytogenetics Concentration.

Designed to give the student hands-on experience with Fluorescence *in situ* Hybridization.

4713. Practicum in Imaging and Staining

(266) Both semesters. One credit. Prerequisite: In order to enroll in this course, a grade of C or better in DGS 3222 and 3223. Open only to DGS students in the Cytogenetics Concentration.

Designed to give the student hands-on experience in chromosome imaging and routine and special cytogenetic staining techniques.

4750. Research in Cytogenetics

(285) Both semesters. One credit. Prerequisite: In order to enroll in this course, the student must have earned a "C" or better in AH 4241W, DGS 3222 and 3223. Open only to Diagnostic Genetic Sciences majors.

Design and implementation of a research project in clinical cytogenetics.

4997. Honors Research

(290) Either semester. Three credits. Open only to Diagnostic Genetic Sciences Honors students.

Design and implementation of an honors research project.

Dietetics (DIET)

Program Director: Robin Abourizk

Dietetics Program Office: Room 314, Koons Hall

For major requirements, see the College of Agriculture and Natural Resources, Department of Allied Health Sciences section of this *Catalog*.

The following courses are open only to students enrolled in the Dietetics Program. Others must obtain the permission of the Director of the Dietetics Program.

3099. Independent Study for Undergraduates

(299) Either semester. Credits and hours by arrangement. Open only to Dietetics majors; others by consent of the Director of Dietetics. Open only with consent of instructor. May be repeated for credit.

The course is designed primarily for students who wish to extend their knowledge in some specialized area in the field of dietetics.

3150. Applied Medical Nutrition Therapy I

(206) First semester. Four credits. Prerequisite: MCB 2000, PNB 2264, 2265; NUSC 1165. Open only to Dietetics majors; others by consent of Dietetics Program Director. *Abourizk*

Introduction to the nutrition care process, nutrition assessment, planning of special diets, and appli-

cations of medical nutrition therapy to selected disease states and conditions.

3155. Clinical Dietetics Practicum I

(211) First semester. One credit. Prerequisite: MCB 2000; PNB 2264, 2265; NUSC 1165. Open only to Dietetics majors; others by consent of Dietetics Program Director. *Abourizk*

Supervised practice experience in the health care setting.

3210. Applied Food Service Systems

(203) Second semester. Two credits. Prerequisite: Student must earn a "C" or better in DIET 3150, 3155. Open only to Dietetics majors; others by consent of Dietetics Program Director. *Duffy*

Concepts and methods of food service systems. The relationship of nutrition care services and food service units.

3215. Food Service Management Practicum I

(215) Second semester. One credit. Prerequisite: Student must earn a "C" or better in DIET 3150, 3155. Open only to Dietetics majors; others by consent of Dietetics Program Director. *Duffy*

Supervised practice experiences in food service settings. A fee of \$13 is charged for this course.

3230WC. Applied Community Nutrition

(213WC) Second semester. Three credits. Prerequisite: Student must earn a "C" or better in DIET 3150, 3155; ENGL 1010 or 1011 or 3800. Open only to Dietetics majors; others by consent of Dietetics Program Director. *Duffy*

Assessment of community structure, agencies, and resources. Plan, implement, and evaluate nutritional care and nutritional education in the community setting. Participation in computer laboratory experiences.

3235. Community Nutrition Practicum I

(214) Second semester. One credit. Prerequisite: Student must earn a "C" or better in DIET 3150, 3155. Open only to Dietetics majors; others by consent of Dietetics Program Director. *Dugdale*

Supervised practice experiences in community agencies.

3250. Applied Medical Nutrition Therapy II

(207) Second semester. Two credits. Prerequisite: Student must earn a "C" or better in DIET 3150, 3155. Open only to Dietetics majors; others by consent of Dietetics Program Director. *Kerstetter*

Medical nutrition therapy for selected disease states and conditions. Continuation of DIET 3150.

3255. Clinical Dietetics Practicum II

(212) Second semester. One credit. Prerequisite: Student must earn a "C" or better in DIET 3150, 3155. Open only to Dietetics majors; others by consent of Dietetics Program Director. *Kerstetter*

Supervised practice experience in the health care setting.

4095. Special Topics

(298) Either semester. Credits and hours by arrangement. Open only to Dietetics majors; others by consent of the Director of Dietetics. May be repeated for credit with a change in topic.

Application of the scientific method of inquiry to planning, implementing, evaluating, and reporting a study of a problem related to dietetics.

4350. Applied Medical Nutrition Therapy III

(233) First semester. Three credits. Prerequisite: Student must earn a "C" or better in DIET 3210, 3250, 3255, 3230WC, 3235, 3215. Open only to Dietetics majors; others by consent of Dietetics Program Director. *Kerstetter*

Medical nutrition therapy for complex medical problems. Continuation of DIET 3250.

4360. Contemporary Nutrition Practice

(234) First semester. Three credits. Prerequisite: Student must earn a "C" or better in DIET 3210, 3250, 3255, 3230WC, 3235, 3215. Open only to Dietetics majors; others by consent of Dietetics Program Director. *Duffy*

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

(236) First semester. Two credits. Prerequisite: Student must earn a "C" or better in DIET 3210, 3250, 3255, 3230WC, 3235, 3215. Open only to Dietetics majors; others by consent of Dietetics Program Director. *O'Brien*

Supervised practice experiences in the clinical dietetics, food service management, and community nutrition settings. A fee of \$13 is charged for this course.

4370. Advanced Nutrition for the Dietetics Practitioner

(238) First semester. Three credits. Hours by arrangement. Prerequisite: Student must earn a "C" or better in DIET 3210, 3250, 3255, 3230WC, 3235, 3215. Open only to Dietetics majors; others by consent of Director of Dietetics. *Kerstetter*

Relationship of nutrients to each other and to body function.

4415. Food Service Management Practicum II

(244) Second semester. Three credits. Prerequisite: Student must earn a "C" or better in DIET 4350, 4360, 4365, 4370. Open only 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

(245) Second semester. Four credits. Prerequisite: Student must earn a "C" or better in DIET 4350, 4360, 4365, 4370. Open only to Dietetics majors; others by consent of Dietetics Program Director.

Application and synthesis of performance requirements in community nutrition.

4455. Clinical Dietetics Practicum III

(249) Second semester. Four credits. Prerequisite: Student must earn a "C" or better in DIET 4350, 4360, 4365, 4370. Open only to Dietetics majors; others by consent of Dietetics Program Director.

Application and synthesis of performance requirements in clinical dietetics.

4470. Seminar in Dietetics

(247) Second semester. Two credits. Prerequisite: Student must earn a "C" or better in DIET 4350, 4360, 4365, 4370. Open only to Dietetics majors; others by consent of the Director of Dietetics. *Abourizk*

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

(250) Second semester. Four credits. Prerequisite: Student must earn a "C" or better in DIET 4350, 4360, 4365, 4370. Open only to Dietetics majors; others by consent of the Director of Dietetics.

Student defines objectives to extend knowledge in a specialized area of dietetics. Research project.

4591. Dietetics Internship Practicum I

(295) First semester. 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

(296) Second semester. 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.

Dramatic Arts (DRAM)

Head of Department: Professor Gary M. English
Department Office: Room 242, Drama – Music Building

For major requirements, see the School of Fine Arts section of this *Catalog*.

1101. Introduction to the Theatre

(101) Either semester. Three credits.

Analysis of the functions of the theatre artists and their contributions to the modern theatre. CA 1.

1102. Fundamentals of Theatrical Design

(108) Either semester. Three credits. *Saternow*

Introduction to theories of theatrical design and their application.

1110. Introduction to Film

(110) Either semester. Three credits. Two class periods and one 2-hour laboratory period.

A basic study of film as both a means of communication and as an art form. A fee of \$25 is charged for this course. CA I

1201. Drafting for the Theatre

(105) First semester. Three credits. Two 3-hour studio periods.

The basics of hand drafting techniques and the drafting conventions for scenic designers, lighting designers and technical directors.

1202. Computer Drafting for the Theatre

(106) Second semester. Three credits. Two 3-hour studio periods.

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.

1207. Theatre Production Studio

(107) Either semester. Three credits. Two class periods and one 2-hour studio period. May be repeated with change in course content to a maximum of nine credits.

Elements of costume, lighting, management and stagecraft with application to departmental productions.

1209. Drawing and Painting Techniques for the Theatre

(109) First semester. Three credits. Two class periods and one 2-hour studio period.

An introduction to theatrical sketching and rendering emphasizing color composition in various media.

1210. Computer Rendering for the Theatre

(118) Second semester. Three credits. Two class periods and one 2-hour studio period. Open only to Dramatic Arts majors; others with consent of instructor.

Computer rendering for theatre design in 2-D and 3-D format.

1282. Practicum in Dramatic Arts

(159) Either or both semester. Credits and hours by arrangement. Department consent required. May be repeated for credit with a change in course content to

a maximum of 6 credits. Open only to Dramatic Arts majors. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

Practical work in all areas of dramatic arts, with emphasis on running crew assignments.

1701-1702. Introduction to Acting

(143-144) Both semesters. Three credits each semester. Concurrent enrollment in DRAM 1801-1802 required for all acting majors.

First semester: Basic acting techniques, including improvisation and the use of the stage environment. Second semester: continuation of basic techniques with emphasis on the presentation of scenes from contemporary plays.

1801. Introduction to Movement for the Actor I

(149) First semester. Three credits. Three 2-hour studio periods. *Sabatine*

Conditioning the body to increase stretch, strength, flexibility, and sensitivity. Exploration of movement concepts in space, time and energy values, and mind body and environment relationships.

1802. Introduction to Movement for the Actor II

(150) Second semester. Three credits. Three 2-hour studio periods. *Sabatine*

Continuation of Dramatic Arts 1801. Emphasis on the organization of movement expression using essence theory of emotion, intentions, gestures and physical characterization through movement.

1901. Production of the Speaking Voice

(120) Either semester. Three credits. *Stern*

Study and practice in the development of an expressive, injury-free speaking voice capable of filling most performance spaces without amplification. Students concentrate on breathing technique, throat relaxation, resonance enhancement, and the use of variety in pitch and speaking rate. The course also integrates these technical voice skills with the principles of the inner acting process.

2130. History of Drama I

(130) First semester. Three credits. Not open for credit to students who have passed DRAM 1102. *McDermott*

Dramatic literature and theatre history from Classical Greece through the Spanish Golden Age, including an examination of non-western theatre traditions, especially Japanese.

2131. History of Drama II

(131) Second semester. Three credits. Recommended preparation: DRAM 2130. Not open for credit to students who have passed DRAM 2133. *McDermott, Molette*

Dramatic literature and theatre history from the French Renaissance to Contemporary Theatre, including an examination of non-western theatre traditions, especially Chinese.

2132. Masterpieces of the Drama: Aeschylus to Shakespeare

(180) Either semester. Three credits.

A study of masterpieces of Greek, Roman and Elizabethan drama with emphasis on analysis of form and content and attention to staging conventions.

2133. Masterpieces of the Drama: Molière to the Present

(181) Either semester. Three credits.

A study of masterpieces of French 17th Century; English Restoration and 18th Century; European, English, and Japanese 19th Century; and European, English, African, and American 20th Century drama. Emphasis on analysis of form and content and attention to staging conventions.

2701. Acting Technique I

(243) First semester. Three credits. Three 2-hour studio periods. Open only with consent of instructor.

Voices of naturalism and realism: the study and practice of techniques utilized in the performance of modern realists.

2702. Acting Technique II

(244) Second semester. Three credits. Three 2-hour studio periods. Prerequisite: DRAM 2701. *McDonald*

A continuation of the study and practice of techniques utilized in the performance of modern realists.

2711-2712. Introduction to Directing

(163-164) Both semesters. Three credits each semester. Prerequisite: DRAM 1701.

First semester: Emphasis on theory and play analysis from the director's point of view. Second semester: Emphasis on practical staging experience, including casting techniques and rehearsal and performance methods.

2801. Theatre Jazz Dance I

(153) Either semester. Three credits. Three 2-hour studio periods.

Basic techniques, styles, and composition of jazz dance. Emphasis placed on technique.

2802. Theatre Jazz Dance II

(154) Either semester. Three credits. Three 2-hour studio periods. Prerequisite: DRAM 2801.

Continuation of Dramatic Arts 2801.

2811. Performance Techniques in Ethnic Arts

(191) Either or both semesters. Credits and hours by arrangement. May be repeated for credit with a change in course content. Open only with consent of instructor.

Performance study and practice in selected areas of ethnic and minority dramatic arts. Topics to be alternated may include Afro-American dance, Black Heritage theatre, Indian dance.

2941. Oral Interpretation

(141) Either semester. Three credits.

An intensive study of background and thought content of literary material and the development of techniques of oral interpretation.

3103. Stage Management for the Theatre

(203) Either semester. Three credits. Prerequisite: Open to juniors or higher. Open only with instructor consent.

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

(219) Either semester. Three credits. Prerequisite: Open to juniors or higher. Open only with consent of instructor.

An introduction to the basic techniques of advertising copy, news releases, and feature stories.

3130. Women in Theatre

(230) Either semester. Three credits. *McDermott*

A study of theatre examining the changing depiction of women in drama and the increasing participation of women in all areas of theatrical activity. Women's advancement in western and oriental theatre will be surveyed as a background for focusing on plays written in the 20th century. CA 4.

3131. African-American Theatre

(231) (Also offered as AFAM 3131.) Either semester. Three credits. *Molette*

The significant developments in African American theatre and its antecedents and an examination of selected play scripts that exemplify those developments. CA 4.

3131W. African-American Theatre

(231W) (Also offered as AFAM 3131W.) Prerequisite: ENGL 1010 or 1011 or 3800. CA 4.

3138. Trends in Contemporary Theatre

(282) Either semester. Three credits.

A study of the major trends in drama and theatrical production of the western world today.

3141. Playwriting

(272) (Also offered as ENGL 3705.) Either or both semesters. Three credits. Prerequisite: Open to juniors or higher. Open only with consent of instructor. May be repeated for credit with a change in course content to a maximum of 9 credits. *McDermott*

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.

3145-3146. Film Writing

(274-275) (Also offered as ENGL 3707-3709.) Both semesters. Three credits each semester. Prerequisite: Open to juniors or higher. Open only with consent of instructor.

Theoretical and practical work in the content and form of the fiction scenario.

3182. Practicum in Dramatic Arts

(259) Either or both semesters. Credits and hours by arrangement. Open only with consent of instructor. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

Practical work in all areas of dramatic arts.

3199. Independent Study

(299) Either or both semesters. Credits and hours by arrangement. Prerequisite: Open to juniors 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

(200) First semester. Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: DRAM 1207 (Stagecraft).

Basic techniques of constructing two dimensional and three dimensional scenery.

3202. Rigging

(201) Second semester. Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: DRAM 1207 (Stagecraft).

Rigging systems and the basic techniques for flying scenery, with an emphasis on rigging safety.

3205. Scenographic Techniques for the Theatre

(205) Either semester. Three credits. Two 3-hour laboratory periods. Prerequisite: Open to juniors or higher. Recommended preparation: DRAM 1207 (Stagecraft).

A laboratory course for designers and technicians in the techniques of preparing a scene design for production in a shop. Drafting techniques, sheet layout, conventions and symbols are stressed.

3206. CAD for the Theatre

(206) Either semester. Two 3-hour laboratory periods. Prerequisite: Open to juniors or higher. Recommended preparation: DRAM 3205.

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.

3207C. Advanced Computer Rendering

(218C) Either semester. Three credits. Two class periods and one 2-hour studio period. Prerequisite: Open to juniors or higher. Recommended preparation: DRAM 1102. *Crow*

Computer rendering for the theatre in 2-D and 3-D format.

3209. Principles of Design and Rendering

(209) Either semester. Three credits. Two class periods and one 2-hour studio period. Prerequisite: Open to juniors or higher. Recommended preparation: DRAM 1102. *Crow*

Composition and color theory for designers as well as an exploration of graphic techniques in mixed media for expression of design ideas.

3220. Sound for the Theatre

(215) Either semester. Three credits. Prerequisite: Open to juniors or higher.

Art of sound design for the theatre. Organizing and creating sound for production.

3231. Fundamentals of Television I

(257) First semester. Three credits. Two 3-hour laboratory periods. Prerequisite: Open to juniors or higher. Open only with consent of instructor.

3232. Fundamentals of Television II

(258) Second semester. Three credits. Two 3-hour laboratory periods. Prerequisite: DRAM 3231; open to juniors or higher.

3301-3302. Scene Design

(211-212) Both semesters. Three credits each semester. Two class periods and one 2-hour laboratory period. Prerequisite: DRAM 1102; open to juniors or higher. *Saternow*

3401. Costume History

(213) Either semester. Three credits. Two class periods and one 2-hour studio period. Prerequisite: Open to juniors or higher. *Crow*

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

(214) Either semester. Three credits. Two class periods and one 2-hour studio period. Prerequisite: Open to juniors or higher. Recommended preparation: DRAM 1102. *Crow*

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.

3411. Stage Make-Up

(242) Either semester. Two credits. One class period and one 2-hour laboratory period. Prerequisite: Open to juniors or higher. Open only with consent of instructor.

3501C-3502. Lighting for the Theatre

(207C-208) Both semesters. Three credits each semester. Two class periods and one 2-hour laboratory period. Prerequisite: Open to juniors or higher. Recommended preparation: DRAM 1207 (Lighting), 1102.

3601. Puppetry

(247) First semester. Three credits. May be repeated for credit with change in course content to a maximum of 12 credits. Open only with consent of instructor. *Roccoberton*

Rod puppetry or shadow theatre. Topics to alternate on a two-year rotation.

3602. Advanced Puppetry Techniques I

(278) First semester. Three credits. Two 3-hour laboratory periods. Prerequisite: Open to juniors or higher. May be repeated for credit with change in course content to a maximum of six credits. Open only with consent of instructor. *Roccoberton*

Laboratory practice in advanced production techniques or paper sculpture for the puppet theatre.

3603. Puppetry

(248) Second semester. Three credits. May be repeated for credit with change in course content to a maximum of 12 credits. Open only with consent of instructor. *Roccoberton*

Hand puppetry or mask theatre. Topics to alternate on a two-year rotation.

3604. Advanced Puppetry Techniques II

(279) Second semester. Three credits. Two 3-hour laboratory periods. Prerequisite: Open to juniors or higher. May be repeated for credit with change in course content to a maximum of six credits. Open only with consent of instructor. *Roccoberton*

Advanced puppetry production techniques for television or laboratory practice in materials techniques.

3611. Trends in the Contemporary Puppet Theatre

(285) Either semester. Three credits. Prerequisite: Open to juniors or higher. Additional project required for graduate credit. *Roccoberton*

A study of the major trends in drama, design styles and production of the puppet theatre in the western world today.

3721. Performance Techniques

(291) Either or both semesters. Credits and hours by arrangement. Prerequisite: Open to juniors or higher. Open only with consent of instructor. May be repeated for credit with a change in course content.

Performance study and practice in selected areas of dramatic arts.

4122. Theatre Administration and Organization

(289) Either semester. Three credits. Prerequisite: Open to juniors or higher.

A survey of the organizational structure of the theatre in the United States, including community, university and regional theatres, and "on," "off," and "off-off" Broadway. Personnel, budgeting, unions and audience development will be covered.

4135. Period Studies in Theatre

(235) Either or both semesters. Three credits. Prerequisite: DRAM 2130, 2131; open to juniors or higher. May be repeated for credit with change in course content.

An in-depth examination of a major period or periods of theatre history and dramatic literature. Topics will vary.

4135W. Period Studies in Theatre

(235W) Prerequisite: DRAM 2130, 2131; ENGL 1010 or 1011 or 3800; open to juniors or higher.

4139. Environmental Theatre

(295) Either or both semesters. Three credits. Three 2-hour studio periods. Prerequisite: Open to juniors or higher. May be repeated for credit. Open only with consent of instructor.

An analysis of New Theatre concepts throughout the twentieth century, with workshops in performance.

4151. The American Film

(251) First semester. Three credits. Prerequisite: DRAM 1110; open to juniors or higher. Two class periods and one 2-hour laboratory period. May be repeated for credit with a change in course content to a maximum of 6 credits.

A critical analysis of the American fiction film. A fee of \$25 is charged for this course.

4152. World Film

(252) Second semester. Three credits. Prerequisite: DRAM 1110; open to juniors or higher. Two class periods and one 2-hour laboratory period. May be repeated for credit with a change in course content to a maximum of 6 credits.

A critical analysis of representative world films. A fee of \$25 is charged for this course.

4193. Foreign Study

(293) Either or both semesters. Credits and hours by arrangement. Prerequisite: Open to juniors or higher. 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 the advisor.

Coursework undertaken within approved Study Abroad programs, with a focus on the theatre history, dramatic literature and production in a particular country or region.

4194. Seminar

(298) Either or both semesters. Credits and hours by arrangement. Prerequisite: Open to juniors or higher. Open only with consent of instructor. May be repeated for credit.

Studies in selected areas of dramatic arts. Topics to be alternated.

4701. Acting Technique III

(268) First semester. Three credits. Three 2-hour studio periods. Prerequisite: DRAM 2702 and consent of instructor, and concurrent enrollment in DRAM 4911 and DRAM 4811 required; open to juniors or higher. *McDonald*

Poetic voices of world theatre: Greek, Elizabethan, and others.

4702. Acting Technique IV

(269) Second semester. Three credits. Three 2-hour studio periods. Prerequisite: DRAM 4701 and consent of instructor, and concurrent enrollment in DRAM 4912 and DRAM 4812 required; open to juniors or higher. *McDonald*

The study and practice of acting techniques utilized in the performance of Shakespeare's plays.

4703. Acting Technique V

(276) First semester. Three credits. Three 2-hour studio periods. Prerequisite: DRAM 4702 and consent of instructor; open to juniors or higher.

The study and practice of acting techniques utilized in a range of comic styles.

4704. Acting Technique VI

(277) Second semester. Three credits. Three 2-hour studio periods. Prerequisite: DRAM 4703 and consent of instructor; open to juniors or higher.

The study and practice of acting techniques utilized in the performance of modern non-realists.

4705. Acting for the Media

(249) Either semester. Credits and hours by arrangement. Prerequisite: DRAM 4702; open only with consent of instructor; open to juniors or higher.

Study and practice in the principles and techniques of television performance and acting before the camera.

4711. The Director in the Theatre

(263) Either semester. Three credits. Prerequisite: DRAM 2130, 2131; 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.

4711W. The Director in the Theatre
(263W) Either semester. Three credits. Prerequisite: DRAM 2130, 2131; ENGL 1010 or 1011 or 3800; open to juniors or higher.

4801. Theatre Jazz Dance III
(238) Second semester. Three credits. Three 2-hour studio periods. Prerequisite: DRAM 2802 and consent of instructor; open to juniors or higher. May be repeated for credit with a change in course content to a maximum of 9 credits. *Sabatine*

Further work in techniques and styles of jazz dance. Projects in jazz choreography.

4811. Theatre Dance I
(239) First semester. Three credits. Prerequisite: DRAM 1801, 1802; open to juniors or higher. *Sabatine*
Stage movement and dances from Greek to Renaissance.

4812. Theatre Dance II
(240) Second semester. Three credits. Prerequisite: DRAM 4811; open to juniors or higher. *Sabatine*
Stage movement and dances from the Renaissance through the Restoration.

4821. Musical Theatre Dance
(250) First semester. Three credits. Three 2-hour studio periods. Prerequisite: Open to juniors or higher. Recommended preparation: DRAM 2802. May be repeated for credit with a change in course content to a maximum of 6 credits. *Sabatine*

Tap, free style, folk and social dance forms used in musical theatre. Integration of dance with song.

4911. Voice and Diction I
(220) First semester. Three credits. Prerequisite: DRAM 1901 and concurrent enrollment in DRAM 4701; open to juniors or higher. *Stern*

Study and practice in the continued development of breathing, phonation and resonance skills, with added attention being paid to non-regional pronunciation (including the standard sounds and symbols of the International Phonetic Alphabet), articulation (of colloquial and classical diction styles), and phrasing.

4912. Voice and Diction II
(222) Prerequisite: DRAM 4911 and concurrent enrollment in DRAM 4702; open to juniors or higher. *Stern*

Continued exploration of voice production and elevated diction skills required for acting in classical and period styles. Particular attention is given to textual analysis, verse performance, and the specialized voice techniques required for highly emotional scenes.

4931. Stage Dialects
(265) Either semester. Two credits. One class period and one 2-hour lab. Prerequisite: Open to juniors or higher. Recommended preparation: DRAM 4911. *Stern*

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.

4941. Oral Interpretation of the Drama
(241) Second semester. Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: DRAM 2941, 1701.

Ecology and Evolutionary Biology (EEB)

Head of Department: Professor Kentwood D. Wells
Department Office: Room 314, Torrey Life Sciences Building

For major requirements, see the College of Liberal Arts and Sciences section of this *Catalog*.

2202. Evolution and Human Diversity
(202) Second semester, alternate years. Three credits. *Schlichting*

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.

2208. Introduction to Conservation Biology
(208) Second semester. Three credits. *Elphick*

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.

2210. Animal Models and Human Evolution
(210) Second semester. Three credits. Prerequisite: Any one of the following: BIOL 1102, 1107 or 1108 or ANTH 2502, or consent of instructor. *Goldman*

Information from a variety of animal models will be used to evaluate and expand upon current hypotheses regarding the evolution of unique hominid traits such as consciousness, language, learning by imitation, an extended period of parental care, and a highly developed and complex social system.

2214. Biology of the Vertebrates
(214) First semester. Three credits. Two 1-hour lecture periods, with demonstrations. Prerequisite: Three credits of introductory Biology. *Rubega, Schwenk, Wells*

Evolutionary history and diversity of vertebrates with emphasis on classification, fossil history, feeding, locomotion, physiological ecology, reproduction, defense, and social behavior.

2227. Biology of Plants
(227) First semester. Three credits. Prerequisites: BIOL 1108 or 1110 or instructor consent. *L. Lewis*

Structure, function, evolution, and ecology of plants. Importance of plants for ecosystems and human life.

2244. General Ecology
(244) First semester. Four credits. Prerequisite: Six credits of college biology. Three lectures and one 2-hour discussion section. *Adams, Chazdon, Colwell, Silander, Turchin*

Fundamental ecological dynamics of communities, populations and ecosystems, with emphasis in discussion sections on reading primary literature, problem-solving, and exposure to ecological research techniques.

2244W. General Ecology
(244W) Four credits. Prerequisite: Six credits of college biology; ENGL 1010 or 1011 or 3800.

Content as in EEB 2244; requires major writing assignment.

2245. Evolutionary Biology
(245) Second semester. Three credits. Prerequisite: Six credits of college biology. *Caira, Henry, Holsinger, Jockusch, Simon*

Introduction to evolutionary mechanisms, biogeography, and the history of major groups of plants and animals.

2245W. Evolutionary Biology
(245W) Four credits. Four class periods. Prerequisite: Six credits of college biology; ENGL 1010 or 1011 or 3800.

Content as in EEB 2245; requires major writing assignment.

3201. Animal Behavior
(253) (Also offered as PSYC 3201.) Either semester (Waterbury). Three credits. Prerequisite: BIOL 1102 or 1107, and PSYC 1100. *Trumbo*

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
(203) (Also offered as EEB 5203.) First semester, alternate years. Four credits. Two class periods and two 2-hour laboratory periods. Prerequisite: BIOL 1108 or instructor consent; open to juniors or higher. *Jones*

Analysis of diversity in plant form; principles of plant construction and development.

3204. Aquatic Plant Biology
(204) (Also offered as EEB 5204.) First semester, alternate years. Four credits. Two lectures and two 3-hour field trip/laboratory periods. Prerequisite: BIOL 1108 or 1110 or instructor consent. *Les*

Field and laboratory-oriented study of the anatomy, morphology, ecology, physiology, systematics and evolution of vascular aquatic and wetland plants.

3205. Current Issues in Environmental Science
(205) First semester, alternate years. Three credits. Open to honors students. Open to non-honors students only with consent of instructor. Recommended preparation: 8 credits of college level science. *Simon, Thorson*

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.

3209W. Soil Degradation and Conservation
(209W) (Also offered as EEB 5209.) Second semester, alternate years. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800. Recommended preparation: EEB 2244 or equivalent. Open only by instructor consent.

Causes and consequences of soil degradation in agricultural and natural ecosystems, including salinization, erosion, nutrient impoverishment, acidification, and biodiversity loss. Historical perspective and current strategies of soil conservation.

3220. Evolution of Green Plants
(280) (Also offered as EEB 5220.) Second semester, alternate years. Three credits. Prerequisite: BIOL 1108 or 1110; open to juniors or higher. *Goffinet, L. Lewis*

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.

3220W. Evolution of Green Plants
(280W) Four credits. Three class periods and one discussion period. Prerequisite: BIOL 1108 or 1110; ENGL 1010 or 1011 or 3800; open to juniors or higher.

Content as in EEB 3220. Major writing assignment required.

3221. Evolution of Green Plants Laboratory

(291) Second semester, alternate years. One credit. One 3-hour laboratory period. Prerequisite or corequisite: EEB 3220 and instructor consent; open to juniors or higher. *Goffinet, L. Lewis*

Study of morphological and anatomical characters of extant and fossil plants. Phylogenetic inferences from morphological and molecular characters. Discussion of primary literature.

3230. Marine Biology

(294) (Also offered as MARN 3014.) First semester (Storrs) second semester (Avery Point). Three credits. Two class periods and one 2-hour laboratory period. Prerequisite: One year of laboratory biology. *Whitlatch/Storrs, McManus/AveryPoint*

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

(240) (Also offered as EEB 5240.) Second semester, alternate years. Four credits. Three class periods and one 3-hour laboratory period. Prerequisites: Six credits of 2000-level or above biology or instructor consent. *Goffinet*

Diversity, evolution, ecology, development and taxonomy of the bryophytes (mosses, liverworts and hornworts) and lichen-forming fungi.

3247. Limnology

(247) (Also offered as ENVE 3320.) First semester. Three credits. Prerequisite: (MATH 1060 or 1120 or 1131) and (CHEM 1122 or 1127 or 1137 or 1147). Recommended preparation: BIOL 1107 or an introductory biology course.

Physical, chemical, and biotic interrelationships of freshwater habitats.

3250. Biology of the Algae

(290) (Also offered as EEB 5250.) First semester, alternate years. Four credits. Three lectures and one 4-hour laboratory. Prerequisite: BIOL 1108 or 1110 or instructor consent; open to juniors or higher. *L. Lewis*

Laboratory and field-oriented study of major groups of algae, emphasizing structure, function, evolution, systematics, and ecology.

3254. Mammalogy

(254) (Also offered as EEB 5254.) First semester, alternate years. Four credits. Two class periods and one 4-hour laboratory period. Prerequisite: Six credits of 2000-level or above biology courses and consent of instructor. EEB 2214 is recommended. *Schwenk*

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

(256) Either semester. Three credits. Prerequisite: Three credits of introductory biology. *Anderson*

Plants and animals used by people; origin, history, biology, distribution, and role in development of civilizations.

3265. Herpetology

(265) (Also offered as EEB 5265). Second semester, alternate years. Four credits. Two class periods and one 4-hour laboratory period. Prerequisite: Six credits of 2000-level or above biology and consent of instructor. EEB 2214 is recommended. *Wells*

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.

3269. Social Insects

(269) (Also offered as EEB 5269.) Second semester, alternate years. Three credits. Prerequisite: Six credits of introductory biology. *Adams*

Behavior, ecology, evolution of social insects: ants, wasps, bees, and termites.

3271. Systematic Botany

(271) Second semester, alternate years. Four credits. Two class periods and two 2-hour laboratory periods. Prerequisite: BIOL 1108 or 1110. *Les*

Classification, identification, economic importance, evolution and nomenclature of flowering plants. Laboratory compares vegetative and reproductive characters of major families.

3273. Comparative Vertebrate Anatomy

(273) First semester, alternate years. Four credits. Three class periods and one 3-hour laboratory period. Prerequisite: BIOL 1108. *Schwenk*

Anatomy, development, functional morphology, and evolution of living vertebrate animals.

3307. African Field Ecology and Renewable Resources Management

(207) (Also offered as NRME 3305 and EEB 5307.) Second semester, alternate years. Four credits. One class period during the semester, followed by three weeks in the field in South Africa. Recommended preparation: EEB 2244. Instructor consent required. *Silander*

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.

3891. Internship in Ecology, Conservation, or Evolutionary Biology

(206) Either semester. One to nine credits per semester. Hours by arrangement. Prerequisite: Instructor consent. May be repeated for a total of up to 15 credits using either EEB 3891 and/or EEB 5891. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

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.

3894. Undergraduate Seminar

(297) Either or both semesters. Credits and hours by arrangement. May be repeated for credit with a change in topic. Content varies with instructor.

3895. Special Topics

(298) Either semester. Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary.

3898. Variable Topics

(289) Either semester. Three credits. With a change of topic, may be repeated for credit. Prerequisites and recommended preparation vary.

3899. Independent Study

(299) Either or both semesters. Credits and hours by arrangement. Open only with consent of instructor and the department honors committee. May be repeated for credit with a change in topic.

Independent investigation of special problems in ecology and evolutionary biology.

4200. Biology of Fishes

(200) Second semester, alternate years. Four credits. Three class periods and one three-hour laboratory period. Prerequisite: BIOL 1108. Not open for credit to students who have passed NRME 3201 or MARN 3000. *Schultz*

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

(296) Second semester, alternate years. Three credits. Prerequisites: BIOL 1107 and BIOL 1108. *Schultz*

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.

4230WC. Methods of Ecology

(293WC) First semester. Four credits. Two class periods and two 3-hour laboratories. Prerequisite: EEB 2244 or instructor consent; ENGL 1010 or 1011 or 3800. Recommended preparation: One course in statistics and one course in calculus. *Chazdon, Silander*

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.

4243. Insect Classification and Identification

(243) Second semester, alternate years. Four credits. Three 1-hour lecture periods and one 4-hour laboratory. Prerequisite: Instructor consent. *Henry*

A phylogenetic approach to the classification and identification of the principal families of insects. Analysis of evolutionary innovations responsible for diversification of the major groups.

4243W. Insect Classification and Identification

(243W) Three 1-hour lecture periods plus individual tutorials for writing assignments. Prerequisite: Instructor consent; ENGL 1010 or 1011 or 3800. *Henry*

Content as in EEB 4243, but without laboratory. A major writing assignment is required.

4248. Limnological Methods

(238) Second semester. Three credits. One class period and two 3-hour field/laboratory periods. Prerequisite: Instructor consent and EEB 3247 or ENVE 3320, either of which may be taken concurrently. *Rich*

Field and laboratory study of physical, chemical, and biotic elements of freshwater habitats. Field trips required.

4250. General Entomology

(286) First semester. Four credits. Two class periods and two 2-hour laboratory periods. Prerequisite: BIOL 1108. *Henry, Schaefer, Wagner*

The biology of insects: anatomy, physiology, ecology, behavior, development, evolution, and diversity.

4251. Medical Entomology

(284) Second semester, alternate years. Three credits. Two class periods and one 2-hour laboratory period. Prerequisite: BIOL 1108. *Schaefer*

Identification and biology of disease-spreading poisonous, and parasitic arthropods.

4251W. Medical Entomology

(284W) Four credits. Prerequisite: BIOL 1108; ENGL 1010 or 1011 or 3800.

Content as in EEB 4251; requires major writing assignment. behavior, development, evolution, and diversity.

4252. Field Entomology

(252) Either semester, summer sessions, or any fractions thereof. Credits and hours by arrangement, to permit offering special sessions of the course to interested students during the spring recess or between fall and spring semester break. Consent of instructor required.

Collection, identification, and ecology of insects.

4253. Concepts of Applied Entomology

(288) Second semester, alternate years. Three credits. Two class periods and one 3-hour laboratory period. Prerequisite: BIOL 1108 or 1110. *Schaefer*

Control, ecology, economics, damage assessment and detection of insect infestations.

4253W. Concepts of Applied Entomology

(288W) Four credits. Two class periods and one 3-hour laboratory period. Prerequisite: BIOL 1108 or 1110; ENGL 1010 or 1011 or 3800.

Content as in EEB 4253. Major writing assignment required.

4260. Ornithology

(281) Second semester. Two credits. Two class periods. Not open for credit to students who have passed EEB 285. *Rubega*

Adaptations, habits, and importance of birds.

4261. Ornithology Laboratory

(287) Second semester. Two credits. One 4-hour laboratory period; required field trips. Prerequisite: Consent of the instructor. Open only to students who are currently taking, or have completed, EEB 4260. *Rubega*

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.

4268. Ecological Plant Geography

(268) Second semester, alternate years. Three credits. Three class periods and one weekend field trip. Prerequisite: EEB 2244 and 2245 or instructor consent.

Geographical differences in vegetation composition and plant adaptation. A global perspective on effects of climate, soil, local conditions and ecosystem processes.

4272. The Summer Flora

(272) Summer session. 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

(283) First semester, alternate years. Four credits. Two class periods, and two 2-hour laboratory periods. Prerequisite: BIOL 1108. *Caira*

Protozoan and metazoan parasites of humans and other animals.

4275. Invertebrate Zoology

(275) First semester, alternate years. Four credits. Two class periods and one 4-hour laboratory period. Prerequisite: Six credits of introductory biology. *Caira*

Body organization, functional morphology and evolution compared among major invertebrate phyla. Field trips required.

4276. Plant Anatomy

(276) First semester, alternate years. Four credits. Two class periods and two 2-hour laboratory periods. Prerequisite: BIOL 1108 or 1110 or instructor consent. *Jones*

Internal structure of seed plants: development and environmental responses.

4276W. Plant Anatomy

(276W) Four credits. Prerequisite: BIOL 1108 or 1110 or instructor consent; ENGL 1010 or 1011 or 3800.

4896W. Senior Research Thesis in Ecology and Evolutionary Biology

(292W) Either semester. Three credits. Hours by arrangement. Prerequisite: Three credits of EEB 3899, which may be taken concurrently; ENGL 1010 or 1011 or 3800; open to juniors or higher; open only with consent of instructor and department honors committee. Not limited to honors students.

A "W" course for students writing a senior thesis on their independent research.

Economics (ECON)

Head of Department: Professor Dennis Heffley
Department Office: Room 345, Monteith Building

For major requirements, see the College of Liberal Arts and Sciences section of this *Catalog*.

1000. Essentials of Economics

(101) First semester. Three credits. Not open for credit to students who have passed ECON 1200, 1201, 1202, or 113.

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.

1107. Honors Core: Economies, Nature, and the Environment

(107) Either semester. Three credits.

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

(108) Either semester. Three credits. Not open for credit to students who have passed ECON 2201 or 2202. *Knoblauch*

Introduction to game theory. Applications in the natural and social sciences and technology may include electric power auctions, evolutionary biology, and elections. CA 2.

1200. Principles of Economics (Intensive)

(102) (Formerly offered as ECON 113.) Second semester. Four credits. Four class periods. Recommended preparation: ECON 1000. Not open for credit to students who have passed ECON 1201, 1202, or 113. May not be taken concurrently with ECON 1201 or 1202.

Same core principles as ECON 1201 and 1202. One half macroeconomics and one half microeconomics. More demanding than ECON 1201 and 1202. Substitutes for ECON 1201 or 1202 as a prerequisite for all junior-senior level courses. May or may not substitute for ECON 1201 and 1202 outside economics; check *Catalog*. CA 2.

1201. Principles of Microeconomics

(112) Both semesters. Three credits. May be taken before or after ECON 1202. Not open for credit to students who have passed ECON 1200 or 113. May not be taken concurrently with ECON 1200.

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

(111) Both semesters. Three credits. May be taken before or after ECON 1201. Not open for credit to students who have passed ECON 1200 or 113. May not be taken concurrently with ECON 1200.

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.

1202C. Principles of Macroeconomics

(111C) CA 2.

2101. Economic History of Europe

(201) First semester. Three credits. Prerequisite: ECON 1200 or both ECON 1201 and 1202 (1201 may be taken concurrently). *Cosgel, Langlois*

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

(201W) Prerequisite: ECON 1200 or both ECON 1201 and 1202 (1201 may be taken concurrently); ENGL 1010 or 1011 or 3800. CA 1.

2102. Economic History of the United States

(203) Second semester. Three credits. Prerequisite: ECON 1200 or both ECON 1201 and 1202, ECON 1201 may be taken concurrently. *Carstensen*

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

(203W) Prerequisite: ECON 1200 or both ECON 1201 and 1202. (1201 may be taken concurrently); ENGL 1010 or 1011 or 3800. CA 1.

2104. Economic History of the Middle East

(204) First semester. Three credits. Prerequisites: ECON 1200 or both ECON 1201 and 1202. (1201 may be taken concurrently). *Cosgel*

Economic history of the Middle East, including the organization of rural and urban activity, relationship with Western Europe, and the roles of international trade, foreign capital, petroleum, and institutional structure in economic development. CA 4-INT.

2104W. Economic History of the Middle East

(204W) ECON 1200 or both ECON 1201 and 1202. (1201 may be taken concurrently); ENGL 1010 or 1011 or 3800. CA 4-INT.

2110. History of Economic Thought

(205) Second semester. Three credits. ECON 1200 or both ECON 1201 and 1202. *Cosgel, Cunningham, Langlois*

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

(205W) Prerequisite: ECON 1200 or ECON 1201 and 1202; ENGL 1010 or 1011 or 3800.

2126. Philosophy and Economics

(206) (Also offered as PHIL 2245.) Either semester. Three credits. Prerequisite: ECON 1200 or ECON 1201.

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

(207) First semester. Three credits. Prerequisite: ECON 1200 or 1201. *Minkler*

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.

2127W. Beyond Self-Interest

(207W) Prerequisite: ECON 1200 or 1201; ENGL 1010 or 1011 or 3800.

2198. Topics in Economic History and Thought

(202) Either semester. Three credits. Prerequisite: ECON 1200 or both ECON 1201 and 1202 or instructor consent. May be repeated for credit, with change in topic. *Carstensen, Cosgel, Langlois, Minkler*

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

(202W) Prerequisite: ECON 1200 or both ECON 1201 and 1202 or instructor consent; ENGL 1010 or 1011 or 3800.

2201. Intermediate Microeconomic Theory

(218) Both semesters. Three credits. Prerequisite: ECON 1200 or 1201. Recommended preparation: ECON 1202 and one of MATH 1071Q, 1110Q, 1121Q, 1131Q, or 1151Q. *Cosgel, Dharmapala, Hefley, Kimenyi, Knoblauch, Lott, Miceli, Minkler, Randolph, Ray, Segerson*

Intermediate microeconomic theory, covering demand and supply, exchange and production, pricing, and welfare economics.

2202. Intermediate Macroeconomic Theory

(219) Both semesters. Three credits. Prerequisite: ECON 1200 or 1202. Recommended preparation: ECON 1201 and one of MATH 1071Q, 1110Q, 1121Q, 1131Q, or 1151Q. *Ahking, Cunningham, Morand, Zimmermann*

Intermediate macroeconomic theory, covering national income accounting; the determination of aggregate output, employment and price levels; elements of business cycles and economic growth.

2301. Mathematical Economics

(214) First semester. Three credits. Prerequisite: ECON 1200 or both 1201 and 1202; MATH 1071Q or 1110Q or 1121Q or 1131Q. *Hefley, Knoblauch, Lott, Ray, Segerson, Zimmermann*

Application of mathematical techniques to economic problems. Methods studied: set theory, linear algebra, equilibrium analysis, unconstrained and constrained optimization, comparative statics, and linear programming.

2311C. Empirical Methods in Economics I

(212C) Second semester. Three credits. Two class periods and one 2-hour laboratory period. Prerequisite: ECON 1200 or both ECON 1201 and 1202; and MATH 1071Q or 1110Q or 1121Q or 1131Q; and STAT 1000QC or 1100QC. A course recommended for all

students majoring in economics. *Couch, Lott, Ray, Tripathi*

Introduction to the empirical testing of economic theories. Student projects testing simple economic models.

2312WC. Empirical Methods in Economics II

(213WC) Second semester. Three credits. Prerequisite: ECON 2311C; ENGL 1010 or 1011 or 3800. *Lott, Ray, Tripathi*

Analysis of economic time series, estimation of single- and simultaneous-equation economic models, and statistical decision theory.

2326C. Operations Research

(216C) First semester. Three credits. Two 75-minute classes per week. Seven of the classes will be held at the computer lab. Recommended preparation: ECON 1200 or both ECON 1201 and 1202.

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

(217) Either semester. Three credits. Prerequisites: ECON 1200 or both ECON 1201 and 1202; and STAT 1000QC or 1100QC. *Ahking, Cosgel*

The presentation of economic data and testing of economic theory through the use of appropriate computer based tools. Analysis of macroeconomic 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

(215) Either semester. Three credits. Prerequisite: ECON 1200 or both ECON 1201 and 1202; STAT 1000Q or 1100Q. Recommended preparation: MATH 1070Q.

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

(215W) Prerequisite: ECON 1200 or both ECON 1201 and 1202; STAT 1000Q or 1100Q; ENGL 1010 or 1011 or 3800. Recommended preparation: MATH 1070Q.

2411. Money and Banking

(230) Both semesters. Three credits. Prerequisite: ECON 1200 or both ECON 1201 and 1202. (1201 may be taken concurrently.) *Ahking, Cunningham, Lott*

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.

2431. Economics of Taxation and Government Spending

(220) Either semester. Three credits. Prerequisite: ECON 1200 or 1201. Recommended preparation for students who have completed ECON 1201: 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

(221) Second semester. Three credits. Prerequisite: ECON 1200 or 1201.

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

(222) Either semester. Three credits. Prerequisites: ECON 1200 or both ECON 1201 and 1202. *Hallwood*

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

(225) (Formerly offered as ECON 274.) Second semester. Three credits. Prerequisite: ECON 1201, or 1200. Recommended preparation: ECON 2201. *Couch, Kimenyi*

Economics of labor: human capital theory, discrimination, unemployment, manpower policy, and trade unions.

2441W. Labor Economics

(225W) (Formerly offered as ECON 274W.) Prerequisite: ECON 1201 or 1200; ENGL 1010 or 1011 or 3800. Recommended preparation: ECON 2201.

2444. Women and Minorities in the Labor Market

(224) (Formerly offered as ECON 279.) First semester. Three credits. Prerequisite: ECON 1200 or both ECON 1201 and 1202. *Kimenyi, Randolph*

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.

2446. Labor Legislation

(226) (Formerly offered as ECON 276.) Second semester. Three credits. Prerequisite: ECON 1201 or 1200.

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.

2456. Economics of Poverty

(223) (Formerly offered as ECON 257.) First semester. Three credits. Prerequisite: ECON 1200 or both ECON 1201 and 1202. *Kimenyi*

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

(232) (Formerly offered as ECON 264.) Second semester. Three credits. Prerequisite: ECON 1201 or 1200. *Knoblauch, Langlois, Minkler*

Relations between government and business. Public policies enforcing, supplementing, or replacing competition in particular markets, studies of selected industries and legal cases.

2467. Economics of the Oceans

(233) Either semester. Three credits. Prerequisite: ECON 1200 or 1201. Recommended preparation for those students who have passed ECON 1202.

Economies of industries that use and manage ocean resources. Applications of industrial organization, law and economics, natural resource theory, and environmental economics.

2477. Transitional Economies of Russia and Eastern Europe

(228) (Formerly offered as ECON 244.) First semester. Three credits. Prerequisite: ECON 1200 or both ECON 1201 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.

3416. Special Problems in Money and Banking

(237) (Formerly offered as ECON 231.) Second semester. Three credits. Prerequisites: ECON 2202, and 2411. Recommended preparation: One of: MATH 1071Q, 1121Q, 1131Q, 1110Q, or 1151Q. *Ahking*

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

(242) Either semester. Three credits. Prerequisite: ECON 2201. Recommended preparation: ECON 1200 or 1202 and one of: MATH 1071Q, 1110Q, 1121Q, 1131Q, or 1151Q. *Matschke*

Economic basis of international trade, trade policies, and international economic organizations.

3421W. International Trade

(242W) Prerequisite: ECON 2201; ENGL 1010 or 1011 or 3800. Recommended preparation: ECON 1200 or 1202 and one of: MATH 1071Q, 1110Q, 1121Q, 1131Q, or 1151Q.

3422. International Finance

(243) Either semester. Three credits. Prerequisites: ECON 2202. Recommended preparation: ECON 1200 or 1201 and one of: MATH 1071Q, 1121Q, 1131Q, or 1151Q. *Ahking, Cunningham, Zimmermann*

Payments and financing of international trade; foreign exchange markets, the balance of payments, capital flows, and international monetary arrangements.

3431. Public Finance

(253) Either semester. Three credits. Prerequisites: ECON 2201. Recommended preparation: ECON 1200, 1202 and one of: MATH 1071Q, 1110Q, 1121Q, 1131Q, or 1151Q. *Dharmapala, Kimenyi, Miceli, Segerson*

Government expenditures and tax policies: theories of public choice, size and mix of government budgets, alternative tax systems, and tax reform.

3431W. Public Finance

(253W) Prerequisites: ECON 2201; ENGL 1010 or 1011 or 3800. Recommended preparation: ECON 1202, 1200 and one of: MATH 1071Q, 1110Q, 1121Q, 1131Q, or 1151Q.

3438. Contemporary Problems in Economics

(258) Either semester. Three credits. Prerequisites: ECON 2201 and 2202 (one of which may be taken concurrently). Recommended preparation: One of: MATH 1071Q, 1110Q, 1121Q, 1131Q, or 1151Q.

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

(258W) Either semester. Three credits. Prerequisites: ECON 2201 and 2202 (one of which may be taken concurrently); ENGL 1010 or 1011 or 3800. Recommended preparation: One of: MATH 1071Q, 1110Q, 1121Q, 1131Q, or 1151Q.

3439. Urban and Regional Economics

(259) (Also offered as URBN 3439.) Second semester. Three credits. Prerequisite: ECON 2201. Recommended preparation: ECON 1200, 1202 and one of: MATH 1071Q, 1110Q, 1121Q, 1131Q, or 1151Q. *Heffley, Miceli*

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

(259W) Prerequisite: ECON 2201; ENGL 1010 or 1011 or 3800. Recommended preparation: ECON 1200, 1202 and one of: MATH 1071Q, 1110Q, 1121Q, 1131Q, or 1151Q.

3441. Theory of Labor Markets

(275) Either semester. Three credits. Prerequisite: ECON 2201. Recommended preparation: One of: MATH 1071Q, 1110Q, 1121Q, 1131Q, or 1151Q. *Couch, Kimenyi*

Theoretical analysis of labor markets: labor supply and demand; wage differentials; human capital; and the inflation-unemployment tradeoff.

3451. Health Economics

(261) Second semester. Three credits. Prerequisite: ECON 2201. Recommended preparation: One of: MATH 1071Q, 1110Q, 1121Q, 1131Q, or 1151Q. *Heffley*

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.

3461. Organization of Industry

(267) First semester. Three credits. Prerequisite: ECON 2201. Recommended preparation: One of: MATH 1071Q, 1110Q, 1121Q, 1131Q, or 1151Q. *Knoblauch, Langlois, Minkler*

The nature of competition and economic organization. Competitive effects of business practices, and their influence on price, production, and technological change.

3468. Economics of the Law

(268) Either semester. Three credits. Prerequisite: ECON 2201. Recommended preparation: MATH 1071Q, 1110Q, 1121Q, 1131Q, or 1151Q. *Miceli*

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

(247) Either semester. Three credits. Prerequisites: ECON 1200 or 1202 or 2201. Recommended preparation: One of: MATH 1071Q, 1110Q, 1121Q, 1131Q, or 1151Q. *Randolph, Zimmermann*

Economics of problems facing developing nations: theories of development, and strategies and policies to promote economic development.

3473W. Economic Development

(247W) Prerequisites: ECON 1200 or 1202 or 2201; ENGL 1010 or 1011 or 3800. Recommended prepara-

tion: One of: MATH 1071Q, 1110Q, 1121Q, 1131Q, or 1151Q.

3479W. Economic Growth

(249W) Either semester. Three credits. Prerequisites: ECON 2202; ENGL 1010 or 1011 or 3800. *Ahking, Cunningham, Langlois, Morand, Zimmermann*

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.

3481. Internship – Field Study

(294) Both semesters. Two credits. Hours by arrangement. Prerequisite: Instructor consent required; students must have: nine credits of 2000-level or above economics courses (six of which may be concurrent); students must be at least 6th-semester and have a minimum GPA of 2.25 or a minimum of 2.5 in economics courses at the 2000-level or above; 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; must be taken concurrently with ECON 3491; no credit will be given for one course without the other. Does not count toward the economics major. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

Supervised field work, of six to eight hours per week, 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).

3491. Internship – Research Paper

(295) Both semesters. One credit. Hours by arrangement. Prerequisite: Instructor consent required; students must have: nine credits of 2000-level or above economics courses (six of which may be concurrent); students must be at least 6th-semester and have a minimum GPA of 2.25 or a minimum of 2.5 in economics courses at the 2000-level or above; must be taken concurrently with ECON 3481; no credit will be given for one course without the other.

Research paper of 3,000-4,000 words on approved topic related to the internship field study.

3491W. Internship – Research Paper

(295W) Prerequisite: ENGL 1010 or 1011 or 3800. Must be taken concurrently with ECON 3481.

3493. Foreign Study

(293) Either or both semesters. Credits and hours by arrangement. May be repeated for credit. Consent of Department Head required, prior to the student's departure. May count toward the major with consent of the advisor.

Special topics taken in a foreign study program.

3495. Special Topics

(298) Either semester. Credits and hours by arrangement. With a change in topic, this course may be repeated for credit. Prerequisites and recommended preparation vary.

3498. Variable Topics

(297) Either semester. Three credits. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary.

3499. Independent Study

(299) Either or both semesters. Credits and hours by arrangement. Open only with consent of instructor. With a change of topic, may be repeated for credit. No more than 6 credits in ECON 3499 may be counted toward major requirements in the department.

Tutorial course to enable qualified students to round out their training in economics. Independent reading conferences and short research papers.

4494W. Seminar in Economics

(286W) Either semester. Three credits. Prerequisite: ECON 2201 and 2202 (one of which may be concurrent); ENGL 1010 or 1011 or 3800. Recommended preparation: One of: MATH 1071Q, 1110Q, 1121Q, 1131Q, or 1151Q.

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

(289W) Either semester. Three credits. Hours by arrangement. Open only with consent of instructor. Prerequisite: ECON 4494W or consent of the Department Honors Advisor; ENGL 1010 or 1011 or 3800.

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.

Education (EGEN)

3100. Seminar/Clinic: Teaching and Learning

(294) Semester by arrangement. Three credits. Prerequisite: Open only to students in the Integrated Bachelor's/Master's Teacher Preparation Program.

Integration of the concepts of learning, special needs, and technology with clinical experiences.

3110. Seminar/Clinic: The Student in the School Context

(295) Second semester. Three credits. Prerequisite: EGEN 3100. Open only to students in the Integrated Bachelor's/Master's Teacher Preparation Program.

Integration of concepts of social and community issues, and exceptionalities with clinical experiences.

3110W. Seminar/Clinic: The Student in the School Context

(295W) Prerequisite: EGEN 3100; ENGL 1010 or 1011 or 3800.

4100. Seminar/Clinic: Methods of Teaching

(296) First semester. Three credits. Prerequisite: EGEN 3110. Open only to students in the Integrated Bachelor's/Master's Teacher Preparation Program.

Integration of concepts of learning assessment and exceptionalities with area specific methods.

4110. Seminar/Clinic: Analysis of Teaching

(297) Second semester. Three credits. Prerequisite: EGEN 4100 and 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

(298) Either semester. Three credits. Prerequisite: Students must be accepted by the School of Education Honors Committee as candidates for Honors Scholars or University Scholars. Can be repeated for credit.

4197. Independent Study: Honors Thesis Preparation

(299) Either semester. Three credits. Prerequisite: Students must be accepted by the School of Education Honors Committee as candidates for Honors Scholars or University Scholars. Can be repeated for credit.

Education Curriculum and Instruction (EDCI)

Head of Department: Professor Mary Anne Doyle
Department Office: Room 315, Gentry Building

For major requirements, see the Neag School of Education section of this *Catalog*.

3000. Introduction to Teaching

(201) First semester. 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.

3002. Introduction to Bilingual-Bicultural Education

(204) Semester by arrangement. Three credits. *Gort, Leach, Reagan, Reyes*

Deals with cultural-historical background and processes of establishment and implementation of bilingual-bicultural education program.

3005. Introduction to Outdoor Education

(212) Semester and hours by arrangement. Three credits. *Goodkind*

An introduction to the elements and philosophy of outdoor education. The development of knowledge, understanding and appreciation of educational values inherent in the natural environment.

3006. Sociolinguistic Diversity and the Classroom

(231) Second semester. One credit. Prerequisite: Open only to students in the Integrated Bachelor's/Master's Teacher Preparation Program. *Osborn, Reagan*

A basic overview of the role of language in the educational process, and the educational implications of language diversity, as one component of multicultural diversity, in the classroom. Topics include the nature and elements of human language, prescriptive and descriptive approaches to language study, first and second language acquisition, language variation and its social and educational implications, the relationship between language and culture, and foreign and second language education, including bilingual and English as a Second Language programs.

3007. Social and Community Issues in Education

(233) Second semester. One credit. Prerequisite: Open only to students in the Integrated Bachelor's/Master's Teacher Preparation Program. *Mannebach*

Social and community issues, including the effect of alcohol, drugs and tobacco, confronting teachers in contemporary society.

3090. Directed Observation and Participation

(262) Credits by arrangement, not to exceed three. Open only with consent of instructor. This course may be taken for more than one semester.

Gives prospective teachers an opportunity to see secondary and elementary school teachers and pupils in action, to discuss with supervisors and teachers problems related to work in designated field, and to study school resources from the standpoint of good teaching.

3305. Methods in Elementary School Music

(258) Semester by arrangement. Three credits. Prerequisite: Satisfactory progress in applied music, and consent of instructor.

4010. Teaching Reading and Writing in the Content Areas

(273) Second semester. Two credits. Prerequisite: Open only to students in the Integrated Bachelor's/Master's Teacher Preparation Program. *Irwin*

A study of the role of reading and writing in the learning of the content areas taught in secondary schools.

4088. Variable Topics

(298) Either semester. Credits and hours by arrangement. Open only with consent of instructor. May be repeated for credit.

4099. Independent Study for Undergraduates

(299) Either semester. Credits and hours by arrangement. Prerequisite: Open only to juniors and seniors with appropriate background for the study of education. Students must present the instructor with a problem well laid out for investigation. May be repeated for credit with a change in content.

Designed primarily for qualified students who wish to extend their knowledge in some specialized area.

4110. Teaching Reading and Writing in the Elementary School

(221) First semester. Three credits. Prerequisite: Open only to Elementary Education and Special Education majors. *Doyle, Irwin, Kaufman*

An introduction to the teaching of reading and writing in the elementary school. Field experiences may be included.

4110W. Teaching Reading and Writing in the Elementary School

(221W) Prerequisite: Open only to Elementary Education and Special Education majors; ENGL 1010 or 1011 or 3800.

4115. Teaching Mathematics in the Elementary School

(222) First semester. Two credits. Prerequisite: Open only to Elementary Education and Special Education majors. *DeFranco, McGivney-Burelle*

A study of current approaches to teaching and learning school mathematics. Opportunities will be provided for participants to develop an awareness and knowledge of the Standards for Teaching School Mathematics.

4120. Teaching Science in the Elementary School

(223) First semester. Two credits. Prerequisite: Open only to Elementary Education and Special Education majors. *Moss*

A study of curriculum materials, laboratory experiences and teaching techniques in science.

4125. Teaching Social Studies in the Elementary School

(224) First semester. 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

(220) Second semester. Three credits. Prerequisite: Open only to Elementary Education and Special Education majors. *Doyle, Irwin, Kaufman*

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

(276) Either semester. Credits and hours by arrangement. Prerequisite: Open only to students in the Integrated Bachelor's/Master's Teacher Preparation Program. 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.

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.

4205. Methods of Foreign Language Instruction, Pre K-12

(260) First semester. Three credits. Prerequisite: Open only to students in the Integrated Bachelor's/Master's Teacher Preparation Program. *Osborn, Reagan*

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.

4205W. Methods of Foreign Language Instruction, Pre K-12

(260W) Prerequisite: Open only to students in the Integrated Bachelor's/Master's Teacher Preparation Program; ENGL 1010 or 1011 or 3800.

4210. Instruction and Curriculum in the Secondary School

(266) Semester and hours by arrangement. Variable credit not to exceed 6. Prerequisite: Open only to students in the Integrated Bachelor's/Master's Teacher Preparation 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.

4210W. Instruction and Curriculum in the Secondary School

(266W) Prerequisite: Open only to students in the Integrated Bachelor's/Master's Teacher Preparation Program; ENGL 1010 or 1011 or 3800.

4215. The Teaching of Reading in Middle and High Schools

(272) Semester and hours by arrangement. Variable credit. Prerequisite: Open only to students in the Integrated Bachelor's/Master's Teacher Preparation Program. *Irwin*

Methods of teaching reading to middle and high school students.

4250. Directed Student Teaching

(277) Either semester. Credits and hours by arrangement. Prerequisite: Open only to students in the Integrated Bachelor's/Master's Teacher Preparation Program. 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.

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.

4301. Foundations of Education: Philosophical Tools for Teachers

(232) Second semester. One credit. Prerequisite: Open only to students in the Music Education Teacher Preparation Program. *Reagan*

Philosophical trends in schooling, and applications of philosophy for prospective teachers.

Education Kinesiology (EKIN)

Head of Department: Professor Carl M. Maresh
Department Office: Room 223, Sports Center

For major requirements, see the Neag School of Education section of this *Catalog*.

All EKIN 2000-level or above courses are open to EKIN majors only or by instructor consent.

1160. Courses in Lifetime Sports Program

(160) Either semester. One credit. Two periods/week. Open to all University students. This course may be repeated with change of activity and/or skill level. Not to exceed 2 credits towards graduation. Students in the Department of Kinesiology may take up to six different activities for six credits toward graduation.

A variety of lifetime sports and skills are offered. The teaching of each activity will be geared to individual, dual, and team activities. The Lifetime Sports Program (EKIN 1160) in the Neag School of Education, Department of Kinesiology, accommodates students who have physical disabilities in the least restrictive environment possible. Participants requiring accommodations should contact the Program Coordinator at (860) 486-3623.

2100. Introduction to Athletic Training I

(161) First semester. First seven weeks. One credit. Prerequisite: Open only to Pre-Athletic Training students who are sophomores or higher. *Howard*

A survey class to explore general considerations of recognizing and treating athletic injuries. This section covers training and conditioning, nutrition, environment, and legal issues.

2110. Introduction to Athletic Training II

(162) First semester. Second seven weeks. One credit. Prerequisite: Open only to Pre-Athletic Training students who are sophomores or higher. *Howard*

A survey class to explore general considerations of recognizing and treating athletic injuries. This section covers tissue healing, rehabilitation, modalities, taping, and bandaging.

3090. Directed Observation and Participation

(262) Credits by arrangement. Prerequisite: Open only to students in Kinesiology programs. May be taken more than one semester, but total credits cannot exceed three. Prior to registration, students must apply for Directed Observation and provide for their own transportation.

Mentors include educators, recreationists, sport professionals.

3091. Internship

(290) Either semester or summer. Variable credits. Prerequisite: In accordance with departmental policy, students will have completed all academic course work in their concentration excluding Athletic Training prior to undertaking the internship. May be repeated for credit. Open only to students in Kinesiology programs.

Field service or experiences in cooperating agencies.

3098. Variable Topics

(298) Either semester. Credits and hours by arrangement. Open only with consent of instructor. May be repeated for credit with a change in content.

3099. Independent Study for Undergraduates

(299) Either semester. Credits and hours by arrangement. Open only to seniors with consent of Department Head or Instructor. May be repeated for credit with a change in content.

Laboratory or library research to expand understanding of a specialized topic in sport, leisure, or exercise sciences.

3099W. Independent Study for Undergraduates

(299W) Prerequisite: Open only to seniors with consent of the Department Head or Instructor; ENGL 1010 or 1011 or 3800.

3100. Prevention and Care of Athletic Injuries

(264) First semester. Three credits. Prerequisite: Open only to students in Kinesiology programs. *Mazerolle*

An introductory class to explore general considerations of preventing, recognizing, and treating athletic injuries.

3105. Therapeutic Modalities for Athletic Injuries

(239) Second semester. Three credits. Prerequisite: Open only to Athletic Training majors who are sophomores or higher. *McDermott*

Techniques and rationale pertaining to treatment and prevention of athletic injuries through the modalities of heat, cold, electricity, massage, ultrasound, and others. Also, the pharmacology of therapeutic medications.

3110. Athletic Training Clinical Rotation I

(221) Second semester. Two credits. Prerequisite: Open only to Athletic Training majors. *Graham, Mazerolle*

Provides students majoring in athletic training hands-on experience dealing with athletic injuries.

3111. Athletic Training Clinical Rotation II

(222) First semester. Two credits. Prerequisite: Open only to Athletic Training majors. *Graham, Mazerolle*

Provides students majoring in athletic training hands-on experience dealing with athletic injuries.

3112. Athletic Training Clinical Rotation III

(223) Second semester. Two credits. Prerequisite: Open only to Athletic Training majors. *Graham, Mazerolle*

Provides students majoring in athletic training hands-on experience dealing with athletic injuries.

3113. Athletic Training Clinical Rotation IV

(224) First semester. Three credits. Prerequisite: Open only to Athletic Training majors. *Graham, Mazerolle*

Provides students majoring in athletic training hands-on experience dealing with athletic injuries.

3114. Athletic Training Clinical Rotation V

(225) Second semester. Three credits. Prerequisite: Open only to Athletic Training majors. *Graham, Mazerolle*

Provides students majoring in athletic training hands-on experience dealing with athletic injuries.

3115. Sports Medicine Experiences

(270) Both semesters. One credit. Repeatable for 4 credits. Prerequisite: Open only to Athletic Training majors. *Graham*

Experiences in a variety of sports medicine settings that will serve to broaden an athletic-training student's awareness of medical coverage of athletic events and other medical personnel involved in athletic health care.

3120. Athletic Training Anatomy

(246) Second semester. Three credits. Prerequisite: Open only to Athletic Training majors. *Mazerolle*

Provides students majoring in athletic training in-depth knowledge of anatomy related to athletic injuries.

3124. Therapeutic Modalities Laboratory

(241) Second semester. One credit. *McDermott*

Provides students majoring in athletic training hands-on instruction/demonstration/practice/imple-

mentation of infrared modalities, electrical modalities, therapeutic ultrasound, mechanical modalities, and massage and other manual techniques as it relates to the treatment of athletic injuries.

3125. Taping and Bracing Laboratory

(250) Second semester. Two credits. Prerequisite: Open only to Athletic Training majors who are sophomores or higher. *Lopez*

Provides students majoring in athletic training an overview of the general concepts and principles related to dealing with specific athletic injuries.

3130. Assessment of Athletic Injuries

(260) Second semester. Three credits. Prerequisite: Open only to Athletic Training majors who are sophomores or higher. *Casa*

Techniques and procedures that athletic trainers use to evaluate injuries to the extremities. Includes history, observation, palpation, special tests, manual muscle testing, blood flow, nerve function, and other injury specific skills.

3135. Rehabilitation of Athletic Injuries

(234) First semester. Three credits. Prerequisite: Open only to Athletic Training majors. *Mazerolle*

The multi-dimensional approaches to rehabilitation of athletic injuries. The restoration of strength, range-of-motion, neuromuscular control, balance, cardiovascular endurance, and other components will be covered as it applies to specific athletic injuries.

3140. Emergency Procedures in Athletic Training

(292) First semester. Three credits. Prerequisite: Open only to Athletic Training majors. *Casa*

Evaluation and treatment skills for athletic injuries to the head, face, neck, trunk, spine, thorax, and abdomen. Acute first-aid considerations in life-threatening situations will also be covered in-depth.

3145. Rehabilitation of Athletic Injuries Laboratory

(251) First semester. One credit. Prerequisite: Open only to Athletic Training majors. *Lopez*

Provides students majoring in athletic training hands-on instruction/demonstration/practice/implementation of conditioning and rehabilitation exercises/techniques as they relate to the treatment of athletic injuries.

3150. Assessment Laboratory

(252) Either semester. Two credits. Prerequisite: Open only to Athletic Training majors. *Mazerolle*

Provides students majoring in athletic training an assessment of athletic injuries experience that integrates the material in previous courses so as to serve as a capstone academic experience related to evaluation skills for athletic injuries.

3155. Athletic Training Administration

(254) Second semester. Three credits. Prerequisite: Open only to Athletic Training majors. *Graham*

Administrative/Management concerns for the athletic trainer. Insurance, budgeting, counseling, facility design, hiring, record keeping, and other issues will be covered.

3155W. Athletic Training Administration

(254W) Prerequisite: Open only to Athletic Training majors; ENGL 1010 or 1011 or 3800.

3156. Administration Laboratory

(269) First semester. Two credits. Prerequisite: Open only to Athletic Training majors. *Graham*

Provides students majoring in athletic training an opportunity to have hands-on skill application for issues related to administration and management issues related to the athletic training profession.

3160. Counseling in Sports Medicine

(276) Second semester, even years. Three credits. Prerequisite: Open only to Athletic Training majors. *Graham*

Counseling concerns for the athletic trainer. Theory, practical skills, assessment, referral and specific counseling issues in athletic health care.

3170. Health and Medicine

(255) First semester. Three credits. Prerequisite: Open only to Athletic Training majors. *Graham*

Knowledge, skills, and values that a health professional must possess to recognize, treat, and refer, when appropriate, the general medical conditions and disabilities of athletes and others involved in physical activity.

3175. Strength and Conditioning for Athletic Trainers

(257) Second semester, odd years. Three credits. Prerequisite: Open only to Athletic Training majors. *Casa*

The focus of this class is the prevention of athletic injuries via the proper implementation of strength and conditioning principles. To include frequency, intensity, recovery, periodization, components of a fitness program, ergogenic aids, and protective bracing.

3177. Pathophysiology and Pharmacology for Athletic Trainers

(249) Second semester. Three credits. Prerequisite: Open only to Athletic Training majors. *McDermott*

The focus of this class is the pathophysiology and pharmacology as it relates to athletic injuries. Specifically, the injury and repair process of skin, muscle, bone, ligaments, tendons, and cartilage. The pharmacology of therapeutic medications and performance enhancing substances will be covered.

3200. Sport Administration II

(207) Second semester. Three credits. Prerequisite: Open only to students in Kinesiology programs. *Morrone*

Focuses on the many administrative roles the coach undertakes to involve the community in his/her sports program. The role of support groups; sport organizations; leagues and conferences; camps and clinics; local community relations; along with the relevance of youth, amateur and professional competition; are considered in depth by professors, coaches and guest speakers.

3210. Sport Administration I

(206) First semester. Three credits. Prerequisite: Open only to students in Kinesiology programs. *Morrone*

Focuses on the many administrative roles the coach assumes within the school when developing, maintaining and/or improving a sports program entrusted to him/her. The coach; the athlete; the program; facilities and equipment; academic and financial aid; scouting and recruiting; and, the media will be emphasized by professors, coaches and guest speakers.

3215. Theory of Coaching

(202) First semester. Three credits. Prerequisite: Open only to students in Kinesiology programs. *Morrone*

Focuses on the development of both a coaching philosophy and the skills necessary to develop as a coaching professional. Various coaches, professors and guest speakers provide insight into the essential elements of coaching, including technical training, tactical awareness, physical fitness and psychological preparation.

3300. Sport in Society

(236) First semester. Three credits. Prerequisite: SOCI 1001 or 1001W, or SOCI 1251 or 1251W. Open only to students in Kinesiology programs. *Bruening*

Sport as an institution. Sociological issues involving gender, race and intercollegiate, professional, and children's sports.

3300W. Sport in Society

(236W) Prerequisite: SOCI 1001 or 1001W, or SOCI 1251 or 1251W; ENGL 1010 or 1011 or 3800. Open only to students in Kinesiology programs.

3310. Introduction to Sport Management

(284) First semester. Three credits. Prerequisite: Open only to students in Kinesiology programs. *Burton*

Management practices, legal issues, budgeting, and supervision.

3315. Issues in Sport

(286) Either semester. Three credits. Prerequisite: Open only to students in Kinesiology programs.

The study of socio-cultural, economic, political, and other related issues in sport.

3320. Introduction to Sport and Exercise Psychology

(240) Second semester. Three credits. Prerequisite: Open only to Kinesiology majors. *Burton*

Examines psychological theories and research related to sport and exercise behavior. Explores the study of how personality and situational variables affect motivation, anxiety, and aggression in sport. Additional topics to be examined include group processes in sport, performance enhancement and psychological development through sport.

3330. Introduction to Theory and Methods of Research in Sport

(287) Second semester. Three credits. Prerequisite: Open only to students in Kinesiology programs.

Introduction to theoretical foundations, methodology and practice of research as these apply to sport and physical activity.

3335. Sport Law

(271) First semester. Three credits. *Fink*

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

(281) Second semester. Three credits. Prerequisite: ECON 1201, 1202 and open only to students in Kinesiology programs. *Fink*

Introduces the basic concepts, principles, and tools for sport marketing.

3500. Exercise and Sport Science for Coaches

(210) First semester. Four credits. Prerequisite: Open only to students in Kinesiology programs. *Volek*

Provides fundamental physiological principles and their application to coaching competitive athletics.

3520. Applied Anatomy and Kinesiology

(263) Second semester. Three credits. Prerequisite: Open only to students in Kinesiology programs. *Van Heest*

Human anatomy and its application to physical activity, exercise and sport.

3522. Sport Biomechanics

(272) First semester. Three credits. Prerequisite: PHYS 1010Q or 1201Q, PNB 2264-2265 and open only to students in Kinesiology programs.

Qualitative analysis of linear and angular motion, force and torque, momentum, energy, equilibrium, projectiles, aerodynamics.

3525. Fundamentals of Resistance Training

(265) Either semester. Four credits. Prerequisite: Open only to students in Kinesiology programs. *Kraemer*

Coaching professionals must have the knowledge, skills, and understanding of the scientific principles

on which to design individualized resistance training programs needed for optimal performance and injury prevention.

3530. Physiological Assessment of Competitive Athletics

(268) Second semester. Three credits. Prerequisite: Open only to students in Kinesiology programs. *Van Heest*

Focuses on the development of analysis techniques of human physiology specific to competitive athletes. The course will include both laboratory and field methods to evaluate aerobic ability, anaerobic ability, flexibility, muscular strength and power and body composition. It requires a strong foundation in musculoskeletal anatomy and physiology. The course is designed to better prepare the student for development of scientifically sound coaching practices.

3530W. Physiological Assessment of Competitive Athletics

(268W) Prerequisite: Open only to students in Kinesiology programs; ENGL 1010 or 1011 or 3800. *Van Heest*

3545. Resistance Training Exercise Techniques and Evaluation

(274) Second semester. Three credits. Prerequisite: Open only to students in Kinesiology programs; others by consent of instructor. *Kraemer*

Strength and conditioning professionals must have the knowledge of proper resistance exercise techniques, safety spotting techniques, equipment care and maintenance, different types of resistance training equipment, and the evaluation of physical performance capabilities. The understanding of the proper teaching techniques, testing protocols, and evaluation methods is vital to a strength and conditioning program.

3547. Service Learning through Sport and Physical Activity

(275) Either semester. Three credits. Prerequisite: Open only by instructor consent. *Bruening*

Requires reading, written journals, class discussion, and significant time out of class for community involvement in Hartford. Transportation is available.

3610. Introduction to Honors Research

(295) Both semesters. Three credits. Prerequisite: Open only to Honors Students in Kinesiology programs.

The student will meet with EKIN faculty members and attend laboratory/program staff meetings to survey the opportunities available for future Honors Thesis research.

3615. Honors Literature Review

(296) Both semesters. 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

(297W) Both semesters. Three credits. Prerequisite: Open only to Honors Students in Kinesiology programs; ENGL 1010 or 1011 or 3800.

The student will collect and interpret data and will write the Honors Thesis, completing work begun during EKIN 3615.

4500. Physiological Systems in Human Performance

(248) First semester. Three credits. Prerequisite: PNB 2264-2265 and open only to students in Kinesiology programs. *Armstrong, Maresh, Van Heest, Volek*

An organ systems approach to optimal human performance including metabolism, energy transfer, nerve transmission, muscle contraction, endocrine control, and cardiopulmonary physiology.

4510. Mechanisms and Adaptations in Sport and Exercise

(258) Second semester. Four credits. Prerequisite: PNB 2264-2265 and open only to students in Kinesiology programs. *Armstrong, Maresh, Van Heest, Volek*

An applied approach to the physiological mechanisms and adaptations influencing sport and exercise: optimal nutrition, body composition, exercise training, ergogenic aids, aging, cardiovascular health, and environmental factors.

4510W. Mechanisms and Adaptations in Sport and Exercise

(258W) Prerequisite: PNB 2264-2265 and open only to students in Kinesiology programs; ENGL 1010 or 1011 or 3800.

Educational Leadership (EDLR)

Head of Department: Professor Barry G. Sheckley
Department Office: Room 406, Gentry Building

For major requirements, see the Neag School of Education section of this *Catalog*.

3250. Experiential Learning and Education

(250) First semester. Three credits.

Experiential learning, individual values, personality characteristics. Learning as a life-long process, adult transition research.

3251. Introduction to Organizations and Human Resources Education

(251) Either semester. Three credits.

Theories and principles of organizations and organizational behavior as they relate to human resources development in education.

3252. Introduction to Management and Human Resources Education

(252) Either semester. Three credits.

Issues and tasks of human resources management (HRM) in educational settings. Theory and practice.

3253. Introduction to Planning and Evaluation and Human Resources Education

(253) Either semester. Three credits.

Planning and evaluating human resources management subsystems in educational settings, staffing, organizational development, compensation and benefits, labor relations, communication, training and development, supervision and information systems.

3254. Introduction to Budget Planning and Human Resources Education

(254) Either semester. Three credits.

Comprehensive budgeting, profit planning and control applied to human resources development. Fiscal management problems, budget planning in educational programs.

3255. Contemporary Labor Issues

(255) Either semester. Three credits. May be repeated for credit, not to exceed 6 credits.

Labor issues in work organization, employees, and the labor movement. Patterns of jobs and career problems of labor organizations. Role of multi-national corporations in changing the job mix, collective bargaining.

3262. College Freshmen: Their Characteristics and Their Adjustment to College Life

(282) Second semester. Three credits. Prerequisite: Consent of instructor.

Personal and social characteristics of college freshmen; adjustment to college life. Techniques for successful transitions.

3263. Student Leadership

(283) Three credits. Prerequisite: Consent of instructor.

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

(298) Either semester. Credits and hours by arrangement. Open only with consent of instructor. May be repeated for credit with a change in content.

3299. Independent Study for Undergraduates

(299) Either semester. Credits and hours by arrangement. Prerequisite: Open only to juniors and seniors with appropriate background for the study of education. Students must present the instructor with a problem for investigation. May be repeated for credit with a change in content.

Designed primarily for qualified students who wish to extend their knowledge in some specialized area.

Educational Psychology (EPSY)

Head of Department: Professor Sally Reis
Department Office: Room 140B, Gentry Building

For major requirements, see the Neag School of Education section of this *Catalog*.

3010. Educational Psychology

(221) Either semester. Three credits. Prerequisite: PSYC 1100. *Brown*

The psychology of learning and teaching, and the study of the nature and development of children and adolescents.

3011. Learning I

(250) First semester. One credit. Prerequisite: PSYC 1100 and open only to students in the Integrated Bachelor's/Master's Teacher Preparation Program. *Stephens*

Theory and practices of learning.

3012. Learning II

(251) First semester. One credit. Prerequisite: Open only to students in the Integrated Bachelor's/Master's Teacher Preparation Program. *Reis*

Theory and practices of learning.

3020. Peer Counseling

(230) Either semester. Three credits. Prerequisite: Consent of instructor.

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.

3090. Field Study in Education

(226) Semester by arrangement. Credits and hours by arrangement. Open only with consent of instructor.

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

(298) Either semester. Credits and hours by arrangement. Open only with consent of instructor. May be repeated for credit.

3099. Independent Study for Undergraduates

(299) Either semester. Credits and hours by arrangement. Prerequisite: Open only to juniors and seniors with appropriate background for the study of education. Students must present the instructor with a problem well laid out for investigation. May be repeated for credit with a change in content.

Designed primarily for qualified students who wish to extend their knowledge in some specialized area.

3100. Introduction to Exceptionality

(206) Either semester. Three credits. Prerequisite: PSYC 1100. *Madaus*

Considers the nature of exceptionalities as well as current policy and programs in the schools and community.

3110. Exceptionality I

(207) Second semester. Two credits. Prerequisite: Open only to students in the Integrated Bachelor's/Master's Teacher Preparation Program. *Parker*

Overview of characteristics of students with exceptionalities and of educational programming for exceptional learners.

3111. Exceptionality II

(208) First semester. One credit. Prerequisite: Open only to students in the Integrated Bachelor's/Master's Teacher Preparation Program.

Educational programming for learners with special needs.

3115. Collaborative Program Planning in Special Education

(210) First semester. Three credits. Prerequisite: Open only to Special Education and Elementary Education majors. *Simonsen*

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.

3120. Fundamentals of Assessment in Special Education

(212) First semester. Three credits. Prerequisite: Open only to Special Education and Elementary Education majors.

Diagnosis of students with special needs, use of test data in planning instruction and report writing.

3120W. Fundamentals of Assessment in Special Education

(212W) Prerequisite: Open only to Special Education and Elementary Education majors; ENGL 1010 or 1011 or 3800.

3125. Positive Behavior Supports and Interventions for Students with Disabilities

(213) Second semester. Three credits. Prerequisite: Open only to Special Education majors. *Simonsen*

Overview of preferred practices for providing positive behavior supports for students with disabilities across a variety of classroom and other educational environments.

3190. Directed Observation and Participation

(262) Credits by arrangement, not to exceed three. Open only with consent of instructor. Prior to registration, students must apply for Directed Observation. This course may be taken more than one semester. *Coyne*

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.

3230. Technology in Education

(240) Both semesters. One credit. Open to first year students in the teacher preparation program. Prerequisite: Open only to students in the Integrated Bachelor's/Master's Teacher Preparation Program. *Puntambekar, Young*

The use of educational technology in the education profession. Emphasis is placed on computer technology, software evaluation and instructional devices.

3235. The Community Assistant

(235) Either semester. Three credits. Prerequisite: Instructor consent. Open only to Community Assistants.

Focuses on the development of college students as it relates to college residence hall life and the Community 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

Either semester. Three credits. *O'Neil*

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.

4010. Assessment of Learning I

(252) First semester. One credit. Prerequisite: Open only to students in the Integrated Bachelor's/Master's Teacher Preparation Program.

Theory and practices of the assessment of learning.

4015. Assessment of Learning II

(253) First semester. One credit. Prerequisite: Open only to students in the Integrated Bachelor's/Master's Teacher Preparation Program.

Theory and practices of the assessment of learning.

4100. Methods for Teaching Students with Disabilities

(214) First semester. Three credits. Prerequisite: EPSY 3120 and 3125; senior enrolled in Special Education Teacher Preparation Program. *Coyne*

Informs students of research-based methods and instructional formats for teaching students with disabilities.

4110. Advanced Foundations of Disability

(215) First semester. Three credits. Prerequisite: EPSY 3120 and 3125; senior enrolled in Special Education Teacher Preparation Program. *Madaus*

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

(277) Either semester. Credits and hours by arrangement. Prerequisite: Open only to Elementary Education and Special Education majors. 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. *Bartlett*

Practicum experience with mentally retarded, learning disabled and/or emotionally disturbed students.

Electrical and Computer Engineering (ECE)

Head of Department: Professor Peter Luh

Department Office: Room 452, Information Technologies Engineering Building

For major requirements, see the School of Engineering section of this *Catalog*.

1001. A Survey of Modern Electronic Technology

(100) Semester by arrangement. Three credits.

A non-specialist introduction to the broad field of electronic technology, including historical roots, contemporary applications, and future directions. CA 3.

1101. Electrical and Computer Engineering Tools

(101) Second semester. One credit.

An introduction to the modern computer tools used for circuit analysis, signal and system analysis, control, and data acquisition.

1110. Microcontroller Applications in Engineering

(110) Second semester. Three credits.

Introduction to microcontroller-based design. Assembly language programming. Design projects for microcontroller applications in engineering.

2001W. Electrical Circuits

(210W) Either semester. Four credits. Three 1-hour lectures and one 2-hour laboratory. Prerequisite: PHYS 1502Q and MATH 2410Q, both of which may be taken concurrently; ENGL 1010 or 1011 or 3800. This course and either ECE 2608 or 2609W 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 of response. Computer analysis tools. Design projects are implemented and tested in the laboratory. Laboratory reports with revisions are required for each project.

2608. Fundamentals of Circuit Analysis

(201) (Formerly offered as EE 201.) Semester by arrangement. Three credits. Three class periods and one discussion period. Prerequisite or corequisite: MATH 2410 and PHYS 1502. This course and ECE 3002 may not both be taken.

Analysis of electrical networks incorporating passive and active elements. Basic laws and techniques of analysis. Transient and forced response of linear circuits. Periodic excitation and frequency response.

2609W. Electrical Circuit Design Laboratory

(209W) (Formerly offered as EE 209W.) Semester by arrangement. Two credits. One 2-hour laboratory period and one 1-hour discussion period. Prerequisite: ECE 2608, may be taken concurrently; ENGL 1010 or 1011 or 3800.

Design and evaluation of analog circuits. Emphasizes out-of-laboratory preparation and troubleshooting. Introduction to laboratory instruments including oscilloscopes, signal sources and meters.

3001. Electromagnetic Fields and Waves

(205) (Formerly offered as EE 205.) First semester. Three credits. Prerequisite: PHYS 1502 and MATH 2110 and 2410. Not open to students who have received credit for ECE 206.

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.

3002. Electrical and Computer Engineering Principles

(220) (Formerly offered as EE 220.) First semester. Three credits. Prerequisite: MATH 2410Q and PHYS 1502Q, both of which may be taken concurrently. This course and ECE 2608 or ECE 2001W may not both be taken.

Basic concepts of circuit analysis as applied to electronic circuits and electromechanical devices, including measuring instruments.

3101. Signals and Systems

(202) (Formerly offered as EE 202.) Either semester. Three credits. Three class periods and one discussion period. Prerequisite: ECE 2001W or 2608 or 3002.

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

(232) (Formerly offered as EE 232.) Second semester. Three credits. Prerequisite: ECE 3101 and prerequisite or corequisite: MATH 2210Q.

Modeling and analysis of physical systems using frequency and time-domain methods. State variable techniques for continuous and discrete-time systems. Controllability and observability. Stability of linear systems with feedback; root locus, Bode and Nyquist methods. Linearization of nonlinear systems. Computational methods for analysis of linear systems.

3201. Electronic Circuit Design and Analysis

(212) Either semester. Four credits. Prerequisite: ECE 2001W or both ECE 2608 and ECE 2609W. Three 1-hour lectures and one 2-hour laboratory. This course and either ECE 3608 or 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. Design projects are implemented and tested in the laboratory. Laboratory reports with revisions are required for each project.

3211. Power Electronics

(214) Second semester. Two credits. Prerequisite: ECE 3608 and ECE 3609; or ECE 3201. One 1-hour lecture and one 2-hour laboratory. This course and ECE 3610W may not both be taken for credit.

Transformers and electrical motors. Switching electronic devices and power supplies. Motor control circuits. Computer analysis tools. Design projects are implemented and tested in the laboratory. Laboratory reports with revisions are required for each project.

3221. Digital Integrated Circuits

(215) (Formerly offered as EE 215.) Second semester. Three credits. Prerequisite: (ECE 3608 or 3201) and (CSE 2300W or 2363). 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

(213) Semester by arrangement. Four credits. Prerequisite: ECE 3608 and ECE 3609; or ECE 3201. Three 1-hour lectures and one 2-hour laboratory. 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

(223) First semester. Three credits. Prerequisite: ECE 3001 or PHYS 3201. 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, interfer-

ometry, integrated optics, frequency conversion, interaction of light and matter.

3225. Optical Engineering Laboratory

(225) Second semester. Three credits. One 3-hour laboratory period. Prerequisite: ECE 3223 or 4231. Not open to students who have passed ECE 4232.

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.

3301. Introduction to Biomedical Engineering

(272) (Also offered as BME 3101.) (Formerly offered as EE 272.) Semester by arrangement. Three credits. Prerequisite: BIOL 1107. Corequisite: PHYS 1501Q and MATH 2110Q.

Survey of the ways engineering and medical science interact. The art and science of medicine, and the process of medical diagnosis and treatment. Diagnostic instrumentation and measurements including medical imaging. Introduction to bioelectric phenomena, biomechanics, and biomaterials. Biochemical engineering. Computers in medicine. Molecular medicine and biotechnology.

3311. Electrical Instrumentation

(230) (Formerly offered as EE 230.) Semester by arrangement. Three credits. Prerequisite: ECE 3101 and (ECE 3201 or 3608) and (CSE 2300W or 2363).

Measurements of physical quantities by means of electrical circuits and electronic instruments. Analysis of measurement systems using equivalent circuits. Methods of measuring signals in the presence of noise. Use of computers in measurement systems. Recording and display devices.

3401. Digital Systems Design

(252) (Also offered as CSE 3302.) (Formerly offered as EE 252.) Second semester. Three credits. Prerequisite: CSE 2363 or 2300W.

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 microprogramming emphasis. Consideration of computer architecture, memories, digital interfacing timing and synchronization, and microprocessor systems.

3411. Microprocessor Applications Laboratory

(266) (Formerly offered as EE 266.) Either semester. Three credits. One class period and one 4-hour laboratory.

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 Circuit (VLSI) Design and Simulation

(249) (Formerly offered as EE 249.) Second semester. Four credits. Two-hour lecture and three-hour laboratory period. Prerequisite: ECE 3221. Not open to students who have passed EE 248 or EE 269.

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

(257) (Also offered as CSE 3802.) (Formerly offered as EE 257.) First semester. Three credits. Prerequisite:

CSE 1100C and MATH 2110Q and 2410Q and prerequisite or corequisite: MATH 2210Q.

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.

3608. Electronic Devices and Circuits

(204) (Formerly offered as EE 204.) Semester by arrangement. Three credits. Prerequisite: ECE 2608. This course and ECE 239 may not both be taken.

Physical electronics underlying the operation of modern solid-state devices. Diodes and diode circuits. The bipolar junction transistor and field-effect transistors. Models of transistors. Applications of transistors to integrated circuits such as operational amplifiers and logic gates.

3609. Analog Electronics Design Laboratory

(261) (Formerly offered as EE 261.) Semester by arrangement. Three credits. One class period and one 4-hour laboratory period. Prerequisite: ECE 2609W or 2001W, 3101, and 3608; ECE 3101 and 3608 may be taken concurrently. This course and ECE 3201 may not both be taken for credit.

Introductory design laboratory. Use of personal computers to design and measure performance of analog electronic circuits and systems. Design with both integrated circuits and discrete components. Design of active filters, effects of feedback, broadbanding, oscillator design, A/D and D/A conversion systems, and low-noise amplifier design.

3610W. Switching and Digital Electronics Design Laboratory

(262W) (Formerly offered as EE 262W.) Semester by arrangement. Three credits. One class period and one 4-hour laboratory period. Prerequisite: ECE 3609 or 3201; ENGL 1010 or 1011 or 3800. This course and ECE 3211 may not both be taken for credit.

Switching electronic devices. Switching power supplies and motor control circuits. Bipolar and MOS digital circuits. Various computer tools.

4079. Independent Design Laboratory

(265) (Formerly offered as EE 265.) Either or both semesters. Three credits. Prerequisite: Instructor consent. May be taken twice for credit.

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

(295) (Formerly offered as EE 295.) Semester by arrangement. Credits by arrangement. Prerequisite: Consent of instructor. With a change in content, this course may be repeated for credit.

Classroom and/or laboratory course in special topics as announced in advance for each semester.

4099. Independent Study in Electrical and Computer Engineering

(299) (Formerly offered as EE 299.) Semester by arrangement. Credits by arrangement, not to exceed four in any semester. Prerequisite: Consent of instructor. With a change in content, this course may be repeated for credit.

Individual exploration of special topics as arranged by the student with course instructor.

4111. Communication Systems

(241) (Formerly offered as EE 241.) First semester. Three credits. Prerequisite: ECE 3101, or BME 3400 and STAT 3345Q.

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 (242) (Formerly offered as EE 242.) Semester by arrangement. Three credits. Prerequisite: ECE 3101 and STAT 3345Q.

Fundamentals of digital 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.

4113. Communications Systems Design Laboratory

(263) (Formerly offered as EE 263.) Semester by arrangement. Three credits. One 4-hour laboratory. Prerequisites: ECE 207 or 3001, and ECE 3610W.

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.

4121. Digital Control Systems

(234) (Formerly offered as EE 234.) First semester. Three credits. Prerequisite: ECE 3111.

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

(267) (Formerly offered as EE 267.) Semester by arrangement. Three credits. One 4-hour laboratory period. Prerequisite: ECE 3111 and ECE 3211 or 3610W.

Real-time digital control and signal processing systems. Typical topics include liquid level control, velocity and position control, digital filters, image processing, and power control electronics. Written and oral presentations of laboratory results.

4131. Introduction to Digital Signal Processing (247) (Formerly offered as EE 247.) Semester by arrangement. Three credits. Prerequisite: ECE 3101.

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. Information Processing Systems Laboratory

(292) First semester. Three credits. Prerequisite or corequisite: ECE 4111 or 4112 or instructor consent.

Laboratory experiments in signal processing, real-time digital filters, image processing, imaging systems, data acquisition using detectors, pattern recognition, communication receivers, and system performance evaluation. Emphasis is on real-time information processing systems with interface between sensors and computer/processors. Applications of analog and

digital techniques to design, implementation and testing of real-time information processing systems.

4141. Introduction to RF/Microwave Wireless Systems

(227) Semester by arrangement. Three credits. Prerequisite: ECE 3001.

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.

4201. Electronic Circuits and Applications

(240) (Formerly offered as EE 240.) Second semester. Three credits. Prerequisite: ECE 3201 or 3608. 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. Micro/Opto-electronic Devices

(245) (Formerly offered as EE 245.) Second semester. Three credits. Prerequisite: ECE 3201 or 3608.

Principles and applications of contemporary solid state devices such as light-emitting diodes, injection lasers, solar cells, p-n-p-n diodes, SCR and Triacs, IMPATT diodes, Schottky devices, bipolar and MOS transistors, MESFETs and MODFETs, and fundamentals of integrated circuits.

4231. Fiber Optics

(228) (Formerly offered as EE 228.) Semester by arrangement. Three credits. Prerequisite: ECE 207 or 3001 or PHYS 3201.

Application of Maxwell's equations and geometric optics first to two-dimensional dielectric waveguides and then to cylindrical fibers. Ray and mode theory, eigenvalues, Goos-Haenchen shift. Step-index, graded-index, and single-mode fibers. Splicers, couplers, sources, detectors and optical design. Fiber manufacturing techniques.

4232. Fiber Optics Laboratory

(229) (Formerly offered as EE 229.) Second semester. Three credits. One four-hour laboratory period. Prerequisite: ECE 4231.

Hands-on design and measurement of fiber-optic applications. Fiber-optic communications and fiber-optic sensors. Structured experiments and design projects centered around available equipment.

4242. Micro/Opto-electronic Devices and Circuits Fabrication Laboratory

(268) (Formerly offered as EE 268.) First semester. Three credits. One class period, and one 4-hour laboratory period. Prerequisite: ECE 3221, 4211.

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.

4244. Nanotechnology II

(251) (Also offered as ENGR 4244) Second semester. Three credits. One-hour lecture and four-hour laboratory. Prerequisites: Senior standing and ECE 4211 or ENGR 4243.

Growth and characterization of carbon nanotube using vapor phase nucleation; growth of CdSe quan-

tum 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.

4401. Digital Design Laboratory

(280) (Also offered as CSE 3350.) (Formerly offered as EE 280.) First semester. Three credits. Four hours of laboratory. Prerequisite or corequisite: CSE 3302/ECE 3401.

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; PBC; design and manufacturing.

4402. Digital Hardware Laboratory

(281) (Also offered as CSE 4901.) (Formerly offered as EE 281.) Semester by arrangement. Three credits. One 4-hour laboratory period. Prerequisite: CSE 4302; ECE 3401 or CSE 3302.

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.

4901. Electrical and Computer Engineering Design I

(290) (Also offered as CSE 4950.) (Formerly offered as EE 290 and EE 297.) Either semester. Two credits. Prerequisite: Senior standing.

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 4591/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

(291) (Also offered as CSE 4951.) (Formerly offered as EE 291 and EE 270.) Either semester. Three credits. Prerequisite: ECE 4901. Hours to be arranged.

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.

Engineering (ENGR)

Interim Dean: Erling Smith

Assistant Dean for Undergraduate Education: M.E. Wood

Office: Room 304, EII Building

1000. Orientation to Engineering

(100) First semester. One credit. Fifteen class periods of lecture, and eight seminar and discussion periods. Not open to Junior or Senior students in the School of Engineering. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

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

(166) Second semester. Three credits. Not open for credit to Junior or Senior students 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.

3181. EUROTECH Internship Abroad

(289) Semester by arrangement. No credit. Prerequisite: consent of instructor. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

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.

3195. Special Topics in Engineering

(295) Either semester. Credits and hours by arrangement, or as announced. Prerequisite and/or consent: Announced separately for each course. With a change in content, this course may be repeated for credit.

Classroom and/or laboratory course in special topics as announced in advance for each semester.

4243. Nanoscience and Nanotechnology I

(250) First semester. Three credits. Prerequisite: ECE 4211 or PHYS 2300 or 3401 or MSE 4001, and CHEM 1127 or equivalent.

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 wall (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

(251) (Also offered as ECE 4244) Second semester. Three credits. One hour lecture and four hour laboratory. Prerequisites: Senior standing and ECE 4211 or ENGR 4243.

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

(299) Semester and hours by arrangements. Credits by arrangement, not to exceed 4. Open to seniors in the School of Engineering. With a change in topic, 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.

English (ENGL)

Head of Department: Professor Robert S. Tilton

Department Office: Room 208, College of Liberal Arts and Sciences Building

For major requirements, see the College of Liberal Arts and Sciences section of this *Catalog*.

1003. English for Foreign Students

(103) Either semester. Three credits. Course may be repeated for credit. Graduate students may elect this course.

Instruction in English for non-native speakers of the language.

1004. Basic Writing

(104) Either semester. Four credits.

Development of the reading and writing skills essential to university work. Students placed in ENGL 1004 must pass the course before electing ENGL 1010 or 1011. Not open to students who have passed ENGL 105, 109, 1010, or 1011.

1010. Seminar in Academic Writing

(110) Either semester. Four credits. Not open for credit to students who have passed ENGL 105. 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

(111) Either semester. Four credits. Not open for credit to students who have passed ENGL 109. Students placed in ENGL 1004 must pass that class 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

(107W) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800.

Introduction to the rhetorical and generic conventions of business writing.

1013W. Technical Writing I

(108W) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800.

Introduction to rhetorical and generic conventions of technical writing.

1101. Classical and Medieval Western Literature (112) First semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800.

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.

1101W. Classical and Medieval Western Literature (112W) Prerequisite: ENGL 1010 or 1011 or 3800. CA 1.

1103. Renaissance and Modern Western Literature

(113) Second semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800.

Literature in the European tradition from the Renaissance through the modern periods. CA 1.

1103W. Renaissance and Modern Western Literature

(113W) Prerequisite: ENGL 1010 or 1011 or 3800. CA 1.

1201. Introduction to American Studies

(165) (Also offered as AMST 1503 and HIST 1503.) First semester. Three credits. Not open to students who have passed INTD 276.

What is an American? A multi-disciplinary inquiry into the diversity of American societies and cultures. CA 4.

1301. Major Works of Eastern Literature

(120) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800.

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.

1401. Introduction to Literary Study

(114) Either semester. Three credits. Recommended for English majors.

Critical analysis, interpretation, and aesthetic appreciation of the three major genres: drama, prose fiction, and poetry.

1503. Introduction to Shakespeare

(130) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800.

Introductory survey of representative Shakespeare plays and poetry. CA 1.

1601W. Race, Gender, and the Culture Industry

(175W) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800.

Cultural construction of race and gender in English-language literature, film, and music. CA 4.

1616. Major Works of English and American Literature

(127) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800.

Includes important works from the major genres and historical periods since Beowulf. CA 1.

1616W. Major Works of English and American Literature

(127W) Prerequisite: ENGL 1010 or 1011 or 3800. CA 1.

1640W. Literature and the Creative Process

(140W) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800.

Examination of the creative process by studying literary texts at various stages of their development. CA 1.

1693. Foreign Study

(193) Either or both semesters. Credits and hours by arrangement. May be repeated for credit. Consent of Department Head or advisor may be required prior to the student's departure.

Special topics taken in a foreign study program.

1701. Creative Writing I

(146) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800.

First course in creative expression in fiction, poetry, and other forms.

2049W. Writing through Research

(149W) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800.

Instruction in academic writing and the procedures of library and internet research leading to a large-scale research paper.

2100. British Literature I

(205) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800.

British literature, medieval through 18th century. Intended to provide preparation for more advanced courses in British literature. This course is strongly recommended for English majors. CA 1.

2101. British Literature II

(206) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800.

British literature, 19th to 20th centuries. Intended to provide preparation for more advanced courses in British literature. This course is strongly recommended for English majors. CA 1.

2201. American Literature to 1880

(270) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800.

American literature from the beginnings: Poe, Emerson, Thoreau, Hawthorne, Melville, Whitman, Douglass, Stowe, Dickinson, Twain, and others.

2201W. American Literature to 1880

(270W) Prerequisite: ENGL 1010 or 1011 or 3800.

2203. American Literature Since 1880

(271) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800.

Modern and contemporary American literature: James, Wharton, Dreiser, Cather, Frost, Hemingway, Fitzgerald, Faulkner, Morrison, and others.

2203W. American Literature Since 1880

(271W) Prerequisite: ENGL 1010 or 1011 or 3800.

2274W. Disability in American Literature and Culture

(174W) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800.

An interdisciplinary examination of the symbolic roles of disability and the social implications of those roles. CA 1. CA 4.

2301. World Literature in English

(227) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800.

English language literature from Africa, India, 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. World Literature in English

(227W) Prerequisite: ENGL 1010 or 1011 or 3800. CA 4-INT.

2401. Poetry

(210) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800.

A study of the techniques and conventions of the chief forms and traditions of poetry in English. CA 1.

2405. Drama

(219) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800.

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

(216) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800.

The short story as a literary form with study of significant Continental, British, and American writers. CA 1.

2600. Introduction to Literary Studies.

Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800. Open to English majors, others with instructor's consent.

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.

3003W. Advanced Expository Writing

(249W) Either semester. Three credits. Three class periods. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher.

3003WC. Advanced Expository Writing

(249WC) Either semester. Three credits. Three class periods. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher.

Writing on topics related, usually, to students' individual interests and needs.

3010W. Advanced Composition for Prospective Teachers

(209W) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800. Designed primarily for English education majors. May not be used to meet the English major requirement.

Advanced training in composition, with consideration of the problem of teaching writing.

3011. Publishing

(294) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800.

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.

3011C. Publishing

(294C) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher.

3011W. Publishing

(294W) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher.

3091. Writing Internship

(297) Either semester. Credit and hours by arrangement, not to exceed six credits per semester. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher. May be repeated for credit. Open only with consent of instructor. 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. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

Training in writing in a supervised field placement.

3111. Medieval English Literature

(220) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800.

Readings in the literature of the English Middle Ages — lyrics, narratives, dramas, and didactic forms.

3111W. Medieval English Literature

(220W) Prerequisite: ENGL 1010 or 1011 or 3800.

3113. Renaissance English Literature

(221) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800.

Writers studied include More, Spenser, Shakespeare, Donne, Jonson, and Milton.

3113W. Renaissance English Literature

(221W) Prerequisite: ENGL 1010 or 1011 or 3800.

3115. Restoration and 18th-Century English Literature

(222) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800.

Includes such writers as Dryden, Pope, Swift, Johnson, Burney, and Austen.

3115W. Restoration and 18th-Century English Literature

(222W) Prerequisite: ENGL 1010 or 1011 or 3800.

3119. Modern English Literature

(226) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800.

Modern literature from the British Isles, including such writers as Yeats, Eliot, Joyce, Woolf, Lawrence, Lessing, and Shaw.

3119W. Modern English Literature

(226W) Prerequisite: ENGL 1010 or 1011 or 3800.

3120. Early and Modern Irish Literature

(233) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher.

Irish literature in English to 1939: fiction, drama, and verse, including such early Irish myth as the *Tain bo Cuailnge* and such writers as Mangan, Somerville & Ross, Yeats, Gregory, Synge, Joyce, and O'Connor. CA 4-INT.

3122. Contemporary Irish Literature

(234) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher.

Irish literature in English since 1939: fiction, drama, and verse by such writers as Beckett, Bowen, O'Brien, Friel, Murdoch, O'Faolain, McGahern, McGinley, Heaney, Muldoon, and Doyle. CA 4-INT.

3177. Romantic and Victorian English Literature

(223) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800.

Includes such writers as Austen, Wordsworth, Coleridge, Keats, Tennyson, Browning, the Brontes, G. Eliot, and Arnold.

3177W. Romantic and Victorian English Literature

(223W) Prerequisite: ENGL 1010 or 1011 or 3800.

3193. Studies in Britain

(292) Second semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800. Hours by arrangement. Open only with consent of instructor.

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.

3210. Native American Literature

(272) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800. *Tilton, Makowski*

Examination of the literatures of pre-contact, post-contact, and contemporary indigenous American cultures. CA 4.

3212. Asian American Literature

(274) (Also offered as AASI 3212.) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800.

Literature, theatre, film about Asian American communities and culture in the United States from the mid-nineteenth century to the present. CA 4.

3214. Black American Writers I

(276) First semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher.

Critical and historical examination of the literature of black American writers from Phyllis Wheatley to the present. CA 4.

3214W. Black American Writers I

(276W) (Also offered as AFAM 3214W.) First semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher. CA 4.

3216W. Black American Writers II

(277W) (Also offered as AFAM 3216W.) Second semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher.

Extensive readings in the works of four or five contemporary black American writers.

3218. Ethnic Literatures of the United States

(278) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher.

The literatures of ethnic American authors. Writers may include Natchee 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

(278W) Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher. CA 4.

3235W. Reading the American City

(235W) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800; 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.

3240. American Nature Writing

(239) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800; 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. Seminar in American Studies

(265W) (Also offered as AMST 3265W.) Second semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher.

An in-depth study of an event, historical period, or cultural production from an interdisciplinary perspective.

3301. Celtic and Norse Myth and Legend

(213) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800. Not open for credit to students who have previously received credit for the same course as ENGL 267.

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.

3318. Literature and Culture of the Third World

(218) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800. May be repeated for credit with a change in topic.

The literature of regions outside North America and Europe. Contents of the course will vary according to regional focus. CA 4-INT.

3403. Modern Poetry in English

(211) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher.

Poetry of the 20th century, from the major modernist innovators to significant contemporaries.

3406. Modern Drama

(236) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher.

Modern British, American, and Continental drama, with the reading and discussion of some 25 representative plays.

3409. The Modern Novel

(212) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800.

Major twentieth-century novels.

3420. Children's Literature

(200) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800.

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

(208) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher. Not open to students who have passed ENGL 201.

Critical analysis of texts for and about young adults, including an historical range of classic and canonical works from before 1900 to the present.

3495. Studies in Early Literature in English

Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher.

Studies in literature written in English before 1800.

3501. Chaucer

(232) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800; 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

(230) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800.

Romantic comedies and principal tragedies.

3503W. Shakespeare I

(230W) Prerequisite: ENGL 1010 or 1011 or 3800.

3505. Shakespeare II

(231) Second semester. Three credits. Prerequisite: ENGL 3503 or instructor consent; open to juniors or higher.

The early plays, problem plays, and late plays.

3507. Milton

(204) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800; 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

(264) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher. May be repeated for credit with a change in topic.

Concentrated study in one or two authors writing in English.

3601. The English Language

(242) First semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800; 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

(244) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800; 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

(261) (Also offered as PRLS 3232.) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800 or instructor consent; open to juniors or higher. *Gonzalez*

Extensive readings in Latina/o literature from the late nineteenth century to the present. CA 4.

3607. Studies in Latina/o Literature

(262) (Also offered as PRLS 3233.) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800 or instructor consent; open to juniors or higher. May be repeated for credit with a change of topic. *Gonzalez*

Advanced study of a theme, form, author, or movement in contemporary Latina/o literature.

3609. Women in Literature

(285) First semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher.

Analysis of the representation of women in a variety of works from different countries. CA 4.

3611. Women in Twentieth-Century Literature

(286) First semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher.

Analysis of the representation of women in a variety of works from different countries.

3613. Introduction to LGBT Literature

(269) Either semester. Three credits.

An introduction to themes of sexual diversity in literature, related to lesbian, gay, bisexual, and transgendered issues. CA 4.

3617. Literature and Religion

(240) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800; 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

(241) (Also offered as HRTS 3619.) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher. May be repeated for credit with a change of topic.

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

(291) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher. May be repeated for credit with a change in topic.

The relationship of literature to other fields of study. Course content will vary by section.

3623. Studies in Literature and Culture

(217) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800. May be repeated for credit with a change in topic.

An examination of social and culture aspects of printed literature and of its relationship to other media. Contents will vary by section.

3625. Studies in Criticism

(266) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher.

Studies in the history and theories of literary criticism.

3627. Studies in Literature

(267) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher. May be repeated for credit with a change in topic.

Advanced exploration of various limited topics, such as a particular literary theme, form, or movement, to be announced from semester to semester.

3650. Maritime Literature

(237) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher.

Classic works of the maritime literary tradition, including texts by Conrad and Melville and other texts contributing significantly to the culture, history and aesthetics of the sea.

3651. Maritime Non-Fiction

(238) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher.

Classics of the non-fictional genre as they apply to an understanding of the culture of the sea. Social, humanistic, intellectual and scientific perspectives are examined through analysis of works by writers such as Steinbeck, McPhee, and Sebastian Junger.

3692. Writing Practicum

(296) Either semester. Credits and hours by arrangement. May be repeated for credit with a change in topic. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher.

A concentrated introduction to (or review of) a particular aspect of composition. Courses will focus on such topics as writing and publishing on the Internet, legal writing, grammar review, grammar by computer, business writing, and web-page design.

3693. Foreign Study

(293) Either or both semesters. Credits and hours by arrangement. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher. 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 the advisor.

Special topics taken in a foreign study program.

3695. Special Topics

(298) Either semester. Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher. Other prerequisites and recommended preparation vary.

3698. Variable Topics

(295) Either semester. Three credits. With a change in topics, may be repeated for credit. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher. Other prerequisites and recommended preparation vary.

3699. Independent Study

(299) Either semester. Credits and hours by arrangement. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher. Open only with consent of instructor and approval of either the department head, or the department undergraduate coordinator. May be repeated for credit with a change of topic.

Supervised reading and writing on a subject of special interest to the student.

3701. Creative Writing II

(246) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher. Open only with consent of instructor. May be repeated for credit with a change in topic.

For student writers of proved ability who wish training in techniques of fiction or verse. Emphasis on poetry.

3703. Writing Workshop

(247) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher. Open only with consent of instructor or Department Head. May be repeated for credit with a change in topic.

For student writers of proved ability who wish training in techniques of fiction or verse. Emphasis on prose fiction.

3705. Playwriting

(245) (Also offered as DRAM 3141.) Either or both semesters. Three credits. Prerequisite: Open to juniors or higher. Open only with consent of instructor. May be repeated for credit with a change in course content to a maximum of 9 credits. *McDermott*

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.

3707-3709. Film Writing

(202-203) (Also offered as DRAM 3145-3146.) Both semesters. Three credits each semester. Prerequisite: Open to juniors or higher. Open only with consent of instructor.

Theoretical and practical work in the content and form of the fiction scenario.

Honors Course Sequence

The Honors course sequence, ENGL 3800 through ENGL 4897, is recommended for students in the Honors Program but is also open to other qualified students. Most courses are weekly seminars on major writers and topics relating to intellectual and cultural backgrounds of English and American literature.

3800. Honors I: Approaches to Literature

(250) First semester. Three credits. Hours by arrangement. Open only with consent of instructor. May be used to satisfy the ENGL 1010 or 1011 requirement. Not open for credit to students who have passed ENGL 1010 or 1011. May not be used to satisfy the English major requirements.

Study of a variety of approaches to literature and of their critical assumptions.

3801W. Honors II: American Literature

(251W) Second semester. Three credits. Hours by arrangement. Open only with consent of instructor. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher.

Early writers and Romantics through Twain and James.

3803W. Honors III: American Literature

(252W) First semester. Three credits. Hours by arrangement. Open only with consent of instructor. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher.

Realism, naturalism, modern American authors.

3805W. Honors IV: English Literature

(253W) First semester, alternate years. Three credits. Open only with consent of instructor. Hours by arrangement. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher.

Medieval through Jacobean literature.

3807W. Honors V: English Literature

(254W) First semester, alternate years. Three credits. Hours by arrangement. Open only with consent of instructor. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher.

Seventeenth and eighteenth century to Romantics.

3809W. Honors VI: English Literature

(255W) Second semester, alternate years. Three credits. Hours by arrangement. Open only with consent of instructor. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher.

Nineteenth century literature.

3811W. Honors VII: English Literature

(256W) Second semester, alternate years. Three credits. Hours by arrangement. Open only with consent of instructor. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher.

Twentieth century literature.

4897. Honors VIII: Honors Thesis

(258) Either semester. Credits and hours by arrangement. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher. Open only with consent of instructor. 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.

4101W. Advanced Study: British Literature

(283W) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher. May be repeated for credit with a change of topic.

Intensive study of particular topics in the literature of the British Isles.

4201W. Advanced Study: American Literature

(284W) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher. May be repeated for credit with a change of topic.

Intensive study of particular topics in the literature of the United States.

4203W. Advanced Study: Ethnic Literature

(287W) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher. May be repeated for credit with a change of topic.

Intensive study of particular topics in British or American literature written by ethnic writers.

4301W. Advanced Study: Anglophone Literature

(288W) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher. May be repeated for credit with a change of topic.

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 Australia, Canada, Ireland, and New Zealand

(289W) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher. May be repeated for credit with a change of topic.

Intensive study of particular topics in the literature of these Commonwealth countries.

4401W. Advanced Study: Poetry

(280W) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher. May be repeated for credit with a change of topic.

Intensive study of particular topics in poetry.

4405W. Advanced Study: Drama

(279W) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher. May be repeated for credit with a change of topic.

Intensive study of particular topics in dramatic literature.

4407W. Advanced Study: Prose

(281W) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher. May be repeated for credit with a change of topic.

Intensive study of particular topics in literary prose.

4600W. Seminars in Literature

(268W) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher.

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

(282W) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher. May be repeated for credit with a change of topic.

Intensive study of particular topics in literary criticism and theory.

4613W. Advanced Study: Lesbian, Gay, Bisexual and Transgendered Literature

(290W) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher. May be repeated for credit with a change of topic.

Intensive study of particular topics in the literary expression of lesbian, gay, bisexual and transgendered identity.

4965W. Advanced Studies in Early Literature in English

Either semester. Three credits. Prerequisites: ENGL 1010 or 1011 or 3800. Open to juniors or higher.

Advanced studies in literature written in English before 1800.

Environmental Engineering (ENVE)

Program Director: Associate Professor Amvrossios Bagtzoglou

Office: Room 310, F.L. Castleman Building

1320. The Environmental Debate I

(110) Second semester. One credit. May be repeated for credit (maximum of 3 credits).

Structured review of environmental issues and active debate during class time. Presentation of current environmental issues by environmental professionals and experts.

2251. Probability and Statistics in Civil Engineering

(251) (Also offered as CE 2251.) First semester. Three credits. Recommended preparation: MATH 1121Q or 1131Q/1131QC. This course and ENVE 2330 or CE 2210 may not both be taken for credit. *Anagnostou, Aultman-Hall, Garrick, Ivan*

Application of statistical principles to the analysis of civil engineering problems. Topics include probability, random variable distributions, hypothesis testing, and linear regression analysis.

2310. Environmental Engineering Fundamentals

(263) (Also offered as CE 2310.) First semester. Three credits. Prerequisites: CHEM 1128Q or 1148Q. *MacKay*

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

(210) Second semester. One credit. May be repeated for credit (maximum of 3 credits).

Structured review of environmental issues and active debate during class time. Presentation of current environmental issues by environmental professionals and experts.

2330. Decision Analysis in Civil and Environmental Engineering

(201) (Also offered as CE 2210.) First semester. Three credits. Prerequisite: MATH 1122Q or 1132Q. This course may not be taken for credit if the student has taken CE 2251, CE 281, or ENVE 2251. *Anagnostou, Ivan*

Time value of money. Evaluation of alternative projects. Fundamentals of probability theory and statistics. Introduction to critical path method for project scheduling and optimization using linear mathematical models.

3200. Environmental Engineering Laboratory

(262) (Also offered as CE 3300.) Second semester. Three credits. Two class periods and one 3-hour laboratory period. Prerequisites: CE 2310; and prerequisite or corequisite (CE 3120 or CHEG 3123). *Abboud, Holmen*

Aqueous analytical chemical techniques, absorption, coagulation/flocculation, fluidization, gas stripping, biokinetics, interpretation of analytical results, bench-scale design projects, written and oral reports.

3210. Environmental Engineering Prerequisite

(270) First semester. Three credits. Prerequisite: (CHEM 1128 or 1148) and MATH 2410. *MacKay*

Quantitative variables governing chemical behavior in environmental systems. Thermodynamics and kinetics of acid/base, coordination, precipitation/

dissolution, and redox reactions. Organic chemistry nomenclature.

3220. Water Quality Engineering

(260) (Also offered as CE 3320.) Second semester. Three credits. Prerequisites: CE 2310 and (CE 3120 or CHEG 3123). *Abboud*

Physical, chemical, and biological principles for the treatment of aqueous phase contaminants; reactor dynamics and kinetics. Design projects.

3230. Introduction to Air Pollution

(285) (Also offered as CHEG 3230.) Second semester. Three credits. Recommended preparation: CHEG 2111 or ME 2233 or ME 238.

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.

3240C. Soil Chemistry Components

(259C) (Also offered as SOIL 3410C.) First semester, alternate years (even). Four credits. Three class periods and one 2-hour computer laboratory period. Prerequisites: CHEM 1128Q and 2241. Recommended preparation: SOIL 2120 and 2125. *Schulthess*

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.

3250. Introduction to Biochemical Engineering

(283) (Also offered as BME 3301 and as CHEG 3173.) First semester. Three credits. Recommended preparation: CHEG 3151. *Wood*

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.

3260. Introduction to Environmental Rate Processes

(280) (Also offered as CHEG 3260.) First semester. Three credits. Recommended preparation: CHEM 1128.

Application of thermodynamics, chemical kinetics and transfer operations to environmental problems; water pollution control. Open only to students not majoring in chemical engineering.

3320. Limnology

(268) (Also offered as EEB 3247.) First semester. Three credits. Prerequisites: (MATH 1060 or 1120 or 1131) and (CHEM 1122 or 1127 or 1137 or 1147). Recommended preparation: BIOL 1107 or an introductory biology course.

Physical, chemical, and biotic interrelationships of freshwater habitats.

3995. Special Topics in Environmental Engineering

(295) Semester, credits, and hours by arrangement as announced. Prerequisite and or consent: Announced separately for each course. Course may be repeated for credit. Classroom or laboratory course on specific topics as announced.

4220. Introduction to Water Pollution

(281) Second semester. Three credits. Recommended preparation: CHEG 3124.

Water purification and water quality control; aeration and mass transfer, biological mechanisms and kinetics; design of biological reactors and sludge treatment facilities; design and operation of physical purification methods; alternative processes for industrial wastewater treatment.

4310. Environmental Modeling

(279) (Also offered as CE 4310.) Second semester. Three credits. Prerequisite: CE 2310 and (CHEG 3123 or CE 3120).

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.

4800. Hydraulic Engineering Laboratory

(266) (Also offered as CE 4800.) Second semester. Two credits. One class period. One 2-hour laboratory. Prerequisite: CE 3120.

Tests of the flow of water in pipes and open channels. Theory and calibration of flow measurement devices. Generation of flow measurement devices. Study of velocity profiles. Generation of pump performance curves. Physical hydraulic modeling and similtude.

4810. Engineering Hydrology

(267) (Also offered as CE 4810.) First semester. Three credits. Prerequisites: CE 3120 or (CHEG 3123 and 3124). *Anagnostou, Ogden*

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

(265) (Also offered as CE 4820.) Second semester. Three credits. Prerequisites: CE 3120 or (CHEG 3123 and 3124). *Anagnostou, Ogden*

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.

4910W. Environmental Engineering Design I

(290W) First semester. Two credits. Prerequisite: ENGL 1010 or 1011 or 3800. To be taken during the senior year.

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

(291W) Second semester. Two credits. Prerequisite: ENVE 4910W. To be taken during the senior year.

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. Thesis

(296) Either semester. Three credits. Prerequisite: Consent of instructor.

Designed to extend student knowledge in a specialized area of environmental engineering and introduction to research.

4999. Independent Study

(299) Either or both semesters. Credits by arrangement, not to exceed six in any semester. Open only with consent of instructor.

Individual study of special topics in law as mutually arranged between student and instructor.

European Studies (ES)

Program Advisor for Center for European Studies:
Ludmilla Burns

Office: Room 5, Human Development Center

3293. Foreign Study

(293) Either or both semesters. Credits and hours by arrangement. May be repeated for credit. Consent of Director required, normally to be granted prior to the student's departure. With a change in content, may be repeated for credit.

3398. Variable Topics

(298) Either or both semesters. Credits to a maximum of three.

Intensive study of specialized topics relating to Europe not ordinarily covered in the curriculum. With change in topic, may be repeated for credit.

3995. Special Topics in European Studies

(295) Either or both semesters. Three credits. With a change in topic, 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

(299) Either semester. Credits and hours by arrangement. Requires independent study Authorization Form from European Studies faculty.

For thesis preparation or other intensive research project relating to Europe. May be repeated for credit. Sponsored by the Center for European Studies.

Finance (FNCE)

Head of Department: Professor Thomas J. O'Brien
Department Office: Room 464, School of Business

For major requirements, see the School of Business section of this *Catalog*.

Courses in the department are open to juniors and seniors only with the exception of FNCE 1000. The School of Business requires students at the Storrs campus to participate in the Mobile Computing Initiative before registering for the courses listed below. See the School of Business *Catalog* section for details about how this program operates. Students not participating in the initiative may be able to register for the following classes: FNCE 1000, 3230, 3715.

1000. Contemporary Issues in Finance

(198) Semester by arrangement. One credit. May be repeated for credit in different sections in combination with BADM 1801 or MGMT 1801 up to a maximum of three credits. Open to freshmen and sophomores, others with consent of instructor. May not be used to satisfy Junior - Senior level major requirements in the School of Business.

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.

3101. Financial Management

(201) Either semester. Three credits. Prerequisite: ACCT 2101, which may be taken concurrently; ECON 1200 or both 1201 and 1202; ENGL 1010 or 1011 or 3800; MATH 1071 or 1122 or 1132; and STAT 1000 or 1100; open to juniors and higher. Not open to students who have passed or are taking BADM 3730.

An introductory examination of how a business plans its needs for funds, raises the necessary funds, and invests them to attain its goals.

3221. Risk Management and Insurance

(221) Either semester. Three credits. Prerequisite: FNCE 3101 or BADM 3730 or MATH 2620 or MATH 3630; open to juniors and higher.

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.

3230. Real Estate Principles

(230) Either semester. Three credits. Prerequisite: Open to juniors and higher.

Overview of the personal, social and business aspects of real estate. Emphasis on home purchase decisions, location analysis, market characteristics and investment decision-making.

3302. Investment and Security Analysis

(202) Either semester. Three credits. Prerequisite: FNCE 3101; open to juniors and higher.

A study of the nature of securities, the mechanics and costs of trading, and the way in which securities markets operate. Risk-return analysis will be applied in making decisions to buy or sell stocks, bonds and options. Written analysis is required.

3332. Real Estate Investments

(232) First or second semester. Three credits. Prerequisite: FNCE 3101 or FNCE 3230 or BADM 3730; open to juniors and higher.

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

(233) First or second semester. Three credits. Prerequisite: FNCE 3101 or FNCE 3230 or BADM 3730; open to juniors and higher.

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. GIS Applications and Use of the Internet in Real Estate Markets

(234) First or second semester. Three credits. Prerequisite: Open to juniors and higher.

How does a business decide where to relocate? Specialized Geographic Information Systems (GIS) are now used to make retail, office, and industrial location decisions. The Internet opens new sources of timely information. This gives decision-makers unprecedented power to manage data and analyze risks. Students gain hands-on experience with GIS and Internet through projects organized around real estate problems.

3451. Economics for Global Business Decisions

(217) First and/or second semester. Three credits. Prerequisite: FNCE 3101 (may be taken concurrently); open to juniors and higher.

Impact of globalization of the world economy on business and financial decisions. Trade, balance of payments, tariff policies, international economic institutions, exchange rates, capital flows.

3715. Personal Finance

(210) Either semester. Three credits. Prerequisite: Open to juniors and 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

(203) First and/or second semester. Three credits. Prerequisite: FNCE 3101; open to juniors and higher. Recommended preparation: OPIM 3103C.

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.

4304. Financial Risk Management

(204) First and/or second semester. Three credits. Prerequisite: FNCE 3101; open to juniors and higher.

Applications of financial structuring and engineering with particular attention to uses of derivatives.

4305. Global Financial Management

(205) Either semester. Three credits. Prerequisite: FNCE 3101; open to juniors and higher.

Focuses on the detailed study of: (1) exchange rate determination, (2) operation of the foreign currency and global capital markets, and (3) hedging both transaction and economic exposure to exchange rate changes.

4306. Financial Services

(206) First and/or second semester. Three credits. Prerequisite: FNCE 3101; open to juniors and higher.

Study of the role of financial services companies in the money and capital markets, funds acquisitions, investment and credit extension.

4319. Entrepreneurial Finance

(219) Semester by arrangement. Three Credits. Prerequisite: FNCE 3101; open to juniors and higher.

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.

4324. Health Insurance

(223) Second semester. Three credits. Prerequisite: FNCE 3221; open to juniors and higher.

Provides a detailed overview of health insurance from the perspective of insurance company owners, employers, and individual consumers of health insurance services. Emphasis is given to individual and group health insurance product management and to the relationship between product characteristics and insurance company investments, financing, and marketing decisions. Managed care techniques, benefit package design and cost sharing mechanisms are assessed in the context of resolving incentive conflicts and meeting cost-containment objectives. Evaluation of insurance company financial strength and the impact of regulation on company management and behavior are considered in detail.

4325. Life Insurance and Retirement Security

(225) First semester. Three credits. Prerequisite: FNCE 3221; open to juniors and higher.

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
(228) First semester. Three credits. Prerequisite: FNCE 3221; open to juniors and higher.

Critically examines the risk management process introduced in FNCE 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 are stressed.

4891. Field Study Internship
(289) Summer session. One to three credits. Hours by arrangement. Prerequisite: 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 to juniors and higher; consent of instructor and Department Head required prior to beginning the internship. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

Designed to provide students with an opportunity for supervised field work 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.

4893. Foreign Study
(293) Either or both semesters. Credits and hours by arrangement, up to a maximum of six credits. Prerequisite: Open to juniors and higher; consent of Department Head required prior to the student's departure. Special topics taken in a foreign study program.

4895. Special Topics
(298) Either semester. Credits and hours by arrangement. Prerequisite: Announced separately for each offering. With a change in content, 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
(299) Either or both semesters. Credits by arrangement, not to exceed six in any semester. Open only with consent of instructor and Department Head.

Individual study of special topics in finance, insurance or real estate as mutually arranged between a student and an instructor.

4997. Senior Thesis in Finance
(296) Either semester. Three credits. Hours by arrangement. Open only to Finance Department Honors Students with consent of instructor and Department Head.

Fine Arts (FINA)

References should be made to the offerings of art, dramatic arts and music. The courses listed below are of common interest to students in various disciplines.

1100. Afrocentric Perspectives in the Arts
(183) (Also offered as AFAM 1100.) Either or both semesters. Three credits. *Molette*

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.

3000. The Arts and Their Interrelations
(200) Either semester. Three credits. Hours by arrangement. Open only to juniors and seniors with consent of instructor.

Comparative study of the visual arts, music and theatre in selected periods.

French (FREN)

Head of Department: Associate Professor Norma Bouchard

Department Office: Room 228, J.H. Arjona Building

Consult the Modern and Classical Languages Department listing in this *Catalog* for requirements for Majors in French.

Consult the Departmental Handbook for courses offered and further description of these courses.

1161-1162. Elementary French I and II
(161-162) Both semesters. Four credits each semester. Four class periods and a one-hour laboratory period. The fourth class period is devoted to culture and society and reinforces through these areas the linguistic skills taught in the preceding classes. Not open for credit to students who have had three or more years of high school French. Students who wish to continue in French but feel ill prepared should contact the head of the Modern and Classical Languages Department.

Elementary French grammar. Emphasis is on the skills of speaking, oral and written comprehension, reading of simple texts and writing.

1163-1164. Intermediate French I and II
(163-164) Both semesters. Four credits each semester. Four class periods and a one-hour laboratory period. The fourth class period is devoted to culture and society. Prerequisite: FREN 1162 or 173 or two years of high school French.

Continuation of 1161-1162. Review and extension of French grammar. Graded composition. Intensive and extensive reading. Intensive oral practice.

1169. Studies in the French-Speaking World
(169) Either semester. Three credits. Conducted in English.

Recent trends in French life. Selected materials to acquaint students with the French contribution to the changing face of modernity. Weekly topics include: popular culture, women in France, cultural myths, the Francophone world, regionalism, decolonization and racism, etc. CA 1. CA 4-INT.

1171. French Cinema
(171) Either semester. Three credits. One 3-hour class period. Readings, viewings and lectures in English. May not be used to meet the foreign language requirement.

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. CA 1. CA 4-INT.

1174 through 1175. Intensive French III-IV
(174 through 175) Both semesters. Eight credits each semester. Two hours a day, four days a week, plus a 2-hour laboratory practice. Open only with consent of instructor.

Intensive coverage; French 1174-1175 (spring) covers the same material as 1163-1164.

1176. Literatures and Cultures of the Postcolonial Francophone World
(184) Three credits. Either semester. Taught in English.

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. CA 1. CA 4-INT.

1177. Magicians, Witches, Wizards: Parallel Beliefs and Popular Culture in France
(196) Either semester. 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
(193) Either or both semesters. Credits and hours by arrangement. May be repeated for credit. Consent of Department Head required, normally before the student's departure.

Special topics taken in a foreign study program.

3210. French Art and Civilization
(210) First semester. Three credits. Recommended preparation: FREN 1164 or 1175 or three years of 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.

3211. Contemporary France
(211) Second semester. Three credits. Recommended preparation: FREN 1164 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
(215) Either semester. Three credits. Recommended preparation: FREN 3267 or 3268 or instructor consent.

The course is primarily designed to acquaint students with the practical aspect of translating by working on a variety of articles on politics, science, business, and the arts.

3216. Advanced Translation
(216) Either semester. Three credits. Prerequisite: FREN 3215 or instructor consent. *Gordon, Melehy*

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
(217) Either semester. Three credits. Recommended preparation: FREN 1164 or 1175 or three years of 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

(218) Either semester. 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

(220) Either semester. 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

(221) Either semester. 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

(222) Either semester. Three credits. Recommended preparation: FREN 1164 or 1175 or three years of 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

(223) Either semester. 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

(224) Either semester. Three credits. Recommended preparation: FREN 3211 or instructor consent. May be repeated twice 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

(226) Either semester. 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.

3230. The Middle Ages: Myths and Legends

(230) Either semester. Three credits. Recommended preparation: FREN 3261 or 3262 or instructor consent.

Founding myths and legends of Occidental culture, including a socio-cultural approach. Strong audio-visual component. CA 1.

3231. Renaissance and Reformation

(231) Either semester. 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."

3232. French Classical Culture and Society

(232) Either semester. Three credits. Recommended preparation: FREN 3261 or 3262 or instructor consent.

Exploration of cultural and social change through literature and art. Women and *Salons*, theories and discourses on love and passions, the Cartesian revolution, the *Libertins*, classical science-fiction and utopias, classical comedy and tragedy, political absolutism, Versailles and the Sun King, classical colonialism and nationalism, the Ancients, and the Moderns.

3234. Romanticism, Realism, Fin de Siècle: 19th-Century Literature

(234) Either semester. 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 I.

3235. French Modernity

(235) Either semester. 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 I.

3250. Global Culture in French I

(250) Either semester. Three credits. Recommended preparation: FREN 1164 or 1175 or three years of 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

(251) Either semester. Three credits. Recommended preparation: Four years of high school French or French 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

(257) Either semester. Three credits. Recommended preparation: FREN 1164 or 1175 or three years of 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.

3261W. From the Holy Grail to the Revolution: Introduction to Literature

(261W) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher. Recommended preparation: FREN 1164 or 1175 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.

3262W. From the Romantics to the Moderns: Introduction to Literature

(262W) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher. Recommended preparation: FREN 1164 or 1175 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

(267) Either semester. Three credits. Recommended preparation: FREN 1164 or 1175 or three years of 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.

3267W. Grammar and Culture

(267W) Prerequisite: ENGL 1010 or 1011 or 3800. Recommended preparation: FREN 1164 or 1175 or three years of high school French or instructor consent. CA 1.

3268. Grammar and Composition

(268) Either semester. Three credits. Recommended preparation: FREN 1164 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.

3268W. Grammar and Composition

(268W) Prerequisite: ENGL 1010 or 1011 or 3800. Recommended preparation: FREN 1164 or 1175 or three years of high school French or instructor consent. CA 1.

3269. Advanced French Grammar

(269) Either semester. Three credits. Three hours per week. Recommended preparation: French 3268 or equivalent.

Intensive course in French grammar through a variety of fictional and non-fictional texts.

3270W. French Literature and Civilization in English

(270W) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800.

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

(272) Either semester. 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.

3273. Quebec Studies

(281) Either semester. Three credits. Recommended preparation: FREN 3210 or 3211 or 3261 or 3262 or instructor consent.

Study of French-Canadian society and its literary and artistic production. Special attention will be given to current issues.

3274. French Cultural Studies

(283) Either semester. 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 Non-fiction by French and Francophone Women

Both semesters. Three credits. Recommended preparation: FREN 3261W or 3262W or consent of instructor. With a change in content, this course may be repeated for credit.

3293. Foreign Study

(293) Either or both semesters. Credits and hours by arrangement. 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 the advisor.

Special topics taken in a foreign study program.

3295. Special Topics

(298) Either semester. Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary.

3298. Variable Topics

(295) Either semester. Three credits. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary.

3299. Independent Study

(299) Either or both semesters. Credits and hours by arrangement. Open only with consent of instructor. With a change in content, may be repeated for credit.

Study Abroad Program in France. The University sponsors an academic program at the University of Paris in France. A program description can be found in this *Catalog* within the Modern and Classical Languages Departmental listing, College of Liberal Arts and Sciences.

General Studies (GS)

Director: Susan Nesbitt

Office: Room: 105, Bishop Center

For major requirements, see the Center for Continuing Studies section of this *Catalog*.

3081. BGS Internship

(296) Either semester. Credits and hours by arrangement. Open only with consent of instructor and BGS mentor/advisor. With a change in content, may be repeated for credit.

3088. Variable Topics

(298) Either semester. Credits and hours by arrangement. With a change in content, may be repeated for credit.

3099. Independent Study

(299) Either semester. Credits and hours by arrangement. Open only with consent of instructor and BGS mentor/advisor. With a change in content, may be repeated for credit.

3200. BGS Continuous Registration

(200) Either semester. No credit.

A course without academic credit for which BGS students must register when not taking credit courses at any college or university for use in the BGS program during a particular semester.

3201. BGS External Study

(201) Either semester. No credit. Open only with consent of BGS advisor.

A course without academic credit for which a BGS student must register when taking approved credit

courses at another college or university for transfer back into the BGS program at the University of Connecticut.

3203. Systemic Analysis

(203) Second semester. Three credits.

Provides students with a foundational understanding of the complex and dynamic relationships between issues and the systems that cause them. Systemic analysis trains students to understand in the operational dynamics of the social and structural dimensions of a society or group.

3205. Contemporary Issues in Policing

(205) Summer. Three credits.

Provides an interactive approach to contemporary public safety issues. Students will be presented with benchmarks of historical issues and problem solving approaches when applicable. Constructed to use the input of each student, which will in part determine the issues discussed and analyzed.

3206. Leadership in Ethics and Public Safety

(206) Summer. Three credits.

Explores the core principles of effective leadership and the significance of ethical behavior in public safety. The characteristics of a quality leader and an effective agency will be discussed with a focus on developing effective leaders and followers, as well as, how leaders can improve the efficiency and productivity of a public safety agency.

3207. Employment Issues for Public Safety Managers

(207) First semester. Three credits.

Explores the issues in the personal management of a law enforcement or public safety agency. Addresses common constitutional and statutory issues that arise in the hiring, assignment, and disciplinary processes.

3208. Confessions, Interrogations, and Torture

(208) First semester. Three credits.

Explores the issues involved when law enforcement personnel seek admissions or confessions from criminal suspects and defendants. Students will be asked to contemplate, discuss and critique (a) interview and interrogation techniques, (b) legal restrictions on interrogations, and (c) technology related to the detection of truth and deception.

3233. Criminal Justice/Public Safety Liability Issues

(233) Second semester. Three credits.

Provides students with basic understanding of Criminal Justice/Public Safety Liability Issues. Concentrates on federal claims and specific state torts peculiar to law enforcement. Students will explore applicable constitutional provisions, statutes, and case law creating the basis for liability claims and defenses. The focus will be on current liability issues including but not limited to: use of force, false arrest, illegal searches, stop and frisk, profiling, pursuit and emergency operation of vehicles, failure to protect and supervisory issues.

3234. Evolving Law of Arrest, Search and Seizure

(234) Second semester. Three credits.

Focuses on the evolution, particularly within the last five years, of the law relating to Fourth Amendment issues. A basic understanding of the fundamental concepts of reasonable expectation of privacy, reasonable suspicion, probable cause and law enforcement actions should be mastered by students prior to taking this course. Focuses on current trends and developments including advances in technology and issues relating to the response to terrorism.

3235. Bias and Law Enforcement

(235) Second semester. Three credits.

Exploration of issues surrounding claims of bias by law enforcement.

3236. Juvenile Justice Issues

(236) First semester. Three credits.

Explanation of public safety and criminal justice behind the scenes of the Connecticut juvenile justice system.

3237. Introduction to U.S. Detention and Corrections

(214) Second semester. Three credits.

Affords a general overview of detention and corrections in America, including differentiating the purpose and operation of jails versus prisons and the use of non-custodial corrections alternatives such as community service, probation and parole. Specific issues of consequence in today’s domestic correctional environment will be explored.

3240. Marketing Concepts and Practices into the 21st Century

(240) Either semester. Three credits. Not applicable to School of Business degree requirements.

Discussion of marketing concepts, processes, strategies and management within context of product/service organizations both in the profit and the non-profit sector whether large or small.

3241. Financial Statement Analysis for Non-Financial Managers

(241) Either semester. Three credits. Not applicable to School of Business requirements.

Concepts and principles to enable non-financial managers to intelligently read and analyze financial reports.

3250. Introduction to Behavior Analysis

(250) Second semester. Three credits.

Survey of the principles of learning and their applications. Topics include the identification of behavior, its function, and methods of controlling its intensity and timing. Utilizes components of the Personalized System of Instruction and Precision Teaching.

3251. Introduction to Behavioral Assessment

(251) Summer semester. Three credits.

Introduction to the science of behavioral assessment through a survey of the strategies, tactics, tools, and practices that behavioral researchers and practitioners utilize to measure behavior change.

3252. Introduction to Behavioral Interventions

(252) First semester. Three credits.

An advanced application of the principles of learning to produce meaningful social outcomes for a variety of learners across settings. Utilizing the tools of behavioral assessment, the selection of an appropriate intervention and the steps in data-based decision making will be examined. The design and implementation of behavior change programs that will be maintained in various environments will be addressed. The use of high ethical standards and best practices will be emphasized.

4278. Integrating General Studies

(295) Both semesters. Three credits.

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

(295W) Prerequisite: ENGL 1010 or 1011 or 3800.

4279. BGS Summary Project

(297) Either semester. Three credits. Open only with consent of BGS mentor/advisor.

A project demonstrating the student's educational accomplishments and ability to synthesize the disciplines studied into a coherent whole.

Geography (GEOG)

Head of Department: Professor Jeffrey P. Osleeb
Department Office: Room 422, College of Liberal Arts and Sciences Building

For major requirements, see the College of Liberal Arts and Sciences section of this *Catalog*.

1000. Introduction to Geography (104) Either semester. 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.

1093. Foreign Study (193) Either or both semesters. Credits and hours by arrangement. May be repeated for credit. Consent of Department Head or advisor may be required prior to the student's departure.

Special topics taken in a foreign study program.

1100. Globalization (165) Either semester. Three credits.

Linkages between spatial processes and social, cultural, economic, political and environmental change around the world today. Focus on theory and impacts of globalization through case studies at the local, regional, national and international scales. CA 2. CA 4-INT.

1200. The City in the Western Tradition (130). (Also offered as URBN 1200.) Either semester. Three credits.

A broad discussion of the role and structure of the city in the western tradition from the Classical period to contemporary America. 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 the western city. CA 1.

1300. Climate, Weather, and the Environment (105) Either semester. 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.

1302. GIS Modeling of Environmental Change

First semester. Four credits. Three class periods and one 3-hour laboratory period.

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 (160) Either semester. 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.

2100. Economic Geography (200) Either semester. 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.

2300. Introduction to Physical Geography (205) Either semester. Three credits.

The physical elements and processes of the lithosphere, hydrosphere and atmosphere are considered in relation to one another and to the distribution of the world's environments. Emphasis on the basic concepts and theories of physical geography. CA 3.

2510. Visualizing Geographic Data (241) Second semester. Three credits.

Survey of methods for representing geographic data in tables, graphs, and maps emphasizing proper application, integration, and interpretation of methods in data visualization.

3100. The Geography of Economic Development (234) Second semester. Three credits. Recommended preparation: GEOG 1100 or 1700 or 2100.

Analysis of processes and patterns of economic organization and spatial change at the international, national and intra-national scales. Examines development from both linear (neo-classical) and structuralist (political economy) perspectives, and emphasizes relationships between advanced and developing economies within the context of the global economy.

3110. Location Analysis (231) Either semester. Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: GEOG 2100.

The study of issues and approaches in location analysis. Topics include location, theory and models, impacts of locational choice, systems analysis, evaluation of service areas, land use allocation, accessibility and locational conflict. Implications for planning and public policy are stressed.

3120. Introduction to Human Geography (204) First semester. Three credits.

Geographic perspectives on the relationships between human behavior/activities, and the physical, economic, and cultural environments.

3200. Urban Geography (233) (Also offered as URBN 3200.) First semester. Three credits. Not open for credit to students who have passed GEOG 212 or URBN 212.

Analysis of the growth, distribution, and functional patterns within and among Western cities. Application of urban geographical concepts to city planning problems.

3210. Applied Population Geography (238) Either semester. Three credits. Recommended preparation: GEOG 1000 or 2100.

The study of the composition and growth of small-area populations with respect to public and private sector decision making in more developed societies. Basic concepts and techniques for analyzing local populations are presented in the context of significant population issues in the United States.

3300. Principles and Applications of Physical Geography (232) First semester. Four credits. Prerequisite: Open to juniors or higher. Recommended preparation: GEOG 2300 or 3400.

Laboratory and field study of the physical environment. Techniques, methodologies, and basic concepts of physical geography.

3310. Fluvial Geomorphology (230) First semester, alternate years. Three credits. One required weekend field trip. Prerequisite: GEOG 2300

or GEOG 1001 or BIOL 1108 or instructor consent; 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. River management and restoration strategies. A fee of \$20 is charged for this course.

3320W. Environmental Evaluation and Assessment (286W) First semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800. Prerequisite: 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.

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.

3330W. Environmental Restoration (287W) First semester. Three credits. Prerequisite: GEOG 2300 or GEOL 1001 or BIOL 1108 or instructor consent; ENGL 1010 or 1011 or 3800; open to juniors or higher.

Restoration of natural environments including rivers, wetlands, coastal areas, grasslands and forests. Theoretical discussions of restoration ecology, management and engineering concerns. History of environmental restoration; relevant policy debates; specific case studies of river, wetland, coastal, grassland, and forest restoration.

Restoration of natural environments including rivers, wetlands, coastal areas, grasslands and forests. Theoretical discussions of restoration ecology, management and engineering concerns. History of environmental restoration; relevant policy debates; specific case studies of river, wetland, coastal, grassland, and forest restoration.

3340. Environmental Planning and Management (237) Second semester. Three credits. 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. A fee of \$10 is charged for this course.

3400. Climate and Weather (215) First semester. Three credits.

Analysis of atmospheric processes giving rise to weather systems and climatic patterns. The dynamic integration of atmospheric systems is emphasized.

3410. Human Modifications of Natural Environments (236) Either semester. Three credits.

A geographical and historical interpretation of the changing relationships between culture and environment. Emphasis on the modification of the biophysical environment by preagricultural, agricultural and urban societies in Europe, southwest Asia, and North America.

3500Q. Geographic Data Analysis (242Q) Second semester. Four credits. Three class periods and one 2-hour laboratory. Prerequisite: Open to juniors or higher. Recommended preparation: 1000-level STAT; MATH 1010 or equivalent.

An introduction to the use of quantitative methods in conducting research, with particular emphasis on the processing and analysis of geographic data.

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.) First semester. 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.

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.

3510C. Cartographic Techniques (240C) Second semester. Four credits. One 2-hour lecture and two 2-hour laboratory periods.

One 2-hour lecture and two 2-hour laboratory periods.

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.

3520C. Introduction to Computer Assisted Cartography

(245C) Second semester. Four credits. Three class periods and one 2-hour Laboratory. Prerequisite: Open to juniors or higher. Recommended preparation: GEOG 3500Q or equivalent.

Introduction to numerical cartography and a review of standard computer-assisted mapping programs. Emphasis is given to data compilation for machine presentation of cartographic information. Exercises will introduce students to a variety of input and output display media.

3700. The American Landscape

(252) Either semester. Three credits.

Survey and analysis of contemporary U.S. and Canadian landscapes, including consideration of the environmental, social, political, and economic forces that generate them.

4090. Internship in Geography: Field Study

(295) Either semester. Credits, not to exceed three, by arrangement. Hours by arrangement with hosting agency, not to exceed 16 hours per week. Prerequisite: Consent of instructor; open to juniors or higher. Corequisite: GEOG 4091. May not be repeated for credit. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

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 8-hour work day per week (or its equivalent) for the host agency during the course of the semester will be necessary for 3 academic credits.

4091. Internship in Geography: Seminar

(294) Either semester. Credits, not to exceed three, by arrangement. Prerequisite: Consent of instructor; open to juniors or higher. Corequisite: GEOG 4090.

Description, analysis, and evaluation of the fieldwork portion (GEOG 4090) of the internship. Written reports are required.

4093. Foreign Study

(293) Either or both semesters. Credits and hours by arrangement, up to a maximum of six credits. Prerequisite: Open to juniors or higher. Consent of Department Head required prior to the student's departure.

Special topics taken in a foreign study program.

4095. Special Topics

(298) Either or both semesters. Credits and hours by arrangement. Prerequisite: Open to juniors or higher. Open only with consent of instructor. May be repeated for credit.

4096. Senior Thesis

(296) Either semester. Three credits. Hours by arrangement. Prerequisite: One advanced seminar in geography and/or 3 credits of independent study in geography; open to juniors or higher. Open only with consent of instructor and department head.

4098. Variable Topics

(297) Either semester. Three credits. Prerequisite: Open to juniors or higher. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary.

4099. Independent Study

(299) Either or both semesters. Credits, not to exceed 6, and hours by arrangement. Prerequisite: Open to juniors or higher. May be repeated for credit.

4100. Advanced Economic Geography

(284) Second semester. Three credits. Prerequisite: GEOG 2100 or instructor consent; open to juniors or higher.

Problems involved in analyzing spatial variations of selected economic variables. Emphasis on location theory with view toward integrating geographic viewpoint and economic concepts.

4110W. Regional Development and Policy

(288W) First semester. Three credits. Prerequisite: GEOG 2100 or instructor consent; ENGL 1010 or 1011 or 3800; 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. Transportation Geography

(235) Either semester. Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: GEOG 2100.

Transportation rate establishment, transportation models for predicting transportation flows, impact of transportation on location of economic activities, and planning of transportation facilities in cities.

4200W. Geographical Analysis of Urban Social Issues

(280W) Second semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800; 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

(274) Either semester. Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: GEOG 2100 or instructor consent.

Urban and regional planning, with emphasis on (1) duties of local planners, especially land use planning, and (2) the political context for planners' work. Legal and political issues in communities and organizations.

4300. Advanced Physical Geography

(285) Second semester, alternate years. Three credits. Prerequisite: GEOG 2300 or instructor consent; open to juniors or higher.

Problems involving the application of physical processes in our changing environment.

4500C. Introduction to Geographic Information Systems

(246C) First semester. Four credits. One 2-hour lecture and two 2-hour laboratory periods. Prerequisite: Open to juniors or higher. Recommended preparation: GEOG 3500Q.

The study of the 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.

4510C. Applications of Geographic Information Systems

(248C) Second semester. Four credits. One 2-hour lecture and two 2-hour laboratory periods. Prerequisite: GEOG 4500C; open to juniors or higher.

Applications of geographic information systems. Particular attention to land use planning and resource management.

4520. Selected Topics in Geographic Information Systems

(249) Either semester. Three credits. Prerequisite: Open to juniors or higher. May be repeated once for credit with change in content. Recommended preparation: GEOG 3500Q.

Selected problems in geospatial decision making and the most commonly used GIS functions, databases, and analyses for decision support.

4530C. Computer Applications in Spatial Analysis

(282C) First semester, alternate years. Prerequisite: Open to juniors or higher. Three credits. Recommended preparation: GEOG 3500Q or equivalent; MATH 1010 or equivalent.

An advanced seminar in the design of computer programs for solving problems in spatial analysis. Students receive a thorough knowledge of Fortran and related graphic subroutine libraries necessary to implement individual projects.

4700. Contemporary Europe: A Geography

(254) Either semester. Three credits. Prerequisite: Open to juniors or higher.

An introduction to the Europe (including the European republics of the former U.S.S.R.). Emphasis on the economic, political, and social forces both maintaining national identities and shaping a united Europe.

4710. Geography of Latin America

(255) Second semester. 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.

Geology and Geophysics (GEOL)

Director: Professor Pieter Visscher
Center for Integrative Geosciences

Geology

1000. Introductory Environmental Geology

(101) Either semester. Three credits. Not open for credit to students who have passed GEOL 1001.

Designed for the nonscience major. Applied geologic principles and processes. Environmental hazards, mineral resources and water problems affecting land use.

1001. Introductory Geology

(102) Either semester. Four credits. Three class periods and one 3-hour laboratory period.

Description and analysis of the physical, chemical and biological processes that continually modify the shape of the earth's surface and the structure and composition of its interior. Methods of interpreting earth history from evidence now preserved in rocks. Field trips are held during several of the regular laboratory periods.

1010. Age of the Dinosaurs

(111) First semester. Three credits.

A reconstruction of the Mesozoic world of the dinosaurs as interpreted from geological and paleontological evidence. Includes fundamental concepts of stratigraphy, historical geology, paleoclimatology, and paleontology. CA 3.

1050. Earth and Life through Time with Laboratory

(105) Both semesters. Four credits. Three class periods and one three-hour laboratory period. Not open to students enrolled in or having passed GEOL 1051 or SCI 1051.

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. Includes laboratory component (see GEOL 1052). CA 3-LAB.

1051. Earth and Life through Time

(103) Both semesters. Three credits. Three class periods. Not open to students enrolled in or having passed GEOL 1050 or SCI 1051. Students who complete both GEOL 1051 and 1052 may request GEOL 1051 be converted from a CA 3 Non-laboratory to a CA 3 Laboratory course.

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.

1052. Laboratory Earth and Life through Time

(107) Both semesters. One credit. Not open to students enrolled in or having passed GEOL 1050. Students who complete both GEOL 1051 and 1052 may request GEOL 1051 be converted from a CA 3 Non-laboratory to a CA 3 Laboratory course.

Laboratory complement to GEOL 1051. Provides an opportunity to work with specimens (minerals, fossils, rocks), terrain images, maps, physical models, and simulation experiments. Includes two local field trips.

1053. Discussion Earth and Life through Time

(109) Both semesters. One credit. Corequisite: GEOL 1050, 1051, 1052 or instructor consent. May be repeated for credit with instructor consent.

Faculty-taught, weekly discussions to enhance GEOL 1050 and 1051. Emphasis and approach will vary, but all sections will track the lecture syllabus.

1054. Field Trips Earth and Life through Time

(113) Both semesters. One credit. Corequisite: GEOL 1050, 1051, 1052 or instructor consent. May be repeated for credit with instructor consent.

Two or more faculty-led weekend field trips to nearby sites of interest, designed to enhance GEOL 1050 and 1051.

3010. Earth History and Global Change

(250) Second semester. Three credits. Two class periods and one 3-hour laboratory period. Prerequisite: GEOL 1001 or 1050. Required of all Geology majors.

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.

3020. Earth Surface Processes

(251) First semester. Three credits. Two class periods and one 3-hour laboratory period. Prerequisite: GEOL 1001 or 1050. Required of all Geology majors.

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.

3030. Earth Structure

(252) Second semester. Three credits. Two class periods and one 3-hour laboratory period. Prerequisite: GEOL 1001 or 1050. Required of all Geology majors.

Structure and composition of the earth, including a survey of plate tectonics and crustal evolution. Gravitational, thermal and tectonic processes associated with the earth's surface and interior. One or more weekend field trips may be required.

3040. Earth Materials

(253) Second semester. Four credits. Two class periods and two 3-hour laboratory periods. Prerequisite: GEOL 1001 or 1050. Recommended preparation: CHEM 1127-1128. Required of all Geology majors.

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.

3230. Beaches and Coasts

(203) (Also offered as MARN 3230.) First semester (Avery Point). Three credits. Prerequisite: MARN 1002 or 1003 or GEOL 1050 or 1051 or instructor consent.

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.

3510. Applied Geophysics for Geologists and Engineers

(228) Second semester, alternate years. Three credits. One 3-hour lecture period during which geophysical field demonstrations may be performed. Prerequisite: GEOL 1000 or 1001 or 1050 or 1051. *Liu*

Introductory survey of surface and borehole geophysical methods and their application to hydrogeologic, environmental monitoring, and geotechnical engineering studies. Demonstrations involve geophysical field measurement, data reduction and geologic interpretation.

3710. Engineering and Environmental Geology

(229) Second semester, alternate years. Three credits. Recommended preparation: GEOL 1000 or 1001 or 1050 or 1051. *Liu*

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 geology and engineering majors.

3980. Field Geology

(212) Second semester. Six credits. Four weeks intensive study following final examination period. Prerequisite: GEOL 1001 or 1050.

Field methods for geological and environmental geoscience studies, including electronic surveying techniques, aerial photograph interpretation, geological mapping, description and measurement of sedimentary sections, techniques of underground mapping, and geophysical surveying.

3990. Spring Field Trip

(213) Second semester. Variable credits. Prerequisite: GEOL 3010, 3020, 3030, and 3040, one of which may be taken concurrently.

Spring field trip during spring break, and supporting research. First 7 weeks: background readings from primary literature and secondary literature. Seven weeks following trip: supervised laboratory research using field samples. One or more short research papers and presentation to the department.

4050W. Geoscience and Society

(290W) Second semester. Three credits. Prerequisite: GEOL 1050 or 1051; ENGL 1010 or 1011 or 3800; 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.

4110. Sedimentation and Stratigraphy

(240) First semester. Three credits. Two class periods and one 3-hour laboratory period. Prerequisite: GEOL 3020.

Composition, deposition and diagenesis of marine and non-marine sediments; stratigraphic methods; dynamics of sediment incorporation into the stratigraphic record. An examination of recent sedimentary sequences as a key to understanding ancient sedimentary environments. One or more weekend field trips may be required.

4120. Invertebrate Paleontology

(219) First semester, alternating years. Four credits. Two class periods and two 2-hour laboratory periods. Prerequisite: GEOL 3010.

The systematics, anatomy, evolutionary patterns and ecology of the major groups of invertebrate fossils.

4210. Glacial Processes and Materials

(223) First semester. Three credits. One 2-hour class period and one 3-hour laboratory (for lab exercises and field trips). Recommended preparation: GEOL 3020.

Reconstruction of former glaciers and the interactive processes leading to the character and distribution of unconsolidated surface materials in glaciated regions. Techniques for interpreting subsurface unconsolidated materials.

4220. Principles of Geomorphology

(220) First semester. Three credits. Two class periods and one 3-hour laboratory (occasionally used for field trips). Prerequisite: GEOL 3020.

Interpretation of landscape genesis with an emphasis on causal processes and paleoenvironmental implications.

4310. Advanced Structural Geology

(217) Second semester. Three credits. Two class periods and one 3-hour laboratory period. Prerequisite: GEOL 3030. *Crespi*

Mechanics of rock deformation. Material behavior of rocks and their geometry during orogenesis, with applications of finite strain analysis, and advanced geometric techniques. One or more weekend field trips may be required.

4320. Plate Tectonics and Geologic Processes

(271) (Formerly offered as GEOL 261.) Second semester. Three credits. Prerequisites: GEOL 3010 and 3030, which may be taken concurrently. Not open for credit to students who have passed GEOL 261.

Understanding the structure and composition of the Earth's lithospheric plates using geological and geophysical techniques and analyses of magnetic anomalies, ocean floor sediments and the geologic history of the continents. Emphasis on the interaction of geologic and plate processes, especially along plate boundaries.

4390. Field Problems in Earth Structure

(257) First semester. One credit. Two weekend field trips and two 2-hour class meetings. Prerequisite or corequisite: GEOL 3030.

Mapping techniques and map interpretation using concepts developed in GEOL 3030. Emphasis on mapping moderately deformed rocks in which sedimentary and tectonic features can be differentiated.

4410C. Igneous Petrology

(214C) Second semester, alternate years. Four credits. Three class periods and one 3-hour laboratory.

Prerequisite: GEOL 3040. Recommended preparation: MATH 1122 or 1132.

Introduction to rocks and the physical and chemical principles governing their formation. Fluid mechanics of magmas, heat transfer, thermodynamics, phase equilibria, isotope geochemistry, and the relation of magmatism to plate tectonics. Optical microscopy, x-ray fluorescence, and electron microprobe analysis. Preparing a paper suitable for publication in a scientific journal.

4420C. Metamorphic Petrology

(215C) Second semester, alternate years. Three credits. Two class periods and one 3-hour laboratory. Prerequisite: GEOL 3040. Recommended preparation: MATH 1122 or 1132. *Joesten*

Interpretation of mineralogical, chemical and textural features of metamorphic rocks in terms of the physical conditions and dynamic processes operating in the Earth's crust. Thermodynamic description of phase equilibria in fluid-rock systems. Kinetics, mass- and energy-transport in metamorphic processes. Petrographic, and X-ray analytical techniques.

4510C. Applied and Environmental Geophysics

(278C) Second semester. Three credits. Two class periods and one 3-hour laboratory period. Prerequisite: PHYS 1230 or 1402 or 1502 or 1602, which may be taken concurrently; MATH 1122 or 1132 or 1152, which may be taken concurrently; not open to students who have passed GEOL 268Q. *Liu*

Principles of imaging the Earth's interior using observations of electric, magnetic, and gravity fields, with applications to environmental problems.

4520C. Exploration Seismology

(277C) First semester. Three credits. Two class periods and one 3-hour laboratory period. Prerequisite: PHYS 1230 or 1402 or 1502 or 1602, which may be taken concurrently; MATH 1121 or 1131 or 1151, which may be taken concurrently; not open to students who have taken GEOL 267Q. *Liu*

Principles of seismic methods for imaging the interior of the earth, with applications to resource exploration and environmental problems.

4550. Physics of the Earth's Interior

(274) (Also offered as PHYS 4100.) Second semester. Three credits. Prerequisite: PHYS 1230 or 1402 or 1502 or 1602, which may be taken concurrently; MATH 1121 or 1131 or 1151, which may be taken concurrently, not open to students who have taken GEOL 264Q. *Cormier*

The composition, structure, and dynamics of the Earth's core, mantle, and crust inferred from observations of seismology, geomagnetism, and heat flow.

4560. Fundamentals of Planetary Science

(276) (Also offered as PHYS 4130.) First semester. Three credits. Prerequisite: PHYS 1230 or 1402 or 1502 or 1602, which may be taken concurrently; MATH 1122 or 1132 or 1152, which may be taken concurrently, not open to students who have taken GEOL 266Q. *Cormier*

Evolution of the solar system, celestial mechanics, tidal friction, internal composition of planets, black-body radiation, planetary atmospheres.

4735C. Introduction to Ground-Water Hydrology

(234C) (Also offered as NRME 4135C.) First semester. Four credits. Three class periods and one 2-hour laboratory for which occasional field trips will be substituted. Prerequisite: MATH 1122 or 1132 and GEOL 1001 or 1050, or instructor consent. *Robbins*

Basic hydrologic principles with emphasis on ground water flow and quality, geologic relationships, quantitative analysis and field methods.

4750. Chemical Hydrogeology

(235) Second semester. Four credits. Three hours lecture and three hours laboratory. Prerequisite: GEOL 4735C and CHEM 1127-1128. *Robbins*

Chemical processes controlling the composition of unpolluted and polluted natural waters. Field and laboratory analytical techniques. Equilibria, reaction and transport models of the chemical interactions between groundwater and the media through which it travels. Applications of geochemical processes and principles to understanding to the mitigation of environmental problems.

4989. Undergraduate Research in Geology and Geophysics

(296) Either semester. Three credits. Hours by arrangement. Prerequisite: Open to juniors or higher. Open only with consent of instructor.

Independent research for the advanced undergraduate student interested in investigating a special problem involving field and/or laboratory observations in geology and geophysics. The student is required to give an oral presentation in a departmental seminar at the end of the semester.

4990. Internship in Geology and Geophysics - Field Study

(293) Either semester. One to three credits. May not be repeated. Internship contract must be formulated before internship work begins. Students with summer internship must preregister for GEOL 4990 for the fall semester. Prerequisite or corequisite: GEOL 3010, 3020, 3030, and 3040. Must be taken concurrently with GEOL 4991; no credit will be given for one course without the other. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

An internship program under the direction of Geology and Geophysics faculty. Students will work 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.

4991. Internship in Geology and Geophysics - Research Paper

(294) Either semester. One credit. May not be repeated. Students with summer internship must preregister for GEOL 4991 for the fall semester. Prerequisite or corequisite: GEOL 3010, 3020, 3030, and 3040. Must be taken concurrently with GEOL 4990; no credit will be given for one course without the other.

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.

4995. Special Topics

(298) Either semester. Credits and hours by arrangement. May be repeated for credit. Open only with consent of instructor.

Investigation of special topics related to, but not ordinarily covered in the undergraduate offerings; emphasis on laboratory projects.

4996W. Undergraduate Research Thesis in Geology and Geophysics

(297W) Either semester. Three credits. Hours by arrangement. Prerequisite: GEOL 4989; ENGL 1010 or 1011 or 3800; open to juniors or higher. Open only with consent of instructor.

Writing of a formal thesis based on independent research conducted by the student.

4998. Variable Topics

(295) Either semester. Three credits. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary.

4999. Independent Study

(299) Either or both semesters. Credits and hours by arrangement. May be repeated for credit. Open only with consent of instructor.

German (GERM)

Head of Department: Associate Professor Norma Bouchard

Department Office: Room 228, J.H. Arjona Building

Consult the Modern and Classical Languages Department listing in this *Catalog* for requirements for Majors in German.

1111 through 1114. Special Intensive Course

(1111 through 1114) First and second semesters. Eight credits per semester. Two hours a day, four days a week, plus a 2-hour laboratory practice. Open only with consent of instructor. Not open for credit to students who have passed GERM 1131 through 1134.

Intensive coverage of two years in two semesters. GERM 1111-1112 (fall) covers same materials as 1131-1132, Elementary German. GERM 1113-1114 (spring) covers same material as GERM 1133-1134, Intermediate German.

1131-1132. Elementary German I and II

(131-132) Both semesters. Four credits each semester. Four class periods, and one 1-hour laboratory practice. Not open for credit to students who have had three or more years of German in high school. Students who wish to continue in German but feel ill prepared should contact the head of the Modern and Classical Languages Department. Not open for credit to students who have passed GERM 1111-1112.

Fundamentals of German. Presentation of dialogues, conversation, vocabulary building, grammar and culture. Emphasis on speaking, oral comprehension, reading of simple texts and writing, to satisfy basic survival needs within a cultural setting.

1133-1134. Intermediate German I and II

(133-134) Both semesters. Four credits each semester. Four class periods and one 1-hour laboratory practice. Prerequisite: GERM 1132 or two years of high school German. Not open for credit to students who have passed GERM 1113-1114.

Review and extension of grammar, vocabulary expansion, graded composition, intensive and extensive reading, and intensive oral practice to further develop communicative abilities within a cultural setting.

1140W. German Literature in English

(140W) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800.

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.

1145-1146. German Readings in the Sciences and Humanities

(145-146) Both semesters. Three credits each semester. Not open for credit to students who have passed GERM 1131-1132 or equivalent. May not be used to meet the undergraduate language requirement.

Basic grammar and intensive practice in reading expository prose in the natural sciences, social sciences, and humanities. Intended for students desiring to learn German as a tool for research. Will satisfy ACS and Ph.D. reading requirements.

1153. Active Language Skills I

(153) First semester. Two credits. Two class periods. Corequisite or prerequisite: GERM 1133. Practice in audio-lingual skills.

Emphasis on everyday vocabulary. Recommended for students intending to travel or study abroad.

1154. Active Language Skills II

(154) Second semester. Two credits. Two class periods. Corequisite or prerequisite: GERM 1134.

Additional practice in developing communicative abilities in a German-speaking country. Recommended for students intending to travel or study abroad.

1169. Contemporary Germany in Europe

(169) Either semester. Three credits. *Finger*

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. CA 1. CA 4-INT.

1171. The German Film

(171) Either semester. Three credits. Readings and lectures in English. May not be used to meet the undergraduate foreign language requirement.

Weekly showings of German films from the 1920's to the present. Introduction to film history, analysis and interpretation of films, outside readings, term papers. CA 1. CA 4-INT.

1175. Human Rights and German Culture

(175) Either semester. Three credits. Readings and lectures in English. May not be used to meet the undergraduate foreign language requirement.

Study of primary sources on human rights from the Age of Enlightenment to contemporary documents and debates as well as literature and other forms of art related to human rights. Documentaries on the Holocaust, human rights in divided Germany, and the contemporary debate on multiculturalism and political asylum. CA 1. CA 4-INT.

1193. Foreign Study

(193) Either or both semesters. Credits and hours by arrangement. May be repeated for credit. Consent of Department Head required, normally to be granted prior to the student's departure.

Special topics taken in a foreign study program.

2201-2202. Composition

(201-202) Both semesters. Three credits each semester. Prerequisite: GERM 1134 or three years of German in high school. May only be used for transfer credit or for study abroad. Not open for credit to students who have passed GERM 3233-3234.

Intensive grammar review and extensive practice in writing.

2204-2205. Conversation

(204-205) Both semesters. Three credits each semester. Prerequisite: GERM 1134 or three years of German in high school. May only be used for transfer credit or for study abroad. Not open for credit to students who have passed GERM 3233-3234.

Intensive oral practice based primarily on cultural readings.

2280. Introduction to Germanic Linguistics

(280) First semester. Three credits. Prerequisite: GERM 1132 or LING 2020 or instructor consent. *McCormick*

A study of the relationship among modern and historical Germanic languages. Lectures, readings, and class discussions in English.

2282. Connecticut and the Global Market: The German-Speaking Countries

(282) First semester. Three credits. Taught in English.

Cultural aspects of international business. Lectures by speakers from the German-speaking countries and representatives of institutions and companies related to those countries. Discussion and analysis of the lectures.

3200. Intensive Language Practice

(200) Second semester. Three credits. Hours by arrangement. Prerequisite: GERM 1133 or equivalent and consent of instructor.

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

(220) First semester. One credit. One class period. Prerequisite or corequisite: GERM 1133 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

(221) Second semester. One credit. One class period. Prerequisite or corequisite: GERM 1134, CHEM 1128Q, and PHYS 1502Q or equivalent.

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

(222) First semester. One credit. One class period. Prerequisite: GERM 3220 and GERM 3221.

A series of lectures and discussion periods on special topics in science and engineering. Open only with consent of instructor.

3231-3232. German for Professional Use I and II

(231-232) Both semesters. Three credits each semester. Prerequisite: GERM 1134 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 Institute's test of German for Professional Purposes (*Deutsch für den Beruf*).

3233-3234. Building Language Skills Through Culture I and II

(233-234) Both semesters. Three credits each semester. Prerequisite: GERM 1134 or equivalent. Not open for credit to students who have passed GERM 2201-2202 or GERM 2204-2205.

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.

3240W. German Literature in Translation

(240W) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800. May not be used to satisfy the undergraduate foreign language requirement or the major requirement in German.

Reading and analysis of significant works of German literature from one or more periods.

3245. German Grammar and Etymology

(245) Either semester. Three credits. Corequisite: GERM 3233 or equivalent or instructor consent.

German grammar and etymology for advanced students. A conceptual foundation for communicative language skills and comparison with English.

3251. German Culture and Civilization

(251) Either semester. Three credits. Conducted in English. Not open for credit to students who have passed GERM 250.

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. CA 1. CA 4-INT.

3252W. Studies in Early German Literature

(252W) Either semester. Three credits. Prerequisite or corequisite: GERM 3233 or instructor consent. Prerequisite: ENGL 1010 or 1011 or 3800.

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.

3253W. Studies in German Literature Around 1800

(253W) Either semester. Three credits. Prerequisite or corequisite: GERM 3233 or instructor consent. Prerequisite: ENGL 1010 or 1011 or 3800.

Study of a cohesive group of texts that mark the periods of Enlightenment, Storm and Stress, Classicism and Early Romanticism. 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.

3254W. Studies in 19th Century German Literature

(254W) Either semester. Three credits. Prerequisite or corequisite: GERM 3233 or instructor consent. Prerequisite: ENGL 1010 or 1011 or 3800.

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

(255) Either semester. Three credits. Prerequisite or corequisite: GERM 3233 or instructor consent.

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

(255W) Prerequisite or corequisite: GERM 3233 or instructor consent. Prerequisite: ENGL 1010 or 1011 or 3800. CA 1.

3258. Germans in Africa, Blacks in German-Speaking Countries. Colonial and Postcolonial Perspectives

(258) Either semester. 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. CA 1. CA 4-INT.

3260. Women's Studies in German

(260) Either semester. Three credits. Prerequisite or corequisite: GERM 3234 or instructor consent.

Women in the literature of the German-speaking countries. Women's writings. The development of German feminism. Contemporary gender issues in the German-speaking countries.

3261W. German Film and Culture

(281W) Either semester. Three credits. Prerequisite or corequisite: GERM 3233. Prerequisite: ENGL 1010 or 1011 or 3800.

Critical analysis of artistic issues in writing screenplays and making movies. Dynamic interplay between German film, the other arts, and their socioeconomic context, and the cinematic traditions of other cultures. Taught in German. CA 1. CA 4.-INT.

3262. German Play Production

(295) Second semester. Three credits. Hours by arrangement. Prerequisite: GERM 111 or 1131 and consent of instructor. May not be used to meet the undergraduate foreign language requirement. With a change in topic, this course may be repeated for credit.

Extensive and intensive study, discussion and interpretation of a German drama, followed by casting, rehearsals and eventual performance. Students are given both on-stage and off-stage assignments and responsibilities. Term paper.

3264W. German Cinema in Cross-Cultural Perspective

(284W) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800.

Cross-cultural comparison of film genres using examples from German film history and other cinematic traditions. CA 1.

3265. Topics in German Culture

(285) Either semester. Three credits. Prerequisite or corequisite: GERM 3233 or instructor consent. With a change in topic, this course 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.

3271. Principles of Translation I

(271) First semester. Three credits. Prerequisite: GERM 3234 or equivalent. Open only to juniors and seniors, with consent of instructor. *Wright*

Theory and practice of translating and interpreting written and oral materials from German into English.

3292. German Language Practicum

(290) Either semester or summer. Credits (not to exceed six) and hours by arrangement. Prerequisite: Three years of college-level German or the equivalent. Open only to juniors and seniors with consent of instructor.

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

(293) Either or both semesters. Credits and hours by arrangement. 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.

Special topics taken in a foreign study program.

3294. German Seminar

(296) Either semester. Credits and hours by arrangement. Open only to juniors and seniors with consent of instructor. May be repeated for credit.

Intensive investigation of selected problems in German literature and/or German studies.

3298. Variable Topics

(297) Either semester. Three credits. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary.

3295. Special Topics

(298) Either semester. Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary.

3299. Independent Study

(299) Either or both semesters. Credits and hours by arrangement. Open only with consent of instructor. With a change in content, may be repeated for credit.

4246. The Finishing Touch: A Capstone in German Studies

(246) Either semester. Three credits. Prerequisite: German 3234 plus a minimum of 6 additional 2000-level or above credits in German.

A course in which advanced students assess and polish their German language skills, consolidate their learning in German Studies, and demonstrate that learning in a final project.

German Study Abroad. An academic year or spring semester at the University of Salzburg, Austria, operated jointly with other New England state universities, allows students to earn up to 34 credits in all disciplines. The University of Connecticut sponsors a variety of programs at any of nine universities in the state of Baden-Wuerttemberg. Students also have the possibility of language study at a Goethe Institute, and a combination of study and work through programs in Mannheim and Regensburg.

Health Sciences (HESC)

Head of Department: Professor Lawrence Silbart
Department Office: Room 227-A, Koons Hall

3000. Anatomy and Physiology for the Radiologic Technologist I

(210) Either semester. Three credits. Hours by arrangement. Open only to students in Allied Health.

A systems approach to the anatomy and physiology of the human body. Anatomy of the thoracic and abdominal cavities, cytology, integumentary and skeletal systems. Appendicular and axial skeletons, gastrointestinal and urinary systems.

3001. Anatomy and Physiology for the Radiologic Technologist II

(211) Either semester. Three credits. Hours by arrangement. Open only to students in Allied Health.

A continuation of Anatomy and Physiology for the Radiologic Technologist I. Respiratory, lymphatic, circulatory, reproductive, endocrine, nervous and muscular systems.

3004. Fundamentals of Radiologic Physics

(220) Either semester. Three credits. Hours by arrangement. Open only to students in Allied Health.

Principles of physics, fundamental concepts of the structure of matter, production and use of electrostatics, electromagnetism, electrodynamics and principles of radiation. Structure of the x-ray tube and linear accelerator is introduced.

3005. Radiation Biology and Protection

(223) Either semester. Four credits. Hours by arrangement. Open only to students in Allied Health.

Principles of radiation protection and safety. Concepts and principles of radiation biology including requirements for regulatory, accreditation and health care organizations. Theories and principles of tolerance dose, time-dose relationships, fractionation schemes and the relationship to the clinical practice.

3010. Patient Care for Radiologic Technologists I

(240) Either semester. Two credits. Hours by arrangement. Open only to students in Allied Health.

Basic patient care procedures, including caring for the physical and emotional needs of the patient and family. Routine patient care procedures, communication, safety, legal, ethical, and professional issues.

3011. Patient Care for Radiologic Technologists II

(241) Either semester. Two credits. Hours by arrangement. Open only to students in Allied Health.

A continuation of Patient Care for Radiologic Technologists I. Emergency patient care procedures, surgical asepsis, pharmacology and radiographic contrast media.

3095. Special Topics

(298) Either semester and summer session. Credits and hours by arrangement. Open only with consent of instructor. May be repeated for credit.

Investigation of special topics in health sciences that are related to basic core interdisciplinary areas.

3099. Independent Study for Undergraduates

(299) Either semester. Credits and hours by arrangement: not to exceed four credits. Open only with consent of instructor. May be repeated for credit.

This course is designed primarily for students who wish to extend their knowledge in some specialized subject in the field of health sciences.

3120. Oncologic Pathology

(244) Summer session. Two credits. Hours by arrangement. Open only to students in Allied Health.

General principles of pathology. Emphasis on factors relating to and providing basis for tumor pathology and normal tissue repair.

3121. Radiation Therapy Physics

(224) Summer session. Three credits. Hours by arrangement. Open only to students in Allied Health.

Nature and physical aspects of generation and interaction of radiation used in therapeutic radiology. Conceptual framework for the physics of diagnostic radiology will be presented.

3122. Foundations of Radiation Therapy

(243) Either semester. Three credits. Hours by arrangement. Open only to students in Allied Health.

Foundations in radiation therapy and the role of the radiation therapist. Introduction to radiation therapy education and professional responsibilities of the radiation therapist. Management of neoplastic disease.

3132. Medical Imaging and Processing

(233) Either semester. Three credits. Hours by arrangement. Open only to students in Allied Health.

Theory and principles governing and influencing the production and recording of radiographic images. Focus on radiation oncology imaging equipment and related devices.

3133. Radiation Therapy Equipment and Operation

(234) Summer session. Two credits. Hours by arrangement. Open only to students in Allied Health.

Theory and operation of a treatment console. Patient documentation, monitoring and safety, radiation protection, verification and quality control.

3151. Treatment Planning I

(225) Summer session. Two credits. Hours by arrangement. Open only to students in Allied Health.

Dose and treatment time calculations for linear accelerators, superficial/orthovoltage and Co-60 treatment units. Application of isodose chart, central axis depth dose curves and beam profiles.

3161. Principles and Practice of Radiation Therapy I

(254) Either semester. Three credits. Hours by arrangement. Open only to students in Allied Health.

Introduction to radiation therapy equipment and its use in clinical practice. Professional issues and the management of patients with cancer will be addressed.

3162. Principles and Practice of Radiation Therapy II

(255) Either semester. Three credits. Hours by arrangement. Open only to students in Allied Health.

A continuation of Principles and Practice of Radiation Therapy I.

3171. Radiation Therapy Clinical Internship I

(270) Either semester. One credit. Hours by arrangement. Open only to students in Allied Health.

Supervised clinical experience with therapeutic applications. Experience in a variety of technical methods and procedures in the management of patients undergoing radiation therapy.

3172. Radiation Therapy Clinical Internship II

(271) Either semester. One credit. Hours by arrangement. Open only to students in Allied Health.

Continuation of Radiation Therapy Clinical Internship I.

3173. Radiation Therapy Clinical Internship III

(272) Summer session. Five credits. Hours by arrangement. Open only to students in Allied Health.

Continuation of Radiation Therapy Clinical Internship I and II.

3231. Principles of Radiographic Imaging I

(230) Either semester. Three credits. Hours by arrangement. Open only to students in Allied Health.

Introduction to fundamentals of exposure factor selection and imaging parameters. Radiographic imaging, radiographic film, cassettes/screens and imaging systems.

3232. Principles of Radiographic Imaging II

(231) Either semester. Three credits. Hours by arrangement. Open only to students in Allied Health.

A continuation of Principles of Radiographic Imaging I. X-ray tube, X-ray circuitry, X-ray production, image quality factors, I.I Tube and Fluoroscope.

3261. Radiographic Procedures I

(250) Either semester. Four credits. Hours by arrangement. Open only to students in Allied Health.

Preparation to accurately position patients for diagnostic radiologic procedures to include preparation of equipment and contrast media. Abdominal, chest, upper GI, large intestine, distal extremities.

3262. Radiographic Procedures II

(251) Either semester. Four credits. Hours by arrangement. Open only to students in Allied Health.

A continuation of Radiographic Procedures I. Urinary tract, upper GI, small intestine, spine, shoulder girdle, pelvis and proximal extremities.

3271. Clinical Radiography I

(260) Either semester. Two credits. Hours by arrangement. Open only to students in Allied Health.

Supervised clinical experience in general radiography, fluoroscopy, cystoscopy, emergency room and portable radiography.

3272. Clinical Radiography II

(261) Either semester. Two credits. Hours by arrangement. Open only to students in Allied Health.

A continuation of Clinical Radiography I with exposure in different radiology departments.

3273. Clinical Radiography III

(262) Summer session. Four credits. Hours by arrangement. Open only to students in Allied Health.

A continuation of Clinical Radiography I and II with addition of specialized rotations in pediatrics, outpatient fluoroscopy, portable examinations in the operating room and trauma radiography evenings in the emergency room.

4125. Clinical Radiation Oncology I

(245) Either semester. Three credits. Hours by arrangement. Open only to students in Allied Health.

Epidemiology, etiology, anatomy, patterns of spread, clinical presentation, detection and diagnosis, histopathology and disease classification related to various disease sites. Role of surgery, radiation therapy, chemotherapy, immunotherapy and the multimodality treatment approach.

4126. Clinical Radiation Oncology II

(246) Either semester. Three credits. Hours by arrangement. Open only to students in Allied Health.

A continuation of Clinical Radiation Oncology I.

4130. Techniques and Applications of Radioactive Materials

(227) Summer session. Three credits. Hours by arrangement. Open only to students in Allied Health.

Elements and their basic components, different categories of atoms and factors involved in nuclear stability. Various types of radioactivity and methods for production of artificial radioactive sources. Dose determination and radiation detection for brachytherapy sources.

4131. Computer Application in Radiation Therapy

(228) Either semester. Two credits. Hours by arrangement. Open only to students in Allied Health.

Theory and technology of digital computers, digital imaging modalities and their application in radiation therapy.

4140. Quality Management

(258) Either semester. Two credits. Hours by arrangement. Open only to students in Allied Health.

Theory and application of the quality management program as related to professional standards of care and accreditation, certification, licensure and service delivery.

4152. Treatment Planning II

(226) Either semester. Three credits. Hours by arrangement. Open only to students in Allied Health.

A continuation of Treatment Planning I. Treatment planning optimizations and the application of beam modifiers. Contouring and the use of single and multiple beam therapies.

4163. Principles and Practice of Radiation Therapy III

(256) Either semester. Three credits. Hours by arrangement. Open only to students in Allied Health.

A continuation of Principles and Practice of Radiation Therapy I and II. Current treatment modalities for cancer in specific sites including its pattern of spread and radiation oncology treatment regimes. Topographical and radiological anatomy.

4164. Principles and Practice of Radiation Therapy IV

(257) Either semester. Three credits. Hours by arrangement. Open only to students in Allied Health.

A continuation of Principles and Practice of Radiation Therapy III.

4174. Radiation Therapy Clinical Internship IV

(273) Either semester. Four credits. Hours by arrangement. Open only to students in Allied Health.

Continuation of Radiation Therapy Clinical Internship I - III. Includes dosimetry.

4175. Radiation Therapy Clinical Internship V

(274) Either semester. Four credits. Hours by arrangement. Open only to students in Allied Health.

Continuation of Radiation Therapy Clinical Internship IV.

4176. Radiation Therapy Clinical Internship VI

(275) Summer session. Nine credits. Hours by arrangement. Open only to students in Allied Health.

Continuation of Radiation Therapy Clinical Internship IV and V. Under supervision, student assumes full therapist responsibilities.

4194. Seminar in Radiation Therapy

(281) Summer session. Four credits. Hours by arrangement. Open only to students in Allied Health.

Capstone experience researching and presenting new innovations in the field of radiation therapy. Examination and evaluation of the management of neoplastic disease and promotion of critical thinking. Preparation for certification examination.

4220. Radiation Pathology

Either semester. Two credits. Hours by arrangement. (242) Open only to students in Allied Health.

The study of disease processes and their radiographic appearance. Discussion of etiology, symptoms, complications, prognosis, treatments and diagnostic imaging methods. Pathologic conditions and their effects on the anatomy and function of body will be demonstrated with use of radiographs.

4225. Medical Radiation Physics and Quality Assurance I

(221) Either semester. Three credits. Hours by arrangement. Open only to students in Allied Health.

Medical physics related to diagnostic imaging and equipment. Radiation and radiation units, measurement, exposure limits and protection. X-ray production, intensity, filtration, interactions and focal spots and image quality. Processing, sensitometry and mammography.

4226. Medical Radiation Physics and Quality Assurance II

(222) Either semester. Three credits. Hours by arrangement. Open only to students in Allied Health.

A continuation of Medical Radiation Physics and Quality Assurance I. Fluoroscopy, angiography, digital fluoroscopy, computers and computer applications and digital radiography. CT, MRI and ultrasound.

4233. Principles of Radiographic Imaging III

(232) Either semester. Three credits. Hours by arrangement. Open only to students in Allied Health.

A continuation of Principles of Radiographic Imaging I and II. Radiographic grid, automatic exposure control, collimation and filtration, film sensitometry, the automatic processor and tomography.

4263. Radiographic Procedures III

(252) Summer session. Four credits. Hours by arrangement. Open only to students in Allied Health.

A continuation of Radiographic Procedures I and II. Lower GI track, spine, spinal cord and myelography, skull and nasal sinuses. Lymphatic and vascular system imaging.

4264. Radiographic Procedures IV

(253) Either semester. Four credits. Hours by arrangement. Open only to students in Allied Health.

A continuation of Radiographic Procedures I, II and III. TMJ and selected bones and foramen of the skull, non-routine extremity views, sacrum, coccyx, thorax, venipuncture, and imaging of the female reproductive system.

4274. Clinical Radiography IV

(263) Either semester. Five credits. Hours by arrangement. Open only to students in Allied Health.

A continuation of Clinical Radiography I, II and III with rotations in different radiology departments with experience in general fluoroscopy, emergency room, operating room, mammography and interventional radiology.

4275. Clinical Radiography V

(264) Either semester. Five credits. Hours by arrangement. Open only to students in Allied Health.

A continuation of Clinical Radiography I - IV with addition of rotations in MRI, long-term care and private radiology office.

4276. Clinical Radiography VI
(265) Summer session. Six credits. Hours by arrangement. Open only to students in Allied Health.

A continuation of Clinical Radiography I - V with rotations in fluoroscopy, emergency room, operating room, CT, MRI, mammography, US, cardiac, nuclear medicine, long-term care, private radiology and the orthopedic office.

4294. Radiology Seminar
(280) Summer session. Two credits. Hours by arrangement. Open only to students in Allied Health.

Independent research paper and presentation on current topics in radiology. ARRT examination review and test preparation.

Health Systems Management (HSMG)

Director: Jeffrey A. Kramer
Center Office: Room 462, School of Business

For major requirements, see the School of Business section of this *Catalog*.

Health Systems Management courses are open to juniors and seniors only. The School of Business requires students at the Storrs campus to participate in the Mobile Computing Initiative before registering for the courses listed below. See the School of Business *Catalog* section for details about how this program operates. Students not participating in the initiative may be able to register for the following classes: HSMG 3240 and 4244.

3240. Introduction to Health Care Management
(280) First semester. Three credits. Prerequisite: Open to juniors or higher.

This course introduces basic concepts, principles, and practices associated with the health care delivery system in the United States. Examines how this system is organized, and discuss the major issues related to the provision of health care, from both a business and social science perspective. Emphasis will be placed on understanding the components and features of the health care delivery system in the United States as it is developed and applied through a managed care organizational framework.

3243. Health Care Analysis
(281) Second semester. Three credits. Prerequisite: HSMG 3240.

This course deals with the application of economic theory, health services research, policy development and analysis, operations research, and management science techniques for analyzing and evaluating the performance of health care services and organizations.

4242. Health Care Information Technology
(282) First semester. Three credits. Prerequisite: HSMG 3243 and 4891.

This course provides an introduction to information technology (IT) within the context of health care planning, managerial decision-making and strategic analysis. The course examines how health care organizations apply information technologies in decision-making and considers factors that influence investments in healthcare IT. Students will learn to define appropriate IT terms, fit IT into an appropriate marketing plan, describe the IT project lifecycle, and identify key IT issues within the major healthcare markets. Topics include business model development, branding of services, and decision support.

4244. Advanced Topics in Health Care Management
(283) Second semester. Three credits. Prerequisites: HSMG 3240, 3243, and 4891.

This course provides health care management students with opportunities to apply tools and concepts learned throughout the program. Through real world consulting projects and hands-on projects, students develop and refine their skills in project organization and management, analysis, reporting, and presentation. Project areas include applications that integrate all business disciplines.

4448. Clinical and Social Issues in Health Care
(285) First semester. Three credits. Prerequisite: Open to juniors or higher.

This course 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.

4891. Internship in Health Care Management
(290) Either or both semesters. Six credits. Hours by arrangement. Prerequisite: OPIM 3103 and 3104, senior standing, and instructor consent.

Supervised field work 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.

4891W. Internship in Health Care Management
(290W) Prerequisite: OPIM 3103 and 3104; ENGL 1010 or 1011 or 3800; senior standing, and instructor consent.

4895. Special Topics
(298) Either semester. Credits and hours by arrangement. Prerequisite: Announced separately for each offering; open to juniors or higher. With a change in content, 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
(299) Either or both semesters. Credits by arrangement; not to exceed six in any semester. Prerequisite: Open to juniors or higher; open only with consent of instructor.

Individual study of special topics in health systems management as mutually arranged between a student and an instructor.

Hebrew (HEB)

Head of Department: Associate Professor Norma Bouchard

Department Office: Room 228, J.H. Arjona Building
Consult the Departmental Handbook for courses being offered and further description of these courses.

1103. Literature and Civilization of the Jewish People
(103) (Also offered as JUDS 1103.) Either semester. Three credits. Taught in English. May not be used to meet the foreign language requirement. *Miller*

The major concepts, personalities and literary works of the Hebraic tradition from the Biblical and Talmudic periods to the present. CA 1. CA 4.

1104. Modern Jewish Thought
(104) (Also offered as JUDS 1104.) Second semester. Three credits. Taught in English. May not be used to meet the foreign language requirement.

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, Nachman Krochmal, Ahad Haam, Hermann Cohen, Franz Rosenzweig, Martin Buber and Mordecai Kaplan.

1149-1150. Elementary Biblical Hebrew I and II
(149-150) Both semesters. Four credits each semester. Four class periods. Not open for credit to students who have had three or more years of Hebrew in high school. Students who wish to continue in Hebrew but feel ill prepared should contact the head of the Modern and Classical Languages department.

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.

1151-1152. Elementary Modern Hebrew I and II
(151-152) Both semesters. Four credits each semester. Four class periods and one 1-hour laboratory practice. Not open for credit to students who have had three or more years of Hebrew in high school.

Elementary Hebrew grammar. Drill in pronunciation. Reading of simple texts. Practice in easy conversation.

1153-1154. Intermediate Hebrew I and II
(153-154) Both semesters. Four credits each semester. Four class periods and one 1-hour laboratory practice. Prerequisite: HEB 1152 or the equivalent.

Review of elementary Hebrew grammar. Graded composition and translation. Intensive and extensive reading. Oral practice in the language. The basic structure patterns of Hebrew.

1193. Foreign Study
(193) Either or both semesters. Credits and hours by arrangement. May be repeated for credit. Consent of Department Head required, normally before the student's departure.

Special topics taken in a foreign study program.

3201. Selected Books of the Hebrew Bible
(201) (Also offered as JUDS 3201.) Either semester. Three credits. Prerequisite: INTD 3260 or HIST 3301 or HEB 1103, which may be taken concurrently or instructor consent. A knowledge of Hebrew is not required. May be repeated with change of content and consent of instructor. Taught in English. May not be used to meet the foreign language requirement. *Miller*

Focuses on a biblical book (or books) and emphasizes its literary structure and content using modern approaches as well as midrashic and medieval exegesis. Historical and archaeological material introduced where relevant.

3203. The Holocaust
(203) (Also offered as HIST 3418 and JUDS 3203.) Either semester. Three credits. Taught in English. May not be used to meet the foreign language requirement.

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.

3218. Palestine Under the Greeks and Romans
(218) (Also offered as CAMS 3256, HIST 3330, and JUDS 3218.) Either semester. Three credits. Prerequisite: CAMS 1101 or 1102 or CAMS 3253/HIST 3301 or HIST 3320 or 3325 or INTD 3260 or HEB 1103 or JUDS 3202 or instructor consent; open to juniors or

higher. Taught in English. May not be used to meet the foreign language requirement. *Miller*

The political, historical and religious currents in Greco-Roman Palestine. Includes the Jewish Revolts; sectarian developments, the rise of Christianity and the Talmudic academies.

3251-3252. Advanced Hebrew

(251-252) Both semesters. Three credits each semester. Prerequisite: HEB 1154 or instructor consent.

Further grammar study. Practice in composition involving the use of everyday vocabulary and idiomatic expressions. Readings and films relevant to Israeli culture and history. With a change in content, either or both of these courses may be repeated for credit.

3293. Foreign Study

(293) Either or both semesters. Credits and hours by arrangement. May be repeated for credit. Consent of Department Head required, normally granted prior to the student's departure. May count toward the major with consent of the advisor.

Special topics taken in a foreign study program.

3298. Variable Topics

(295) Either semester. Three credits. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary.

3295. Special Topics

(298) Either semester. Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary.

3299. Independent Study

(299) Either or both semesters. Credits and hours by arrangement. Open only with consent of instructor. With a change in content, may be repeated for credit.

Study Abroad in Israel. Students may spend a semester or academic year at Hebrew University in Jerusalem, Tel Aviv, Haifa or Ben Gurion Universities. Students should take at least one semester of Hebrew at UConn before studying abroad. The University also sponsors an archaeological excavation at Sephoris during the month of June. This is a six-credit program.

Hindi (HIND)

Head of Department: Associate Professor Norma Bouchard

Department Office: Room 228, J.H. Arjona Building

1101-1102 (101-102). Elementary Levels I and II

1103-1104 (103-104). Intermediate Levels I and II

1101 and 1103 are offered in the first semester, and 1102 and 1104 in the second. Please refer to the Critical Languages course descriptions in this publication. Consult the Program Director in Arjona 128 or at manuela.m.wagner@UConn.edu for more information.

History (HIST)

Head of Department: Professor Shirley Roe

Department Office: Room 121, Wood Hall

For major requirements, see the College of Liberal Arts and Sciences section of this *Catalog*.

1100. The Historian as Detective

(135) Either semester. 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

(135W) Prerequisite: ENGL1010 or 1011 or 3800. CA 1.

1201. Modern World History

(108) Either semester. 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

(121) (Also offered as WS 1121.) Either semester. 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

(126) Either semester. Three credits. *Watson*

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.

1300. Western Traditions before 1500

(100) Either semester. 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

(101) Either semester. Three credits.

History of political institutions, economic systems, social structures, and cultures in the modern Western world. CA 1.

1501. United States History to 1877

(131) Either semester. Three credits. Not open to students who have passed HIST 231 or HIST 231W.

Surveys political, economic, social, and cultural developments in American history through the Civil War and Reconstruction. CA 1.

1501W. United States History to 1877

(131W) Prerequisite: ENGL 1010 or 1011 or 3800. CA 1.

1502. United States History since 1877

(132) Either semester. Three credits. Not open to students who have passed HIST 232 or HIST 232W.

Surveys political, economic, social, and cultural developments in American history from 1877 to the present. CA 1.

1502W. United States History since 1877

(132W) Prerequisite: ENGL 1010 or 1011 or 3800. CA 1.

1503. Introduction to American Studies

(165) (Also offered as AMST 1503 and ENGL 1503.) First semester. Three credits. Not open to students who have passed INTD 276.

What is an American? A multi-disciplinary inquiry into the diversity of American societies and cultures. CA 4.

1800. The Roots of Traditional Asia

(106) Either semester. Three credits. *Wang*

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.

1805. East Asian History Through Hanzi Characters

(107) Either semester. Three credits. *Wang*

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.

1995. Special Topics Lecture

(195) Either semester. Credits, prerequisites, and hours as determined by the Senate Curricula and Courses Committee. May be repeated for credit with a change in topic.

1998. Varieties of History

(198) Either semester. Three credits. With a change in content may be repeated for credit.

A major topic in history through contemporary sources and historical interpretations.

2100. The Historian's Craft

(211) Either semester. Three credits. Open only to history majors.

Learning critical reading, thinking and writing skills by interpreting a variety of primary sources.

2206. History of Science

(206) (Also offered as SCI 2206.) First semester. Three credits. *Roe*

Development of modern science and technology in relation to culture, politics, and social issues. CA 1.

2240. History of War in the Modern World

(225) Either semester. Three credits. Recommended preparation: HIST 1400. *Dintenfass*

Selected topics analyzing the interactions of warfare, military theories and practice with social, economic and technological developments since 1815.

2401. Europe in the Nineteenth Century

(228) First semester. 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

(228W) Prerequisite: ENGL 1010 or 1011 or 3800. Recommended preparation: HIST 1400. CA 1.

2402. Europe in the Twentieth Century

(229) Either semester. 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

(229W) Prerequisite: ENGL 1010 or 1011 or 3800. Recommended preparation: HIST 1400. CA 1.

3100W. Biography as History

(292W) Second semester. Three credits. Two class periods of 75 minutes. Prerequisite: ENGL 1010 or 1011 or 3800.

What the lives of significant individuals reveal about major historical periods and themes. Variable topics.

3101W. History through Fiction

(295W) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher.

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

Either semester. Three credits. With a change in content, may be repeated for credit. *Forbes, Rozwadowski, Woodward*

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.

3201. The History of Human Rights

(253) (Also offered as HRTS 3201.) Either semester. Three credits. Prerequisite: Open to juniors or higher.

Case studies in the emergence and evolution of human rights as experience and concept.

3202. International Human Rights

(226) (Also offered as HRTS 3202.) Either semester. Three credits. Prerequisite: Open to juniors or higher. *Omara-Otunnu*

Historical and theoretical survey of the evolution of human rights since 1945.

3203. History of the Family

(209) (Also offered as HDFS 3423.) Either semester. Three credits. Prerequisite: Open to juniors or higher. Not open for credit to students who have passed HDFS 3423.

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.

3204. Science and Social Issues in the Modern World

(207) Second semester. Three credits. Prerequisite: Open to juniors or higher. *Roe*

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.

3204W. Science and Social Issues in the Modern World

(207W) Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher. CA 4.

3205. Personality and Power in the Twentieth Century

(291) Second semester. Three credits.

Dynamic leadership in historical crises, including, for example, Churchill, Roosevelt, Stalin, Hitler, DeGaulle, Kennedy, and Mao.

3206. Black Experience in the Americas

(266) (Also offered as AFAM 3206.) Either semester. Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: HIST 3563, 3564, 3609, or 3620. *Pappademos*

Major themes in recent scholarship of African-descended communities in the Americas and their interconnection beyond geopolitical boundaries; race, gender, class, religion, cultural movements and practices, slavery, political economy, political movements, and African consciousness, from historical perspective.

3300. Near Eastern Pre-History

(212) (Also offered as ANTH 3513.) Second semester. Three credits. Prerequisite: Open to juniors or higher.

From the earliest hunter-gatherers to the rise of the state: the transition from food-gathering to food-producing and the development of complex societies in the Near East.

3301. Ancient Near East

(213) (Also offered as CAMS 3253.) Either semester. Three credits. Prerequisite: Open to juniors or higher.

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.

3320. Ancient Greece

(214) (Also offered as CAMS 3254.) Either semester. Three credits. Prerequisite: Open to juniors or higher. *Caner*

The history of Greece from Minoan and Mycenaean times into the Hellenistic period with

special emphasis on the Fifth Century and the "Golden Age" of Athens.

3325. Ancient Rome

(216) (Also offered as CAMS 3255.) Either semester. Three credits. Prerequisite: Open to juniors or higher. *Caner*

From the beginning of Rome to the reign of Justinian. The growth of the Roman Republic and Empire. Roman civilization and its influence upon later history.

3330. Palestine Under the Greeks and Romans

(218) (Also offered as CAMS 3256, HEB 3218, and JUDS 3218.) Either semester. Three credits. Prerequisite: CAMS 1101 or 1102 or CAMS 3253/HIST 3301 or HIST 3320 or 3325 or INTD 3260 or HEB 1103 or JUDS 3202 or instructor consent; open to juniors or higher. Taught in English. May not be used to meet the foreign language requirement. *Miller*

The political, historical and religious currents in Greco-Roman Palestine. Includes the Jewish Revolts, sectarian developments, the rise of Christianity and the Talmudic academies.

3335. The Early Church and Christian Thought

(257) (Also offered as CAMS 3250.) Either semester. Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: HIST 3325 or CAMS 3255. *Caner*

A critical approach to the evolution of Christian thought, social organization and institutions ca. 50-450 C.E. Topics include gnosticism, apostolic succession, heresy, orthodoxy.

3340. World of Late Antiquity

(217) (Also offered as CAMS 3243.) Either semester. Three credits. Prerequisite: Open to juniors or higher. *Caner*

The profound social and cultural changes that redefined the cities, frontiers, and economies of the classical world and led to the Middle Ages. Developments in the eastern and western Mediterranean lands between the second and seventh centuries, including neo-Platonism, the spread of Christianity, Rabbinic Judaism, and Islam.

3350. Byzantium

(250) Either semester. Three credits. Prerequisite: Open to juniors or higher.

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.

3360. Early Middle Ages

(219) First semester. Three credits. Prerequisite: Open to juniors or higher. *Olson*

The decline of Rome, rise of Christianity, the barbarian invasions and kingdoms, culminating in the civilizations of the Carolingian Empire, of Byzantium, and of Islam.

3361. The High Middle Ages

(220) Second semester. Three credits. Prerequisite: Open to juniors or higher. *Olson*

The history of Europe from the tenth through the fourteenth centuries. The development and expansion of European civilization, the revival of a money economy and town life, the development of feudal monarchy, the conflict of Empire and Papacy, the Crusades.

3370. The Renaissance

(271) First semester. Three credits. Prerequisite: Open to juniors or higher. *Gouwens*

Europe in the fourteenth and fifteenth centuries.

3371. The Reformation

(272) Second semester. Three credits. Prerequisite: Open to juniors or higher.

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

(273) First semester. Three credits. Prerequisite: Open to juniors or higher.

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.

3401. Europe in the Eighteenth Century

(274) Second semester. Three credits. Prerequisite: Open to juniors or higher.

Intellectual, political, and socioeconomic developments in Europe from 1713 to 1789.

3412. Intellectual and Social History of Europe in the Nineteenth Century

(258) First semester. Three credits. Prerequisite: Open to juniors or higher. *Lansing*

The thought and feeling of Europeans in their social context.

3412W. Intellectual and Social History of Europe in the Nineteenth Century

(258W) Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher.

3413. Intellectual and Social History of Europe in the Twentieth Century

(259) Second semester. Three credits. Prerequisite: Open to juniors or higher. *Lansing*

The thought and feeling of Europeans in their social context.

3413W. Intellectual and Social History of Europe in the Twentieth Century

(259W) Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher.

3416. Gender and Sexuality in Modern Europe

(208) (Also offered as WS 3416.) Either semester. Three credits. *Schafer*

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

(202) (Also offered as HEB 3203 and JUDS 3203). Either semester. 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.

3420. English History to 1603

(261) First semester. Three credits. Prerequisite: Open to juniors or higher. *Kane*

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.

3421. History of Modern England

(262) Second semester. Three credits. Prerequisite: Open to juniors or higher. *Watson*

Cultural, political, economic, and intellectual development of modern Britain, with special emphasis on changing ideas of national identity.

3422. History of Southern Africa

(263) Either semester. Three credits. Prerequisite: Open to juniors or higher. *Vernal*

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.

3426. Social and Economic History of Modern Britain

(264) First semester. Three credits. Prerequisite: Open to juniors or higher. *Watson*

The change from an agrarian to an industrial society.

3430. History of Ireland

(265) Either semester. Three credits. Prerequisite: Open to juniors or higher. *Kane*

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

(279) Second semester. Three credits. *Schafer*

The disintegration of the monarchical synthesis prior to and during the French Revolution; the attempts to harmonize French society under subsequent regimes.

3450. Germany from the Reformation to 1815

(255) First semester. Three credits. Prerequisite: Open to juniors or higher.

A political and cultural survey of German history with topical emphasis on the Reformation, the religious wars, the Age of Enlightenment, the rise of Brandenburg-Prussia, Germany during the revolutionary era.

3451. Germany Since 1815

(256) Second semester. Three credits. Prerequisite: Open to juniors or higher. *Lansing*

A study of German political, social, and intellectual history since the Napoleonic Wars. This course also considers European and world problems as reflected in the emergence of Germany as a pivotal force in international affairs.

3456. The Habsburg Monarchy and Its Peoples, 1740-1918

(254) Second semester. Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: HIST 1400.

The rise and fall of the multinational, dynastic state of the Habsburgs, with emphasis upon those forces which sustained it through the nineteenth century and those which brought its collapse in 1918.

3460. Italy 1250-1600

(267) Either semester. Three credits. *Gouwens*

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

(269) Second semester. Three credits. Prerequisite: Open to juniors or higher. *Davis*

The modernization of Italy's traditional sociopolitical and economic structure; Industrialization, unification, the liberal regime, fascism, and the republic.

3470. Medieval and Imperial Russia to 1855

(251) First semester. Three credits. Prerequisite: Open to juniors or higher.

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.

3471. History of Russia Since 1855

(252) Second semester. Three credits. Prerequisite: Open to juniors or higher. Recommended Preparation: HIST 3470.

Continuation of HIST 3470. Late imperial Russia, the former Soviet Union, and contemporary Russia.

3502. Colonial America: Native Americans, Slaves, and Settlers, 1492-1760

(243) Either semester. Three credits. Prerequisite: Open to juniors or higher. *Dayton*

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

(243W) Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher.

3504. The American Revolution

(244) Second semester. Three credits. Prerequisite: Open to juniors or higher. *Brown*

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

(236) Second semester. Three credits. Prerequisite: Open to juniors or higher. *Waller*

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

(249) Either semester. Three credits. Prerequisite: Open to juniors or higher. *Costigliola*

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.

3520. Social and Cultural History of Connecticut and New England

(227) Either semester. Three credits. Either 3520 or 3522, but not both, may be counted for credit toward the History major. *Baldwin, Clark, Woodward*

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.

3522. History of Connecticut

(239) First semester in odd-numbered years. Three credits. Prerequisite: Open to juniors or higher. Either 3520 or 3522, but not both, may be counted for credit toward the History major.

A survey of Connecticut's history from 1633 to the present from a constitutional and political perspective.

3530. Asian-American Experience Since 1850

(294) (Also offered as AASI 3578.) Either semester. Three credits. Prerequisite: Open to juniors or higher. *Wang*

Survey of Asian-American experiences in the United States since 1850. Responses by Asian-Americans to both opportunities and discrimination.

3531. Japanese Americans and World War II

(268) (Also offered as AASI 3531.) First semester. Three credits. Prerequisite: Open to juniors or higher. *Buckley*

The events leading to martial law and executive order 9066, the wartime experience of Japanese Americans, and national consequences. CA 1. CA 4.

3540. American Environmental History

(230) Either semester. Three credits. Prerequisite: Open to juniors or higher. *Rozwadowski, Shoemaker, Woodward*

Transformations of the North American environment: the effects of human practices and policies, varying ideas about nature across cultures and time periods, and the rise of environmental movements.

3540W. American Environmental History

(230W) Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher.

3541. The History of Urban America

(241) (Also offered as URBN 3541.) Either semester. Three credits. *Baldwin*

The development of Urban America with emphasis on social, political, physical, and environmental change in the industrial city.

3541W. The History of Urban America

(241W) (Also offered as URBN 3541W.) Prerequisite: ENGL 1010 or 1011 or 3800.

3544. Atlantic Voyages

(245) Either semester. Three credits. Prerequisite: Open to juniors or higher.

Seafaring and society since the age of Columbus. Emphasis on the Anglo-American experience.

3550. Constitutional History of the United States

(235) Either semester. Three credits. Prerequisite: Open to juniors or higher.

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

(248) Either semester. Three credits. Prerequisite: Open to juniors or higher. With change in content, may be repeated for credit. *Dayton*

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

(248W) Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher.

3554. Immigrants and the Shaping of American History

(247) Either semester. Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: One course in American History. *Chang*

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."

3555. Work and Workers in American Society

(242) Either semester. Three credits. Prerequisite: 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.

3555W. Work and Workers in American Society

(242W) Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher.

3556W. History Workshop: Topics in American Society and Culture

(240W) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher. May be repeated for credit with a change of topic.

Techniques of primary historical research based on collaborative research and writing on a topic selected by the instructor.

3561. History of Women and Gender in Early America

(210) (Also offered as WS 3561.) Either semester. Three credits. Prerequisite: Open to juniors or higher.

Compares the evolving gender systems of native American groups, transplanted Africans, and immigrant Europeans up to the early Nineteenth Century. Topics include women's work, marriage and divorce, witch-hunting, masculinity, and women's Revolutionary War roles.

3562. History of Women and Gender in the United States, 1790-Present

(215) (Also offered as WS 3562.) Either semester. Three credits. Prerequisite: Open to juniors or higher.

Women and gender in family, work, education, politics, and religion. Impact of age, race, ethnicity, region, class, and affectional preference on women's lives. Changing definitions of womanhood and manhood.

3563. African American History to 1865

(238) (Also offered as HRTS 3563 and AFAM 3563.) Either semester. Prerequisite: Open to juniors or higher. Three credits. *Ogbar*

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

(246) (Also offered as AFAM 3564.) Either semester. Three credits. Prerequisite: Open to juniors or higher. *Ogbar*

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

(260) (Also offered as AFAM 3568.) Either semester. Three credits. Prerequisite: Open to juniors or higher. *Ogbar*

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. American Indian History

(237) Either semester. Three credits. *Shoemaker*

Surveys American Indian history in what is now the United States from pre-Columbian times up to the present. Cultural diversity among Indian peoples, the effects of European contact, tribal sovereignty, and other current issues. CA 4.

3575. Latinos/as and Human Rights

(284) (Also offered as HRTS 3221 and PRLS 3221.) Either semester. Three credits. Prerequisite: Open to juniors or higher. *Overmyer-Velázquez, Silvestrini*

Latino/a issues related to human, civil and cultural rights, and gender differences.

3607. Latin America in the Colonial Period

(281) (Also offered as LAMS 3607.) First semester. Three credits. Prerequisite: Open to sophomores or higher. *Spalding*

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.

3608W. The Hispanic World in the Ages of Reason and Revolution

(283W) First semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher. Recommended preparation: HIST 3607. *Silvestrini*

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

(282) (Also offered as LAMS 3609.) Either semester. Three credits. Prerequisite: Open to sophomores or higher. *Silvestrini*

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.

3610. Latin America and the Great Powers

(275) First semester. Three credits. Prerequisite: Open to juniors or higher.

Great power diplomatic, commercial, and cultural relations with Latin America from the end of the colonial period to the present. Emphasis on the United States and Great Britain.

3620. Cuba, Puerto Rico, and the Spanish Caribbean

(285) (Also offered as AFAM 3620.) Either semester. Three credits. Prerequisite: Open to juniors or higher. *Pappademos, Silvestrini*

Discovery and settlement, slavery and plantation economy, recent political and economic developments, and United States relations with the Spanish Caribbean.

3621. Cuba in Local and Global Perspective

Either semester. Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: HIST 3607, 3608W, 3609, 3620, 3635.

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.

3635. Mexico in the Nineteenth and Twentieth Centuries

(280) (Also offered as LAMS 3635.) Either semester. 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

(276) Second semester. Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: HIST 3607 or 3609. *Spalding*

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

(286) First semester. Three credits. Prerequisite: Open to juniors or higher. 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 Américas

(233W) (Also offered as LAMS 3660W and PRLS 3660W.) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher. Recommended preparation: LAMS 1190, ANTH 3042, HIST 3635, HIST 3609, or HIST 3674/PRLS 3220; PRLS 3210. Spanish useful, but not required. Instructor consent. *Gabany-Guerrero, Overmyer-Velázquez*

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.

3674. History of Latinos/as in the United States

(278) (Also offered as PRLS 3220.) Either semester. Three credits. Prerequisite: Open to juniors or higher. *Overmyer-Velázquez, Silvestrini*

Settlement and growth of Hispanic-origin populations in the United States today, from Spanish and Mexican settlement of western United States to the growth of Latino communities. Student oral history project. CA 1. CA 4.

3704. Medieval Islamic Civilization to 1700

(204) First semester. Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: HIST 1300 or 1400. *Azimi*

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

(205) Second semester. Three credits. Prerequisite: Open to juniors or higher. *Azimi*

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.

3712. The Middle East Crucible

(290) First semester. Three credits. Prerequisite: Open to juniors or higher. *Azimi*

Twentieth-century issues in the Middle East heartland with analysis focusing on the Ottoman heritage, nationalism, Arab-Israeli and other conflicts, Islam, oil, water, rapid sociopolitical change, trends in development, super-power rivalries, and the search for identity, independence, and peace with justice.

3752. History of Pre-Colonial Africa

(222) (Also offered as AFAM 3752.) Either semester. Three credits. Prerequisite: Open to juniors or higher. *Omara-Otunnu, Vernal*

The history of pre-colonial Africa with particular attention to the rise and fall of African Kingdoms, interaction between different ethnic groups, African trade with other continents, and the impact of foreigners on African societies.

3753. History of Modern Africa

(223) (Also offered as AFAM 3753.) Either semester. Three credits. Prerequisite: Open to juniors or higher. *Omara-Otunnu, Vernal*

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.

3770. History of Pan-Africanism

(224) (Also offered as AFAM 3224.) Either semester. Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: At least one of the following, HIST 3563, 3564, 3752, or 3753. *Omara-Otunnu*

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 (287) (Also offered as AASI 3808.) First semester. Three credits. Prerequisite: Open to juniors or higher. *Wang*

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

(288) (Also offered as AASI 3809.) Second semester. Three credits. Prerequisite: Open to juniors or higher. *Wang*

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

(277) (Also offered as AASI 3812.) Either semester. Three credits. Prerequisite: Open to juniors or higher. *Buckley*

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.

3822. Modern China

(221) Either semester. Three credits. Prerequisite: Open to juniors or higher. *Wang*

Survey of patterns of modern China since 1800. Topics will include reforms and revolutions, industrialization and urbanization, and family and population growth.

3863. War and Diplomacy in East Asia

(289) First semester. Three credits. Prerequisite: Open to juniors or higher. *Dudden*

European struggle for power in Asia since 1842, in the context of the rise of Japan and the reassertion of Chinese power.

3991. Supervised Field Work

(201) Either semester. Credits and hours by arrangement. Prerequisite: Open to juniors or higher. May be repeated for credit up to a maximum of 12 credits. No more than six credits will count toward the department's major or minor requirements. Open only with consent of Department Head.

Internship in applied history.

3993. Foreign Study

(293) Either or both semesters. Credits and hours by arrangement. 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.

3995. Special Topics

(298) Either semester. Credits and hours by arrangement. Prerequisite: Open to juniors or higher. With a change of content, may be repeated for credit. Prerequisites and recommended preparation vary.

3998. Variable Topics

(270) Either semester. Three credits. Prerequisite: Open to juniors or higher. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary.

4989. Directed Research

(296) Either or both semesters. Three credits. Open only to senior history majors.

An introduction to research methods and resources in history.

4994W. Senior Seminar

(297W) Either semester. Three credits. Prerequisite: HIST 2100; ENGL 1010 or 1011 or 3800. Open only to undergraduate history majors in their senior year. With a change in content, 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.

4997W. Senior Thesis in History

(200W) Either semester. Three credits. Hours by arrangement. Open only to Honors students with consent of instructor and History Honors advisor. Prerequisite: HIST 2100 and either HIST 4994W or 4999; ENGL 1010 or 1011 or 3800.

4999. Independent Study

(299) Either or both semesters. Credits and hours by arrangement. Open only with consent of instructor. With a change in content, may be repeated for credit.

Horticulture (HORT)

Head of Department: Professor Mary E. Musgrave
Department Office: Room 119, W.B. Young Building

For major requirements, see the College of Agriculture and Natural Resources section of this *Catalog*.

1110. Fundamentals of Horticulture

(101) (Formerly offered as PLSC 101.) Second semester. Three credits. Three class periods. *Salsedo*

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.

2430. Herbaceous Ornamental Plants

(231) (Formerly offered as PLSC 231.) Second semester. Three credits. Taught jointly with SAPL 430. Not open for credit to graduate students. *Kuzovkina*

Identification, nomenclature, cultural requirements and landscape uses of herbaceous perennials, ornamental grasses, ferns, annuals and bulbs. Study of live plants is required.

2520. Floral Art

(230) (Formerly offered as PLSC 230.) Second semester. Two credits. One class period and one 2-hour studio period. Taught jointly with SAPL 520.

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. A fee of \$75 is charged for this course.

2750. Landscape Plant Maintenance

(245) (Formerly offered as PLSC 245.) Second semester. Three credits. Recommended preparation: BIOL 1110. Taught jointly with SAPL 750. *Elliot*

Planting, establishment and maintenance of woody and herbaceous plants in built and managed environments. Plant structural and functional requirements. Preserving and protecting established

plants. Soil conditions and modification. Influence of climate and modification of microclimate. Plant selection. Pruning, mulching, water and irrigation, nutrition and fertilization, plant health care and other horticultural practices.

3410. Woody Plants I: Common Trees, Shrubs and Vines

First semester. Three credits. Taught jointly with SAPL 410. Two class periods and one 2-hour outdoor laboratory. Recommended preparation: BIOL 1110. *Brand*

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.

3420. Woody Plants II: Uncommon Trees, Shrubs and Vines

(241) Second semester. Three credits. Two class periods and one 2-hour outdoor laboratory. Taught jointly with SAPL 420. Prerequisite: HORT 3410. *Brand*

Taxonomy, identification, ornamental characteristics, cultural requirements and landscape use of uncommon, unusual and rare deciduous and evergreen woody plants utilized in landscapes of the northeastern United States and similar environs.

3530. Advanced Floral Design

(235) (Formerly offered as PLSC 235.) Second semester. Two credits. Taught concurrently with SAPL 530. One class period and one 2-hour lab. Not open for credit to graduate students. Prerequisite: HORT 2520.

In-depth study of post-harvest requirements for specialized floral crops. Exposure to novel floral materials and abstract, tribute, high-style, and wedding designs. Retail price structuring, wire services, and mass-production concepts. A fee of \$75 is charged for this course.

3540. Garden Center Management

(244) (Formerly offered as PLSC 244.) First semester. Three credits. Taught concurrently with SAPL 540. Not open for credit to graduate students. *Bonelli*

Fundamentals related to horticultural specialty businesses with particular emphasis on the retail and contracting areas. Specialty and mass merchandising firms are considered and compared.

3575. Pesticide Safety and Management

(286) (Formerly offered as PLSC 286.) Second semester. Two credits. Taught jointly with SAPL 850. Not open to graduate students.

Pesticide application equipment, pesticide safety and toxicity, equipment calibration, pesticide poisoning, first aid and crop worker protection standards. Managing pesticides to increase safety for applicators and the environment, and increasing effectiveness using principles of Integrated Pest Management.

3620. Vegetable Production

(212) (Formerly offered as PLSC 212.) First semester. Four credits. Three class periods and one 2-hour field laboratory period. Taught jointly with SAPL 620. Field trips required. Not open for credit to graduate students. *Berkowitz*

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.

3640. Plant Propagation

(238) (Formerly offered as PLSC 238.) Second semester. Three credits. Two class periods and one 2-hour laboratory period. Not open for credit to graduate students. Taught jointly with SAPL 640. *Brand*

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.

3650. Plant Micropropagation

(292) (Formerly offered as PLSC 292.) First semester, odd-numbered years. Three credits. One class period and two 2-hour laboratory periods. Prerequisite: CHEM 1122 or 1127 and consent of instructor.

The use of aseptic techniques for the micropropagation of plants of economic interest. Laboratory techniques covered include rapid propagation of plants *in vitro*, meristem culture for the elimination of diseases, somaclonal variation, somatic embryogenesis and media preparation. A fee of \$50 is charged for this course.

3660. Nursery Management

(240) (Formerly offered as PLSC 240.) First semester. Three credits. Two class periods and one 2-hour laboratory period.

Principles of field and container production of nursery stock. Emphasis on production practices for woody nursery stock from propagule to sale.

3660W. Nursery Management

(240W) (Formerly offered as PLSC 240W.) Prerequisite: ENGL 1010 or 1011 or 3800.

3670. Greenhouse Technology and Operations

(225) (Formerly offered as PLSC 225.) First semester. Four credits. Three class periods and one 2-hour laboratory period. Field trips required. *Elliott*

Introduction to greenhouse systems with emphasis on structures, environmental control, root media, irrigation and fertilization, and pest control, in relation to requirements for plant growth and crop production. Laboratories provide experience in greenhouse operations and crop production.

3675. Greenhouse Crop Production I

(226) (Formerly offered as PLSC 226.) Second semester. Three credits. Two class periods and one 2-hour laboratory period. Field trips required. Prerequisite: HORT 3670. Taught jointly with SAPL 675. Not open for credit to graduate students. *Elliott*

Environmental and cultural requirements and scheduling of major greenhouse crops, exclusive of edible produce. Emphasis on cut flowers and flowering potted plants and bedding and garden plants produced for spring and early summer markets. Laboratories provide experience in crop production.

3710. Design of Small Spaces

(202) (Formerly offered as PLSC 202.) Second semester. Two credits. One class period and one 2-hour studio. Prerequisites: LAND 2110 and LAND 2210. Not open to Landscape Architecture majors.

Studio-based course emphasizing the acquisition of skills necessary for the landscape design for small spaces. The skills will include: visualization methods, methodology in design process, derivation of basic forms and planting design.

3760. Urban Horticulture

(276) First semester. Three credits. Two class periods and one 2-hour laboratory. Recommended preparation: HORT 2750. Field trips may be required. *Kuzovkina*

Opportunities for the use of plants to enhance urban-suburban environments. Environmental stresses and challenges to successful establishment of plants.

Principles of sustainable landscapes and ecological enhancement. Selection and effective use of plants in different situations. Special management situations and novel horticultural practices including green roofs, rain gardens, phytoremediation, and brownfield reclamation.

Human Development and Family Studies (HDFS)

Department Head: Ronald Sabatelli

Office: Room 106, Family Studies Building

For major requirements, see the College of Liberal Arts and Sciences section of this *Catalog*.

1060. Close Relationships Across the Lifespan

(180) Either semester. 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

(190) (Formerly offered as HDFR 190) Either semester. Three credits.

Human development throughout the life span, with emphasis upon the family as a primary context. CA 2.

1095. Special Topics Lecture

(195) Either semester. Credits, prerequisites, and hours as determined by the Senate Curricula and Courses Committee. May be repeated for credit with a change in topic.

2001. Diversity Issues in Human Development and Family Studies

(201) (Formerly offered as HDFR 201) Either semester. Three credits. Recommended preparation: HDFS 1070.

Critical issues in diversity and multiculturalism in human development, family relations, and professional practice. CA 4.

2004. Research Methods in Human Development and Family Studies

(205) Either semester. Three credits. Prerequisite or corequisite: HDFS 1070, which may be taken concurrently; open only to HDFS majors. Not open for credit to students who have completed HDFS 290.

Overview of research methods with emphasis on (1) the social context in which research occurs and is used, and (2) 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.

2004W. Research Methods in Human Development and Family Studies

(205W) Four credits. Prerequisite or corequisite: HDFS 1070, which may be taken concurrently; ENGL 1010 or 1011 or 3800; open only to HDFS majors. Not open for credit to students who have completed HDFS 290.

2100. Human Development: Infancy Through Adolescence

(202) (Formerly offered as HDFR 202) Either semester. Three credits.

Individual development and behavior from prenatal period through adolescence; impact of peers, school, other social agencies, and especially the family.

2200. Human Development: Adulthood and Aging

(204) (Formerly offered as HDFR 204) Either semester. Three credits.

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

(273) (Formerly offered as HDFR 273) Either semester. Three credits.

Family interaction: communication processes, bonding behaviors, management of conflict and aggression, negotiation of family crisis.

3080. Supervised Field Experience

(288) (Formerly offered as HDFR 288) Either semester. Three or six credits. May be repeated up to a maximum of six credits. Prerequisites: GPA of 2.5 in HDFS courses: 15 credits of 2000-level or above HDFS courses and consent of the Director of Undergraduate Studies. Students who do not meet all of these requirements may take the course with the consent of the field-work coordinator and of the seminar instructor. Weekly seminar required. Practicum by arrangement.

Supervised participation in settings where purposes and functions are related to the development and welfare of individuals and families.

3083. Foreign Study

(294) Either or both semesters. Credits and hours by arrangement. Consent of Director of Undergraduate Studies required, preferably prior to student's departure. With a change in content, this course may be repeated for credit.

Special topics taken in a foreign study program.

3087. Honors Proseminar

(291) Second semester. One credit. One class period. Prerequisite: Open only with consent of instructor to students in the Honors Program. *Garey*

Overview of the Family Studies Honors Programs and the opportunities available through University Honors. Includes written and oral presentations by Family Studies faculty members and discussions with faculty regarding research. Provides direction to students planning honors theses.

3090. Fieldwork in Community Settings

(289) (Formerly offered as HDFR 289) Either semester. Three credits. Prerequisites: HDFS 3080; GPA of 2.5 in HDFS courses: 15 credits of 2000-level or above HDFS courses and consent of the Director of Undergraduate Studies. 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.

Supervised participation in settings where purposes and functions are related to the development and welfare of individuals and families.

3092. Research Practicum in Human Development and Family Studies

(292) (Formerly offered as HDFR 292) Either semester. Credits and hours by arrangement. Prerequisite: GPA of 2.5 in HDFS courses and consent of instructor. May be taken more than one semester.

Supervised experience conducting research in human development and family studies.

3098. Selected Topics in Human Development and Family Studies

(298) (Formerly offered as HDFR 298) Either semester. Variable credits. With a change in content this course may be repeated for credit.

3101. Infant and Toddler Development

(231) (Formerly offered as HDFS 231) Either semester. Three credits. Prerequisite: HDFS 2100 or PSYC 2400; open to juniors or higher. Prerequisite or corequisite: HDFS 2004 or PSYC 2100 or SOCI 3201.

Human development from birth through the second year of life within the family setting.

3102. Early and Middle Childhood Development

(232) Second semester. Three credits. Prerequisite: HDFS 2100 or PSYC 2400; open to juniors or higher. Prerequisite or corequisite: HDFS 2004 or PSYC 2100 or SOCI 3201.

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

(284) (Formerly offered as HDFS 284) Either semester. Three credits. Prerequisite: HDFS 2100 or PSYC 2400; open to juniors or higher. Prerequisite or corequisite: HDFS 2004 or PSYC 2100 or SOCI 3201.

Contemporary adolescence, the multiple forces and behavioral characteristics of this period of development.

3110. Social and Community Influence on Children in the United States

(210) Either semester. 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

(220) (Formerly offered as HDFS 220) Either semester. Three credits. Prerequisite: Open to juniors or higher. Open only with instructor consent. Must be taken concurrently with HDFS 3180 or 3183.

Components of programs designed for infants and young children. 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

(222) (Formerly offered as HDFS 222) Either semester. Three credits. Two class periods and one 2-hour laboratory period. Prerequisite: Open to juniors or higher. Open only with instructor consent.

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

(223) (Formerly offered as HDFS 223) Either semester. Three credits. Two class periods and one 2-hour laboratory period. Prerequisite: Open to juniors or higher. Open only with instructor consent.

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

(226) Either semester. Three credits. Prerequisite: HDFS 2100 or PSYC 2400; 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.

3126. Analysis of Programs for Young Children

(225) (Formerly offered as HDFS 225) Either semester. Three credits. Prerequisite: HDFS 3120 or equivalent; open to juniors or higher.

Analytic study of programs designed for young children and their families. Includes historical, social, philosophical, and psychological foundations of education, prevention and intervention programs, as well as theories, specific models, cultural and subcultural issues, parental involvement, and evaluation procedures.

3130. Current Topics in Early Childhood Education

(230) (Formerly offered as HDFS 230) Semester and hours by arrangement. Variable credits. Prerequisite: Open to juniors or higher. Open only with instructor consent. With a change in content this course may be repeated for credit.

In-depth investigation of a current issue in early childhood education (e.g. emergent literacy, diversity), with focus on recent research and application to classroom practice. Includes classroom instruction and laboratory observation.

3180. Programs for Young Children: Introductory Laboratory

(221) (Formerly offered as HDFS 221) Either semester. One credit. One 2-hour laboratory by arrangement. Open only to students concurrently enrolled in HDFS 3120, and only with instructor consent.

Guided observation and participation in a program for young children.

3181. Observing Infant and Toddler Development

(235) First semester. One credit. Weekly seminar. Lab by arrangement. Prerequisite or corequisite: HDFS 3101. Not open to students who have passed HDFS 3182.

Observation of children ages 8 weeks to two years in early care and education programs.

3182. Observing Early and Middle Childhood Development

(236) Second semester. One credit. Weekly seminar. Lab by arrangement. Prerequisite or corequisite: HDFS 3102. Not open to students who have passed HDFS 3181.

Observation of children ages 3-8 years in early care and education programs and in programs for school-age children.

3183. Child Development Laboratory: Fieldwork Practicum

(224) (Formerly offered as HDFS 224) Either semester. Four credits. Prerequisite: Completion of or concurrent enrollment in HDFS 3101 and 3122; or HDFS 3102 and 3123; open to juniors or higher. Open only with instructor consent. Recommended preparation: HDFS 3120. Weekly seminar. Practicum by arrangement.

Supervised participation with typically developing and special needs children within the Child Development Lab classrooms. Topics will include observation and assessment and the role of play in development and interventions.

3240. Aging in American Society

(248) (Formerly offered as HDFS 248) (Also offered as SOCI 3459.) Either semester. Three credits. Prerequisite: Open to juniors or higher.

Social gerontology: the role and status of older people in a changing society.

3240W. Aging in American Society

(248W) (Formerly offered as HDFS 248W) (Also offered as SOCI 3459W.) Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher.

3249. Gender and Aging

(250) (Formerly offered as HDFS 250) Either semester. 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.

3252. Death, Dying, and Bereavement

(252) (Formerly offered as HDFS 252) Either semester. 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.

3260. Woman: A Developmental Perspective

(260) (Formerly offered as HDFS 260) Either semester. Three credits. Prerequisite: Open to juniors or higher.

Development of women and women's roles from birth to maturity; physiological, psychological, sociological, and interpersonal systems which contribute to development of women across the life span; cross-cultural and alternative models for role development.

3261. Men and Masculinity: A Social Psychological Perspective

(259) (Formerly offered as HDFS 259) Either semester. 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

(268) (Also offered as PRLS 3251.) Either semester. 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

(277) (Formerly offered as HDFS 277) Either semester. 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

(245) (Formerly offered as HDFS 245) (Also offered as ANTH 3303.) Either semester. 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

(287) (Formerly offered as HDFS 287) Either semester. Three credits. Prerequisite: HDFS 2100 or PSYC 2400 and HDFS 1070 or HDFS 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.

3319. Family Pathology

(275) (Formerly offered as HDFS 275) Either semester. Three credits. Prerequisite: Open to juniors or higher.

Theory, research and intervention in families under stress.

3340. Introduction to Counseling

(266) (Formerly offered as HDFR 266) Either semester. Three credits. Prerequisite: Open to juniors or higher.

Principles of professional counseling including therapeutic processes, roles, and skills. How counselors help people solve problems is explored. Student's psychological growth and development is facilitated through psychological education.

3341. Family and Consumer Sciences: Developing Curriculum for Adolescents

(241) Three credits. Either semester. Prerequisites: HDFS 2100 and HDFS 3103. Open to students in Human Development and Family Studies, others with permission. Course may be repeated up to three times with change in content/topic for a total of 9 credits.

Theory, research and practicum related to instruction of adolescents using developmentally appropriate practices. Curriculum development, methodology, and assessment of students in selected content areas (i.e. interior design, clothing and textiles, quantity food production) for the preparation of teachers of Family and Consumer Sciences.

3342. Family Resource Management

(283) Either semester. Three credits. Prerequisite: Open to juniors or higher.

Decision-making process of families concerning the utilization of financial, personal, environmental and social resources.

3420. Family Violence

(269) (Formerly offered as HDFR 269) Either semester. Three credits. Prerequisite: Open to juniors or higher.

Theory, research, prevention, and treatment concerning the multiple forms of violence within contemporary families. The impact of violence on families and family members over the entire life span is considered. Includes child abuse and neglect, courtship violence, spouse abuse, elder abuse, and rape.

3421. Low Income Families

(270) (Formerly offered as HDFR 270) Either semester. 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.

3422. Black American Family Patterns

(271) (Formerly offered as HDFR 271) Either semester. Three credits. Prerequisite: Open to juniors or higher.

Continuities and discontinuities between black American subcultural patterns and dominant cultural norms as reflected by black American families.

3423. History of the Family

(279) (Formerly offered as HDFR 279) (Also offered as HIST 3203.) Either semester. Three credits. Prerequisite: Open to juniors or higher.

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.

3430. The Family-School Partnership

(240) (Formerly offered as HDFR 240) Either semester. Three credits. Prerequisite: HDFS 1070 or HDFS 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. Family and Work

(272) (Formerly offered as HDFR 272) Either semester. 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.

3432. Family in Society

(278) (Formerly offered as HDFR 278) Either semester. Three credits. Prerequisite: Open to juniors or higher.

Sociocultural and historic variability of family and kinship systems. Race, class, gender and ethnicity as those advantage or disadvantage the opportunity structure for families and individuals. Effect of public policy on the quality of family life.

3442. Latino Health and Health Care

(267) (Also offered as PRLS 3250.) Either semester. 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).

3510. Planning and Managing Human Service Programs

(276) (Formerly offered as HDFR 276) Either semester. 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

(264) (Formerly offered as HDFR 264) Either semester. 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

(274) (Formerly offered as HDFR 274) Either semester. 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

(285) Either semester. Three credits. Prerequisite: HDFS 2100 or PSYC 2400; and HDFS 2004 or PSYC 2100; open to juniors or higher.

Examines the methods through which empirical social science research can affect law and public policy affecting children and families.

3550. Comparative Family Policy

(281) (Formerly offered as HDFR 281) Either semester. 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

(295) Either or both semesters. Three credits. Prerequisites: HDFS 2004, 12 credits of 2000-level or above

HDFS courses. Open only to Human Development and Family Studies Majors. Open only with consent of instructor.

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 Human Development and Family Studies

(293W) Either semester. Three credits. Prerequisite: HDFS 2004W and an additional 12 credits completed in 2000-level or above HDFS courses; ENGL 1010 or 1011 or 3800. Open only 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

(296W) Either semester. Three to six credits. Hours by arrangement. Prerequisite: ENGL 1010 or 1011 or 3800. Open only with consent of instructor to students in the Honors Program. Student must have a thesis advisor and have an approved thesis topic.

Individual study with student's honors thesis supervisor for the purpose of writing the honors thesis.

4097. Honors Thesis Preparation Seminar

(297) First semester. Two credits. Class meets once a week for two hours. Prerequisite: HDFS 3087; open only with consent of instructor to students in the Honors Program. May be repeated once for credit. *Garey*

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

(299) (Formerly offered as HDFR 299) Either or both semesters. Credits and hours by arrangement. Prerequisite: HDFS 2004. Open only with consent of instructor. May be taken more than one semester.

Students, working with a faculty supervisor, develop plans for an independent research project or review paper, execute the project, and complete a report.

4133. Administration and Leadership in Child, Family, and Community Programs

(233) Either semester. Three credits. Prerequisites: HDFS 1070 and 2100 or equivalent.

Study of leadership styles, characteristics, practices, and critical issues in program administration, leadership, ethics, management, and advocacy, accompanied by exercises in skill development.

4181. Child Development Laboratory: Supervised Teaching Practicum

(227) (Formerly offered as HDFR 227) Either semester. Nine credits. Two class periods and laboratory by arrangement. Prerequisites: HDFS 2100, 3101, 3102, 3120, 3122, 3123, 3183, and either 3181 or 3182; GPA of 2.7 in HDFS courses, and instructor consent.

Supervised teaching experience within the Child Development Labs or approved early education center.

4182. Administration and Leadership in Early Childhood Programs: Practicum

(228) (Formerly offered as HDFR 228) Either semester. Variable credits. Two class periods and laboratory by arrangement. Prerequisite: HDFS 4181, GPA of 2.5 in HDFS courses; open to juniors or higher; instructor consent.

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

(255) Either semester. Three credits. Prerequisite: Open only 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.

Human Resource Management (HRM)

Director: Susan Nesbitt

Program Director: Mark Sullivan

Department Office: Room 220, Bishop Center

3204. Employment Law

(204) (Formerly offered as GS 204.) First semester. Three credits.

Addresses the applicable federal and state laws, the forums, and prevention of claims through diversity training, a system of reporting/handling disputes, and proper employer response. An overview of the laws, their interrelationships, forums, and factors involved in responding.

3220. Work in the United States: Hollywood vs. History

(220) Second semester. Three credits.

Explores how Hollywood has portrayed work in America over the last seventy years with an emphasis on the context within which it was produced.

3221. Jobs, Work and Globalization

(221) First semester. Three credits.

Introductory course on globalization provides understanding of the globalized economy and its impact on jobs and work both locally and globally.

3222. Federal Law and Collective Bargaining

(222) (Formerly offered as GS 222.) Second semester. Three credits.

Provides fundamental skills needed to understand the collective bargaining under federal law.

3261. Issues in Contract Bargaining

(261) (Formerly offered as GS 261.) Both semesters. Three credits.

Provides the student with the introductory skills needed to participate fully in bargaining.

3262. Introduction to Mediation and Arbitration

(262) (Formerly offered as GS 262.) Second semester. Three credits.

Provides the student with the fundamental skills needed to participate fully in any situation requiring dispute resolution capacities.

3263. Introduction to United States Labor Law

(263) Second semester. Three credits.

Provides the student with an introduction to the major laws that govern labor relations in the public and private arenas.

3264. Labor and Work in the United States

(264) (Formerly offered as GS 264.) Second semester. Three credits.

Organized chronologically using the high points of our country's history as guideposts for our study of working people.

3265. Labor and American Politics

(265) (Formerly offered as GS 265.) Second semester. Three credits.

Chronological study using the high points of our country's political history and labor's attempts to influence the political process.

3266. Introduction to Labor Relations

(266) (Formerly offered as GS 266.) Second semester. Three credits.

Introduction to the basic concepts and many of the needed skill areas associated with the ability to participate more fully in the arena of labor relations. The basics of labor relations including its history, the participants, how unions are organized, collective bargaining, contract administration, dispute resolution, discipline, union/management rights and what is happening in the public sector labor and politics.

3295. Special Topics

(298) Either or both semesters. Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites, required preparation, and recommended preparation vary.

3299. Independent Study

(299) Either or both semesters. Credits and hours by arrangement. With a change in content, may be repeated for credit. Open only with consent of instructor.

Human Rights (HRTS)

Director: Richard A. Wilson

Office: 152 Human Rights Institute, Dodd Research Center

1007. Introduction to Human Rights

(125) (Also offered as POLS 1007.) Either semester. 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.

2170W. Bioethics and Human Rights in Cross-Cultural Perspective

(170W) (Also offered as PHIL 2170W.) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800; 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.

3028. Indigenous Rights and Aboriginal Australia

(228) (Also offered as ANTH 3028.) Either semester. 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.

3042. The Theory of Human Rights

(205) (Also offered as POLS 3042.) Either semester. Three credits. Prerequisite: Open to juniors or higher. *Hiskes*

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.

3153W. Human Rights in Democratizing Countries

(280W) (Also offered as ANTH 3153W.) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800; Open only with consent of instructor.

Human rights, political violence, political and legal anthropology, prosecutions of human rights offenders, truth and memory, reconciliation, international justice. CA 4-INT.

3201. The History of Human Rights

(253) (Also offered as HIST 3201.) Either semester. Three credits. Prerequisite: Open to juniors or higher.

Case studies in the emergence and evolution of human rights as experience and concept.

3202. International Human Rights

(226) (Also offered as HIST 3202.) Either semester. Three credits. Prerequisite: Open to juniors or higher.

Historical and theoretical survey of the evolution of human rights since 1945.

3212. Comparative Perspectives on Human Rights

(258) (Also offered as POLS 3212.) First semester. 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

(219) (Also offered as PHIL 3219.) Either semester. Three credits. Prerequisite: One three-credit course in Philosophy or instructor consent; open to juniors or higher. With a change in content, 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.

3221. Latinos/as and Human Rights

(220) (Also offered as HIST 3575 and PRLS 3221.) Either semester. Three credits. Prerequisite: Open to juniors or higher. *Silvestrini*

Latino/a issues related to human, civil and cultural rights, and gender differences.

3245. Human Rights Internship and Portfolio

(245) (Formerly offered as INTD 245.) Either semester. Three credits. Prerequisite: Consent of Director of Human Rights Minor.

Internship with a human rights-related agency, organization, or group, and preparation of a portfolio synthesizing the internship experiences with Human Rights Minor course work.

3263. Women and Violence

(263) (Also offered as WS 3263.) Either semester. Three credits.

A discussion of the various forms of violence against women in our society, including rape, battering, incest and pornography; treats the social, political and personal meaning of violence.

3293. Foreign Study

(293) Either or both semesters. Credits and hours by arrangement. With a change in content, may be repeated for credit. May be taken for a maximum of 15 credits. Consent of the Minor Director required prior to departure.

Special topics taken in a foreign study program.

3295. Special Topics

(298) Either or both semesters. Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary.

3299. Independent Study

(299) Either or both semesters. Credits and hours by arrangement. With a change in content may be repeated for credit.

Supervised reading and writing on a subject of special interest to the student.

3418. International Organizations and Law

(225) (Also offered as POLS 3418.) Either semester. 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.

3421. Class, Power, and Inequality

(268) (Also offered as SOCI 3421.) Either semester. Three credits. Prerequisite: Open to juniors or higher. *Bernstein, Glasberg, Villemez, Wallace*

Inequality and its consequences in contemporary societies.

3429. Sociological Perspectives on Poverty

(249) (Also offered as SOCI 3429.) Either semester. Three credits. Prerequisite: Open to juniors or higher. *Cazenave, Villemez*

Poverty in the U.S. and abroad, its roots, and strategies to deal with it.

3505. White Racism

(236) (Also offered as AFAM 3505 and SOCI 3505.) Either semester. Three credits. Prerequisite: Open to juniors or higher. *Cazenave*

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. CA 4.

3563. African American History to 1865

(238) (Also offered as HIST 3563 and AFAM 3563.) Either semester. Three credits. Prerequisite: Open to juniors or higher. *Campbell, Ogbar*

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.

3571. Sociological Perspectives on Asian American Women

(221) (Also offered as AASI 3221 and SOCI 3221.) Either semester. Three credits. Prerequisite: Open to juniors or higher. *Purkayastha*

An overview of social structures, inter-group relations, and women's rights, focusing on the experience of Asian American women. CA 4.

3573. Asian Indian Women: Activism and Social Change in India and the United States

(222) (Also offered as AASI 3222 and SOCI 3222.) First semester. Three credits. Prerequisites: SOCI 1001, 1251 or 1501; open to juniors or higher.

How gender, class and ethnicity/race structure everyday lives of Asian Indian women in both India and the United States.

3619. Topics in Literature and Human Rights

(241) (Also offered as ENGL 3619.) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher. May be repeated for credit with a change of topic.

Study of literature from various historical periods and nationalities concerned with defining, exploring, and critiquing the idea of universal human rights.

3801. Political Sociology

(269) (Also offered as SOCI 3801.) Either semester. Three credits. Prerequisite: Open to juniors or higher. *Glasberg*

Social analysis of power, democracy and voting, society and the state, and political economy.

3807. Constitutional Rights and Liberties

(256) (Also offered as POLS 3807.) Either semester. 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.

3825. African Americans and Social Protest

(235) (Also offered as AFAM 3825 and SOCI 3825.) Either semester. Three credits. Prerequisite: Open to juniors or higher. *Cazenave*

Social and economic-justice movements, from the beginning of the Civil Rights movement to the present.

3831. Human Rights in the United States

(215) (Also offered as SOCI 3831.) Either semester. Three credits. Prerequisite: Open to juniors or higher.

Sociological analyses of human rights issues in the United States, including economic, racial, and gender justice; prisoner's rights and capital punishment; the role of the United States in international human rights agreements and treaties; and struggles on behalf of human rights.

India Studies (INDS)

Director: Elizabeth Hanson

Office: Monteith Building

3210. Ancient and Classical Indian Literature in Translation

(210) Either semester. 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

(293) Either or both semesters. Credits and hours by arrangement. May be taken for a maximum of 15 credits. Consent of Coordinator of India Studies required prior to departure.

Special topics taken in a foreign study program.

3295. Special Topics

(298) Either or both semesters. Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites, required preparation, and recommended preparation vary.

3298. Variable Topics

(295) Either or both semesters. Credits and hours by arrangement. With a change of content, may be repeated for credit.

3299. Independent Study

(299) Either or both semesters. Credits and hours by arrangement. With a change in content, may be repeated for credit.

Supervised reading and writing on a subject of special interest to the student.

4296. Senior Thesis

(296) Either or both semesters. Three credits. Hours by arrangement. Open only with instructor consent. Research and writing of thesis.

Informational Science and Knowledge Management (ISKM)

Director: Susan Nesbitt

Program Director: Andrew DePalma

Department Office: Room 233, Bishop Center

3100. Introduction to Information Technology

(210) (Formerly offered as GS 210.) Either semester. Three credits.

An overview of information technologies including fundamentals of the Internet, service protocols, web development and deployment, and fundamentals of networking.

3100W. Introduction to Information Technology

(210W) Prerequisite: ENGL 1010 or 1011 or 3800.

3110. Introduction to UNIX/Linux

(215) (Formerly offered as GS 209.) Either semester. Three credits. Prerequisite: Basic computing skills required. Online access required.

A technical overview of UNIX to build knowledge and understanding through hands-on experiences.

Includes basic commands and system structures; system tools; output redirection; command line text editing, e-mail and system calls; file system basics; and basic shell scripting. Preparation for versatile use of any UNIX system and serves as a foundation for numerous UNIX certification programs.

3112. Introduction to System Administration with UNIX/Linux

(226) (Formerly offered as GS 212.) Either semester. Three credits. Prerequisite: ISKM 3110 or equivalent experience. Basic computing skills and an understanding of the UNIX/Linux operating environments required. Online access required.

Expands the use of a UNIX system from that of the user to the administrator. Topics covered will include installation, file system structure, data transfer, backup and recovery, user and process administration, system security features, system startup and shutdown, performance monitoring and troubleshooting techniques. Since it is impossible to cover all aspects of system administration in depth, the focus of this course is on developing a mindset that acts as a springboard to developing your skills.

3120. Web Applications I: Client Side Scripting

(217) (Formerly offered as GS 225.) First semester. Three credits. *DePalma*

The structure and function of client side scripting languages such as JavaScript. Covers programming concepts from the beginning. Topics covered include: application development methodologies, variables and arrays, program flow control, functions, and objects. Web-specific topics include: JavaScript objects, events, forms, regular expressions, cookies, and platform and browser capability.

3220. Web Application Development with PERL/PHP

(218) (Formerly offered as GS 213.) Either semester. Three credits. Prerequisite: Basic computing skills required. Unix skills course required; can be taken concurrently.

Participation in cooperative assignments the student will gain appreciation for the process of web application development. Includes the design and implementation of simpler programs and the group development of advanced web applications.

3222. Introduction to Object Oriented Programming with Java

(219) (Formerly offered as GS 211.) Either semester. Three credits.

Fundamentals of the Java language with applied object-oriented techniques. Topics covered: classes and methods, application and applet modes, and graphical interfaces.

3240. Web Authoring and Content Management I

(220) (Formerly offered as GS 223.) First semester. Three credits. *DePalma*

Introduction to creation and management of web content. Discusses information architecture and markup languages as a means to design, relate, and compose documents for the web. Technical topics covered include: Hypertext markup language and XHTML.

3241. Web Authoring and Content Management II

(222) (Formerly offered as GS 224.) First semester. Three credits. Prerequisite: ISKM 3240. *DePalma*

Continuation web authoring and management, focusing on security and commerce. Topics examined from consumer, infrastructure, and content-provider perspectives. Topics include: cryptography, digital identification, privacy, physical security, certificates, content filtering, and intellectual property.

3260. Web Graphics and Layout

(224) (Formerly offered as GS 226.) First semester. Three credits. Prerequisite: ISKM 3100, 3240 and/or department head or instructor consent. *DePalma*

Examination and use of the techniques and tools used to create functional and attractive web content. Topics include: image selection and editing, typography, designing navigational elements, animation and multimedia.

4120. Database Systems for the Web

(230) (Formerly offered as GS 230.) Either semester. Four credits. Prerequisite: ISKM 3240. *DePalma*

Discussion of the administration of data systems, database design, and data delivery for the web. Topics include: UML, data driven tag sets, client-side and server side scripting, SQL queries, security issues, and data system administration.

4130. Web Server Administration

(231) (Formerly offered as GS 231.) First semester. Three credits. Prerequisite: ISKM 3112. *DePalma*

Provide in-depth knowledge of web services administration. The material will cover initial system configuration; web server installation; web server configuration; administering the web server, web users and hosting accounts; automating user account management; security issues, and troubleshooting. Hands-on experience through labs and projects will reinforce the reading, coursework and exams.

4140. Web Metrics and Analysis

(232) (Formerly offered as GS 232.) Second semester. Variable credits. Prerequisite: ISKM 4130 and STAT 1000. *DePalma*

A thorough examination of the quantification and qualification of web utilization. Topics include: counting methods, hierarchical methods, and analysis of dynamic content and errors.

4195. Special Topics

(298) Either or both semesters. Three credits. With a change in content, may be repeated for credit.

4199. Independent Study

(299) Either or both semesters. Credits and hours by arrangement. With a change in content, may be repeated for credit.

Interdepartmental (INTD)

Individualized and Interdisciplinary Studies Program

Director: Margaret Lamb

Office: Room 323, Center for Undergraduate Education

1500. Alcohol and Drugs on Campus: Exploring the College Culture

(150) First semester. Three credits.

Interdisciplinary examination of alcohol and other drug issues as matters of social concern for college students, the institution, the campus community and society. Discussions of controversial issues and service learning skills. CA 2.

1660W. Ports of Passage

(166W) Second semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800.

A selection of readings concerning ports around the world. Interdisciplinary readings will explore the cultural and historical significance of the port as a setting of philosophical and commercial exchange. CA 4-INT.

1700. Honors Core: Walden, A History

(170) Either semester. Three credits. Open only to freshman and sophomore students in the Honors program. *Gross, Pritchard, Thorson*

Explores the interplay of nature, history, and aesthetics in the making of Thoreau's Walden (1854).

Topics include the geological development of the Walden ecosystem; the economic reshaping of the Walden environment in the mid-19th century; the social critique, scientific ideas, and aesthetic notions informing Thoreau's work; and the impact of Walden on Americans' views of themselves and their sense of place. Applies interdisciplinary perspectives from art, geology, literature, and social and intellectual history. CA 1.

1784. Freshman Honors Seminar

(198) First semester. One credit. Open only with consent of Honors Director.

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

(180) Either semester. One credit. One class period. Open to freshman and sophomore students only.

A component of the First Year Experience (FYE) program, this course is intended to acquaint students with the university and expand their learning experiences in order for them to adjust to the new expectations they will face. Involves assignments that will provide opportunities for students to enhance their academic and interpersonal skills.

1810. FYE Learning Community Seminar

(181) Either semester. One credit. One class period. Open to freshman and sophomore students only. This course must be taken in combination with a cluster of three courses; with the permission of the instructor, one of the cluster courses may have been completed previously. With a change in content, this course may be repeated for credit.

A component of the First Year Experience (FYE) program, this seminar course is intended to provide an opportunity to integrate the consideration of material from three courses through discussion, assignments, and projects. Students will have opportunities to enhance their academic and interpersonal skills.

1820. FYE Faculty/Student Seminar

(182) Either semester. One credit. One class period. Open to freshman and sophomore students only. With a change in content, this course may be repeated for credit.

A component of the First Year Experience (FYE) program, this seminar course is intended to provide an opportunity for students to investigate topics of professional interest to the faculty instructor through guided research or reading, discussion, and some writing. The course will help students learn independently and engage actively in the academic life of the university.

1985. Special Topics Lecture

(195) Either semester. Credits, prerequisites, and hours as determined by the Senate Curricula and Courses Committee. May be repeated for credit with a change in topic.

1993. Foreign Study

(193) Either or both semesters. Credits and hours by arrangement. May be repeated for credit (to a maximum of 15).

Course work undertaken within approved Study Abroad programs.

1995. Special Topics Seminar

(196) Either semester. Credits and hours as determined by the Senate Curricula and Courses Committee. Open only with consent of instructor. May be repeated for credit with a change in topic. 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.

1998. Variable Topics Seminar

(194) Either semester. Credits and hours as determined by the Senate Curricula and Courses Committee. Open only with consent of instructor. May be repeated for credit with a change in topic. 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. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

1999. Special Topics Independent Study

(197) Either semester. Credits and hours as determined by the Senate Curricula and Courses Committee. Open only to freshmen and sophomores with consent of instructor. May be repeated for credit with a change in topic.

2245. Introduction to Diversity Studies in American Culture

(241) Either semester. 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.

3220. Studies in the Culture of the Middle Ages

(220) Second semester. Three credits. Open only with consent of the instructor of record. With a change in content this course may be repeated for credit.

An interdisciplinary examination of various aspects of the culture of Medieval Europe. Instructors and content will vary. Particulars will be announced prior to registration for the semester in which the course is offered.

3222. Linkage through Language

(222) Either semester. 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, with a change in content. Sponsored by the Modern and Classical Languages Department in collaboration with the department offering the companion course.

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.

3250. Global Militarism and Human Survival

(250) Second semester. Three credits. *Luyster*

A consideration of the threat posed to humanity's survival by global militarism, poverty, and the unprecedented threat to the natural environment.

3260. The Bible

(294) First semester. Three credits, which may be counted toward the related field requirement in History, Philosophy, or English.

The literary, historical, and philosophical content, circumstances and problems of the Old and New Testaments. CA 1.

3584. Seminar in Urban Problems

(211) Either semester. Three credits. Hours by arrangement. Prerequisite: Open to juniors and higher, open only with consent of the Director of the Urban Semester Program. Must be taken concurrently with INTD 3590 and 3594.

Discussions based upon assigned readings and led by faculty and invited speakers from outside and within the University. CA 4.

3590. Urban Field Studies

(210) Either semester. Nine credits. Hours by arrangement. Prerequisite: Open to juniors and higher, open only with consent of the Director of the Urban Se-

mester Program. Must be taken concurrently with INTD 3584 and 3594.

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 (212) Either semester. Three credits. Hours by arrangement. Prerequisite: open to juniors and higher, open only with consent of the Director of the Urban Semester Program. Must be taken concurrently with INTD 3590 and 3584.

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 (212W) Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors and higher, open only with consent of the Director of the Urban Semester Program. Must be taken concurrently with INTD 3590 and 3584.

3784. Interdisciplinary Honors Seminar (291) Either semester. Three credits. Open only with consent of instructor. May be repeated for credit with a change of topic.

An interdisciplinary seminar designed for honors students and open to other qualified students. Topics vary from semester to semester. Sponsored by the Honors Program.

3984. Interdisciplinary Experience (282) Either semester. One credit. Open only with consent of instructor. May be repeated for credit with a change in topic.

A variable topic course, drawing material from multiple departments. Experimentation in content and format is encouraged.

3985. Special Topics Either semester. Credits and hours by arrangement. Open only with consent of instructor. With a change in content, may be repeated for credit. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

3993. Foreign Study (293) Either or both semesters. Credits and hours by arrangement. May be repeated for credit (to a maximum of 17).

Course work undertaken within approved Study Abroad programs.

3995. Special Topics (298) Either semester. Credits and hours by arrangement. Open only with consent of instructor. With a change in topic, may be repeated for credit.

3998. Variable Topics (297) Either semester. Three credits. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary.

3999. Independent Study (299) Either semester. Credits and hours by arrangement. Open only with consent of instructor. May be repeated for credit.

4600W. Capstone Course (295W) Either semester. Three credits. Consent required by instructor and the INTD Department Head. Prerequisite: ENGL 1010 or 1011 or 3800 and 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 (296W) Either semester. Three - six credits. Hours by arrangement. Consent required by instructor and INTD Department Head. Prerequisite: ENGL 1010 or 1011 or 3800 and senior standing with an approved individualized major plan of study. Students must have obtained a thesis advisor and have an approved thesis topic before registration.

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.

4800. Senior Year Experience (283) Either semester. One credit. Prerequisite: Open only to seniors. *Doerr, Jones*

A component of the Senior Year Experience (SYE) Program, the course promotes effective planning and decision making in adult life after college. Discussion, reading and written assignments enhance seniors' awareness of personal adjustments to be experienced during their transition from college to the professional world. Course activities encourage students to make meaningful connections between their academic majors, extracurricular activities, and work experiences, as well as consider practical matters such as financial planning, continuing professional development, and healthy living.

Italian Literary and Cultural Studies (ILCS)

Department Head: Associate Professor Norma Bouchard

Department Office: Room 228, Arjona Building

Consult the Modern and Classical Languages Departmental listing in this *Catalog* for requirements for Majors in Italian Literary and Cultural Studies.

Consult the Departmental Handbook for courses offered in the appropriate semesters and further description of these courses.

1101. The Italian Renaissance (101) (Formerly offered as ITAL 101.) First semester. Three credits. A knowledge of Italian is not required. Taught in English. May not be used to meet the foreign language requirement.

A survey of Italian Renaissance civilization, with emphasis on literature and intellectual life. CA 1.

1145-1146. Elementary Italian I and II (145-146) (Formerly offered as ITAL 145-146.) Both semesters. Four credits each semester. Four class periods and one 1-hour laboratory practice. Not open for credit to students who have had three or more years of Italian in high school. Students who wish to continue in Italian but feel ill prepared should contact the head of the Modern and Classical Languages Department.

Elementary Italian grammar. Drill in pronunciation. Reading of simple texts. Practice in easy conversation.

1147-1148. Intermediate Italian I and II (147-148) (Formerly offered as ITAL 147-148.) Both semesters. Four credits each semester. Four class periods and one 1-hour laboratory practice. Prerequisite: ILCS 1146 or equivalent.

Review of elementary Italian grammar. Graded composition and translation. Intensive and extensive reading. Oral practice in the language.

1149. Cinema and Society in Contemporary Italy (149) (Formerly offered as ITAL 149.) Second semester. Three credits. Three class periods and one 2-hour laboratory period. Films in Italian with English subtitles. Taught in English. May not be used to meet the foreign language requirement.

A critical analysis of contemporary Italian society seen through the media of film and literature. CA 1. CA 4-INT.

1158. Italian American Experience in Literature and Film (158) Either semester. Three credits. Three class periods and one 2-hour laboratory period. Taught in English. May not be used to meet the foreign language requirement.

Focuses on the Italian American experience as represented in a variety of fields, including literature and cinema. CA 1. CA 4.

1160. Culture of Fascist Italy (160) First semester. Three credits. Taught in English. May not be used to meet the foreign language requirement.

The way Italian literary and cinematic culture justified, survived, and fought the terrors of the Fascist totalitarian regime. CA 1. CA 4-INT.

1170. Introducing Italy through Its Regions (170) Either semester. Three credits. Taught in English. May not be used to meet the foreign language requirement. May be repeated for credit with a change of subject matter for a maximum of nine credits.

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. CA 1.

1175-1178. Intensive Italian I - IV (175-178) First and second semesters. Eight credits per semester. Two hours a day, four days a week, plus a two-hour laboratory practice. Open only with consent of the instructor. Not open for credit to students who have passed ILCS 1145 through ILCS 1148.

Intensive coverage of two years of Italian in two semesters. Intensive Italian 1175-1176 (Fall) covers the same material as ILCS 1145-1146; Intensive Italian 1177-1178 (Spring) covers the same material as ILCS 1147-1148.

1193. Foreign Study (193) (Formerly offered as ITAL 193.) Either or both semesters. Credits and hours by arrangement. May be repeated for credit. Consent of Department Head required, normally before the student's departure.

Special topics taken in a foreign study program.

3237. Italy Today (237) (Formerly offered as ITAL 237.) First semester. Three credits. Prerequisite: ILCS 1148.

A survey of contemporary Italian political, social, economic and cultural life.

3239. Italian Composition and Conversation I (239) (Formerly offered as ITAL 239.) First semester. Three credits. Prerequisite: ILCS 1148 or equivalent. Practice in written and oral composition. Syntax study.

3240. Italian Composition and Conversation II (240) (Formerly offered as ITAL 240.) Second semester. Three credits. Prerequisite: ILCS 3239 or equivalent.

Further practice in written and oral composition. Treatment of the finer points in syntax.

3243. Main Currents of Italian Literature Through the Renaissance

(243) (Formerly offered as ITAL 243.) First semester. Three credits. Prerequisite: ILCS 1148 or equivalent.

The history of Italian literature through the Renaissance is traced through its main developments. Acquaints the student with the principal authors, literary schools and trends.

3244. Main Currents of Italian Literature After the Renaissance

(244) (Formerly offered as ITAL 244.) Second semester. Three credits. Prerequisite: ILCS 1148 or equivalent.

The history of Italian literature after the Renaissance is traced through its main developments. The aim of the course is to acquaint the student with the principal authors, literary schools and trends.

3250. Italian Theatre of the Eighteenth Century (250) (Formerly offered as ITAL 250.) Second semester. Three credits. Prerequisite: ILCS 3237 or 3239 or 3243 or equivalent.

Readings from Metastasio, Goldoni, and Alfieri.

3253. Dante and His Time

(253) (Formerly offered as ITAL 253.) Either semester. Three credits. Prerequisite: ILCS 3237 or 3239 or 3243 or equivalent.

Selected readings from Dante, Petrarch, Compagni, Villani.

3254. Boccaccio and His Time

(254) (Formerly offered as ITAL 254.) Either semester. 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

(255W) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800. Taught in English. May not be used to meet the foreign language requirement. *Masciandaro*

Dante's poem as a unique synthesis of Medieval culture. Emphasizes its integration of ethics, political thought, and theology with poetic imagination. CA 1.

3256. The Literature of the Italian Renaissance

(256) (Formerly offered as ITAL 256W.) Second semester. Three credits. Not open to students who have passed ILCS 251-252. Taught in English. May not be used to meet the foreign language requirement.

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.

3258. Cinematic Representations of Italian Americans

(258) Either semester. Three credits. Three class periods and one 2-hour laboratory period. Taught in English. May not be used to meet the foreign language requirement.

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. CA 1. CA 4.

3258W. Cinematic Representations of Italian Americans

(258W) Prerequisite: ENGL 1010 or 1011 or 3800. Taught in English. May not be used to meet the foreign language requirement. CA 1. CA 4.

3259. Topics in Italian Cinema

(259) Either semester. Three credits. One 3-hour class period and one 2-hour laboratory. Prerequisite: ILCS 1148. Taught in Italian.

Major topics in modern and contemporary Italian cinema.

3260W. Italian Cinema

(260W) (Formerly offered as ITAL 260W.) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800. Two class periods and one 2-hour laboratory period. Taught in English. May not be used to meet the foreign language requirement. Films in Italian with English subtitles. *Bouchard*

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. CA 1. CA 4-INT.

3261. Twentieth-Century Italian Literature

(261) (Formerly offered as ITAL 261.) Either semester. Three credits. Recommended preparation: ILCS 3237 or 3239 or 3240. *Bouchard*

Major trends in twentieth-century Italian Literature from the early modern period to contemporary times.

3262. Nineteenth-Century Italian Literature

(262) (Formerly offered as ITAL 262.) Either semester. Three credits. Recommended preparation: ILCS 3237 or 3239 or 3240 or 3243 or instructor consent. *Bouchard*

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

(270) Either semester. Three credits. Prerequisite: ILCS 1148 or instructor consent.

Introduction to Italian business culture. Written and oral practice in the language of business Italian.

3293. Foreign Study

(293) (Formerly offered as ITAL 293.) Either or both semesters. Credits and hours by arrangement. May be repeated for credit. Consent of Department Head required, normally granted prior to the student's departure. May count toward the major with consent of the advisor.

Special topics taken in a foreign study program.

3295. Special Topics

(298) (Formerly offered as ITAL 298.) Either semester. Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary.

3298. Variable Topics

(295) (Formerly offered as ITAL 295.) Either semester. Three credits. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary.

3299. Independent Study

(299) (Formerly offered as ITAL 299.) Either or both semesters. Credits and hours by arrangement. Open only with consent of instructor. With a change in content, may be repeated for credit.

4279. Capstone in Italian Studies

(289) Either semester. Three credits. Prerequisite: ILCS 1148 or instructor consent.

Advanced language practicum and integration of studies in Italian Literature and Culture.

Study Abroad in Italy. Students can participate in a variety of UConn-sponsored Study 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. No more

than 12 credits taken in any Study Abroad Program may count toward a major in Italian at this University.

Japanese (JAPN)

Head of Department: Assistant Professor Norma Bouchard

Department Office: Room 228, J.H. Arjona Building

1101-1102. Elementary Levels I and II (101-102)

1103-1104. Intermediate Levels I and II (103-104)

1101 and 1103 are offered in the first semester, and 1102 and 1104 in the second. Please refer to the Critical Languages course descriptions in this publication. Consult the Program Director in Arjona 128 or at manuela.m.wagner@UConn.edu for more information.

Journalism (JOUR)

Head of Department: Professor Maureen Croteau

Department Office: Room 422, Arjona Building

For major requirements, see the College of Liberal Arts and Sciences section of this *Catalog*.

1002. The Press in America

(102) Either semester. Three credits.

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.

2000W. Newswriting I

(200W) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800. One 75-minute lecture and one 2-hour laboratory plus field work.

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

(201W) Either semester. Three credits. One 75-minute lecture and one 2-hour laboratory plus field work. Prerequisite: JOUR 2000W.

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

(203) Either semester. Three credits. Prerequisite: JOUR 1002 or 2000W. May be taken concurrently with JOUR 2000W.

Critical survey embracing the diverse voices of literary journalism from the 17th century through the 21st.

3000W. Public Affairs Reporting

Either semester. Three credits. Prerequisite: JOUR 2001W and ENGL 1010 or 1011 or 3800; open to juniors or higher.

In-depth reporting on state and local government-municipal agencies, boards, commissions, courts, public safety, schools. Field trips required.

3002. Journalism Ethics

(202) Either semester. Three credits. Prerequisite: JOUR 1002.

Discussion of such contemporary problems as privacy, good taste, community standards, effectiveness of the press and responsibility of the press.

3012W. Feature Writing

(212W) Either semester. Three credits. Prerequisite: JOUR 2001W.

Emphasis on finding, developing and writing feature stories. Outside stories will be assigned weekly.

3013W. Magazine Journalism

(213W) Either semester. Three credits. Prerequisite: JOUR 2001W.

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.

3019. Daily Campus Critique

(219) First semester. One credit. One class period. Open only with consent of instructor. May be repeated only once for credit.

A weekly critique of the content of the student daily from news stories, through editorials to advertising copy and printing.

3020. Law of Libel and Communications

(220) Either semester. Three credits. Prerequisite: Open to juniors or higher.

Typical subjects: libel, slander, invasion of privacy, obscenity, legal problems of newsgathering, protecting the political process, protecting state secrets, protecting the public welfare.

3030. Copy Editing I

(230) Either semester. Three credits. Prerequisite: JOUR 2000W.

Editing for grammar, style and content, headline writing, introduction to basic newspaper design concepts.

3031C. Copy Editing II

(231C) Second semester. Three credits. Prerequisite: JOUR 3030.

Emphasis on copy and picture selection, copy fitting, photo editing and computer-assisted editing, page layout and production.

3033. Opinion Writing

(233) First semester. One credit. Prerequisite: JOUR 2001. One two-hour lab-lecture period.

Writing for the editorial and op-ed pages.

3040. Newswriting for Radio and Television

(240) Either semester. Three credits. Prerequisite: JOUR 2000. Two 75-minute lab-lecture sessions plus a field trip.

Application of newswriting techniques to the broadcast media.

3041. Reporting and Editing TV News

(241) Either semester. 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.

3045. Specialized Journalism

(245) Either semester. Three credits. Prerequisite: JOUR 2000.

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

(245W) Either semester. Three credits. Prerequisite: JOUR 2000; ENGL 1010 or 1011 or 3800.

3050. Professional Seminar

(250) Three credits. Three hours. Prerequisite: JOUR 2000, which may be taken concurrently (Also available for one credit. Two hours. No prerequisite.) May be repeated once for a maximum total of four credits.

Journalists discuss the economic, technological, sociological and ethical issues that challenge their profession.

3093. Foreign Study

(293) Either or both semesters. Credits and hours by arrangement. 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. *Croteau*

3095. Special Topics

(298) Either semester. Credits and hours by arrangement. Prerequisites and recommended preparation vary; open to juniors or higher. With a change in content, may be repeated for credit.

3097. Honors Thesis

(294) Either semester. Three credits. Hours by arrangement. Prerequisites: JOUR 2000W, 2001W and at least six additional journalism credits at the 2000-level or above. Open only with consent of instructor.

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

(295) Either semester. Three credits. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary; open to juniors or higher.

4016. Publication Practice

(216) Either semester. One to 3 credits. May be repeated for credit. Hours by arrangement. Open only with consent of instructor.

Students and faculty work together to research, write, edit and produce a publication.

4035C. Advanced Reporting Techniques

(235C) First semester. Three credits. Prerequisite: JOUR 2001.

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.

4091. Supervised Field Internship

(297) Either semester. One to three credits. Hours by arrangement. Prerequisite: JOUR 2000, 2001 and 3020. Open only with consent of Department Head.

Students research, report and write for newspapers, news departments of radio and television stations, and public relations offices under supervision of professionals.

4099. Independent Study

(299) Either semester. Credits and hours by arrangement. Open only with consent of instructor. May be repeated for credit.

Open to qualified students who present suitable projects for independent work in journalism.

Judaic Studies (JUDS)

Associate Director, Center for Judaic Studies and Contemporary Jewish Life: Professor Stuart S. Miller
Offices: Room 154, Thomas J. Dodd Research Center and Room 220, Arjona Building

For more information, please refer to the "College of Liberal Arts and Sciences" section of this *Catalog*.

1101. The Land of Israel from Biblical Times to the Present

(101) Either semester. Three credits. Offered in alternate years. Taught in English. May not be used to meet the foreign language requirement. *Miller*

An in-depth look at the history, culture and

civilizations of the land of Israel. The importance of the land in Judaism and its significance for Christianity and Islam will be discussed. Lectures and discussion will be enhanced by slide presentations.

1103. Literature and Civilization of the Jewish People

(103) (Also offered as HEB 1103.) Either semester. Three credits. Taught in English. May not be used to meet the foreign language requirement. *Miller*

The major concepts, personalities and literary works of the Hebraic tradition from the Biblical and Talmudic periods to the present. CA 1. CA 4.

1104. Modern Jewish Thought

(104) (Also offered as HEB 1104.) Second semester. Three credits. Taught in English. May not be used to meet the foreign language requirement.

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, Nachman Krochmal, Ahad Haam, Hermann Cohen, Franz Rosenzweig, Martin Buber and Mordecai Kaplan.

3201. Selected Books of the Hebrew Bible

(201) (Also offered as HEB 3201.) Either semester. Three credits. Prerequisite: INTD 3260 or HIST 3301 or HEB 1103, which may be taken concurrently or instructor consent. A knowledge of Hebrew is not required. May be repeated with change of content and consent of instructor. Taught in English. May not be used to meet the foreign language requirement. *Miller*

Focuses on a biblical book (or books) and emphasizes its literary structure and content using modern approaches as well as midrashic and medieval exegesis. Historical and archaeological material introduced where relevant.

3202. Sects and Movements in Judaism

(202) Either semester. Three credits. Offered in alternate years. Taught in English. May not be used to meet the foreign language requirement.

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.

3203. The Holocaust

(203) (Also offered as HEB 3203 and HIST 3418.) Either semester. Three credits. Taught in English. May not be used to meet the foreign language requirement.

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.

3218. Palestine Under the Greeks and Romans

(218) (Also offered as CAMS 3256, HEB 3218, and HIST 3330) Either semester. Three credits. Prerequisite: CAMS 1101 or 1102 or CAMS 3253/HIST 3301 or HIST 3320 or 3325 or INTD 3260 or HEB 1103 or JUDS 3202 or instructor consent; open to juniors or higher. Taught in English. May not be used to meet the foreign language requirement. *Miller*

The political, historical and religious currents in Greco-Roman Palestine. Includes the Jewish Revolts; sectarian developments, the rise of Christianity and the Talmudic academies.

3511. American Jewry

(242) (Also offered as SOCI 3511) Three credits. Either semester. Prerequisite: Open to juniors or higher. Taught in English. May not be used to meet the foreign language requirement. *Dashefsky*

Historical, demographic, organizational, and sociopsychological perspectives.

Korean (KORE)

Head of Department: Associate Professor Norma Bouchard

Department Office: Room 228, J.H. Arjona Building

1101-1102. Elementary Levels I and II
(101-102)

1103-1104. Intermediate Levels I and II
(103-104)

1101 and 1103 are offered in the first semester, and 1102 and 1104 in the second. Please refer to the Critical Languages course descriptions in this publication. Consult the Program Director in Arjona 128 or at manuela.m.wagner@UConn.edu for more information.

Landscape Architecture (LAND)

Head of Department: Professor Mary E. Musgrave
Department Office: Room 119, W.B. Young Building

For major requirements, see the College of Agriculture and Natural Resources section of this *Catalog*.

2110. Landscape Architecture: Graphics I - Design Drawing

(255) (Formerly offered as PLSC 255.) First semester. Four credits. Two class periods and two 2-hour studios. Open only with consent of instructor. *Schwab*

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

(256) (Formerly offered as PLSC 256.) Second semester. Four credits. Three class periods and three 1-hour studios. Open to Landscape Architecture majors only. Prerequisite: LAND 2110. *Miniutti*

Knowledge and theory of visual perception and model making. Application of theory in the creation of various graphic products including plan, section, elevation, parallel and perspective drawings. Controlled free hand and computer methods in a studio environment.

2210. Landscape Architecture: Theory I - The Cultural Landscape

(275) (Formerly offered as PLSC 275.) First semester. Two credits. Two class periods. *Miniutti*

An introduction to the study of landscape architecture and related planning and design disciplines. Emphasis on understanding the political and social forces which influence development patterns in the United States.

2220. Landscape Architecture: Theory II - Design History

(277) (Formerly offered as PLSC 277.) Second semester. Three credits. Three class periods. Prerequisite: LAND 2210. *Alexopoulos*

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

(265) (Formerly offered as PLSC 265.) Second semester. Five credits. Three class periods and three 2-hour studios. Open to Landscape Architecture majors only. Prerequisite: LAND 2110 and 2210. Field trips are required. *Westa*

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.

3130C. Landscape Architecture: Graphics III - Computer Applications

(241C) (Formerly offered as PLSC 241C.) First semester. Four credits. Three class periods and three 1-hour labs. Prerequisite: LAND 2120. Open to Landscape Architecture majors only. *Westa*

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.

3230W. Environmental Planning and Landscape Design

(290W) (Formerly offered as PLSC 290W.) Second semester. Three credits. Two class periods and one discussion period. Prerequisite: Open only with consent of instructor; ENGL 1010 or 1011 or 3800. *Schwab*

Theories, concepts and methods for sustainable design of the land to balance the needs for conservation and development. Topics include land use planning, ecological design, and cultural and natural landscape assessment at a variety of scales and settings.

3310. Landscape Architecture : Construction I - Site Engineering

(281) (Formerly offered as PLSC 281.) First semester. Four credits. Two class periods and two 2-hour studios. Prerequisite: LAND 2120. Open to Landscape Architecture majors only. *Alexopoulos*

Theory and practice in manipulating landform in landscape architecture. Earthwork computation, drainage systems, sedimentation and erosion control, roadway design and low-impact design.

3320. Landscape Architecture: Construction II - Materials and Methods

(280) (Formerly offered as PLSC 280.) Second semester. Four credits. Two class periods and two 2-hour studios. Prerequisite: LAND 3310. Open to Landscape Architecture majors only. *Westa*

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.

3420. Landscape Architecture: Design II - Space, Form and Meaning

(262) (Formerly offered as PLSC 262.) First semester. Five credits. Three class periods and three 2-hour studios. Open to Landscape Architecture majors only. Prerequisite: LAND 2410. *Miniutti*

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

(266) (Formerly offered as PLSC 266.) Second semester. Five credits. Three class periods and three 2-hour studios. Open to Landscape Architecture majors only. Prerequisite: LAND 3420. Field trips are required. *Alexopoulos*

Knowledge and theory of site design and planning with a focus on program analysis and development. Design of appropriate form and function through pre-cedent study and research on user and client needs, de-

velopment regulations and site context. Application of theory to a variety of project types and scales.

4294. Landscape Architecture: Theory V - Seminar

(293) (Formerly offered as PLSC 293.) Either semester. One credit. Open to Landscape Architecture majors only. Open only with instructor consent. Course may be repeated for credit.

Current topics in landscape architecture.

4330. Landscape Architecture: Construction III - Planting Design

(268) (Formerly offered as PLSC 268.) First semester. Four credits. Two class periods and two 2-hour studios. Open to Landscape Architecture majors only. Prerequisite: LAND 3320. *Schwab*

Knowledge and theory of the role of plants as visual, spatial, ecological and cultural design elements. Analysis and creation of planting plans that support and develop design concepts and respond to physical site conditions. Application of knowledge and theory by developing planting plans, models and databases for a variety of project types in a studio environment.

4340. Landscape Architecture: Theory IV - Professional Practice

(271) (Formerly offered as PLSC 271.) First semester. Three credits. Three class periods. Open to Landscape Architecture majors only. Prerequisite: LAND 2220. *Westa*

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

(276) (Formerly offered as PLSC 276.) First semester. Five credits. Three class periods and three 2-hour studios. Prerequisite: LAND 3430. Open to Landscape Architecture majors only. Field trips are required. *Schwab*

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.

4450. Landscape Architecture: Design V - Capstone

(267) (Formerly offered as PLSC 267.) Second semester. Five credits. Three class periods and three 2-hour studios. Prerequisite: LAND 4440. Open to Landscape Architecture majors only. Field trips required. *Miniutti*

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.

Latin American Studies (LAMS)

Interim Director, Center for Latin American and Caribbean Studies: Assistant Professor-in-Residence Tricia Gabany-Guerrero

Office: Room 4, Human Development Center

For major requirements, see the College of Liberal Arts and Sciences section of this *Catalog*. For information about courses on Latin America in other departments consult the list published by the Center before pre-registration each semester.

1190. Perspectives on Latin America

(190) Either semester. Three credits.

A multidisciplinary course including geography, indigenous peoples, colonization and nation formation; society, politics, economy, and

culture of contemporary Latin America and its place in today's world. CA 2. CA 4-INT.

1190W. Perspectives on Latin America (190W) Prerequisite: ENGL 1010 or 1011 or 3800. CA 2. CA 4-INT.

1193. Foreign Study (193) Either or both semesters. Credits and hours by arrangement. May be repeated for credit (to a maximum of 15). Consent of Director of Latin American and Caribbean Studies required before departure.

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.

3293. Foreign Study (293) Either or both semesters. Credits (to a maximum of 17) and hours by arrangement. Consent of Director of Latin American and Caribbean Studies required before departure. May count toward the major with consent of advisor.

Special topics taken in a foreign study program.

3575. Cinema and Society in Latin America (275) Either or both semesters. Variable credit up to a maximum of three credits. Hours by arrangement. With a change in content, this course may be repeated once for credit.

The aesthetic, social, and political significance of Latin American film.

3579. Latin America (284) Either semester. Credits and hours by arrangement. Open only with consent of instructor and director of the Center for Latin American and Caribbean Studies. This number covers courses in Latin American Studies taken at other Universities by special arrangement for University of Connecticut credit.

3607. Latin America in the Colonial Period (281) (Also offered as HIST 3607.) First semester. 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.

3609. Latin America in the National Period (282) (Also offered as HIST 3609.) Either semester. 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.

3635. Mexico in the Nineteenth and Twentieth Centuries (280) (Also offered as HIST 3635.) Either semester. Three credits. Recommended preparation: HIST 3607. *Overmyer-Velázquez*

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 Américas (233W) (Also offered as HIST 3660W and PRLS 3660W.) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher. Recommended preparation: PRLS 3210, LAMS 1190, ANTH 3042, HIST 3635, HIST 3609, or HIST 3674/PRLS 3220. Spanish useful, but not required. Instructor consent. *Gabany-Guerrero, Overmyer-Velázquez*

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.

3995. Special Topics (298) Either or both semesters. With a change in topic, may be repeated for credit.

3998. Variable Topics (295) Either semester. Three credits. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary.

3999. Independent Study (299) Either semester. Credits and hours by arrangement. Open only with consent of instructor. May be repeated for credit. Sponsored by the Center for Latin American and Caribbean Studies.

4994W. Latin American Studies Research Seminar (290W) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800; and instructor consent.

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.

Study Abroad. The University sponsors academic programs in Mexico at the Universidad de las Américas, Puebla; in the Dominican Republic, at the Pontificia Universidad Católica Madre y Maestra, Santiago de los Caballeros; at the University of Costa Rica, in San José, Costa Rica; at the Pontificia Universidad Católica de Chile and the Universidad de Chile, in Santiago, Chile; and at the Universidad de Buenos Aires, Argentina. Students may go for either a semester or a full academic year. The University also sponsors an academic year and a one-semester program in Brazil at the Universidade de São Paulo. For further information, contact the Center for Latin American and Caribbean Studies or the Study Abroad Office.

Linguistics (LING)

Head of Department: Associate Professor William Snyder

Department Office: Room 332, Arjona Bldg.

For major requirements, see the College of Liberal Arts and Sciences section of this *Catalog*.

1010. Language and Mind (101) Either semester. Three credits.

The special properties of human language and of the human mind that make verbal communication possible. Basic topics in the psychology of language. CA 1.

1020. Language and Environment (102) Second semester. Three credits. *Anderson*
The birth, spread, and death of languages. A basic survey of the effects of geography, society, and politics on language families. CA 2. CA 4-INT.

1030. The Diversity of Languages (103) Either semester. Three credits. *Calabrese, van der Hulst*

An overview of the languages of the world. Language families. Typological classifications of linguistic properties: what can we expect in a structure of a language? Unity and diversity in language systems. Mechanisms of language change and variation. Language myths and realities. CA 2. CA 4.

1793. Foreign Study (193) Either or both semesters. Credits and hours by arrangement. May be repeated for credit. Consent of Department Head or advisor may be required prior to the student's departure.

Special topics taken in a foreign study program.

1795. Special Topics Lecture (195) Either semester. Credits, prerequisites, and hours as determined by the Senate Curricula and Courses Committee. May be repeated for credit with a change in topic.

2010Q. The Science of Linguistics (110Q) Either semester. Three credits.

An introduction to linguistics as a science. Methods, findings and theory of linguistic research on the sound system and the structures of human language. The relation between structure and meaning. The basics of linguistic analysis. Applied linguistics. CA 3.

2020. Principles of Linguistics (202) Either semester. Three credits.

A survey of theory, methods and findings of linguistic research: the relation between sound and meaning in human languages; social variation in language; language change over time; universals of language; the mental representation of linguistic knowledge.

2850. Introduction to Sociolinguistics of the Deaf Community (150) Either semester. 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.

3110C. Experimental Linguistics (215C) Semester by arrangement. Three credits. Prerequisite: PSYC 1100 and LING 1010 or 2020; open to juniors or higher. *Lillo-Martin, Snyder*

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.

3120. Second Language Acquisition (225) Either semester. Three credits. Prerequisite: LING 1010, or 2020; open to juniors or higher. *Bar-Shalom*

The relationship between linguistic theory and second language acquisition. Effects of mother tongue and linguistic input. Pedagogical implications of second language acquisition research.

3310Q. Phonology (205Q) First semester. Three credits. Prerequisite: LING 2020; open to juniors or higher. *Calabrese, van der Hulst*

The analysis of sound patterns in language within a generative framework: distinctive features, segmental and prosodic analysis, word formation, the theory of markedness.

3510Q. Syntax and Semantics (206Q) Second semester. Three credits. Prerequisite: LING 1010 or 2020; open to juniors or higher. *Beck, Boskovic, Lasnik, Sharvit*

The analysis of form and meaning in natural languages in a Chomskyan framework: surface structures, deep structures, transformational rules, and principles of semantic interpretation.

3610W. Language and Culture (244W) First semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher. *Anderson, Bar-Shalom*

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.

3793. Foreign Study

(293) Either or both semesters. Credits and hours by arrangement. Prerequisite: Open to juniors or higher. 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 the consent of the advisor.

Special topics taken in a foreign study program.

3795. Special Topics

(298) Either semester. Credits and hours by arrangement. Prerequisites and recommended preparation vary; open to juniors or higher. With a change in content, may be repeated for credit.

3798. Variable Topics

(295) Either semester. Three credits. Prerequisites and recommended preparation vary; open to juniors or higher. With a change in topic, may be repeated for credit.

3799. Independent Study

(299) Either or both semesters. Credits and hours by arrangement. Prerequisite: Open to juniors or higher. May be repeated for credit.

3850. Cultural and Linguistic Variation in the Deaf Community

(250) Second semester. 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.

Management (MGMT)

Head of Department: Professor John E. Mathieu
Department Office: Room 336, School of Business

For major requirements, see the School of Business section of this *Catalog*.

Courses in this department are open to juniors and seniors only with the exception of MGMT 1801. The School of Business requires students at the Storrs campus to participate in the Mobile Computing Initiative before registering for the courses listed below. See the School of Business *Catalog* section for details about how this program operates. Students not participating in the initiative may be able to register MGMT 1801.

1801. Contemporary Issues in the World of Management

(198) Semester by arrangement. One credit. May be repeated in different sections, in combination with BADM 1801, up to a maximum of three credits. May not be used to satisfy Junior-Senior level major requirements of the School of Business.

3070W. Effective Business Writing

(270W) Either semester. One credit. Prerequisite: MGMT 3101, MKTG 3101 or FNCE 3101; ENGL 1010 or 1011 or 3800.

Designed to teach students techniques to improve their 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 cri-

tiques of their written assignments and will be required to revise their writing.

3072. Career Development in Business

(272) Either semester. One credit. Meeting once per week for one hour and fifty minutes for 6 weeks (first or second half of semester), plus 2 or 3 evenings or Saturday morning panel discussions. Prerequisite: Sixth or seventh semester standing. Open only to students in the School of Business.

Topics covered include: self-assessment, exploration of career information resources, informational interviewing, development of an individual career plan, development of job search strategies and skills, discussion of career transition issues, overview of the career life cycle, and introduction to career development in organizations.

3101. Managerial and Interpersonal Behavior

(201) Either semester. Three credits. Prerequisite or corequisite: ACCT 2001; ECON 1200 or both 1201 and 1202; ENGL 1010 or 1011 or 3800; MATH 1071 or 1122 or 1132; STAT 1000 or 1100; open to juniors or higher. Not open to students who have passed or are taking 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.

3225. International Business

(225) Semester by arrangement. Three credits. Prerequisite: FNCE 3101; OPIM 3104; MGMT 3101; MKTG 3101; open to juniors or higher.

An introduction to the basic problems of the manager making decisions involving international trade, payments, and investment. Through extensive use of actual case studies, the special features of decision-making within the multinational enterprise integrating business operations among national economics are given particular attention. Lecturer, discussion, and case analyses.

3230. Thinking, Acting, and Managing Entrepreneurially

(230) Semester by arrangement. Three credits. Prerequisite: ACCT 2001; ECON 1201 and 1202; ENGL 1010 or 1011 or 3800; MATH 1071 or 1122 or 1132; STAT 1000 or 1100; open to juniors or higher.

An exposure to the entrepreneurial process that is common and relevant in all business contexts – small, large, family, corporate, domestic, international, etc. – and equips them with the skills necessary to start and sustain this process.

3234. Opportunity Generation, Assessment, and Promotion

(234) Semester by arrangement. Three credits. Prerequisite: ACCT 2101; FNCE 3101; BLAW 3671 or 3175; OPIM 3103; MGMT 3101; MKTG 3101; open to juniors or higher. It is recommended that students take MKTG 3101 prior to or concurrent with MGMT 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.

3235. Venture Planning, Management, and Growth

(235) Semester by arrangement. Three credits. Prerequisite: ACCT 2101; FNCE 3101; BLAW 3671 or

3175; OPIM 3103; MGMT 3101; MKTG 3101; open to juniors or higher.

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.

3239. Managing a Diverse Workforce

(239) Semester by arrangement. Three credits. Prerequisite: Open to juniors or higher.

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.

3245. Managerial Behavior in Cross-Cultural Settings

(245) Semester by arrangement. Three credits. Prerequisite: Open to juniors or higher.

The objective of this course is to introduce the student to the work values and behaviors of individuals in countries around the world. Some of the topics presented in the cross-cultural comparisons discussed in this course will include: approaches to motivation, communication, decision making, and negotiation. Particular emphasis will be placed on the developed and developing parts of the world that are major players in today's global economy.

3250. Effective Management Presentations

(250) Semester by arrangement. Three credits. Open to Management majors only. Prerequisite: Open to juniors or higher.

Learn and practice communication skills required to deliver messages accurately, concisely, and convincingly, individually or in a team, in business scenarios. Overcome speech anxiety, identify audience and purpose, and work with visual aids to persuade, inform, and motivate.

4271. Venture Consulting

(291) Semester by arrangement. Three credits. Hours by arrangement. Prerequisite: Senior standing.

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.

4891. Field Study Internship

(289) Either or both semesters. One to six credits. Hours by arrangement. Prerequisite: Consent of instructor and Department Head; open to juniors or higher. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

Provides students with an opportunity for field work 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.

4893. Foreign Study

(293) Either or both semesters. Credits and hours by arrangement, up to a maximum of six credits. Consent of Department Head required, prior to the student's departure. Prerequisite: Open to juniors or higher.

Special topics taken in a foreign study program.

4895. Special Topics

(298) Semester by arrangement. Credits and hours by arrangement. Prerequisite: Announced separately for each offering; open to juniors or higher. With a change in content, may be repeated for credit.

Classroom course in special topics in management as announced in advance for each semester.

4899. Independent Study

(299) Either or both semesters. Credits by arrangement, not to exceed six in any semester. Prerequisite: Open to juniors or higher, open only with consent of instructor.

Individual study of special topics in management as mutually arranged between a student and an instructor.

4900. Strategy, Policy and Planning

(290) Either semester. Three credits. Prerequisite or corequisite: ACCT 2101; FNCE 3101; OPIM 3103 and 3104 (or CSE 1100 and MEM 2211 for MEM majors); MGMT 3101; MKTG 3101; and either BLAW 3671 or 3175. Open only to School of Business students with senior class standing. Not open to students who have passed or are taking MGMT 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.

4902. Strategic Analysis

(292) Both semesters. Three credits. Prerequisite or corequisite: ACCT 2101; FNCE 3101; OPIM 3103 and 3104; MGMT 3101; MKTG 3101; and either BLAW 3671 or 3175. Open only to Business students with senior class standing. Not open for credit to students who have passed or are taking MGMT 4900.

Technology is having a profound affect on the rules by which firms plan, organize, and compete. By simulating applications of strategic frameworks in cases, readings, and classroom discussion, this course introduces students to methods that will improve their ability to judge the viability of firm's strategy, and recommend improvements. As such, it builds a valuable knowledge base that is relevant for managing, venturing, going-concern judgments, and investing.

4997. Senior Thesis in Management

(296) Either semester. Three credits. Hours by arrangement. Prerequisite: Open to juniors or higher, open only to Management Department Honors Students with consent of instructor and Department Head.

Management and Engineering for Manufacturing (MEM)

Co-Directors: School of Business: Lakshman S.

Thakur, Associate Professor

School of Engineering: Robert G. Jeffers, Associate Professor

1151. Introduction to Management and Engineering for Manufacturing Program

(151) Second semester. Three credits.

Introduction to the goals of engineering and management for manufacturing enterprises. 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

(210) Either semester. One credit. One and one-half hours of laboratory per week.

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

(211) Second semester. Three credits. Prerequisite: STAT 1100QC.

Overview of manufacturing operations management and the systems used in controlling manufacturing enterprises including the concepts of global competition and manufacturing as a competitive weapon.

3221. Introduction to Products and Processes

(221) First semester. 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

(231) Second semester. Three credits. Prerequisite: ECE 3002 and MEM 2211, which may be taken concurrently.

The utilization of computers and information systems in manufacturing, with special emphasis placed on Computer Integrated Manufacturing (CIM). The study of actual CIM applications will be incorporated.

3281. Manufacturing Internship

(296) One or more summer semesters. No credits. Hours by arrangement. Prerequisite: Consent of instructor and MEM program director. May be repeated. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

This course is 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.

4225. Advanced Products and Processes

(225) First semester. 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.

4915W. Advanced Manufacturing Systems

(215W) Second semester. Four credits. Two three-hour laboratory periods. Prerequisite: ME 3221 and MEM 2211; ENGL 1010 or 1011 or 3800.

Capstone design course for the MEM Program. Design applications involving construction and analysis of manufacturing system models. Students submit write-ups for several small projects. One large project is completed by all students in the course, with a written report and oral presentation. Projects incorporate major concepts studied in prior courses.

Marine Sciences (MARN)

Department Head: Professor Ann Bucklin

Department Office: Marine Sciences, Avery Point

For major requirements, see the College of Liberal Arts and Sciences section of this *Catalog*.

1001. The Sea Around Us

(135) Second semester. Three credits. *P. Kremer*

The relationship of humans with the marine environment. Exploitation of marine resources, development and use of the coastal zone, and the impact of technology and pollution on marine ecosystems. CA 3.

1002. Introduction to Oceanography

(170) Either semester. Three credits. Three class periods per week and two afternoon cruises per semester. A background in secondary school physics, chemistry or biology is recommended. Not open to students who have passed MARN 1003.

Processes governing the geology, circulation, chemistry and biological productivity of the world's oceans. Emphasis is placed on the interactions and interrelationships between physical, chemical, biological and geological processes that contribute to both the stability and the variability of the marine environment. A fee of \$10 is charged for this course. CA 3.

1003. Introduction to Oceanography with Laboratory

(171) First semester (Avery Point). Four credits. Three hours lecture and one three-hour laboratory per week. Recommended preparation: A background in secondary school physics, chemistry or biology. Not open to students who have passed MARN 1002. *Whitney*

Processes governing the geology, circulation, chemistry and biological productivity of the world's oceans. Emphasis on the interactions and interrelationships of 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 including required cruise on research vessel. CA 3-LAB.

1004. Oceanography Laboratory

(172) Either semester. One credit. One three-hour laboratory per week. 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, biological, and geological processes and their interaction in the marine environment.

2002. Coastal Systems Science I

(210) Second semester (Avery Point). Three credits. Prerequisite: MARN 1002 or 1003 and any two of the following: BIOL 1107, 1108, CHEM 1127Q, 1128Q, PHYS 1201Q, 1202Q, 1401Q, 1402Q. *McManus*

Biological, chemical, physical, and geological structure and function of coastal systems; a worldwide survey with emphasis on important coastal habitats and processes.

3000. The Hydrosphere

(200) Either semester. Three credits. *Vlahos*

Interactions of the hydrological, chemical and biological components of the hydrosphere. Transport, reservoirs and dynamics of water in environmental systems.

3001. Coastal Systems Science II

(211) First semester (Avery Point). Four credits. Three hours lecture and three hours laboratory. Prerequisite: MARN 1002 or 1003 and any two of the following: BIOL 1107, 1108; CHEM 1127Q, 1128Q; PHYS 1201Q, 1202Q, 1401Q, 1402Q. *Ward*

Biological, chemical, physical and geological structure and function of coastal systems; a worldwide survey with emphasis on important coastal habitats and processes.

3003Q. Environmental Reaction and Transport

(220Q) Second semester. Four credits. Prerequisite: CHEM 1127 and one additional semester of CHEM, BIOL or PHYS; one semester of calculus (MATH 1110, 1120, 1131, or 1151) or concurrent enrollment in Calculus (1110, 1131, 1151). *Torgersen*

An introduction to the chemical/biological reactions and transport dynamics of environmental systems. Mass balances, elementary fluid mechanics and the coupled dynamics of lakes, rivers, oceans, groundwater and the atmosphere as biogeochemical systems.

3012. Marine Invertebrate Biology: Adaptations and Community Structure

(241) First semester (alternate years). Three credits. Prerequisites: BIOL 1107 and 1108. Recommended preparation: MARN 1002 or 1003 or instructor consent. *Ward*

Comparative examination of major adaptations and functional responses of marine invertebrates to biotic and abiotic factors in the marine environment. Field trips required.

3013. Environmental Physiology of Marine Animals

(242) First semester (alternate years). Three credits. Prerequisites: BIOL 1107 and 1108. Recommended preparation: MARN 1002 or 1003 or instructor consent. *Ward*

Introduction to the study of marine environmental physiology; behavioral and physiological adaptations of marine animals to different environments (intertidal, estuarine, coastal, oceanic); compensatory responses to changing ambient conditions; and basic animal energetics. Laboratory exercises focus on food consumption, energy transformations, and principles of physiological measurement.

3014. Marine Biology

(294) (Also offered as EEB 3230.) First semester (Storrs) second semester (Avery Point). Three credits. Two class periods and one 2-hour laboratory period. Prerequisite: One year of laboratory biology. *Whitlatch/Storrs, McManus/Avery Point*

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. A fee of \$10 is charged for this course.

3015. Molecular Approaches to Biological Oceanography

(265) First semester. Three credits. Two-hour lecture, three-hour lab. Recommended preparation: one of BIOL 1108, MARN 4010, MCB 3010. *Lin*

Principles and technology in nucleic acid purification and manipulation, DNA fingerprinting, gene cloning and sequencing, phylogenetic analysis, and detection of gene expression (mRNA and protein). Application examples in marine ecological studies.

3016. Marine Microbiology

(236) (Also offered as MCB 3636.) First semester (Avery Point) second semester (Storrs). Three credits. Two lecture-discussion class periods and one 2-hour laboratory period for which field trips may be substituted. Prerequisite: MCB 2610 or instructor consent. *Visscher*

A general survey of the taxonomy, physiology and ecology of marine microorganisms.

3017. Plankton Ecology

(267) First semester. Three credits. Two 50 minute lectures and one 3 hour lab/recitation period. Prerequisites: MATH 1060Q or 1131, PHYS 1201Q or 1401Q, CHEM 1122 or equivalent, BIOL 1107 and 1108. Recommended preparation: MARN 1002. Consent of instructor for graduate students in lieu of requirements. Students who have taken both MARN 5014 and MARN 5016 cannot take this course for credit. *Dam*

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

(282) First semester (alternate years). Three credits. Two class periods, 1 two-hour lab period. Required preparation: BIOL 1107, 1108 and CHEM 1127-1128 or instructor consent. *Visscher*

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

(230) First semester (Avery Point). Three credits. Prerequisite: MARN 2002 and 3001; MATH 1120 or 1131 or 1110 or 1151. *Bohlen*

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.

3061. Environmental Fluid Dynamics

(235) First semester. Three credits. Recommended preparation: PHYS 1202 or 1402 or 1502 or 1602; and MATH 2130 (may be taken concurrently).

Introduction to fluid dynamics with applications to coastal waters, estuaries, rivers, lakes, and ground water flows. Topics include waves, tides turbulence, mixing, drag, lift, effects on organisms, and wind driven circulation.

3230. Beaches and Coasts

(203) (Also offered as GEOL 3230.) First semester (Avery Point). Three credits. Prerequisite MARN 1002 or 1003 or GEOL 1050 or 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.

3244. Coastal Ecology

(244) Joint program with Mystic Marineline Aquarium. Summer. Three credits. Offered at Mystic Marineline Aquarium. Prerequisite: One year college laboratory biology and permission of instructor.

A special introductory course providing students with theoretical as well as practical knowledge of ecological sampling techniques, estuarine productivity, and selected continental shelf communities. Laboratory portion of this course consists of a 5-day study cruise in coastal New England waters. (Special registration and fee: contact Mystic Marineline Aquarium, Mystic, CT 06355. 860-536-4208.)

3505. Remote Sensing of Marine Geography

(Also offered as GEOG 3505.) First semester. 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.

3801W. Coastal Studies Seminar

(255W) Second semester (Avery Point). Two credits. Prerequisite: MARN 2002 and 3001 or instructor consent; ENGL 1010 or 1011 or 3800. *Kremer*

Scientific analysis of coastal zone issues and their interdisciplinary implications. Written analysis and discussion of primary literature.

3811. Seminar on Marine Mammals

(240) Joint program with Mystic Marineline Aquarium. First semester. Three credits. One 3-hour class period; one field trip. Offered at Mystic Marineline Aquarium. Prerequisite: one year college laboratory biology and permission of instructor.

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 and fee: Contact Mystic Marineline Aquarium, Mystic, CT 06355. 860-572-5955.)

3899. Independent Study

(299) Either or both semesters. Credits and hours by arrangement. Open only with consent of instructor. May be repeated for credit.

4001C. Measurement and Analysis in Coastal Ecosystems

(212C) First semester (Avery Point). Four credits. Two 1-hour lectures and two 3-hour laboratories. Required field trips. Prerequisite: Both MARN 2002 and 3001, or instructor consent. *Mason*

Examination of oceanographic processes in local coastal systems; collection and analyses of samples from field trips and lab experiments; data analysis using computers.

4002. Science and the Coastal Environment

(256) Second semester (Avery Point). Three credits. Prerequisite: MARN 2002, 3001, and 4001; or at least two (2) of the following: MARN 4060, 4050W, and 4030W. *J. Kremer*

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

(260) Second semester. Three credits. Prerequisite: MARN 4060 and MARN 4030W (both may be taken concurrently) or instructor consent. Open only with permission of department head. *Dam, Lin, Visscher*

An advanced course in biological processes in oceanic and coastal waters. Emphasis is on empirical and theoretical concepts of marine ecosystem dynamics, primary and secondary production and detrital cycling.

4030W. Marine Biogeochemistry

(280W) First semester. Three credits. Two 1-hour lectures. Prerequisite: CHEM 1128, MATH 1122 or 1132, PHYS 1202 or equivalents; ENGL 1010 or 1011 or 3800. *Fitzgerald*

Composition, origin and solution chemistry of sea water. Marine biogeochemical cycles of water, salt, carbon, nutrients, gases and trace elements. Effects of ocean circulation, biological cycles and crustal exchanges on the distribution and transfer of substances in the marine environment.

4050W. Geological Oceanography

(275W) First semester. Three credits. Prerequisite: One year of laboratory science in CHEM, GEOL, MARN and/or PHYS or instructor consent; ENGL 1010 or 1011 or 3800. *Torgersen*

Basic concepts in geological oceanography, plate tectonics and the role of ocean floor dynamics in the control of the Earth and ocean system.

4060. Descriptive Physical Oceanography

(270) First semester. Three credits. Prerequisite: PHYS 1202, 1402, 1502 or 1602; MATH 1122 or 1132. *Whitney*

Ocean basin characteristics, properties of sea water, distribution of water masses, oceanic and atmospheric circulation, waves, tides, near-shore circulation, methods and instrumentation.

4891. Internship in Marine Sciences

(297) Either semester. Variable credits. With a change in topic, may be repeated for credit, not to exceed 3 credits. Recommended preparation: Nine credits of MARN courses at the Junior - Senior level. Consent of Instructor. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

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.

4893. Foreign Study

(293) Either semester. Credits and hours by arrangement. May be repeated for credit. Consent of Department Head required prior to the student's departure for foreign site.

Special topics in Marine Sciences taken in a foreign study program.

4895. Special Topics

(298) Either semester. Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary.

4896W. Senior Research Thesis

(295W) Either semester. Three credits. Hours by arrangement. Prerequisite: Three credits of MARN 3899, which may be taken concurrently; ENGL 1010 or 1011 or 3800. Recommended preparation; MARN 3801W. Open only with consent of instructor. Not limited to honors students.

Senior thesis reflecting independent research.

4898. Variable Topics

(296) Either semester. Variable credits: one to three. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary.

Maritime Studies (MAST)

Program Coordinator: Professor Helen Rozwadowski
Office: Avery Point Campus, Academic Building, First Floor

For major requirements, see the College of Liberal Arts and Sciences section of this *Catalog*.

1101. Introduction to Maritime Studies

(101) First semester (Avery Point). Three credits.

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.

2995. Special Topics Lecture

(195) Either semester. Credits, prerequisites, and hours as determined by the Senate Curricula and Courses Committee. May be repeated for credit with a change in topic.

3991. Supervised Internship in Maritime Studies

(290) Either semester. Credits, not to exceed 3, and hours by arrangement. Prerequisite: completion of 9 credits of Maritime Studies core courses, and consent of the program coordinator. May be repeated for credit with change in content and program coordinator's consent.

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.

3995. Special Topics

(298) Either semester. Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary.

3998. Variable Topics

(295) Either semester. Three credits. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary.

4994W. Maritime Studies Capstone Seminar

(297W) Second semester (Avery Point). Three credits. Prerequisite: MAST 1101, MARN 1001; open only to Maritime Studies majors; ENGL 1010 or 1011 or 3800.

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

(299) Either or both semesters. Credits and hours by arrangement. May be repeated for credit with a change in subject matter. Open only with consent of instructor.

Marketing (MKTG)

Head of Department: Professor Robin Coulter
Department Office: Room 349, School of Business

For major requirements, see the School of Business section of this *Catalog*. The School of Business requires students at the Storrs campus to participate in the Mobile Computing Initiative before registering for the courses listed below. See the School of Business *Catalog* section for details about how the program operates.

3101. Introduction to Marketing Management

(201) Either semester. Three credits. Prerequisite: ACCT 2001; ECON 1200 or both 1201 and 1202; ENGL 1010 or 1011 or 3800; MATH 1071, or 1122 or 1132; STAT 1000 or 1100. Not open to students who have passed or are taking BADM 3750.

An introduction to the marketing system, its foundations and institutions. Students are exposed to product, promotion, price, distribution decision areas, strategic alliances, relationship marketing, and total marketing quality.

3208. Consumer Behavior

(208) Either semester. Three credits. Prerequisite: MKTG 3101. Not open for credit to students who have passed, or are currently enrolled in, MKTG 3209.

The analysis of consumer decision processes as they relate to marketing management decision areas. Several models of consumer behavior are studied as are the psychological phenomena of learning, motivation, and attitude development, and the sociological influences of social class, reference groups and culture.

3209. Industrial Buyer Behavior

(209) Either semester. Three credits. Prerequisite: MKTG 3101. Not open for credit to students who have passed, or are currently enrolled in, MKTG 3208.

Provides an analysis of industrial markets and develops the tools required to thoroughly analyze these markets for marketing strategies. Differences between consumer and industrial products and services will be emphasized. Emphasis will be on high technology products and services.

3260. Marketing Research

(280) Either semester. Three credits. Prerequisite: MKTG 3101 and OPIM 3103.

Covers strategies and techniques for obtaining and using market information from consumer and business-to-business markets. Emphasis on: translating managerial problems into research questions, designing research, selecting alternate research methods, and analyzing and interpreting market research data. Students gain hands on, computer based experience in analyzing market data.

3362. Marketing Planning and Strategy

(282) First or second semester. Three credits. Prerequisite: MKTG 3101, 3208 or 3209, 3260, and senior class standing.

The application of a systems approach to the evaluation of opportunity and to the solution of major problems from the perspective of the top marketing executive. Emphasis is placed on the analysis and synthesis of marketing programs to determine the appropriate marketing mix for various business enterprises.

3370. Global Marketing Strategy

(270) First or second semester. Three credits. Prerequisite: MKTG 3101; MKTG 3208 or 3209; MKTG 3260 and senior class standing.

A study of the marketing concepts and analytical processes used in the development of programs in international markets. Emphasizes comparative differences in markets, marketing functions, and political considerations. It includes the application of a systems approach to the evaluation of opportunity and to the solution of major global marketing problems. Emphasis is placed on the analysis and synthesis of marketing programs to determine the appropriate marketing mix for various international business enterprises.

3452. Professional Selling

(252) Either semester. Three credits. Prerequisite: MKTG 3101 or BADM 3750; open to juniors or higher.

Focuses on the tactical and strategic aspects of the professional selling process with particular emphasis upon managing the complex sale. Topics include account entry strategies, effective investigative techniques, objection prevention, the client decision process, negotiation skills, and account development strategies. Learning tools will include: participant interaction, role plays, work groups, and case studies.

3453. Advanced Professional Sales

(253) Either semester. Three credits. Prerequisite: MKTG 3101 or BADM 3750 and MKTG 3452 and consent of instructor; open to juniors or higher.

Focuses on three major issues: using current technology to maximize sales efforts' effectiveness and efficiency, introducing the concepts of Customer Relationship Management (CRM) and team selling concepts and practices. As an experiential course, its focus is on using the tools to enhance the selling process and includes such topics as: consumer databases, communicating with diverse and widely distributed customers efficiently, using CRM technology, concepts of team selling and expanding on the concepts mastered in Professional Sales I. Learning tools will include: work groups, case studies, and special projects and a team selling role-play.

3454. Sales Management and Leadership

(254) Either semester. Three credits. Prerequisite: MKTG 3101 or BADM 3750 and MKTG 3452; open to juniors or higher.

Focuses on two major areas: the activities and problems of sales force management (with particular emphasis placed on organizing the sales force, recruiting, training, compensation, motivation, forecasting, territory design, evaluation, and control) and the distinction between management and leadership (with emphasis on the common characteristics of well-known leaders and how they developed into leadership roles). Learning tools include: interaction, experiential learning (actual management of a student sales force), work groups, case studies, and special projects and presentations.

3625. Integrated Marketing Communications

(225) Either semester. Three credits. Prerequisite: MKTG 3101 or BADM 3750; open to juniors or higher. Not open to students who have passed or are currently enrolled in COMM 4800.

The design, coordination, integration, and management of marketing communications. The course focuses on advertising and sales promotion with an emphasis on the competitive and strategic value of communications in the market place.

3627. Product and Price Policies

(227) First or second semester. Three credits. Prerequisite: MATH 1071 or 1122 or 1132; STAT 1000QC or 1100QC; MKTG 3101 or BADM 3750; open to juniors or higher.

Consideration in depth of the product and price variables as elements of marketing strategy and tactics. Emphasis will be placed on conceptual as well as

decision-making aspects. The roles of technology, social change, innovation and creativity are included in the treatment of product. Institutional, behavioral, governmental and economic factors are included in the treatment of price.

3661. Database Marketing

(281) Either semester. Three credits. Prerequisite: MKTG 3260.

The course introduces students to the concepts, technology and quantitative tools for creating, maintaining and exploiting customer databases. The course will have a strong hands-on methodological orientation with emphasis on applications involving real customer data. Students will learn about quantitative tools including those used for experimentation in test markets and measurement of customer lifetime value. Applications will include prospecting, market segmentation and targeting, product customization, cross-selling, brand equity, customer loyalty programs, and valuation of customers. The applications will span several different types of businesses including online retailing, financial services, high tech services, and traditional catalogue companies.

3665. Marketing on the Internet

(265) First and/or second semester. Three credits. Prerequisite: MKTG 3101 or BADM 3750.

Topics include comparisons of business models in physical space and cyberspace and integration of marketing efforts among the world-wide-web, and other means of communications, distribution, and selling. This course relies on the Internet as a teaching tool. Students need access to a computer with an Internet Browser.

4891. Professional Practice in Marketing

(289) Either or both semesters. One to three credits. Hours by arrangement. Prerequisite: completion of Freshman - Sophomore level School of Business requirements and consent of instructor and Department Head. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

Provides students with an opportunity for supervised field work in relevant major areas within the Department. Students will work with one or more professionals in the field of marketing. Student performance will be evaluated on the basis of an appraisal by the field supervisor and a detailed written report submitted by the student.

4893. Foreign Study

(293) Either or both semesters. Credits and hours by arrangement, up to a maximum of six credits. Consent of Department Head required, prior to student's departure.

Special topics taken in a foreign study program.

4895. Special Topics

(298) Either semester. Credits and hours by arrangement. Prerequisite: Announced separately for each offering. With a change in content, may be repeated for credit.

Classroom course in special topics as announced in advance for each semester.

4899. Independent Study

(299) Either or both semesters. Credits by arrangement, not to exceed six in any semester. Open only with consent of instructor and Department Head.

Individual study of special topics as mutually arranged between student and instructor.

4997. Senior Thesis in Marketing

(296) Either semester. Three credits. Hours by arrangement. Prerequisite: Open only to Marketing Department Honor Students with consent of instructor and Department Head.

Materials Science and Engineering (MSE)

Program Director: Professor Mark Aindow
Department Office: Room 111, Institute of Materials Science Building

For major requirements, see the School of Engineering section of this *Catalog*.

2001. Introduction to Structure, Properties, and Processing of Materials I

(243) First semester. 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

(244) Second semester. 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

(284) Second semester. One credit. Prerequisite: MSE 2002, which may be taken concurrently. One 3-hour laboratory period.

Principles of materials properties, processing and microstructure will be illustrated by experiments with qualitative and quantitative microscopy, mechanical testing, thermal processing, plastic deformation and corrosion. Materials design and selection criteria will be introduced by studying case histories from industry and reverse engineering analyses.

2101. Materials Science & Engineering I

(201) Both semesters. 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.

3001. Applied Thermodynamics of Materials

(256) First semester. 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

(255) Second semester. 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

(265) First semester. 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

(266) Second semester. 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

(207) Second semester. 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. Physical Ceramics

(229) Semester and hours by arrangement. Three credits. Prerequisite: MSE 2002 and PHYS 1502.

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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

(230) Either semester by arrangement. 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

(232) Semester by arrangement. 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.

3055 Materials Processing and Microstructures Laboratory

(286) First semester. One credit. Prerequisite: MSE 2053. Corequisite: MSE 3003. One 3-hour laboratory period.

Illustrative processing, microstructural characterization and control. As-cast, wrought, and solutionized non-ferrous alloys, dendritic, non-dendritic, and eutectic microstructures. Heat-treated ferrous alloys. Composites. Powder metallurgy-processed, and weld microstructures.

3056. Mechanical Behavior Laboratory

(285) Second semester. One credit. Prerequisite: MSE 3004, which may be taken concurrently. Three hour laboratory.

Characterization of mechanical properties of materials and fundamentals of materials deformation and fracture processes will be experienced through hands-on projects with tensile, rheological, cyclic, and high temperature testing; drawing; forging; extrusion; rolling; and hot pressing.

3152. Materials Science & Engineering Lab

(202) Both semesters. One credit. One 3-hour laboratory period. Prerequisite: MSE 2101, which may be taken concurrently.

Experiments will illustrate the relationships between processing, properties and microstructure for common industrial materials. Topics include sample preparation techniques, quantitative metallography, x-ray diffraction, light and electron microscopy, tensile and fatigue testing, phase transformations, heat treatment, corrosion.

4001. Electrical and Magnetic Properties of Materials

(267) First semester. Three credits. Prerequisite: PHYS 1502Q and MSE 2001; or MSE 2101.

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

(236) Semester by arrangement. Three credits. Two class periods and, every other week, a 3-hour laboratory period. Laboratory sections in addition to those initially listed will be arranged. 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.

4003W. Materials Characterization

(236W) Prerequisite: MSE 2001 or 2101; ENGL 1010 or 1011 or 3800.

4004. Thermal/Mechanical Processing of Materials

(276) Second semester. Three credits. Prerequisite: MSE 3004, 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

(277) Second semester. Three credits. Prerequisite: MSE 3001 and 3002.

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

(219) Either semester. Three credits. Prerequisite: MSE 2001 or 2101. *Kattamis*

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

(234) Semester by arrangement. 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

(238) Second semester by arrangement. Three credits. Prerequisite: MSE 3002 and 3003.

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.

4095. Special Topics in Materials Engineering

(298) Both semesters. Variable (1-3) credits. Prerequisite: Consent of instructor. With a change in topic this course may be repeated for credit.

4240. Nanomaterials Synthesis and Design

(260) Either semester. 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

(261) Either semester. 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.

4901. Capstone Design Project I

(287) Either semester. Two credits. Six hours practicum. Prerequisite: MSE 3002 and 3004, which may be taken concurrently.

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.

4902W. Capstone Design Project II

(288W) Either semester. Two credits. Six hours practicum. Prerequisite: MSE 4901; ENGL 1010 or 1011 or 3800.

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.

4989. Introduction to Research

(299) Both semesters. Credits and hours by arrangement. Prerequisite: Consent of instructor. With a change in topic this course may be repeated for credit. Some sections of this course are graded Satisfactory/Unsatisfactory.

Methods of research and development. Laboratory investigation. Correlation and interpretation of experimental results. Writing of technical reports.

Mathematics (MATH)

Head of Department: Professor Michael Neumann
Department Office: Room 123, Mathematical Sciences Building

For major requirements, see the College of Liberal Arts and Sciences section of this *Catalog*.

1010. Basic Algebra with Applications

(101) Either semester. Three credits. Not open to students who have passed any Q-course. Strongly recommended as preparation for Q-courses for students with a weak algebra background. This course does not count toward the minimum credit requirement for graduation.

Polynomials, exponents, Cartesian coordinate system, linear and quadratic equations, inequalities.

1011Q. Introductory College Algebra and Mathematical Modeling

(104Q) Both semesters. Three credits. Five class periods. Not open for credit to students who have passed MATH 1010, or any Q course. Strongly recommended as preparation for Q courses for students whose high school algebra needs reinforcement.

The course 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.

1020Q. Problem Solving

(102Q) Either semester. Three credits. Recommended preparation: MATH 1010, 1011 or the equivalent. Not eligible for course credit by examination. Not open for credit to students who have passed any mathematics course other than MATH 1010, 1011, 1030, 1040, 1050, 1060, or 1070. *Vinsonhaler*

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.

1030Q. Elementary Discrete Mathematics

(103Q) Either semester. Three credits. Recommended preparation: MATH 1010, 1011 or the equivalent. Not open for credit to students who have passed any mathematics course other than MATH 1010, 1011, 1020, 1040, 1050, 1060 or 1070.

Problem solving strategies, solutions of simultaneous linear equations, sequences, counting and probability, graph theory, deductive reasoning, the axiomatic method and finite geometries, number systems.

1040Q. Elementary Mathematical Modeling

(107Q) Either semester. Three credits. Recommended preparation: MATH 1010, 1011 or the equivalent. Not

open to students who have passed any mathematics course other than MATH 1010, 1011, 1020, 1030, 1050, or 1070. This course and MATH 1060 cannot both be taken for credit. This course should not be considered as adequate preparation for MATH 1071, 1120, 1131, or 1151.

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.

1050QC. Mathematical Modeling in the Environment

(108QC) Either semester. Three credits. Recommended preparation: MATH 1010, 1011 or the equivalent. A solid background and good performance in high school algebra are highly recommended.

An interdisciplinary approach to environmental issues, such as: ground water contamination, air pollution, and hazardous materials handling. Emphasis on mathematical models, social and ethical implications, and physical and chemical principles. Includes a spread sheet program for water and air pollution data; a computer modeling package to analyze hazardous materials emergencies; creative use of the internet and field research. CA 3.

1060Q. Precalculus

(109Q) Either semester. Three credits. Recommended preparation: MATH 1010, 1011 or the equivalent. Not open for credit to students who have passed MATH 1120, 1131, or 120. Students may not receive credit for this course and 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

(105Q) Either semester. Three credits. Recommended preparation: MATH 1010, 1011 or the equivalent.

Linear equations and inequalities, exponents and logarithms, matrices and determinants, linear programming. Applications.

1071Q. Calculus for Business and Economics

(106Q) Either semester. Three credits. (One credit for students who have passed MATH 1121, 1131, 120, or 1151.) Recommended preparation: MATH 1010, 1011 or the equivalent and MATH 1070. Not open for credit to students who have passed MATH 1110.

Derivatives and integrals of algebraic, exponential and logarithmic functions. Functions of several variables. Applications.

1110Q. A Survey of Calculus with Applications I

(118Q) Either semester. Three credits. Recommended preparation: MATH 1010, 1011 or the equivalent. Not open for credit to students who have passed MATH 1071, 1121, 1131, or 120 or 1151.

Derivatives and integrals of elementary functions including the exponential and logarithm functions; applications include optimization, marginal functions, exponential growth and decay, compound interest.

1120Q. Introductory Calculus I

(112Q) Either semester. Four credits. Four class periods. Recommended preparation: MATH 1010, 1011 or the equivalent. Students cannot receive credit for MATH 1120 and either MATH 1131, 120, or 1151. Students who have not passed the Calculus Placement Survey take this course rather than MATH 1131 or 120.

Limits, derivatives, and extreme values of algebraic functions, with supporting algebraic topics.

1121Q. Introductory Calculus 2

(113Q) Either semester. Four credits. Four class periods. Prerequisite: MATH 1120. Recommended preparation: A grade of C- or better in MATH 1120. Students cannot receive credit for MATH 1121 and either MATH 1131, 120, or 1151. May be used in place of MATH 1131 or 120 to fulfill any requirement satisfied by MATH 1131 or 120.

Limits, derivatives, and extreme values of trigonometric functions, with supporting trigonometric topics; anti-derivatives of algebraic and trigonometric functions; the definite integral and applications.

1122Q. Introductory Calculus 3

(114Q) Either semester. Four credits. Four class periods. Prerequisite: MATH 1121. Recommended preparation: A grade of C- or better in MATH 1121. Note: MATH 1131 is not adequate preparation for MATH 1122. Not open for credit to students who have passed MATH 1132, 121, or 1152.

The transcendental functions, formal integration, polar coordinates, infinite sequences and series, lines and planes in three dimensions, vector algebra.

1131Q or QC. Calculus I

(115Q or QC) Either semester. Four credits. Four class periods. Prerequisite: Passing score on the Calculus Placement Survey. Students cannot receive credit for MATH 1131 and either MATH 1120, 1121, 120, or 1151. Suitable for students with some prior calculus experience. May be used in place of MATH 1120, 120, or 1151 to fulfill any requirement satisfied by MATH 1120, 120, or 1151.

Limits, continuity, differentiation, antidifferentiation, definite integrals, with applications to the physical and engineering sciences. Sections with QC credit integrate computer-laboratory activity.

1132Q or QC. Calculus II

(116Q or QC) Either semester. Four credits. Four class periods. Prerequisite: MATH 1121, 1131, or 1151, or advanced placement credit for calculus (a score of 4 or 5 on the Calculus AB exam or a score of 3 on the Calculus BC exam). Recommended preparation: A grade of C- or better in MATH 1121 and 1131. Not open to students who have passed MATH 1122, 121, or 1152. Substitutes for MATH 1122 or 121 as a requirement.

Transcendental functions, formal integration, polar coordinates, infinite sequences and series, vector algebra and geometry, with applications to the physical sciences and engineering. Sections with QC credit integrate computer-laboratory activity.

1151Q. Honors Calculus I

(135Q) (Formerly offered as MATH 120Q) First semester. Four credits. Prerequisite: Passing score on the Calculus Placement Survey. Students cannot receive credit for MATH 1151 and either MATH 1121, 1131, or 120. May be used in place of MATH 1131 to fulfill any requirement satisfied by MATH 1131.

The subject matter of MATH 1131 in greater depth, with emphasis on the underlying mathematical concepts.

1152Q. Honors Calculus II

(136Q) (Formerly offered as MATH 121Q) Both semesters. Four credits. Prerequisite: MATH 1151 or advanced placement credit for calculus (a score of 4 or 5 on the calculus AB examination or a score of 3 on the Calculus BC examination) or consent of instructor. Students cannot receive credit for MATH 1152 and either MATH 1122, 1132, or 121. May be used in place of MATH 1132 to fulfill any requirement satisfied by MATH 1132.

The subject matter of MATH 1132 in greater depth, with emphasis on the underlying mathematical concepts.

1793. Foreign Study

(193) Either or both semesters. Credits and hours by arrangement. 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.

1795Q. Special Topics Lecture

(195Q) Either semester. Credits, prerequisites, and hours as determined by the Senate Curricula and Courses Committee. Recommended preparation: MATH 1010 or equivalent. May be repeated for credit with a change in topic.

2010Q-2011Q. Fundamentals of Algebra and Geometry

(247Q-248Q) Either semester. Three credits each semester. Prerequisite: PSYC 1100 and three credits of Mathematics other than MATH 1010. Not open for credit to students who have passed MATH 2110, 2410, 220, 2130, or 2143. This course may not be counted in any of the major groups described in the Mathematics Departmental listing.

The development of the number system with applications to elementary number theory and analytic geometry. This course is recommended for students in elementary education.

2110Q. Multivariable Calculus

(210Q) Either semester. Four credits. Four class periods. Prerequisite: MATH 1132, or 1152 or a score of 4 or 5 on the Advanced Placement Calculus BC exam. Recommended preparation: A grade of C- or better in MATH 1132. Not open for credit to students who have passed MATH 220 or 2130 or 2143.

Two- and three-dimensional vector algebra, calculus of functions of several variables, vector differential calculus, line and surface integrals.

2130Q. Honors Multivariable Calculus

(230Q) (Formerly offered as MATH 220Q.) Both semesters. Four credits. Prerequisite: MATH 1152 or advanced placement credit for one year of calculus (a score of 4 or 5 on the Calculus BC examination) or consent of instructor. Not open to students who have passed MATH 2110 or 2143. May be used in place of MATH 2110 to fulfill any requirement satisfied by MATH 2110.

The subject matter of MATH 2110 in greater depth, with emphasis on the underlying mathematical concepts.

2141Q-2142Q. Advanced Calculus I, II

(243Q-244Q) Both semesters. 4 credits each semester. May be taken for honors credit but open to any qualified student. Prerequisite: A year of calculus (that may include high school) and instructor consent. MATH 2141Q may be used in place of MATH 1131 or 1151 to fulfill any requirement satisfied by MATH 1131 or 1151. MATH 2142Q may be used in place of MATH 1132 or 1152 to fulfill any requirement satisfied by MATH 1132 or 1152.

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.

2143Q-2144Q. Advanced Calculus III, IV

(245Q-246Q) Both semesters. 4 credits each semester. May be taken for honors credit but open to any qualified student. Prerequisite: Math 2142Q or consent of instructor. MATH 2143 may be used in place of MATH 2110 to fulfill any requirement satisfied by MATH 2110. MATH 2144 may be used in place of MATH 2410 to fulfill any requirement satisfied by MATH 2410.

A rigorous treatment of more advanced topics, including vector spaces and their application to multi-variable calculus and first-order, second-order and systems of differential equations.

2194W. Pedagogical Seminar

(202W) Either semester. One credit. Corequisite: MATH 2110. Prerequisite: ENGL 1010 or 1011 or 3800.

Weekly seminars and short essays reflecting on the learning experiences and content of MATH 2110.

2210Q. Applied Linear Algebra

(227Q) Either semester. Three credits. Prerequisite: MATH 1132, 1152 or 2142. Recommended preparation: A grade of C- or better in MATH 1132. Not open for credit to students who have passed MATH 3210 or 2144.

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

(223Q) Either semester. Three credits. Prerequisite: MATH 1121, 1131, 1151, or 2142. MATH 1121 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

(211Q) Either semester. Three credits. Prerequisite: MATH 1132, 1152 or 2142. Recommended preparation: A grade of C- or better in MATH 1132; and MATH 2110, 220, or 2130. Not open for credit to students who have passed MATH 2420 or 2144.

Introduction to ordinary differential equations and their applications, linear differential equations, systems of first order linear equations, numerical methods.

2420Q. Honors Differential Equations

(221Q) Either semester. Three credits. Prerequisite: MATH 1152 or instructor consent. Not open to students who have passed MATH 2410 or 2144. MATH 2420 satisfies any requirement met by MATH 2410, and provides superior preparation for prospective mathematics, science, and engineering majors.

The subject matter of MATH 2410 in greater depth, with emphasis on the underlying mathematical concepts.

2610. Introduction to Actuarial Science

(236) Both semesters. Three credits. Prerequisite: Consent of instructor.

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

(285) (Also offered as MATH 5620.) First semester. Three credits. Prerequisite: MATH 1132, 1152 or 2142.

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.

2710. Transition to Advanced Mathematics

(213) Either semester. Three credits. Prerequisite: MATH 2110 or 2130. Students intending to major in mathematics should ordinarily take this course during the third or fourth semester.

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.

2720W. History of Mathematics

(242W) Either semester, alternate years. Three credits. Prerequisite: Either (i) MATH 2110 or 2130, and 2410, or (ii) 2420 or 2144; and ENGL 1010 or 1011 or 3800. This course may not be counted in any of the major groups described in the Mathematics Departmental listing.

A historical study of the growth of the various fields of mathematics.

2784. Undergraduate Seminar I

(200) Either semester. Two credits. Prerequisite: Either MATH 2110, 2130, or 2143; MATH 2410, 2420 or 2144; ENGL 1010 or 1011 or 3800.

The student will attend talks during the semester and choose a mathematical topic from one of them 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.

2794W. Undergraduate Seminar II

(201W) Either semester. Two credits. Prerequisite: MATH 2784; ENGL 1010 or 1011 or 3800.

The student will attend talks during the semester and choose a mathematical topic from one of them 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, building upon the writing experience in MATH 2784.

3094. Undergraduate Seminar

(297) Either semester. Three credits. Open only with consent of instructor. This course, with a change of topic, may be repeated for credit.

3146. Introduction to Complex Variables

(252) (Also offered as MATH 5046.) Either semester. Three credits. Prerequisite: MATH 2110 and 2410, or 2420, or 2144. Not open for credit to students who have passed MATH 5046.

Functions of a complex variable, integration in the complex plane, conformal mappings.

3150-3151. Analysis

(273-274) Either semester. Three credits each semester. Prerequisite: MATH 2410 or 2420 or 2144; MATH 2710 or 2142.

Introduction to the theory of functions of one and several real variables.

3160. Probability

(231) Either semester. Three credits. Prerequisite: MATH 2110, 2130 or 2143 which may be taken concurrently with the consent of the instructor.

Introduction to the theory of probability. Discussion of some of the probability problems encountered in scientific and business fields.

3170. Elementary Stochastic Processes

(232) (Also offered as STAT 3965.) Either semester. Three credits. Prerequisite: STAT 3025 or 3345 or 3375 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.

3210. Abstract Linear Algebra

(215) Either semester. Alternate years. Three credits. Prerequisite: MATH 2210 or 2144; and MATH 2710.

Vector spaces and linear transformations over fields.

3230. Abstract Algebra I

(216) Either semester. Three credits. Prerequisite: MATH 2710 or 2142. Recommended preparation: MATH 2210 or 2144.

An introduction to group theory and ring theory.

3231. Abstract Algebra II

(217) Either semester. 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

(258) Either semester. Three credits. Prerequisite: MATH 2142 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

(251) Either semester. Three credits. Prerequisite: MATH 2142 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

(235) Either semester, alternate years. Three credits. Prerequisite: MATH 2710 or 2142 or CSE 207. PHIL 2211 is recommended.

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.

3270. Theory of Computability

(237) Either semester, alternate years. Three credits. Prerequisite: MATH 2710 or 2142 or CSE 2500.

Finite automata and regular languages, pushdown automata and context-free languages and grammars. Turing machines, recursively enumerable sets and grammars, Church's thesis, the halting problem, and other undecidable problems. Computational complexity and NP-completeness.

3330. Elements of Topology

(250) Either semester, alternate years. Three credits. Prerequisite: MATH 2142 or 2710.

Metric spaces, topological spaces and functions, topological properties, surfaces, elementary topics in geometric topology.

3370. Differential Geometry

(225) Either semester, alternate years. Three credits. Prerequisite: Either (i) MATH 2110 or 2130, and 2410, and MATH 2710 or 2142 or (ii) MATH 2144.

The in-depth study of curves and surfaces in space.

3410. Differential Equations for Applications

(272) Either semester. Three credits. Prerequisite: MATH 2110 and 2410, or 2420 or 2144. Not open for credit to students who have passed MATH 3412.

Series solutions of differential equations, Bessel functions, Fourier series, partial differential equations and boundary value problems, nonlinear differential equations.

3412. Introduction to Field Theory

(279) Either semester. Three credits. Prerequisite: Either (i) MATH 2110 or 2130, and 2410 or 2420 or (ii) MATH 2144. Not open for credit to students who have passed MATH 3410.

Vector analysis in rectangular, circular-cylindrical and spherical coordinates, postulational derivation of the partial differential equations of classical physics, Fourier series, Bessel and Legendre functions, solutions of Laplace, Poisson, diffusion and scalar and vector wave equations.

3430. Applied Analysis

(277) (Also offered as MATH 5430.) Either semester. Three credits. Prerequisite: MATH 3410. Offered in alternate years. Not open for credit to students who have passed MATH 5430.

Convergence of Fourier Series, Legendre and Hermite polynomials, existence and uniqueness theorems, two point boundary value problems, and Green's functions.

3435. Partial Differential Equations

(278) (Also offered as MATH 5435.) Either semester, alternate years. Three credits. Prerequisite: MATH 3410 or its equivalent. Not open for credit to students who have passed MATH 5435.

Solution of first and second order partial differential equations with applications to engineering and the sciences.

3510. Numerical Analysis I

(281) Either semester. Three credits. Prerequisite: Either (i) MATH 2110 or 2130, 2410, and either 3210 or 2210 or (ii) MATH 2144; and knowledge of at least one programming language.

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

(282) Either semester. Three credits. Prerequisite: MATH 3510.

Approximate integration, difference equations, solution of ordinary and partial differential equations.

3610. Probability Problems

(283) Either semester. One credit. Two class periods. Prerequisite: MATH 2110, 2130 or 2143; and 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

(280) Both semesters. One credit. Two class periods. Prerequisite: MATH 2620 and 3660, which may be taken concurrently.

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.

3621. Actuarial Statistics

(238) First semester. Three credits. Prerequisite: MATH 3160 and STAT 3375.

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. Actuarial Mathematics I

(287) (Also offered as MATH 5630.) First semester. Four credits. Prerequisite: MATH 3160 or STAT 3375; and MATH 2620. MATH 3630 is not open to students who have passed MATH 5630.

Provides the theoretical basis of actuarial models and the application of those models to insurance and other financial risks. The concept of "model" in an actuarial context, how and why models are used, their

advantages and their limitations. Extracting important results from models for the purpose of making business decisions, and approaches to determining these results.

3631. Actuarial Mathematics II

(288) (Also offered as MATH 5631.) Second semester. Four credits. Prerequisite: MATH 3630. MATH 3631 is not open to students who have passed MATH 5631.

A continuation of Actuarial Mathematics I. This course, along with MATH 3630, helps students prepare for the actuarial examination on models for quantifying risk.

3634. Actuarial Models

(276) Either semester. Three credits. Prerequisite: MATH 3160 or STAT 3025 or 3375; and MATH 2620.

Introduction to the design of computerized simulations for analyzing and interpreting actuarial and financial problems. This course, together with MATH 5637, 5640, and 5641, helps the student prepare for the actuarial examination on the construction and evaluation of risk models.

3650. Financial Mathematics II

(289) Either semester. Three credits. Prerequisite: MATH 2620 and ACCT 2001, which may be taken concurrently. Not open for credit to students who have passed MATH 5621.

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

(284) Either semester. 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

(291W) Second semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800. Consent of Director of Actuarial Science required.

Students will write a technical report on an advanced topic in actuarial science.

3710. Introduction to Mathematical Modeling

(204) Either semester. Three credits. Prerequisite: MATH 2420 or 2144; or MATH 2410 and 2210. Knowledge of a programming language is strongly recommended. Not open for credit to students who have passed MATH 5530 or 5540, CHEM 305, or PHYS 5350.

Construction of mathematical models in the social, physical, life and management sciences. Linear programming, simplex algorithm, duality. Graphical and probabilistic modeling. Stochastic processes, Markov chains and matrices. Basic differential equations and modeling.

3790. Field Study Internship

(290) Either or both semesters. One to three credits. May be repeated for credit (to a maximum of 6 credits). Consent of the Department Head, Director of the Actuarial Program, or the Undergraduate Coordinator required. Prerequisite: Completion of Freshman - Sophomore level requisite courses in the major. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

3793. Foreign Study

(293) Either or both semesters. Credit and hours by arrangement. 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 depart-

ture. May count toward the major with consent of the Advisor and either the Department Head or Undergraduate Coordinator.

3794. Problem Seminar

(296) Either semester. One credit. One class period. Prerequisite: MATH 1122, 1132, or 1152. This course, with a change of topic, 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

(298) Either semester. Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary.

3796W. Senior Thesis in Mathematics

(292W) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800. Open only by consent of Department Head or Departmental Honors Committee.

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 this credit.

3798. Variable Topics

(295) Either semester. Three credits. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary.

3799. Independent Study

(299) Either semester. Credits and hours by arrangement. Open only with consent of instructor. This course, with a change of topic, may be repeated for credit.

4110. Introduction to Modern Analysis

(261) (Also offered as MATH 5110.) First semester. Three credits. Prerequisite: Consent of instructor. 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

(265) (Also offered as MATH 5210.) First semester. Three credits. Prerequisite: Consent of instructor. 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

(267) (Also offered as MATH 5310.) First semester. Three credits. Prerequisite: Consent of instructor. 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.

4735. Introduction to Operations Research

(286) (Also offered as STAT 4535 and STAT 5535.) Either semester. Three credits. Prerequisite: MATH 3160 or STAT 3025 or 3375. Not open for credit to students who have passed MATH 5635, STAT 4535 or 5535.

Introduction to the use of mathematical and statistical techniques to solve a wide variety of organizational problems. Topics include linear programming, network analysis, queueing theory, decision analysis.

Mechanical Engineering (ME)

Head of Department: Professor Baki M. Cetegen
Department Office: Room 480, United Technologies Engineering Building

For major requirements, see the School of Engineering section of this *Catalog*.

2233. Thermodynamic Principles

(233) Second semester. Three credits. Prerequisite: CHEM 1124Q or CHEM 1127 and 1125; PHYS 1501Q and MATH 2110Q which may be taken concurrently.

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

(234) First semester. Three credits. Prerequisite: ME 2233 or CHEG 2111.

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.

3214. Dynamics of Particles and Rigid Bodies

(214) Second semester. 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

(217) First semester. Three credits. Two class periods and one 2-hour laboratory period. Prerequisite: CE 3110 and MSE 3152 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

(220) Second semester. Three credits. Prerequisite: ME 3253; MATH 2110Q, 2410Q; and CE 2120 or 215.

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

(221) First semester. Three credits. Prerequisite: Consent of instructor. Not open to students who have passed ME 386.

Introduction to Computer Integrated Manufacturing (CIM). Fundamentals of automated manufacturing; Computer Numerical Control (CNC); production economics and optimization of production systems.

3222. Production Engineering

(222) Second semester. Three credits. Prerequisite: Consent of instructor. Not open to students who have passed ME 387.

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

(224) First semester. Three credits. Prerequisite: MATH 2110 and 2410 and 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

(225) Both semesters. Three credits. Prerequisite: CSE 1100, CE 3110, MATH 2110 and instructor consent.

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

(227) First semester. 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

(228) Second semester. Three credits. Prerequisite: CE 3110. Not open to students who have passed ME 5365.

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.

3229. Machine Design

(229) Second semester. Three credits. Prerequisite: CE 3110. This course and CE 289 may not both be taken for credit.

Torsion of machine members with noncircular cross sections. Elastic stability and buckling. General methodology of stress analysis. Introduction to the theory of elasticity. Beams on elastic foundation. The energy method.

3239. Pollution from Combustion

(239) Either semester. 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

(242) First semester. 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

(250) Second semester. Three credits. Prerequisite: ME 2233, and MATH 2110 and 2410. This course and CE 3120 may not both be taken for credit.

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

(251) Either semester. 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

(253) First semester. Three credits. Prerequisite: CE 2120 and MATH 2410Q.

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.

3255. Computational Mechanics

(255) First semester. 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.

3257. Mechanical Engineering Analysis

(257) Either semester. Three credits. Three class periods. Prerequisite: MATH 2410Q.

Introduction to the applied mathematical techniques in mechanical systems, heat transfer, fluid mechanics, and thermodynamics. Methods involving the application of partial differential equations, linear algebra, Fourier series, Bessel functions and Laplace transform will be treated within the context of mechanical engineering. Case studies will be employed where appropriate.

3260W. Measurement Techniques

(260W) Second semester. Three credits. Two class periods and one 2-hour laboratory period. Prerequisite: ECE 3002; ENGL 1010 or 1011 or 3800.

Theory and practice of measurement including analysis and application of electromechanical transducers. Methods of measuring length, area, time, pressure, temperature, force and strain. The determination of the phase relation between a driving potential and the response of a system. The application of statistical methods to analysis of experimental data.

3262. Introductory Thermo-Fluids Laboratory

(262) First semester. Three credits. One class period and one 3-hour laboratory period. Prerequisite and corequisite: ECE 3002 and ME 2233.

Introduction to experimental methods in Mechanical Engineering. Review and use of pressure, temperature, and flow measuring devices. Data acquisition and analysis including use of computers. Principles of good experimental design. Experiments selected mainly from within the thermo-fluids area.

3294. Mechanical Engineering Undergraduate Seminar

(298) Second semester. One credit. One class period. Open only to seniors in mechanical engineering.

Presentation and discussion of advanced topics in mechanical engineering.

3295. Special Topics in Mechanical Engineering

(295) Semester, credits and hours by arrangement or as announced. Prerequisite and/or consent: Announced separately for each course. This course, with a change in topic, may be repeated for credit.

A classroom course on special topics as announced.

3299. Problems in Mechanical Engineering

(299) Semester and hours by arrangement. Credits by arrangement, not to exceed four. Open only to seniors in mechanical engineering. This course, with a change in topic, may be repeated for credit.

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 and by the instructor before registration is completed.

4972. Senior Design Project I

(272) First semester. Three credits. Prerequisite: ME 3250; ME 3227, may be taken concurrently.

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

(273W) Second semester. Three credits. Prerequisites: ME 4972, 3260, and 3262; ENGL 1010 or 1011 or 3800.

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.

Medical Laboratory Sciences Programs (MLS)

Diagnostic Genetic Sciences Program Director:

Martha B. Keagle

Diagnostic Genetic Sciences Program Office:

Room 222, Koons Hall

Medical Technology Program Director:

Rosanne Lipcius

Medical Technology Program Office:

Room 214, Koons Hall

For major requirements, see the College of Agriculture and Natural Sciences, Department of Allied Health Sciences section of this *Catalog*.

3101. Introduction to Medical Laboratory Sciences

(201) First semester. Two credits. Open to students in the following majors: Allied Health Sciences, Diagnostic Genetic Sciences, and Medical Technology; open to juniors or higher. Others with consent of instructor.

Introduction to diagnostic genetic sciences, diagnostic molecular technologies, cytotechnology and medical technology including laboratory safety and equipment, microscopy and staining, hematopoiesis, and quality control and quality assurance.

3111. Anatomy and Physiology for the Medical Laboratory Sciences

(206) First semester. Two 1-1/2-hour lectures and one two-hour laboratory period. Prerequisite: CHEM 1125Q or 1128Q; and two of the following four courses: BIOL 1103, BIOL 1107, BIOL 1108, PNB 2264; one of which may be taken concurrently. Open to students in the following majors: Cytotechnology, Medical Technology, and Diagnostic Genetic Science; others with consent of instructor. Not open for credit for students who have passed PNB 2265.

A systemic approach to the study of anatomy and physiology specific to the Medical Laboratory Sciences. The structure and function of each organ system will be discussed.

3121. Immunology for the Medical Laboratory Sciences

(208) Second semester. Three credits. Three hours of lecture. Recommended preparation: MT 3131 or MCB 2610 which may be taken concurrently. Open to students in the following majors: Allied Health Sciences, Diagnostic Genetic Sciences, and Medical Technology; 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.

3121W. Immunology for the Medical Laboratory Sciences

(208W) Prerequisite: ENGL 1010 or 1011 or 3800. Open to students in the following majors: Cytotechnology, Medical Technology, and Diagnostic Genetic Science; others with consent of instructor; open to juniors or higher.

4095. Special Topics

(298) Either semester. Credits and hours by arrangement. Prerequisite: The completion of all Freshman - Sophomore level requirements in Medical Technology and Diagnostic Genetic Sciences. Open only with consent of instructor. 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 the medical laboratory.

4099. Independent Study for Undergraduates

(299) Either semester. Credits and hours by arrangement. Open only with consent of the instructor. May be repeated for credit.

Designed primarily for students who wish to extend their knowledge in some specialized area in the field of cytology, diagnostic genetic sciences, clinical laboratory medicine or medical technology.

Medical Technology (MT)

Medical Technology Program Director:

Rosanne Lipcius

Program Office: Room 214, Koons Hall

For major requirements, see the College of Agriculture and Natural Resources, Department of Allied Health Sciences section of this *Catalog*.

3131. Infectious Disease Process I

(210) First semester. Four credits. One 2-hour lecture, 4 hours of laboratory. Prerequisite: CHEM 2241 or MCB 2000 or MCB 3010 which may be taken concurrently. Open only to Medical Technology majors; others with consent of Medical Technology Program Director.

Fundamentals of microbial classification, structure, growth and metabolism. Principles of disease and epidemiology, mechanisms of pathogenicity and identification of bacteria causing human disease. A fee of \$13 is charged for this course.

3333. Infectious Disease Process II

(252) Both semesters. Two credits. Prerequisite: To enroll in the course the student must earn a "C" or better in MT 3131. Open only to Medical Technology majors; others with consent of Medical Technology Program Director.

Isolation and identification of pathogenic and opportunistic fungi that infect humans, pathogenesis and identification of human parasites and correlation of organisms to disease states.

3361. Molecular Techniques for Medical Technologists

(215) Both semesters. Two credits. Prerequisite: BIOL 1107 and CHEM 1124 and 1125 or 1127 and 1128. Open only to Medical Technology majors. *Lipcius*

Theory and techniques of molecular diagnostic testing in clinical settings, including DNA isolation, blotting techniques and polymerase chain reaction. A fee of \$13 is charged for this course.

3365. Theory of Phlebotomy

(260) Both semesters. One credit. Prerequisite: To enroll in the course the student must earn a "C" or better in MLS 3101. Open only to Medical Technology majors; others with consent of Medical Technology Program Director. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

Venipuncture and special phlebotomy techniques, safety, ethics, and management of phlebotomy services.

4094W. Seminar in Medical Technology

(280W) Both semesters. Two credits. Prerequisite: To enroll in the course the student must earn a "C" or better in AH 4241W. Open only to Medical Technology majors; others with consent of Medical Technology 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 technology. Oral and written presentation of research project or topic.

4095. Special Topics

(298) Either semester. Credits and hours by arrangement. Prerequisite: The completion of Freshman - Sophomore requirements in the Medical Technology Program. Open only with consent of instructor. 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

(299) Either semester. Credits and hours by arrangement. Open only with consent of instructor. May be repeated for credit.

Designed primarily for students who wish to extend their knowledge in some specialized areas in the field of Medical Technology.

4301. Clinical Chemistry and Instrumentation

(250) Either semester. Five credits. Prerequisite: MCB 2000. Open only to Medical Technology majors; others with consent of Medical Technology Program Director.

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

(251) Both semesters. Three credits. Prerequisite: To enroll in the course the student must earn a "C" or better in MT 4301. Open only to Medical Technology majors; others with consent of Medical Technology Program Director.

Application of the theory and techniques learned in MT 4301 to the clinical laboratory setting. Understanding work flow, teamwork, evaluation of normal and abnormal results; instrumentation and quality assurance in the general laboratory environment.

4311. Hematology

(264) Both semesters. Three credits. Prerequisite: To enroll in the course the student must earn a "C" or better in MLS 3101. Open only to Medical Technology majors; others with consent of Medical Technology Program Director.

Principles of hemostasis, blood cell formation, morphology, function and kinetics; pathophysiology of coagulation and blood cell disorders; principles and procedures used to evaluate coagulation and blood cells in blood and body fluids; laboratory practice in microscopic evaluation.

4312. Hematology Laboratory

(274) Both semesters. Three credits. Prerequisite: To enroll in the course the student must earn a "C" or better in MT 4311. Open only to Medical Technology majors; others with consent of Medical Technology Program Director.

Application of the theory and techniques learned in MT 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 and Virology

(213) Either semester. Three credits. Prerequisite: To enroll in the course the student must earn a "C" or better in MLS 3121 or 3121W. Open only to Medical Technology majors; others with consent of Medical Technology Program Director.

Immune responses in normal and diseased states; methods for the detection of antigens and antibodies in blood and body fluids; introduction to virology and immunology methods for the diagnosis of viral diseases.

4322. Clinical Immunology Laboratory

(269) Both semesters. One credit. Prerequisite: To enroll in the course the student must earn a "C" or better in MT 4321. Open only to Medical Technology majors; others with consent of Medical Technology 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

(266) Both semesters. Four credits. Prerequisite: To enroll in the course the student must earn a "C" or better in MT 3131. Open only to Medical Technology majors; others with consent of Medical Technology 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

(267) Both semesters. Four credits. Prerequisite: To enroll in the course the student must earn a "C" or better in MT 4341. Open only to Medical Technology majors; others with consent of Medical Technology Program Director.

Application of the theory and techniques learned in MT 3333 and MT 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

(270) Both semesters. Two credits. Prerequisite: To enroll in the course the student must earn a "C" or

better in MLS 3121 or 3121W. Open only to Medical Technology majors; others with consent of Medical Technology 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

(275) Both semesters. Two credits. Prerequisite: To enroll in the course the student must earn a "C" or better in MT 4351. Open only to Medical Technology majors; others with consent of Medical Technology Program Director.

Application of the theory and techniques learned in MT 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.

4366. Phlebotomy Laboratory

(261) Both semesters. One credit. Prerequisite: To enroll in the course the student must earn an "S" in MT 3365. Open only to Medical Technology majors; others with consent of Medical Technology Program Director. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

Application of the theory and techniques learned in MT 3365 to the clinical laboratory setting. Understanding work flow, scheduling, teamwork, and quality assurance in the general laboratory environment.

4371. Urinalysis

(272) Both semesters. One credit. Prerequisite: To enroll in the course the student must earn a "C" or better in MLS 3101. Open only to Medical Technology majors; others with consent of Medical Technology Program Director.

Renal physiology, chemical and microscopic examination of urine, correlation of results with disease states, chemical analysis of feces.

4372. Urinalysis Laboratory

(273) Both semesters. One credit. Prerequisite: To enroll in the course the student must earn a "C" or better in MT 4371. Open only to Medical Technology majors; others with consent of Medical Technology Program Director.

Application of the theory and techniques learned in MT 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.

Military Science (MIS)

Head of Department: Lieutenant Colonel Christine L. Harvey
ROTC Office, Army: Hall Dormitory, 362 Fairfield Road

1101. General Military Science I

(131) Either semester. One credit. One class period. Organization of the Army, basic soldier skills; ropes, knots, and rappelling; individual physical fitness; land navigation; time management; role of regular Army, Reserve and National Guard; M16 rifle.

1102. General Military Science II

(132) Either semester. One credit. One class period. Organization and equipment of small military units, fundamentals of marksmanship and military instruction techniques. Leadership lab as announced. Army customs and traditions; land navigation; heat

and cold survival; tactical communications; military correspondence; leadership/professional ethics; branches of Army; encoding and decoding messages.

1133. General Military Science: Air Rifle Marksmanship

(133) Both semesters. One credit. One class period, two hours lecture and laboratory. May be taken only once for 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.

1201. General Military Science II

(145) Either semester. One credit. One class period and leadership laboratory.

Map reading, mountaineering, principles of war.

1202. General Military Science II

(146) Either semester. One credit. One class period and leadership laboratory.

Map reading, mountaineering, principles of war.

3301. General Military Science III

(252) First semester. Three credits. One 3-hour class period and leadership laboratory. One weekend field training exercise. Prerequisite: Completion of the basic course in military science, basic training, or a six-week basic summer camp. In all cases, approval of the Professor of Military Science is required.

Leadership principles, techniques, and the responsibilities of command. Military instruction techniques, to include student class presentations.

3302. General Military Science III

(253) Second semester. Three credits. One 3-hour class period and leadership laboratory. One weekend field training exercise. Prerequisite: MISI 3301.

Dynamics of small unit tactics, and branches of the Army.

4401. General Military Science IV

(297) First semester. Three credits. One 3-hour class period and leadership laboratory. One weekend field training exercise. Prerequisite: MISI 3302.

Army staff organization, unit administration and management, logistics, military intelligence, leadership seminar, the international system, and strategic doctrine.

4402. General Military Science IV

(298) Second semester. Three credits. One 3-hour class period and leadership laboratory. One weekend field training exercise.

Military law, obligations and responsibilities of an officer, contemporary human problems, and a leadership seminar.

Modern Greek (MGRK)

Head of Department: Associate Professor Norma Bouchard

Department Office: Room 228, J.H. Arjona Building

1101-1102. Elementary Levels I and II
(101-102)

1103-1104. Intermediate Levels I and II
(103-104)

1101 and 1103 are offered in the first semester, and 1102 and 1104 in the second. Please refer to the Critical Languages course descriptions in this publication. Consult the Program Director in Arjona 128 or at manuela.m.wagner@UConn.edu for more information.

Molecular and Cell Biology (MCB)

Head of Department: Professor David Benson
Department Office: Room 104, Biology/Physics Building

For major requirements, see the College of Liberal Arts and Sciences section of this *Catalog*.

1401. Honors Core: Computational Molecular Biology

(120) (Also offered as BME 1401 and CSE 1401.) Either semester. 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

(125) Second semester. Three credits. 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.

2000. Introduction to Biochemistry

(203) Either semester. Four credits. Three class periods and one 3-hour laboratory period. Prerequisite: CHEM 2241 or 2444. (CHEM 2444 may also be corequisite.) Not open for credit to students who have passed MCB 3010.

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. A fee of \$20 is charged for this course.

2210. Cell Biology

(210) First semester. Three credits. Prerequisite: BIOL 1107. This course is intended to be taken before MCB 2000 or 3010.

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.

2211. Gene Expression

(201) First semester. Three credits. Recommended preparation: MCB 2210 or 2410 or 2610.

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.

2225W. Advanced Cell Biology Laboratory

(225W) Second semester. Four credits. One 1-hour lecture and two 4-hour laboratories. Prerequisite or corequisite: MCB 2210. Prerequisite: ENGL 1010 or 1011 or 3800. Open to honors students. Open to non-honors students with instructor consent.

Research techniques that investigate processes in live cells including DNA transfection, GFP-fusion protein dynamics, confocal fluorescence microscopy, time-lapse video microscopy, and flow cytometry. Students will pursue independent research projects.

2400. Heredity and Society

(218) Either semester. Three credits. Two lectures and one problem session. Prerequisite: BIOL 1107. May not be counted toward the majors or minors in Biological Sciences, Ecology and Evolutionary Biology, Molecular and Cell Biology, Physiology and Neurobiology, or Structural Biology and Biophysics. Not open to students who have passed MCB 2410.

Principles of genetics as applied to humans. Focus on modern methods of molecular genetics.

2410. Human Genetics

(200) Either semester. Three credits. Two lectures and one problem session. Not open to students who have passed MCB 2400. Prerequisite: BIOL 1107.

Principles of genetics as applied to humans. Focus on modern methods of molecular genetics.

2413. Concepts of Genetic Analysis

(213) Second semester. Four credits. Three class periods and 2-hour laboratory. Prerequisite: BIOL 1108 or 1110, or MCB 2410 or equivalent, and CHEM 1128.

Survey of genetic theory and applications of genetic analysis. Model genetic systems in animals, plants, and microbes. A fee of \$20 is charged for this course.

2610. Fundamentals of Microbiology

(229) Either semester. Four credits. Three lecture periods and one 2-1/2-hour laboratory period. Prerequisite or corequisite: CHEM 2241 or 2443. Recommended preparation: BIOL 1107 or equivalent.

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. A fee of \$20 is charged for this course.

3006. Fundamentals of Structural Biology

(206) First semester. Three credits. Prerequisite: BIOL 1107 or CHEM 1128 or instructor consent.

An introduction to principles underlying the structure and function of the molecules guiding life processes. These principles will be applied to proteins, DNA/RNA and membranes as well as to the energetics of life processes.

3007. Introduction to Biophysical Chemistry

(207) Second semester. Three credits. Prerequisite: CHEM 2443; MATH 1122 or 1132; PHYS 1202, 1402 or 1602 or instructor consent.

Energetics and kinetics of metabolic reactions. Interactions of electromagnetic radiation and biological macromolecules. Formation and energetics of supramolecular structures. The basis of selected techniques of molecular biology, such as DNA hybridization, radioimmune assays. DNA melting and thermal transitions in polymers, thermodynamics, analysis of reactions, binding theory, cooperative interactions.

3010. Biochemistry

(204) First semester. Five credits. Four class periods and one 3-hour laboratory. Prerequisite or corequisite: CHEM 2444. Recommended preparation: MCB 2210 or MCB 2610. Not open for credit to students who have passed MCB 2000.

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 course work in biochemistry, biophysics, or other areas of molecular biology. A fee of \$20 is charged for this course.

3011. Human Metabolism and Disease

(205) First semester, alternate years. 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

(222W) First semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800. 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.

3212. Basic Immunology

(211) First semester. 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.

3220. Laboratory in Developmental Biology

(220) Second semester. Three credits. Two 3-hour laboratory periods and a discussion/recitation period. Prerequisite or corequisite: MCB 4219, or six credits of college biology and consent of instructor. Not open for credit to students who have passed MCB 223.

Analysis of principles of morphogenesis and differentiation.

3246. Virology

(246) Second semester. Three credits. Three lecture periods. Prerequisite: MCB 2610. Recommended preparation: MCB 2210 or 3010.

Biological, biochemical, physical, and genetic characteristics of viruses, with an emphasis on molecular and quantitative aspects of virus-cell interactions.

3412. Genetic Engineering and Functional Genomics

(212) Second semester. Three credits. Prerequisite: MCB 2410 or 2413. 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.

3414. Experiments in DNA Identification

(214) Second semester. Two credits. One fifty minute lecture period and one three hour laboratory session. Prerequisite: MCB 2410 or 2413.

An introductory laboratory course in principles and techniques of DNA manipulation and identification. Course simulates independent research, using modern molecular genetics techniques. A fee of \$20 is charged for this course.

3416. Forensic Application of DNA Science

(290) First semester. Three credits. Prerequisite: MCB 2410 or 2413.

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.

3421. Introduction to Molecular Evolution and Bioinformatics

(221) First semester. 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.

3617. Molecular Biology and Genetics of Prokaryotes

(217) First semester. Four credits. Three lecture periods and one 2-hour discussion. 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.

3633. Pathogenic Microbiology

(233) First semester. Four credits. Two class periods and one 2-hour, 45 minute laboratory period. 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.

3635. Applied Microbiology

(235) Second semester. Three credits. Prerequisite: MCB 2610. Recommended preparation: MCB 2000 or 3010.

A study of the biology, physiology, and genetics of microorganisms useful in industry, agriculture, and selected environmental processes.

3636. Marine Microbiology

(236) (Also offered as MARN 3016.) First semester (Avery Point) second semester (Storrs). Three credits. Two lecture-discussion class periods and one 2-hour laboratory period for which field trips may be substituted. Prerequisite: MCB 2610 or instructor consent.

A general survey of the taxonomy, physiology, and ecology of marine microorganisms.

3640W. Bacterial Diversity and Ecology

(240W) First semester. Four credits. Two lecture periods and two 3-hour laboratory/discussion periods. Prerequisite: MCB 2610 or instructor consent; ENGL 1010 or 1011 or 3800. Recommended preparation: MCB 2000 or 3010.

A study of the ecophysiology of diverse bacterial types with particular emphasis on the activities of bacteria *in situ*. Investigative laboratory includes individual projects. A fee of \$20 is charged for this course.

3832C. Microcomputer Applications in Molecular and Cell Biology

(232C) First semester. Three credits. One 1-hour lecture and two 3-hour laboratories. Recommended preparation: MCB 2210 or 2410 or 2413 or 2610 or 3010.

Introduction to the use of microcomputers in molecular biology, emphasizing commercially available applications software, both general (spreadsheet, word processing, database, graphics) and specialized (DNA and protein sequence database manipulation, molecular modeling, data acquisition, others).

3841W. Research Literature in Molecular and Cell Biology

(241W) Either semester. Three credits. Open only with consent of instructor. Prerequisite: ENGL 1010 or 1011 or 3800. Recommended preparation: one 2000-level course in MCB. With a change in content, may be repeated for credit.

Discussion of current research in molecular and cell biology.

3895. Special Topics

(298) Either semester. Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary.

3898. Variable Topics

(289) Either semester. Three credits. With a change of topic, may be repeated for credit. Prerequisites and recommended preparation vary.

3899. Independent Study

(299) Either or both semesters. Credits and hours by arrangement. Open only with consent of instructor. May be repeated for credit with change in topic.

Designed for the advanced undergraduate student who is pursuing a special problem as an introduction to independent investigation.

3989. Introduction to Research

(291) Either semester. Credits and hours by arrangement. Open with consent of instructor. May be repeated for credit with change in topic.

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.

3996W. Research Thesis in Molecular and Cell Biology

Either semester. Three credits. Hours by arrangement. Prerequisite: At least three credits of MCB 3989 or 4989, which may be taken concurrently. Prerequisite: ENGL 1010 or 1011 or 3800; open with consent of instructor.

Writing of a thesis based upon the student's independent laboratory research project.

4008. Techniques of Biophysical Chemistry

(208) Second semester. Three credits. Prerequisite: MCB 3007, or CHEM 3563 or instructor consent.

The characterization of biological macromolecules (i.e. proteins and nucleic acids) in solution is important to the biotechnology and pharmaceutical industries. This course deals with hydrodynamic techniques (i.e. diffusion, electrophoresis, sedimentation, light scattering, and viscosity) for molecular size and shape, and spectroscopic methods (such as circular dichroism) for more detailed structure.

4009. Structure and Function of Biological Macromolecules

(209) Second semester. Three credits. Prerequisite or corequisite: MCB 2000 or 3010 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.

4026W. Advanced Biochemistry Laboratory

(226W) Second semester. Four credits. One 1-hour lecture and two 4-hour laboratories. Prerequisite: Either MCB 3010 or 2000 with instructor consent; ENGL 1010 or 1011 or 3800.

Theory and application of modern techniques for separation and characterization of biological macromolecules, including several types of liquid chromatography, liquid scintillation spectrophotometry, and SDS polyacrylamide gel electrophoresis. Instruction in writing a scientific paper. A fee of \$20 is charged for this course.

4219. Developmental Biology

(219) Second semester. Three credits. Prerequisite: BIOL 1107. Recommended preparation: MCB 2210 and 2410 or 2413, which may be taken concurrently.

Principles of embryogenesis, pattern formation, and cell differentiation. The focus will be on molecular and cellular aspects of development in several experimental systems, including the mouse, fruit fly, amphibians, and marine invertebrates. Regeneration and stem cell biology will be discussed. Relevance to human development and disease will be emphasized.

4415. Experiments in Molecular Genetics

(215) First semester. Three credits. One 1-hour lecture and two 3-hour laboratory periods. Open only with consent of instructor. Recommended preparation: MCB 3010; 3412 or 3617. Not open for credit to students who have passed MCB 230.

Modern methods in molecular genetics arranged to meet a research goal. Use of polymerase chain reaction, bacteriophage library screening, molecular cloning, nucleic acid hybridizations, and DNA sequence determinations to isolate and characterize a eukaryotic gene. A fee of \$20 is charged for this course.

4624. Experiments in Bacterial Genetics

(224) Second semester. Three credits. Two 3 1/2 hour laboratory/lecture periods. Prerequisite: MCB 2610. Recommended preparation: MCB 3617. Open only with instructor consent.

Experiments in bacterial genetics, emphasizing genetic manipulations and analyses using modern biological techniques including transposon mutagenesis, DNA isolation, PCR, DNA sequencing and phenotypic analysis.

4894. Undergraduate Seminar

(297) Either or both semesters. Credits and hours by arrangement. Open only with consent of instructor. May be repeated for credit with a change of topic.

4989. Introduction to Honors Research

(293) Either semester. Credits and hours by arrangement. Open only to honors students with consent of instructor. May be repeated for credit with change in topic.

Laboratory research project carried on by the student under the guidance of a faculty member. The stu-

dent is required to submit a brief report on the research findings at the end of the semester.

4994W Honors Undergraduate Seminar

Either semester. Two credits. Open to honors students; non-honors students require consent of instructor. Prerequisite: At least one 2000-level MCB course; ENGL 1010 or 1011 or 3800. May be taken for W credit once and may not be repeated.

Students will attend six to eight research seminars and write papers about the topics presented in each seminar. Students will be introduced to electronic journal databases and their uses.

4997W. Senior Research Thesis in Molecular and Cell Biology

(292W) Either semester. Three credits. Hours by arrangement. Prerequisite: Three credits of MCB 3899, which may be taken concurrently; ENGL 1010 or 1011 or 3800. Open only with consent of instructor and department honors committee. Not limited to honors students.

Designed for the advanced undergraduate who is pursuing a special problem as an introduction to independent investigation. Research and writing of a thesis.

Music (MUSI)

Interim Department Head: Professor Karla Fox

Department Office: Room 229, Music Building

For major requirements, see the School of Fine Arts section of this *Catalog*.

1001. Music Appreciation

(191) Either semester. Three credits. No previous training required. Not appropriate for students who have previously passed MUSI 1021 or 1022. Intended primarily for students who are not music majors.

An approach toward intelligent listening, illustrated by recordings. CA 1.

1002. Sing and Shout! The History of America in Song

(102) Either semester. Three credits. Lecture with discussion groups. *Junda*

Develop an understanding of American people, history and culture through the study and singing of American folk songs. CA 1. CA 4.

1004. Non-Western Music

(190) Either semester. Three credits. Not open for credit to students who have passed MUSI 3421W. Intended primarily for students who are not music majors.

Folk, popular, and classical musics of selected non-Western cultures, with an emphasis on the distinctive characteristics of each culture. CA 1. CA 4-INT.

1005. Honors Core: Music and Nature, Music and the Environment

(105) Either semester. Three credits. No previous musical training required. *Stanley*

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. CA 1.

1011. Fundamentals of Music I

(153) Either semester. Three credits. *Maker*

Basic skills in note reading, rhythm, meter, pitch symbols, scales, key-signatures, intervals, and triads. No previous training is required.

1012. Introduction to Ear Training

(155) Second semester. Three credits.

Music reading, sight-singing, and dictation.

1021. Introduction to Music History I

(193) First semester. Three credits. Not intended for music majors.

Music history in relation to other arts from the early Christian era to J.S. Bach (1750). Some background in music fundamentals or performance is highly recommended. CA 1.

1022. Introduction to Music History II

(194) Second semester. Three credits. Not intended for music 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

(101) 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). *Larrabee, Maker*

1103. Introduction to University-Level Musical Study

(103) First semester. Zero credits. Required of all music majors during the first fall semester of residence. Students taking this course will be assigned a grade of S (satisfactory) or U (unsatisfactory). *Maker, Miller*
Study, rehearsal, audience and technology skills.

1108. Marching Band

(109) First semester. One credit. Three laboratory periods. Open only with consent of instructor. May be repeated for credit. *Mills*

Repertoire, rehearsal techniques, preparation and presentation of marching band shows.

1109. Varsity Band

(108) Either semester. One credit. Two laboratory periods. Open only with consent of instructor. May be repeated for credit. *Mills*

Repertory, rehearsal techniques, preparation and presentation of performances in support of the University community.

1110. Band

(110) Either semester. One credit each semester. Three laboratory periods. Open only with consent of instructor. May be repeated for credit. Wind Ensemble, Symphony Band, Concert Band. *Mills, Renshaw*

Repertoire, rehearsal technique, preparation and presentation of concerts.

1111. Chorus

(111) Either semester. One credit each semester. Three laboratory periods. Open only with consent of instructor. May be repeated for credit. Concert Choir, Chamber Singers, University Chorale.

Choral repertoire from all periods, concentration on vocal and choral techniques as related to musical styles, preparation and presentation of concerts.

1112. University Symphony Orchestra

(112) Either semester. One credit each semester. Three laboratory periods. Open only with consent of instructor. May be repeated for credit.

Standard symphonic repertoire, technique of orchestral routine, preparation and presentation of concerts. CA 1.

1113. Chamber Ensemble

(113) Semester by arrangement. One credit each semester. Three laboratory periods. Open only with consent of instructor. May be repeated for credit. As a requirement for credit, the student must participate in MUSI 1110, 1111, or 1112.

Chamber music for various combinations of voices, string, woodwind, brass, percussion and keyboard instruments. Preparation and presentation of concerts.

1114. Voices of Freedom Gospel Choir

(114) Either semester. One credit. One 2-hour laboratory period. Open only with consent of instructor. May be repeated for credit.

Preparation and presentation of concerts. Gospel and spiritual music of the Black experience.

1115. Jazz Ensemble

(115) Either semester. One credit. Two laboratory periods. Open only with consent of instructor. May be repeated for credit.

Jazz repertoire, rehearsal techniques, preparation and presentation of concerts.

1116. Small Ensemble

(116) Either semester. One credit. Two laboratory periods. Open only with consent of instructor. May be repeated for credit. As a requirement for credit, the student must participate in MUSI 1110, 1111, or 1112.

Small ensemble music under the direction of a conductor. Preparation and presentation of concerts.

1117. Women's Choir

(117) Either semester. One credit. Two 1 1/2 hour laboratory periods. Open only with consent of instructor. May be repeated for credit.

Choral repertoire from all styles, concentration on vocal and choral techniques as related to musical styles, preparation and presentation of concerts.

1118. Collegium Musicum

(118) Either semester. One credit per semester. Two laboratory periods. Open only with consent of instructor. 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

(119) Either semester. One credit each semester. Three laboratory periods. Open only with consent of instructor. May be repeated for credit. *McClain*

Performance practices. Preparation and participation in scenes from operatic repertoire.

1221. Secondary Applied Music

(121) Either semester. One credit each semester. May be repeated for credit. Ensemble required with conditions stated under MUSI 1222. Open only with consent of instructor and department head.

Basic performance techniques. Elementary and intermediate repertoire. Primarily for students majoring in another applied area.

A fee of \$175 for one half-hour lesson per week or \$350 for a one-hour lesson per week per semester is charged all students receiving private instrumental or vocal instruction.

1222. Applied Music

(122) Bn (Bassoon), Co (Cello), Ct (Clarinet), Em (Euphonium), Fe (Flute), Fn (French Horn), Gr (Guitar), Hp (Harp), Oe (Oboe), On (Organ), Pn (Percussion), Po (Piano), Se (Saxophone), Ss (String Bass), Te (Trombone), Tt (Trumpet), Ta (Tuba), Va (Viola), Vn (Violin), Ve (Voice).

Either or both semesters. One to 3 credits each semester. May be repeated for credit. Participation in an appropriate ensemble, MUSI 1110, 1111, or 1112, is required each semester for students registered in MUSI 1222 unless exception is made by the department head.

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. Open only with consent of instructor.

A fee of \$175 for one half-hour lesson per week or \$350 for a one-hour lesson per week per semester is charged all students receiving private instrumental or vocal instruction.

1231. Class Instruction in Piano

(123) Either or both semesters. One credit each semester. Two class periods and required practice. May be repeated for credit. Open only with consent of instructor. *Clark*

1241. Applied Accompanying

(124) One credit per semester. One class period per week by arrangement. Open only with consent of instructor. This course is intended for students whose area of emphasis is keyboard. An audition is required for all other students.

Performance class in accompanying skills.

1251. Introduction to Diction for Singers

(126) First semester. One credit. Two one-hour laboratory periods. Prerequisite: concurrent registration in applied voice study under MUSI 1222, 3222, or 5323. *McClain*

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

(127) Second semester. One credit. Two one-hour laboratory periods. 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

(143) Either semester. One credit. Two one-hour class periods. Open only with consent of instructor.

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

(144) Either semester. One credit. Two one-hour class periods. 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

(145) First semester. Three credits. Three one-hour class periods. Open only with consent of instructor. Not open for credit to students who have passed MUSI 1301. *Kaminsky*

Writing and analysis of tonal harmony; relation to melody and counterpoint.

1314. Harmony II

(146) Second semester. Three credits. Three one-hour class periods. Prerequisite: MUSI 1313. Not open for credit to students who have passed MUSI 1302. *Kaminsky*

Continuation of MUSI 1313.

1501. Applied Music Techniques

(125) Bs (Brass), Pn (Percussion), Sg (String), Ve (Voice), Wd (Woodwind).

Either semester. One credit. Two laboratory periods. May be repeated for credit. Open only with consent of instructor.

Performance and teaching techniques.

1601. Introduction to Improvisation

(138) Either semester. One credit. One laboratory period. Open only with consent of instructor. May be repeated once for credit.

Basic jazz theory and the elements of improvisation.

1995. Special Topics Lecture

(195) Either semester. Credits, prerequisites, and hours as determined by the Senate Curricula and Courses Committee. May be repeated for credit with a change in topic.

2253. German Diction for Singers

(128) First semester. One credit. Two one-hour laboratory periods. Prerequisite: MUSI 1251 and concurrent registration in applied voice study under MUSI 1222, 3222, or 5323. *McClain*

A continuing study of the IPA symbols with their special application to the study of German diction for singers.

2254. French Diction for Singers

(129) Second semester. One credit. Two one-hour laboratory periods. 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

(222) Either or both semesters. Credits and hours by arrangement. Ensemble required with conditions stated under MUSI 1222. Prerequisite: Advanced standing in performance as recommended by a faculty jury, recommendation by an instructor in this department, and consent of the Department Head; open to juniors or higher. May be repeated for credit.

A continuation of MUSI 1222 for students with proven ability. A fee of \$115 for one half-hour lesson per week or \$230 for a one-hour lesson per week per semester is charged all students receiving private instrumental or vocal instruction.

3231. Vocal Pedagogy

(281) Either semester. Two credits. Two class periods. Prerequisite: MUSI 3222 and consent of instructor; open to juniors or higher. *Vasil*

Vocabulary, methodology and practical application of pedagogical techniques.

3232. Instrumental Pedagogy and Literature

(229) Either semester. One or two credits. One or two instrumental hours per week. Prerequisite: Open to juniors or higher. Corequisite: MUSI 3222 (Junior-Senior level). May be repeated for credit to a maximum of four semesters. Open only with consent of instructor.

3241. Orchestral Techniques

(282) Semester by arrangement. One credit. Prerequisite: Open to juniors or higher. Open only with consent of instructor. May be repeated for credit.

The art of practice, preparation, and performance of orchestral literature.

3311. Ear Training and Musicianship III

(243) Either semester. One credit. Two one-hour class periods. 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

(244) Either semester. One credit. Two one-hour class periods. Prerequisite: MUSI 3311.

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

(245) First semester. Three credits. Three one-hour class periods. Prerequisite: MUSI 1314. *Bass*

Continuation of MUSI 1314.

3314. Harmony IV

(246) Second semester. Three credits. Three one-hour class periods. Prerequisite: MUSI 3313. *Bass*

Continuation of MUSI 3313.

3321. Form and Analysis I

(257) Either semester. Three credits. Prerequisite: MUSI 3314; open to juniors or higher. Not open for credit to students who have passed MUSI 3302 with a grade of "B" or better.

Musical structure and expression; melodic, harmonic, rhythmic and contrapuntal relationships; style analysis.

3322. Form and Analysis II

(258) Either semester. Three credits. Prerequisite: MUSI 3321; open to juniors or higher.

Continuation of MUSI 3321. Emphasis on the larger works of the 19th-century and 20th-century styles.

3322W. Form and Analysis II

(258W) Prerequisite: MUSI 3321; ENGL 1010 or 1011 or 3800; open to juniors or higher.

3331. Composition I

(251) First semester. Three credits. Prerequisite: MUSI 3314; open to juniors or higher.

Creative writing in the smaller forms. Extensive analysis and discussion.

3332. Composition II

(252) Second semester. Two credits. Prerequisite: MUSI 3331 and consent of instructor; open to juniors or higher.

3341. Introduction to Electronic Composition

(250) Either semester. Three credits. Prerequisite: MUSI 3811; open to juniors or higher.

Composition by synthesizer and computer.

3351. Orchestration I

(275) Second semester. Three credits. Prerequisite: MUSI 3313 or 3301 and consent of instructor; open to juniors or higher. *Maker*

Range, tone quality, and characteristics of the various orchestral and band instruments. Elementary scoring problems.

3352. Orchestration II

(276) First semester. Three credits. Prerequisite: MUSI 3351; open to juniors or higher. *Maker*

Scoring problems, score reading, and study of scores in the standard literature.

3361. Counterpoint I

(277) Either semester. Three credits. Prerequisite: MUSI 3314 or 3302; open to juniors or higher.

Two- and three-voiced textures in the principal 16th-century styles: Josquin, Lassus, Palestrina.

3362. Counterpoint II

(278) Either semester. Three credits. Prerequisite: MUSI 3361; open to juniors or higher.

3371Q. Twentieth Century Theory and Analysis

(279Q) Either semester. Three credits. Prerequisite: MUSI 3314 and MUSI 3321; open to juniors or higher. With consent of instructor, MUSI 3321 may be taken

concurrently. Recommended preparation: MATH 1010 or the equivalent. *Bass*

Analytical techniques appropriate to selected styles of twentieth century music. Problems in twentieth century counterpoint and composition.

3401. Music History and Literature Before 1700

(284) (Formerly offered as MUSI 287.) First semester. Three credits. Prerequisite: MUSI 1314.

Medieval, Renaissance, to High Baroque periods. Score study, development of notation, and relation to other artistic traditions.

3402. Music History and Literature 1700-1830

(285) First semester. Three credits. Prerequisite: MUSI 3401.

Leading composers, genres, elements of style, form and harmony, musical institutions and aesthetics in the High Baroque, Pre-classic, and Classic periods.

3403. Music History and Literature 1830 to Present

(286) Second semester. Three credits. Prerequisite: MUSI 3402.

The romantic period and the Twentieth Century.

3410W. Music, History, and Ideas

(210W) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher. Open only with consent of instructor.

Relationships of musical styles to cultural and intellectual backgrounds.

3411. The Composer and the Composer's World

(211) Either semester. Three credits. Prerequisite: MUSI 3403; open to juniors or higher. May be repeated for credit with a change in content.

Selected works in relation to the musical institutions, musical style, social, intellectual and political milieu, and biography of composer(s).

3412. Music of the Church

(212) First semester. Three credits. Prerequisite: MUSI 3403; open to juniors or higher.

Plainsong, mass, motet, cantata, oratorio, and other forms of church music.

3413. Music of the Theater

(213) Second semester. Three credits. Prerequisite: MUSI 3403; open to juniors or higher.

Opera, ballet, and other types of music for the theater.

3414. Orchestral Music

(214) First semester. Three credits. Prerequisite: MUSI 3403; open to juniors or higher.

Concerto, symphony, symphonic poem, and other forms of music for orchestral ensembles.

3415. Chamber Music

(215) Second semester. Three credits. Prerequisite: MUSI 3403; open to juniors or higher.

String quartet, trio sonata, and other forms of music for various small ensembles.

3416. Solo Literature

(216) Second semester. Three credits. Prerequisite: MUSI 3403; open to juniors or higher.

Keyboard music, the art song, and other types of music for instrumental or vocal soloists.

3417. Music of the Twentieth Century

(295) Either semester. Three credits. Prerequisite: MUSI 3403; open to juniors or higher.

3421W. Music in World Cultures

(292W) Either semester. Three credits. Not open for credit to students who have passed MUSI 1004. Prerequisite: MUSI 3403 and consent of instructor; ENGL 1010 or 1011 or 3800; open to juniors or higher.

Comparison of musical concepts, styles, and performance practice in the social context of various cultures. CA 4-INT.

3551. Music for the Classroom Teacher

(259) Either semester. Three credits. Prerequisite: Open to juniors or higher. *Junda*

Primarily for the non-music major preparing to teach in the elementary school. Elementary music materials, organization of learning experiences, and teaching methods.

3561. Marching Band Techniques

(283) First semester. Two credits. Two class periods. Prerequisite: Open to juniors or higher. Open only with consent of instructor. *Mills*

Scoring for the outdoor band, administration, marching and maneuvering.

3571. Seminar in Music Education

(273) First semester. One or two credits. One or two class periods. Prerequisite: Open to juniors or higher. Open only with consent of instructor. With a change of content, may be repeated for credit. *Junda*

Theories and procedures for the organization of musical instruction.

3601. Jazz Improvisation and Performance

(238) Either semester. One credit. One laboratory period. Prerequisite: MUSI 1601; open to juniors or higher. May be repeated for credit.

Advanced jazz theory, styles, and ensemble techniques.

3611. A History of Jazz

(217) Either semester. Three credits. Prerequisite: MUSI 1314; open to juniors or higher.

3631. Jazz Arranging I

(239) First semester. Two credits. Two class periods. 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

(240) Second semester. Two credits. Two class periods. Prerequisite: MUSI 3631 and consent of instructor; open to juniors or higher.

Continuation of MUSI 3631.

3641. Jazz: Theory and Performance

(241) Either semester. Two credits. Two class periods. Prerequisite: MUSI 1314 and consent of instructor.

Performance, improvisation, arranging, and ensemble techniques.

3721. Vocal Literature I

(225) First semester. Two credits. Two class periods. Prerequisite: Open to juniors or higher. Corequisite: MUSI 3222 and consent of instructor.

Songs and arias of the Renaissance and Baroque Periods: Oratorio Literature.

3722. Vocal Literature II

(226) Second semester. Two credits. Two class periods. Prerequisite: Open to juniors or higher. Corequisite: MUSI 3222 and consent of instructor.

Classical Period Songs; German Lied.

3723. Vocal Literature III

(227) First semester. Two credits. Two class periods. Prerequisite: Open to juniors or higher. Corequisite: MUSI 3222 and consent of instructor.

French melodie; Songs of Nationalistic origin.

3724. Vocal Literature IV

(228) Second semester. Two credits. Two class periods. Prerequisite: Open to juniors or higher.

Corequisite: MUSI 3222 and consent of instructor.

British and American Songs; The Modern Period.

3801. Acoustics and the Perception of Music (261) Either semester. Three credits. Prerequisite: Open to juniors or higher.

Science of Music, using basic quantitative techniques.

3811. Electronic Music Techniques

(264) Either semester. Three credits. Prerequisite: Open to juniors or higher. Open only with consent of instructor.

Theory and application of standard electronic music systems and techniques of sound synthesis.

3861C. Microcomputers in Music Education

(267C) Either semester. Two credits. Two laboratory/discussion periods. Prerequisite: Open to juniors or higher. Open only with consent of instructor.

Uses of micro-computers in the school music program. A fee of \$35 is charged for this course.

3982. Practicum in Music

(201) Either or both semesters. Credits and hours by arrangement. Prerequisite: Open to juniors or higher. Open only with consent of instructor. May be repeated for credit. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

4333. Composition III

(253) Either or both semesters. Two credits. Hours by arrangement. May be repeated for credit. Prerequisite: MUSI 3332 and consent of instructor; open to juniors or higher.

Individual instruction in musical composition.

4371. Theory Review

(290) First semester. 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

(271) Either semester. Three credits. Prerequisite: MUSI 3403 and one MUSI 2000 or higher level W course; open to juniors or higher. Open only with consent of instructor. With a change in content, may be repeated once for credit.

4472. Seminar: Style Periods in Music History

(272) Either semester. Three credits. Prerequisite: MUSI 3403 and one 2000 or higher level W course; open to juniors or higher. Open only with consent of instructor. With a change in content, may be repeated once for credit.

4473. Seminar: History of Musical Forms

(274) Either semester. Three credits. Prerequisites: MUSI 3403 and one 2000 or higher level W course; open to juniors or higher. Open only with consent of instructor. With a change of content, may be repeated once for credit.

Sonata, concerto, madrigal, motet, or other musical forms.

4489. Procedures in Historical Research

(291) Either semester. Three credits. Prerequisite: MUSI 3403 and one 2000 or higher level W course; open to juniors or higher. Open only with consent of instructor.

A project-oriented approach to bibliographic tools and research methods applicable to the historical study of music.

4731. Conducting I

(232) Either semester. Two credits. Prerequisite: MUSI 1314; open to juniors or higher. *Renshaw*

Physical aspects of conducting, reading of full and condensed scores.

4732. Conducting II: Choral

(233) Either semester. Two credits. Prerequisite: MUSI 4731; open to juniors or higher. *Bagley*

4733. Conducting II: Instrumental

(234) Either semester. Two credits. Prerequisite: MUSI 4731; open to juniors or higher. *Renshaw*

4979. Senior Recital

(297) Required of all Bachelor of Music performance majors. No credit. Prerequisite: Open to juniors or higher. Students completing this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

4995. Special Topics

(298) Either semester. Credits and hours by arrangement. Prerequisite: Open to juniors or higher. Open only with consent of instructor. May be repeated for credit.

Classroom course in a special topic as announced in advance for each semester.

4999. Independent Study

(299) Either semester. Credits and hours by arrangement. Prerequisite: Open to juniors or higher. Open only with consent of head of department. May be repeated for credit.

Natural Resources Management and Engineering (NRME)

Interim Department Head: Professor John Clausen
Department Office: Room 308, W.B. Young Building

For major requirements, see the College of Agriculture and Natural Resources section of this *Catalog*.

1000. Environmental Science

(100) First semester. Three credits. *Rudnicki*

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.

1235. Environmental Conservation

(130) Second semester. Three credits. *Barclay*

Overview of conservation policy development from colonial period to present and development of the environmental movement in the U.S. Discussion of the context and complexity of some contemporary environmental policy issues.

1615. Introduction to Natural Resources

(110) First semester. One credit. Open only to Freshman - Sophomore students.

An introduction to the field of renewable resources. Field trips required.

2000. Introduction to Geomatics

(219) Second semester. Four credits. Three lecture periods and one laboratory period. Not open to students who have passed NRME 3252 or 3535. *Civco, Meyer*

Principles and applications of geographic information systems (GIS), global positioning system (GPS), and remote sensing will be covered. Students will be provided with the scientific knowledge and technical skills needed to collect and use spatial data effectively in a Geographic Information System (GIS).

2010. Natural Resources Measurements

(242) First semester. Four credits. Two class periods and two 2-hour laboratories. Field trips required.

Principles and instrumentation used in the measurement of environmental conditions and processes.

2315. Introductory Wildlife Ecology and Conservation

(217) First semester. Three credits. Recommended preparation: BIOL 1107. *Ortega*

An introduction to wildlife ecology, conservation programs, and resource values. The distribution, life history and status of those amphibians, reptiles, birds and mammals whose populations humans are attempting to preserve, reestablish, or to control are examined.

2415. Dendrology

(214) First semester. Three credits. Two class periods and one 3-hour laboratory period. Recommended preparation: BIOL 1108 or 1110. *Schroeder*

The taxonomy, silvics, and distribution of trees and shrubs of the United States with emphasis upon Northeastern species. Field trips will be required.

3105. Wetlands Biology and Conservation

(204) First semester, alternate years (even). Three credits. Three class periods and one weekend field trip. Recommended preparation: BIOL 1107 and 1108. *Clausen*

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.

3115. Air Pollution

(210) First semester. Three credits. Prerequisite: NRME 3145.

The meteorology, effects and controls of air pollution.

3125. Watershed Hydrology

(211) Second semester, alternate years (even). Three credits. Recommended preparation: NRME 2010. *Warner*

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

(241) First semester. Three credits. *Yang*

A survey course in meteorology at the introductory level covering weather and climate processes.

3155. Water Quality Management

(246) First semester, alternate years (odd). Three credits. Recommended preparation: NRME 3125 or NRME 4165. *Clausen*

An introduction to all aspects of water quality problems relating to the many beneficial uses of water, including the physical, chemical, and biological properties.

3201. Conservation Law Enforcement

(201) Second semester. 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.

3205. Stream Ecology

(205) Second semester. Three credits. Recommended preparation: BIOL 1108 or equivalent. *Vokoun*

A broad overview of stream ecology will be presented. Emphasis will be placed on types of lotic habitats and the diversity and community patterns of organisms which inhabit them. Adaptations to life in

running water and energy flow in stream ecosystems will also be discussed. Efforts targeted at the conservation of streams will be integrated throughout the semester. One or more field trips required.

3218. Water Resources Assessment, Development and Management

(218) Second semester. Three credits. Three class periods and two field trips. Recommended preparation: NRME 1000 and GEOL 1050. *Robbins*

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.

3245. Environmental Law

(240) First semester. Three credits.

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.

3252. Geographic Information Science for Natural Resources Management

(252) Second semester. Four credits. Three class periods and one two-hour laboratory period. Prerequisite: NRME 2010, MATH 1120Q or higher calculus course. Recommended preparation: PHYS 1201Q. Open only to natural resource majors or with consent of instructor. *Meyer*

Introduction to geodetic and cartographic principles underlying the creation of accurate maps. Particular emphasis is given to mapping topography and natural areas. Topics include: horizontal and vertical geodetic datums, the geoid, map projections, coordinate systems, global positioning systems (GPS), GIS data modeling with regional database management systems, and digital terrain models.

3305. African Field Ecology and Renewable Resources Management

(207) (Also offered as EEB 3307 and EEB 5307.) Second semester, alternate years. Four credits. One class period during the semester, followed by three weeks in the field in South Africa. Recommended preparation: EEB 2244. Instructor consent required. *Ortega*

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 project conducted by the student in the field is required. CA 4-INT.

3315. Introduction to Aquaculture

(208) Either semester. Three credits. Two class periods, one 2-hour laboratory. Prerequisite: BIOL 1107 or 1108.

Basic principles and practice of environmentally compatible aquaculture. Emphasis on commercial aquaculture production including concepts and principles of various re-circulation systems, species, and culture techniques. Application of biotechnology will also be covered.

3335. Wildlife Management

(232) Second semester. Three credits. Prerequisite: NRME 2315. Recommended preparation: Prior course work in ecology. *Ortega*

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

(233) First semester, alternate years. Four credits. Two class periods and two 2-hour laboratories. Prerequisite: NRME 3335. One or more field trips will be required. *Barclay*

Based upon understanding and applying ecological principles, technology and science based information to fulfill human goals for wildlife resources and their habitats. Use of literature, development of basic field and laboratory skills, and application of management and research principles are integral. Collection and reporting of biological data upon which wildlife conservation decisions are based are emphasized. Designed for pre-professional students and meets professional certification requirements.

3355. Public Lands Wildlife Management

(247) Second semester. Three credits. Recommended preparation: NRME 2315, 3335, EEB 2244. Open only with consent of instructor. *Ortega*

Applied natural resources management in different ecosystems (forestlands, grasslands, and drylands). Meet one hour per week for background readings from current literature. Two short research papers and presentation to the class. Required field trip last two weeks of May. Students are responsible for cost of field trip.

3365. Private Lands Wildlife Management

(248) First semester. Alternate (odd) years. Three credits. Two class periods and one 3-hour laboratory period. Prerequisite: One 2000-level or above in ecology or wildlife management. *Barclay*

Companion course for Public Lands Wildlife Management (NRME 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.

3475. Forest Management

(280) Second semester, alternate years (odd). Four credits. Two class periods and one 4-hour laboratory period. Prerequisite: NRME 2415.

An introduction to forest mensuration, ecology, silviculture, and multiple-use management. Field trips required.

3535. Introductory Remote Sensing

(237) First semester. Three credits. Two class periods and one 2-hour laboratory period. Open to only CANR students and GEOG major. *Civco*

The principles of the interpretation of remote sensing imagery acquired from aircraft and satellite platforms will be studied. Various applications of remote sensing will be discussed.

3690. Field Study Internship

(287) Either semester or summer. One to six credits. Hours by arrangement. Open only to Junior - Senior students with consent of advisor and department head. 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).

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.

3699. Independent Study

(299) Either or both semesters. Credits and hours by arrangement. May be repeated for credit. Open only with consent of instructor.

4000W. Natural Resources Planning and Management

(239W) Second semester. Three credits. Prerequisite: Senior standing; ENGL 1010 or 1011 or 3800. *Clausen*

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

(295) Second semester. One credit. May be repeated for credit. Open only with consent of instructor.

4135C. Introduction to Ground-Water Hydrology

(234C) (Also offered as GEOL 4735C.) First semester. Four credits. Three class periods and one 2-hour laboratory for which occasional field trips will be substituted. Prerequisite: MATH 1122 or 1132 and GEOL 1001 or 1050, or instructor consent. *Robbins*

Basic hydrologic principles with emphasis on ground water flow and quality, geologic relationships, quantitative analysis and field methods.

4165. Soil and Water Management and Engineering

(260) Second semester, alternate years (odd). Three credits. Recommended preparation: NRME 3125 or CE 4820. *Warner*

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.

4175. Environmental Meteorology

(271) Second semester, even numbered years. Three credits. Recommended preparation: NRME 3145. *Yang*

Applied meteorology in environmental science and engineering. Solar energy, winds and air pollution, atmospheric-hydrologic interactions, agricultural and forest meteorology, and biometeorology.

4335. Fisheries Management

(235) First semester. Four credits. Three class periods and one 3-hour laboratory period. Prerequisite: STAT 1000QC or higher. *Vokoun*

Introduction to fisheries management principles with application to the biotic, habitat, and human components of fisheries. Selected topics include sampling gears, harvest regulations, stocking, population dynamics, and habitat management practices in ponds, lake, reservoir, river, and stream fisheries.

4455. Forest Ecology

(285) First semester. Three credits. Two class periods and one 3-hour laboratory. Prerequisite: NRME 2415, may be taken concurrently. *Rudnicki*

Ecological basis of forest management. Ecological diversity and relationships to the physical environment (light, temperature, soil, etc.); the influence of time (succession, disturbance, stand dynamics) and space (landscape ecology, ecosystem management) on forest ecosystem dynamics; forest production ecology and

nutrient cycling. Laboratory will be in the field or in computer lab.

4535C. Remote Sensing Image Processing

(238C) Second semester. Three credits. Two class periods and one 2-hour laboratory period. Prerequisite: NRME 2000 or 3535. Open only with consent of instructor. *Civco*

The principles of quantitative remote sensing, image processing and pattern recognition will be studied. Computer-assisted data analysis techniques will be used.

4545. Introduction to Geodesy

(253) First semester. Four credits. Prerequisite: NRME 2000, STAT 1100, PHYS 1201 or higher. Three class periods and one two-hour laboratory period. Fieldwork required. *Meyer*

Horizontal and vertical geodetic datums, proper integration of spatial information collected in disparate datums, distortions created by cartographic projections, and proper use of standard cartographic coordinate systems. Integrate measurements from optomechanical instruments such as total stations with Global Positioning System measurements.

4575. Natural Resource Applications of Geographic Information Systems

(277) First semester. Four credits. Three class periods and one 2-hour laboratory. *Civco*

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.

4665. Natural Resources Modeling

(256) First semester. Three credits. Prerequisite: MATH 1120Q or higher. Open only to natural resource majors except by consent. *Warner, Clausen*

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.

4689. Undergraduate Research in Natural Resources

(296) Either semester. Credits and hours by arrangement. May be repeated for credit for maximum of six credits. Open only with consent of instructor.

Field or laboratory research performed by the advanced undergraduate student in an area of natural resources under the supervision of a NRME faculty member. A report and/or an oral presentation will be required at the end of the semester.

4695. Special Topics

(298) Either semester. Credits and hours by arrangement. May be repeated for credit with a change of topic. Open only with consent of instructor.

Topics and credits to be published prior to the registration period preceding the semester offerings.

4697W. Undergraduate Research Thesis in Natural Resources

(297W) Either semester. Three credits. Hours by arrangement. Prerequisite: Three credits of either NRME 3699 or 4689, which may be taken concurrently; ENGL 1010 or 1011 or 3800. 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.

Nursing (NURS)

Dean: Anne R. Bavier

Associate Dean for Academic Affairs: Regina Cusson

Associate Dean for Academic Affairs: E. Carol

Polifroni

Office: Room 102, Storrs Hall

For major requirements, see the School of Nursing section of this *Catalog*.

1110. Introduction to Health and the Discipline of Nursing

(110) Both semesters. Three credits.

An introduction to the internal and external factors that influence health while simultaneously introducing students to the discipline and profession of nursing. Leading causes of illness, injury and death are discussed with emphasis on the role of the nurse in promoting health and disease prevention. Avenues for responsible participation in socio-political action to influence the health of all communities are explored.

1130. Health Care Delivery System

(112) Both semesters. Three credits.

An historical and contemporary exploration of the American health care delivery system: its evolution and development, legal and regulatory perspectives, roles of all providers and finances. A comparison with socialized health care will be made.

1175W. The End of Life: A Multicultural Interdisciplinary Experience

(175W) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800.

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.

3100. Clinical Science I

(200) First semester. Three credits. Prerequisite: PNB 2264, may be taken concurrently; open only to Nursing majors.

Critical examination of concepts from pathophysiology, pharmacology and nutrition as they relate to preventative health care of adults. Emphasis will be placed on nutritional aspects of preventative health care.

3110. Clinical Science II

(201) Second semester. Three credits. Prerequisite: CHEM 1122; NURS 3100; PNB 2264. PNB 2265 concurrent or prerequisite; open only to Nursing majors.

Critical examination of concepts from microbiology, pathophysiology, and pharmacology as they relate to health care of individuals throughout the lifespan. Emphasis will be placed on microbiology and anti-infectives.

3120. Health Assessment throughout the Lifespan

(221) Second semester. Three credits. Prerequisite: NURS 3100; PNB 2264; PNB 2265 concurrent; open only to Nursing majors.

In this course, students will acquire the knowledge, skills, and values needed for assessing individuals through the lifespan. Supervised laboratory sessions will provide opportunity to practice newly acquired skills. A fee of \$10 is charged for this course.

3130. Public Health Nursing

(270) Second semester. Three credits. Prerequisite: NURS 1130; Open only to Nursing majors.

Theories from nursing and public health are examined within the context of aggregate/population based care. Primary, secondary and tertiary approaches are used to promote the health of selected population/community.

3215W. Nursing Research

(213W) First semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800; to enroll in this course, a student must have earned a "C" or better in STAT 1000QC or 1100QC; open only to Nursing majors.

An introduction to qualitative and quantitative research. A variety of processes and resources is used to identify scholarly writing, critique research, and apply research findings to nursing.

3220. Clinical Science for Sub-Acute and Chronically Ill Adults

(212) First semester. Three credits. Prerequisite: To enroll in this course, a student must have earned a "C" or better in NURS 1110, 1130, 3100, 3110, 3120 and 3130; 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

(225) First semester. Three credits. Prerequisite: To enroll in this course, a student must have earned a "C" or better in NURS 3292 or RN license; open only to Nursing majors.

An exploration of the ethical way of knowing in nursing. Selected models and theories illustrating an ethical approach will be analyzed.

3230. Nursing Science for Adults with Sub-Acute or Chronic Health Issues

(218) First semester. Three credits. Prerequisite: To enroll in this course, a student must have earned a "C" or better in NURS 1110, 1130, 3100, 3110, 3120, and 3130; open only to Nursing majors.

Critical examination of theory, research and expert clinical practice supportive of nursing with adults experiencing sub-acute and chronic health problems and their families.

3292. Practicum with Sub-Acute and Chronically Ill Individuals

(219) First semester. Six credits. Prerequisite: To enroll in this course, a student must have earned a "C" or better in NURS 1110, 1130, 3100, 3110, 3120, and 3130; open only to Nursing majors.

Nursing and interdisciplinary care of the person and family with sub-acute and chronic health issues. Combined fees of \$95 are charged for this course.

3295. Special Topics in Nursing

(298) Either semester. Credits and hours by arrangement. Open only with consent of instructor. With a change in content, this course may be repeated for credit.

3330. Clinical and Nursing Science: Nursing Care of the Childbearing Family

(232) Both semesters. Four credits. Prerequisite: To enroll in this course, a student must have earned a "C" or better in NURS 3220, 3215W, 3230, and 3292; open only to Nursing majors.

Builds on students' understanding of microbiology, pharmacology, nutrition and pathophysiology as these sciences relate to childbearing families. Emphasis is on development of clinical decision making skills related to nursing care of childbearing families with a particular focus on anticipatory guidance, prevention, intervention and health restoration.

3392. Practicum with Childbearing Families

(239) Both semesters. Three credits. Prerequisite: To enroll in this course, a student must have earned a "C" or better in NURS 3220, 3215W, 3230, and 3292; NURS 3330 concurrent; open only to Nursing majors.

Provides experience in the application of principles of nursing used in the care of childbearing families. Clinical placements will be settings such as day care centers, childbirth education classes, schools, clinics,

group homes, women's health centers and agencies providing acute and chronic care. Combined fees of \$20 are charged for this course.

3450. Clinical and Nursing Science for Nursing Care of Childrearing Families

(252) Both semesters. Four credits. Prerequisite: To enroll in this course, a student must have earned a "C" or better in NURS 3220, 3215W, 3230, 3292; NURS 3330 concurrent; open only to Nursing majors.

Builds on students' understanding of microbiology, pharmacology, nutrition and pathophysiology as these sciences relate to childrearing families. Emphasis is on development of clinical decision making skills related to nursing care of childrearing families with a particular focus on anticipatory guidance, prevention, intervention and health restoration.

3492. Practicum with Childrearing Families

(259) Both semesters. Three credits. Prerequisite: To enroll in this course, a student must have earned a "C" or better in NURS 3220, 3215W, 3230, 3292; NURS 3450 concurrent; open only to Nursing majors.

Provides experience in the application of principles of nursing used in the care of infants, children, adolescents and their families. Clinical placements will be settings such as day care centers, schools, clinics, group homes, women's health centers and agencies providing acute and chronic care.

3560. Clinical and Nursing Science for Psychiatric and Mental Health Nursing

(264) Both semesters. Four credits. Prerequisite: To enroll in this course a student must have earned a grade of "C" or higher in Nursing 3220, 3215W, 3230, 3292; Nursing 3592 concurrent. Open to Nursing majors only. Not open to students who have completed NURS 262, 263.

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 process to assist individuals and families with a variety of behavioral health problems.

3592. Practicum for Psychiatric and Mental Health Nursing

(269) Both semesters. Three credits. Prerequisite: To enroll in this course, a student must have earned a "C" or better in NURS 3220, 3215W, 3230, 3292; NURS 262 and 263 or NURS 3560, must be taken concurrently; open only to Nursing majors.

Entails the clinical application of theory from nursing and related disciplines to mental health and illness (behavioral health). The focus is on psychiatric illness, critical thinking, communication skills, the nursing process in persons with a primary or secondary/adjunctive illness. The target of nursing care is the individual, family, group or community.

3670. Clinical and Nursing Science for Acutely Ill Adults

(274) Both semesters. Four credits. Prerequisite: To enroll in this course a student must have earned a grade of "C" or higher in NURS 3220, 3215W, 3230, 3292; Open to Nursing majors only. Not open to students who have completed NURS 272, 273.

Critical examination of pharmacology, microbiology, nutrition, 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.

3692. Practicum with Acutely Ill Adults

(279) Both semesters. Three credits. Prerequisite: To enroll in this course, a student must have earned a "C" or better in NURS 3220, 3215W, 3230, 3292; NURS 272 and 273 or NURS 3670 must be taken concurrently; open only to Nursing majors.

Nursing and interdisciplinary care of acutely ill persons and their families. Combined fees of \$20 are charged for this course.

3715. Nursing Leadership in the 21st Century

(250) Second semester. Three credits. Prerequisite: To enroll in this course, a student must have earned a "C" or better in NURS 3292; open only to Nursing majors.

An in-depth analysis of the components that facilitate new nursing graduates to become leaders at the patient bedside, within interdisciplinary groups, and in the community. Emphasis is on communication, leadership, social disclosure and social justice to benefit the client and the discipline.

4235. The Aesthetic Way of Knowing in Nursing

(235) Second semester. Three credits. Prerequisite: To enroll in this course, a student must have earned a "C" or better in NURS 3292 or RN license; open only to Nursing majors.

An exploration of the aesthetic way of knowing in nursing.

4265. Nursing's Past as Prologue

(251) Both semesters. Three credits. Prerequisites: Students must have earned a "C" or higher in NURS 3292 or RN license. Open to Nursing Majors Only. Not open to students who have completed NURS 1120.

Beginning with Florence Nightingale, the impact of events and the contributions of individuals will be examined in light of present day concerns in the profession of nursing. Issues such as race, class, gender and other social, political and economic factors will be analyzed. Internal and external forces that shape the substance of nursing education, practice, and research will be analyzed.

4292. Capstone Practicum

(289) Second semester. Variable credits. Recommended preparation: To enroll in this course, a student must have earned a "C" or better in all nursing courses through first semester, senior year; open only to Nursing majors. Undergraduate students should register for 6 credits.

Synthesis of knowledge, skills, and values from all prior learning to provide professional nursing care as a beginning practitioner. Combined fees of \$20 are charged for this course.

4299. Independent Study

(299) Either semester. Credits and hours by arrangement. Open only with consent of instructor.

Primarily for qualified students who wish to extend their knowledge by investigating special problems in nursing. With a change in content, this course may be repeated for credit.

4392. Health Assessment and Fundamentals of Nursing Praxis

(290) Second semester. Variable credits, 1 through 12. Prerequisite: PNB 2264/2265, CHEM 1122, BIOL 1107, MCB 2410, NURS 3100, Portfolio Review as required; equivalent coursework will be accepted for all courses. Student must be accepted into Basic Nursing (MBeIN) Certificate 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.

4492. Nursing Across the Lifespan I

(291) Variable credits, 1 through 12. Prerequisite: To enroll in this course, a student must have earned a "C" or better in NURS 4392. Student must be accepted into Basic Nursing (MBeIN) Certificate Program.

Problem based learning course examining issues in both parent-child health and community health. The nursing care of three major populations is explored: parents of childbearing and childrearing age, children, and clients in the community (wellness care and morbidity care in the home). The course will explore the major health and illness problems associated with these populations and incorporate clinical science, nursing science, and disease science knowledge appropriate to them. Major concepts of birth, wellness, prevention, grief and grieving, and chronicity will be explored. Settings will include but are not limited to hospitals, clinics, and homes.

4592. Nursing Across the Lifespan II

(293) Variable credits, 1 through 12. Prerequisite: To enroll in this course, a student must have earned a "C" or better in NURS 4492. Student must be accepted into Basic Nursing (MBeIN) Certificate Program.

Examines the major health and illness issues with adults through a problem based learning approach. Primary areas of focus are acute care and psychiatric mental health nursing. Hospitals and community centers are the primary areas of practice although students may also follow clients to their homes, long term care facilities, or other residential facilities. Major concepts of infection, coping, grief and grieving, loss, aeration/oxygenation, communication, and circulation are addressed.

Nutritional Sciences (NUSC)

Head of Department: Professor Sung I. Koo
Department Office: Room 214, Roy E. Jones Building

For major requirements, see the College of Agriculture and Natural Resources section of this *Catalog*.

1030. Interdisciplinary Approach to Obesity Prevention

(130) (Also offered as AH 1030.) Second semester. Three credits. Open to freshman 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.

1165. Fundamentals of Nutrition

(165) Either semester. Three credits.

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

(167) Either semester. One credit. One class period and one 2-hour discussion/laboratory every other week. Concurrent enrollment in NUSC 1165 required.

Clark

Lectures, discussions, and laboratory exercises to complement topics from NUSC 1165. Primarily for, but not restricted to, honors students.

1167. Food, Culture and Society
(166) Either semester. 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 Lecture

(195) Either semester. Credits, prerequisites, and hours as determined by the Senate Curricula and Courses Committee. May be repeated for credit with a change in topic.

1645. The Science of Food

(160) (Also offered as ANSC 1645.) Either semester. 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.

2200. Nutrition and Human Development

(200) Either semester. Three credits. Prerequisite: NUSC 1165.

Nutritional needs and consequences of nutritional deficiencies throughout the life cycle: periconception, pregnancy, lactation, childhood, adolescence and aging. Maternal and child public health issues in the developed and developing world.

2241. Nutritional Assessment

(241) Second semester. One credit. One class period and one 2-hour laboratory, every other week. Prerequisite: NUSC 1165. Recommended preparation: MCB 2000 or 3010, PNB 2250 or 2265. Enrollment restricted to Nutritional Sciences and Kinesiology majors. *Clark*

Anthropometry, clinical, and biochemical techniques for assessment of human nutritional status.

2245. Profession of Dietetics

(245) First semester. One credit. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory). *Shanley*

Overview of the profession of dietetics, including clinical, community, and food service management. Portfolio development will be introduced. Not open for credit to students who have passed NUSC 4295 when entitled Profession of Dietetics.

3180. Experience in Community Nutrition

(281) Either semester. One to six credits. Prerequisite: NUSC 1165. Recommended preparation: NUSC 3267. Consent of instructor required. May be repeated for credit. No more than six credits of experience or independent study may apply toward the major. *Ferris, Perez-Escamilla*

Supervised field work with community nutrition education or problem-solving. Readings and reports.

3233. Food Composition and Preparation

(233) First semester. Three credits. Prerequisite: NUSC 1165. Recommended preparation: CHEM 2241 or 2443. *Fernandez*

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

(235) First semester. One credit. One 3-hour laboratory period. Prerequisite: NUSC 1165 and concurrent registration in NUSC 3233. Recommended preparation: CHEM 2241 or 2443. Enrollment restricted to Nutritional Sciences and Allied Health Dietetic ma-

jors. Open to others by consent if space is available. *Fernandez*

Laboratory techniques related to composition of foods, and the physical and chemical changes that occur during preparation. A fee of \$20 is charged for this course.

3235. Principles of Food Science

(212) Second semester. Three credits. Recommended preparation: MCB 2000 or 3010.

Chemical, physical, microbiological, and legal aspects of food production, preservation and processing. Safety, aesthetics and nutrition topics included.

3267. Principles of Community Nutrition

(267) First semester. Three credits. Prerequisite: NUSC 2200 which may be taken concurrently. *Perez-Escamilla*

Role of community structures, agencies, services and the professional nutritionist in community health.

3270. Food Services Systems Management I

(270) Second semester. Three credits. Two class periods and one 2-hour laboratory/discussion period. Recommended preparation: AH 4244 or MGMT 3101, NUSC 3233, 3234. *Shanley*

Quantity food procurement, preparation and distribution; recipe standardization; sanitation and safety; portion and quality control; food cost control; computer applications; and personnel management. A fee of \$20 is charged for this course.

3782. Experience in Food Service Systems Management

(275) Either semester. One to six credits. Prerequisite: NUSC 3270. Consent of instructor required. May be repeated for credit. No more than six credits of experience or independent study may apply toward the major. *Shanley*

Application of principles of food service management. Supervised placement.

3823. Experience in Medical Nutrition Therapy

(283) Either semester. One to three credits. Prerequisite: NUSC 2241. Consent of instructor required. No more than six credits of experience or independent study may apply toward the major. *Rodriguez*

4236. Principles of Nutrition

(236) Second semester. Three credits. Prerequisite: NUSC 1165 and MCB 2000 or 3010. *Clark*

Function and metabolism of carbohydrates, proteins, fats, minerals, and vitamins.

4237W. Writing in Nutritional Sciences

(237W) Second semester. One credit. Prerequisite: ENGL 1010 or 1011 or 3800. NUSC 4236 must be taken concurrently. Open only by consent of instructor.

A writing-intensive class that emphasizes both style and content consistent with the discipline of Nutritional Science.

4250. Nutrition for Exercise and Sport

(250) Second semester. Three credits. Prerequisite: NUSC 1165 and PNB 2250 or 2265. *Rodriguez*

Basic nutrition principles. Physical activity, exercise, sport performance and consequences of nutritional ergogenic aids.

4265. Medical Nutrition Therapy

(265) First semester. Three credits. Prerequisite: NUSC 2241. Recommended preparation: MCB 2000 or 3010. *Rodriguez*

Metabolic basis for medical nutrition therapy. Enteral and parenteral nutrition. Pathology of disease. Role of dietary management of disease.

4266. Medical Nutrition Therapy Recitation

(266) First semester. One credit. Prerequisite: NUSC 2241. NUSC 4265 must be taken concurrently. *Rodriguez*

Case studies and presentations. Medical terminology. Practical aspects of medical nutrition therapy administration.

4270C. Food Service Systems Management II

(272C) First semester. Three credits. Two class periods and one 2-hour laboratory/discussion period. Prerequisite: NUSC 3270. *Shanley*

Institutional menu development; cost and budgeting; recipe analysis and adaptation; equipment layout and design; personnel management; communications skills; computer applications; marketing and merchandising; food delivery systems. A fee of \$20 is charged for this course.

4294. Seminar

(295) Second semester. One credit. One class period. Prerequisite: NUSC 2200. May be taken twice.

Review, evaluation, and oral and written presentation of contemporary nutrition issues.

4295. Special Topics

(298) Either semester. Credits and hours by arrangement. May be repeated for credit with a change of topic. Consent of instructor required.

Topics and credits to be published prior to the registration period preceding the semester offerings.

4296W. Senior Thesis in Nutrition

(296W) Either semester. Three credits. Hours by arrangement. Prerequisite: Open only by consent of honors advisor and department head; enrollment limited to Nutritional Sciences honors students; ENGL 1010 or 1011 or 3800.

4299. Independent Study

(299) Either semester. One to 3 credits. Consent of instructor and department head required. No more than six credits of experience or independent study may apply toward the major.

Individual study and research with faculty. Written report.

Occupational Safety and Health (OSH)

Director: Susan Nesbitt

Program Director: Anthony Joseph

Department Office: Room 207, Bishop Center

For General Studies major requirements, see the Center for Continuing Studies section of the *Catalog*.

3270. Industrial Fire Safety/Industrial Protection

(270) Either semester. Three credits. *Russo*

Control and prevention of fire in the workplace, life safety requirements and what to do in a fire emergency. Topics include: requirements of 1910.36-38 and 1918.100; evacuation plan; recognizing and evaluating fire hazards; evaluating suppression and prevention systems; personal protective equipment; life safety requirements and emergency response and training.

3271. Workplace Chemical Safety

(271) (Formerly offered as GS 271.) Either semester. Three credits.

Management of the hazards associated with processes using highly hazardous chemicals. Topics include: Physical and chemical properties of highly hazardous chemicals; classification of hazardous chemicals; requirements of the process safety standard (1910.199); and management of hazards associated with processes using highly hazardous chemicals, including auditing.

3272. Workplace Safety Hazards

(272) (Formerly offered as GS 272.) Either semester. Three credits.

Anticipation, identification and evaluation of safety hazards, and development of controls to reduce the risk for injury, illness of workers or damage to property and/or the environment. Topics include: types of hazards; fall protection; material handling; machine guarding; electrical safety; and safety programs.

3273. Psychology of Workplace Safety

(273) (Formerly offered as GS 273.) Either semester. Three credits.

Human factors and behavior that have an impact upon the safety performance of employees in the workplace. Topics include: Behavioral analysis; stress vs. distress; sensation, perception and perceived risk; caring and interviewing.

3274. Workplace Environmental Issues

(274) (Formerly offered as GS 274.) Either semester. Three credits.

Management of environmental issues related to the workplace. Topics include: compliance with regulatory requirements; waste disposal; material storage and transportation; managing workplace environmental programs and future of environmental management.

3275. Workplace Environmental Law and Regulations

(275) (Formerly offered as GS 275.) Either semester. Three credits.

Understanding environmental laws and regulations required for workplaces to be in compliance. Topics include: an overview of the history and current environmental laws; the general framework of federal legislation; Resources Conservation and Recovery Act (RCRA); the Clean Air Act (CAA); Clean Water Act (CWA) and Emergency Planning and Community Right to Know Act (EPCRA).

3276. Workplace Security and Violence

(276) (Formerly offered as GS 276.) Either semester. Three credits.

Management of workplace security and violence issues. Topics include: workplace security issues; security and law; physical security standards; security management systems; workplace violence; crisis management; fear in the workplace; and workplace violence interventions and prevention strategies.

3277W. Hazardous Chemicals

(277W) (Formerly offered as GS 277.) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800.

A writing course that has as its subject hazardous chemicals and their use in the workplaces, their effects on the environment, and the hazards caused by exposure to them.

3278. Workers' Compensation Law

(278) (Formerly offered as GS 278.) Either semester. Three credits.

State and Federal workers' compensation laws, and the interrelationship of these laws with other laws. Designed for the student without a legal background, and interested in learning about the laws governing workplace injuries and practical considerations for handling of these claims.

3295. Special Topics

(298) Either or both semesters. Three credits. With a change in content, may be repeated for credit.

3299. Independent Study

(299) Either or both semesters. Credits and hours by arrangement. With a change in content, may be repeated for credit. Open only with consent of instructor.

4220. Pollution Control and Prevention I

(220) Either semester. Three credits.

Provides basic knowledge of management and applied techniques in controlling and preventing pollution from industrial activities. Includes a brief history of pollution, legal aspects of prevention and control, management of all types of industrial wastes, and techniques to control pollution of water, air and land.

4221W. Trends in Environmental and Occupational Safety and Health

(221W) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800.

Introduction to the impact of issues in the workplace in promoting prevention of injuries and illness to workers, and protection of property and the environment.

4269. Environmental Management Systems

(269) Either semester. Three credits.

Examines a number of environmental management systems and provides basic guidance for developing systems with special reference to ISO 14001. Also offers advice on a wide range of environmental issues including auditing.

Operations and Information Management (OPIM)

Head of Department: Professor James R. Marsden
Department Office: Room 372, School of Business

For major requirements, see the School of Business section of this *Catalog*.

Courses in this department are open to juniors and seniors only. The School of Business requires students at the Storrs campus to participate in the Mobile Computing Initiative before registering for the courses listed below. See the School of Business *Catalog* section for details about how the program operates.

1195. Special Topics Lecture

(195) Either semester. Credits, prerequisites, and hours as determined by the Senate Curricula and Courses Committee. May be repeated for credit with a change in topic.

3103C. Business Information Systems

(203C) Either semester. Three credits. Prerequisite: ACCT 2001. Open only to School of Business students; others with the consent of the Operations and Information Management Department Head; open to juniors or higher. Not open to students who have passed or are taking BADM 3760.

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

(204) Either semester. Three credits. Prerequisite: Open to juniors or higher.

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.

3211. Systems Analysis and Design

(211) Either semester. Three credits. Prerequisite: OPIM 3103C, 3220, 3221, 3222; open only to MIS majors.

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.

3212. Advanced Information Technologies

(212) Either semester. Three credits. Prerequisite: OPIM 3103C, 3220, 3221, 3222; open only to MIS majors.

Deepens knowledge of application development tools for the design of decision oriented information systems. Emphasis will be placed on emerging tools and techniques relevant for modern organizational information needs.

3220. Business Software Development

(220) Either semester. Three credits. Prerequisite: Open to juniors or higher.

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.

3221. Business Database Systems

(221) Either semester. Three credits. Prerequisite: Open to juniors or higher.

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.

3222. Network Design and Applications

(222) Either semester. Three credits. Prerequisite: Open to juniors or higher.

Principles and applications of business telecommunications emphasized. Covers important network systems as well as crucial techniques in building these systems. Students participate in network design and implementation project.

3223. Advanced Business Application Development

(223) Three credits. Prerequisite: OPIM 3103C. Open to MIS majors only.

Course designed to cover 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.

3505. Introduction to Database Management

(205) Either semester. Three credits. Prerequisite: OPIM 3103C or equivalent. Consent of Department Head and BGS Mentor is required. Cannot be used toward fulfilling MIS major requirements. Offered only at the Tri-Campus and Stamford Regional Campus locations.

Introduction to the development and implementation of database applications. Topics covered include costs and benefits of database approach, database design lifecycle, conceptual database design, the relational data model, data administration, database security, database backup and recovery, and database management system selection and implementation. Students participate in the hands on design and implementation of a small database using the relational architecture.

3506. Business Application Programming

(206) Either semester. Three credits. Prerequisite: OPIM 3103C or equivalent. Consent of Department Head and BGS Mentor is required. Cannot be used toward fulfilling MIS major requirements. Offered only at the Tri-Campus and Stamford Regional Campus locations.

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.

3507. Internet Technologies and Electronic Commerce

(207) Either semester. Three credits. Prerequisite: OPIM 3505, OPIM 3506; consent of Department Head and BGS Mentor is required. Cannot be used toward fulfilling MIS major requirements. Offered only at the Tri-Campus and Stamford Regional Campus locations.

Introduces Internet technology and tools from the perspective of business users. The focus is on providing knowledge base and functional tools for students as workers in the 21st Century. The specific technologies covered in the class will depend upon state-of-the-art at the time of class offering. However, some of the general concepts include: HTML, client side programming such as Javascript or VBscript, dynamic content creation and management, electronic business process management, security concerns and solutions, and regulatory/public policy issues. A significant part of the course will involve hands-on training.

3508. System Development and Process Management

(208) Either semester. Three credits. Prerequisite: OPIM 3505, OPIM 3506; consent of Department Head and BGS Mentor is required. Cannot be used toward fulfilling MIS major requirements. Offered only at the Tri-Campus and Stamford Regional Campus locations.

Covers the system development life cycle of business information systems. Topics include business process reengineering, detailed process modeling and data modeling techniques, project management concepts, system architecture, testing and implementation considerations. The potential system issues and relevant up-to-date technologies are also explored in the class. Students participate in a project using supportive software tools.

3610. Operations Research for Information Systems Analysis

(210) Either semester. Three credits. Prerequisite: OPIM 3103C, which may be taken concurrently.

The philosophy and techniques of Operations Research, including problem definition, modeling, and solution in the context of analysis, design, and implementation of computer-based information systems.

3652. Industrial Quality Control

(252) Semester by arrangement. Three credits. Prerequisite: STAT 1000 or 1100, and OPIM 3104 or MEM 2211.

The economic control and assurance of quality and reliability with emphasis on management of the quality function. Included are: a conceptual treatment of statistical methods in quality control; control of quality during manufacture and at delivery of finished goods; planning for quality control and reliability; quality management, to include organization, economics, systems and procedures.

4891. Field Study Internship

(289) Either or both semesters. One to six credits. Hours by arrangement. Prerequisite: Completion of Freshman - Sophomore School of Business Requirements and consent of instructor and Department Head. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

Designed to provide students with an opportunity for field work 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.

4893. Foreign Study

(293) Either or both semesters. Credits and hours by arrangement, up to a maximum of six credits. Prerequisite: open to juniors or higher; 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.

Special topics taken in a foreign study program.

4895. Special Topics

(298) Either semester. Credits and hours by arrangement. Prerequisite: OPIM 3103C and others as announced separately for each offering. With a change in content, may be repeated for credit.

4899. Independent Study

(299) Either semester or both semesters. Credits by arrangement, not to exceed six in any semester. Open only with consent of instructor and Department Head.

Individual study of special topics in operations management, operations research and information management as mutually arranged between a student and an instructor. Individual study of special topics in operations management, operations research and information management as mutually arranged between a student and an instructor.

4997. Senior Thesis in Operations and Information Management

(296) Either semester. Three credits. Hours by arrangement. Prerequisite: Open only by consent of instructor and department head; open only to OPIM Department Honors Students.

Classroom course in special topics in operations management, operations research and information management as announced in advance for each semester. Classroom course in special topics in operations management, operations research and information management as announced in advance for each semester.

Pathobiology and Veterinary Science (PVS)

Head of Department: Professor Herbert J. Van Kruiningen

Department Office: Room 103, Animal Pathology Building

For major requirements, see the College of Agriculture and Natural Resources section of this *Catalog*.

1000. Biomedical Issues in Pathobiology

(113) (Formerly offered as PATH 113.) Second semester, alternate years (odd). Two credits. *Frasca*

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.

2095. Special Topics Lecture

(195) Either semester. Credits, prerequisites, and hours as determined by the Senate Curricula and Courses Committee. May be repeated for credit with a change in topic.

2100. Anatomy and Physiology of Animals

(200) (Formerly offered as PATH 200.) First semester. Four credits. Prerequisite: BIOL 1107 or equivalent. Three class periods and one 2-hour discussion/laboratory period. *Smyth*

A study of the anatomy and physiology of animals with reference to pathological changes of the component parts of the body.

2301. Health and Disease Management of Animals

(202) (Formerly offered as PATH 202.) Second semester. Three credits. Prerequisite: PVS 2100. *Bushmich*

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.

3094W. Seminar

(295W) Either or both semesters. Two credits. One class period. Prerequisite: ENGL 1010 or 1011 or 3800. Open only with consent of instructor. Majors may take this course in each semester of the senior year. May be repeated for credit. *Khan*

3095. Special Topics

(298) (Formerly offered as PATH 298.) Either semester. Credits and hours by arrangement. May be repeated for credit with a change of topic. Open only with consent of instructor.

Topics and credits to be published prior to the registration period preceding the semester offerings.

3099. Independent Study

(299) (Formerly offered as PATH 299.) Either or both semesters. Credits and laboratory periods by arrangement. 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.

3100. Histologic Structure and Function

(296) (Formerly offered as PATH 296.) First semester. Four credits. Three class periods and one 2-hour laboratory. Prerequisite: Open to juniors or higher. Open only with consent of instructor. *French*

Designed for students in biologic, paramedical and animal sciences, and its purpose is to integrate histologic and cellular structure with function, utilizing tissues from man and other vertebrates.

3201. Principles of Animal Virology

(248) (Formerly offered as PATH 248.) First semester. Three credits. Prerequisite: Open to juniors or higher. *Garmendia*

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.

3201W. Principles of Animal Virology

(248W) (Formerly offered as PATH 248W.) Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher.

3341. Pathobiology of the Avian Species (252) (Formerly offered as PATH 252.) First semester. Three credits. Prerequisite: Open to juniors or higher. Offered in odd-numbered years. *Khan*

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.

3501. Diagnostic Techniques for the Biomedical Sciences

(260) (Also offered as AH 3501.) Second semester. Two credits. One 1-hour lecture and one 3-hour laboratory. Prerequisite: Open to juniors or higher. Instructor consent required. Open only to students who have declared the Agricultural Biotechnology minor and passed MCB 3414. Recommended preparation: MCB 2000. *Anamani, Frasca, Lipcius, Risatti*

Theoretical basis and practical exposure to modern laboratory methods used in the biomedical sciences for disease diagnosis.

4300. Principles of Pathobiology

(297) (Formerly offered as PATH 297.) Second semester. Three credits. Prerequisite: Open to juniors or higher. *Van Kruiningen*

The body's response to chemical, physical, and microbial injuries including the functional and morphologic alterations in disease of the major organ systems are discussed. Knowledge of anatomy and physiology is recommended.

4351. Diseases of Finfish and Shellfish

(256) (Formerly offered as PATH 256.) Second semester. Three credits. Offered in even-numbered years. Fieldtrips are required. Prerequisites: BIOL 1107 or equivalent, PNB 2250 or PVS 2100 or equivalent; open to juniors or higher. Recommended preparation: MCB 2610, EEB 4200, NRME 3315, PNB 3235 and PVS 3100. *Frasca, French*

A systematic study of infectious and noninfectious diseases of commercial finfish and shellfish emphasizing pathology, microbiology, diagnosis and prevention.

Pharmacy (PHAR)

For major requirements, see the School of Pharmacy section of this *Catalog*.

1000. Drugs: Actions and Impact on Health and Society

(100) Either semester. Three credits. Two 1 1/2 hour class periods. Not open to pharmacy students in the Professional Program. Not open to students who have completed PHAR 2000 when taken as Drugs: Actions and Impact on Health and Society. *Gerald*

Introductory survey of common drugs used medically and nonmedically. Biological emphasis with historical, cultural, social implications. General Concepts: mechanisms of action, modification drug response, and new drug development. CA 3.

1001. Toxic Chemicals and Health

(150) Second semester. Three credits. Not open to pharmacy students in the Professional Program. *Morris*

An elementary service course which will provide an understanding of the issues and problems associated with evaluating human health risks from voluntary and involuntary exposure to toxic chemicals. An appreciation of toxic chemical risks as compared to other societal health risks, the processes of scientific risk assessment, and social management of toxic chemical risks will be gained. CA 3.

The following courses are open only to students enrolled in the professional program (four years) of the School of Pharmacy.

2000. Special Topics Lecture

(195) Either semester. Credits and hours as determined by the Senate Curricula and Courses Committee. May be repeated for credit with a change in topic.

2002. Human Physiology and Anatomy I

(202) First semester. Three credits. Prerequisite: BIOL 1107; CHEM 1127, 1128; PHYS 1300; open only to pre-pharmacy students, others by permission.

First of a two-part course in human physiology and anatomy. Structure and function of the skin, bone and muscle systems, the nervous system, special senses and the endocrine system.

2003. Human Physiology and Anatomy II

(203) Second semester. Three credits. Prerequisite: BIOL 1107; CHEM 1127, 1128; PHYS 1300; PHAR 2002; open only to pre-pharmacy students, others by permission.

Second of a two-part course in human physiology and anatomy. Structure and function of the cardiovascular system, the lymphatic system, the respiratory system, the gastrointestinal system, the renal and reproductive systems.

3012. Pharmacy Research Seminar

(201) First semester. One credit. One class period. A cumulative grade point of 2.3 or above is normally required for enrollment. May be repeated up to two times for credit. *Anderson*

A seminar series providing an overview of current research areas and contemporary issues in pharmacy practice and the pharmaceutical sciences.

3087W. Honors Thesis in Pharmacy

(297W) Either semester. Three credits. Hours by arrangement. Prerequisite: ENGL 1010 or 1011 or 3800. Open only to honors students within the School of Pharmacy with consent of the instructor and Associate Dean.

3095. Special Topics

(298) Either semester. Credits by arrangement. Open only with consent of instructor; open only to Pharmacy students. This course may be repeated for credit. *Hubbard*

3099. Undergraduate Research

(299) Either semester. Credits by arrangement. Open only with consent of instructor and Associate Dean. This course may be repeated for credit. *Hubbard*

This course is designed primarily for qualified students who wish to extend their knowledge in the various fields represented in the School of Pharmacy. A 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.

Pharmacy (PHRM)

Courses for the Doctor of Pharmacy (Pharm.D.)

Associate Dean: Andrea K. Hubbard, Ph.D.

Office: Pharmacy/Biology Building, Room 351

For major requirements, see the School of Pharmacy section of this *Catalog*.

The following courses are open only to students enrolled in the professional program of the School of Pharmacy.

2000. Special Topics Lecture

(195) Either semester. Credits and hours as determined by the Senate Curricula and Courses Committee. May be repeated for credit with a change in topic.

3001. Health Care Organization

(202) First semester. One credit. One class period. Prerequisite: ECON 1202. *McCarthy*

A study of the United States health care system, with emphasis given to its historical development, its activities, and the major organizational forms and financing mechanisms supporting it and consideration of pharmacy's role within the current and future United States health care system.

3002. Social And Behavioral Aspects Of Pharmacy

(203) First semester. Two credits. Two class periods. Prerequisite: SOCI 1001 and COMM 1100. *Facchinetti*

Social development of pharmacists in the twentieth Century. The need for newer roles. Competence to provide progressive cognitive services. Social and organizational support necessary to provide pharmacy care. Behavioral aspects of patients pertaining to the provision of pharmaceutical care.

3003. Principles of Pharmacoeconomics

(205) First semester. Two credits. One class period. Prerequisite: ECON 1202. *Coleman*

A study of the economic forces within the health care environment affecting the practice of pharmacy focusing on the various types of pharmacoeconomic methodologies, including an assessment of their strengths and weaknesses, and their validity and applicability in clinical practice.

3005. General Principles and Organ System Overview

(219) First semester. Three credits. Three class periods. Prerequisite: Must have satisfied all science and math requirements of the first two years. *Aneskievich*

Basic principles of physiology, pharmacology and receptor site theory and overview of cell biology and all the organ systems.

3006. Pharmaceutical Bio-Organic Chemistry I

(233) First semester. Three credits. Three class periods. Prerequisite: Must have satisfied all science and math requirements of the first two years. *Pavlopoulos*

Development of the fundamental medicinal and natural products chemistry knowledge, as well as the critical thinking and problem solving skills to apply this knowledge which will be required in the provision of pharmaceutical care and will serve as the foundation for the Pharmacy graduate's continuing professional maturation, education and development.

3007. Pharmaceutical Care I

(201) First and second semester. One credit total. Hours by arrangement. *Hritcko*

Provision of a historical perspective of pharmacy practice, development of a theoretical foundation for the practice of pharmaceutical care and experiential opportunities for the student to begin to develop skills in providing pharmaceutical care.

3008. Interpersonal Skills Development in Pharmacy Practice

(206) Second semester. Two credits. One class period and one two-hour laboratory. Prerequisite: COMM 1100; PHRM 3001, 3002, 3003. *Facchinetti*

Principles of interpersonal communications: effective questioning, empathic listening, reflective responding, assertiveness, and other socio-behavioral aspects of patient care. Skill development in patient counseling and interpersonal communications.

3009. Nervous System

(220) Second semester. Five credits. Five class periods. Prerequisite: PHRM 3005. *Gianutos*

Functions of the autonomic, somatic and central nervous systems; pharmacological effects and mechanism of action of drugs and biotechnologically-derived products used to treat diseases of the autonomic nervous system, sensory system disorders and neuro-

logical and psychiatric diseases, and structural features imparting biological activity and the design of drugs used to treat diseases of the autonomic nervous system, sensory system disorders, and neurological psychiatric diseases.

3010. Pharmaceutical Bio-Organic Chemistry II
(234) First semester. Three credits. Three class periods. Prerequisite: PHRM 3006. *Bouvier*
A continuation of PHRM 3006.

3011. Pharmaceutical Bio-Organic Chemistry Laboratory
(235) Second semester. One credit. One laboratory session and one pre-laboratory session. Must be taken concurrently with PHRM 3010. *Pavlopoulos*

A study of organic compounds, having pharmaceutical significance with ten laboratory exercises which include physical properties and chemical reactivities of drug molecules, their chromatographic analysis, the study of enzymes, and biotechnological techniques and their isolation from natural products. A fee of \$10 is charged for this course.

3012. Community Pharmacy Management
(213) First semester. Two credits. One class period.
A study of the concepts and theories, with case study application, underlying the successful management of a community pharmacy practice.

4000. Cardiovascular/Renal/Respiratory Systems
(221) First semester. Four credits. Four class periods. Prerequisite: PHRM 3009. *Langner*

A study of the physiology, pharmacology, and structure-activity relationships of drugs affecting the cardiovascular, renal, and respiratory systems.

4001. Solution and Solid Dosage Forms
(242) First semester. Four credits. Four class periods. Prerequisite: Must have satisfied all science requirements of first two years. *Kalonia*

An investigation of the principles underlying the formulation, dissolution, stability, and release of drug products for optimum delivery. Solution dosage forms, parenteral formulations, tablets and capsules are considered in detail.

4002. Dosage Forms Preparation Laboratory
(244) First semester. One credit. One discussion period and one three-hour laboratory. Prerequisite: Must have satisfied all science requirements of first two years. To be taken concurrently with PHRM 4001. *Pikal*

Extemporaneous preparation of sterile and non-sterile dosage forms, with particular attention to solutions, solids and dispersed systems. A fee of \$20 is charged for this course.

4003C. Pharmacokinetics
(245C) First semester. Three credits. Three class periods. Prerequisite: Must have satisfied all science requirements of first two years, PHRM 3009, 3010. *Morris*

A study of the basic principles of Pharmacokinetics and their application to the rational design of both dosage forms and dosing regimens, optimizing the latter to further the likelihood of safe effective drug therapy in a variety of clinical situations.

4004. Therapeutics I
(253) First semester. Three credits. One two-hour class period and one two-hour conference. Prerequisite: PHRM 3009 and concurrent with PHRM 4000. *Caley*

A study of the clinical features of diseases of the central nervous system and the provision of pharmaceutical care to psychiatric, neurologic, and pain syndrome patients. Drug related problems concerned with the treatment of these patients is emphasized.

4005W. Current Topics in Pharmacy
(258W) Either semester. Three credits. Two hours of lecture, one hour of discussion and required readings and writings. May be repeated for credit with a change of content and permission of instructor. Prerequisite: ENGL 1010 or 1011 or 3800.

4006. Pharmaceutical Care II
(207) First and second semester. One credit total. Hours by arrangement. *Hritcko*

4007. Pharmacy Law and Ethics
(208) Second semester. Three credits. Three class periods. Prerequisite: PHRM 3008. *McCarthy*

A study of federal and state laws and ethical principles governing pharmacy practice. Case-study practice scenarios allow students to make pharmaceutical care decisions based upon legal and/or ethical reasoning.

4008. Endocrine/Gastrointestinal Systems
(222) Second semester. Three credits. Three class periods. Prerequisite: PHRM 4000. *Manautou*

A study of the physiology, pharmacology, and structure-activity relationships of drugs affecting the gastrointestinal and endocrine systems.

4009. Dispersed Systems
(246) Second semester. Three credits. Three class periods. Prerequisite: PHRM 4001. *Burgess*

Investigation of the principles and factors affecting the performance of dosage forms classified as dispersed systems: suppositories, aerosols, emulsions, suspensions, transdermals, and ointments.

4010. Dosage Forms Preparation Laboratory II
(247) Second semester. One credit. One class period and one three-hour laboratory. Prerequisite: Must be taken concurrently with PHRM 4009. *Bogner*

Extemporaneous preparation of sterile and non-sterile dosage forms, with particular attention to solutions, solids and dispersed systems. A fee of \$20 is charged for this course.

4011. Therapeutics II
(254) Second semester. Four credits. Three lecture hours and three conference hours. Prerequisite: PHRM 4004; open to Pharmacy students only. *Wang*

A study of the etiology, clinical manifestations, and treatment regimens of common acute and chronic cardiovascular, critical care, respiratory, renal, and women's health diseases with emphasis on solving drug-related problems and the application of pharmacokinetic principles of selected drugs in these clinical situations.

4012. Advanced Compounding
(214) First semester. Two credits. One class period and one 3-hour laboratory. Prerequisite: PHRM 4010. *Bogner*

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. A fee of \$10 is charged for this course.

5000. Evaluation Skills
(200) First semester. Three credits. Three class periods. *Bahr, White*

Development of skills needed to critically evaluate and assess data published in pharmacy literature. This course will include an introduction to computer-based software programs, fundamentals of biostatistics, drug literature evaluation, literature search programs and fundamentals of epidemiology.

5001. Pharmacology Discussion / Lab
(223) First semester. One credit. Three hours of laboratory/conference. Prerequisite: PHRM 4008. *Aneskievich*

Continuing development of problem solving based skills. Topics and issues will be related to pharmacology didactic concepts and theory acquired through the first two professional years.

5002. Chemotherapy
(224) First semester. Two credits. Two class periods. Prerequisite: PHRM 3010, 4008, 4011; PVS 4300. *Hubbard*

Development of an understanding of the clinical indications, pharmacology, adverse drug events and structure activity relationships of drugs used in the treatment of infectious diseases.

5003. Toxicology
(225) First semester. Two credits. Two class periods. Prerequisite: PHRM 3010, 4008, 4011; PVS 4300. *Grant*

Development of an understanding of basic principles of toxicology which determine effects of therapeutic, occupational, or environmental chemicals on human health. Rationale for and nature of procedures required during preclinical safety assessment of therapeutic agents will be discussed.

5004. Therapeutics III
(255) First semester. Three credits. Two class periods. One two-hour class period and one two-hour conference. Prerequisite: PHRM 4011. *Chapron*

Development of skills necessary to make meaningful therapeutic contributions to the investigation and management of patients with various renal, electrolyte, acid-base, endocrine and metabolic disorders and further develop the student's ability to apply problem-solving strategies in these clinical situations.

5005. Clinical Pharmacokinetics
(257) First semester. One credit. Prerequisite: PHRM 4003, 4011; open to Pharmacy students only. *Ellis*

Development of an understanding of drug dosing regimen design with application to these concepts to relevant drugs. Emphasis will be placed on recognition of special dosing situations due to potentially altered pharmacokinetics and drugs exhibiting unique pharmacokinetics.

5006. Pharmaceutical Care III
(209) First and second semester. One credit total. Hours by arrangement. Prerequisite: PHRM 4006. *Hritcko*

Continuation of historical perspective of pharmacy practice, development of a theoretical foundation for the practice of pharmaceutical care and experiential opportunities for the student to begin to develop skills in providing pharmaceutical care. A fee of \$35 is charged for this course.

5007. Non-Prescription Medication
(210) Second semester. Three credits. Three class periods. *Dang*

Self-medication based on a foundation of pharmaceutical technology, pharmacology and therapeutics. Emphasis will be placed on the role of the pharmacist in enhancing the rational selection and use of non-prescription (OTC) medications by consumers.

5008. Introduction to Clinical Practice
(211) Second semester. Two credits. Hours by arrangement. Prerequisite: PHRM 5004, concurrent with PHRM 5011. *Lee*

Development of skills necessary in professional practice of pharmacy. Emphasis on patient assessment skills necessary for providing pharmaceutical care and approaches in conducting medication regimen review and pharmacological consultation.

5009. Pharmacy Practice Laboratory

(212) Second semester. Three credits. One two-hour lecture and three-hour laboratory period. Prerequisite: PHRM 5004. Corequisite: PHRM 5011. *Schlesselman*

Laboratory course focusing on the basic skills necessary to provide pharmaceutical care with emphasis on dispensing as well as the skills and motivation to expand pharmacist services including wellness screenings, patient education, collaborative practice, and disease management. A fee of \$95 is charged for this course.

5010. Immunology

(226) Second semester. Three credits. Three class periods. Prerequisite: PHRM 3010, 4008, 4011; PVS 4300. *Hubbard*

Development of an understanding of principles of immunology focusing on mechanisms underlying disease processes and the role of immunotherapeutics and biopharmaceuticals in altering outcome of immunologic disease.

5011. Therapeutics IV

(256) Second semester. Four credits. Three lecture hours and three conference hours. Prerequisite: PHRM 5004; open to Pharmacy students only. *Aeschlimann*

Development of skills necessary to make meaningful therapeutic contributions to the pharmacotherapeutic management of patients with infectious diseases and malignancies and the application of problem-solving strategies in these clinical situations.

5014. Pediatric Pharmacotherapy

(216) Second semester. Two credits. Prerequisite: B.S. in Pharmacy Studies. *Ellis*

Extended therapeutic knowledge of common pediatric disease states and an understanding of some of the specific pharmacologic concerns in the pediatric population.

5015. Careers in Pharmacy

(215) First semester. One credit. One class period. Prerequisite: B.S. in Pharmacy Studies. *Gerald*

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.

5016. Pharmacotherapy of Diabetes Mellitus

(217) Second semester. Two credits. Prerequisite: PHRM 4004, 4011, 5004. Not open to students who have completed PHRX 5052. *Dang*

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.

5100. Professional Experience in Community Pharmacy

(262) Either semester. Four credits. Hours by arrangement. Prerequisite: PHRM 5007, 5008, 5009, 5011. *Hritcko*

The student will apply drug therapy knowledge and communication skills to the provision of pharmaceutical care in a community pharmacy. Emphasis is on further development of skills in patient assessment and patient education in optimizing response to pharmacotherapy. Introduction to the administrative aspects of the provision of pharmaceutical care in the community pharmacy is provided. Direct patient contact.

5101. Professional Experience in Institutional Pharmacy I

(263) Either semester. Four credits. Prerequisite: PHRM 5007, 5008, 5009, 5011. *Hritcko*

The student will apply pharmacy knowledge and skills to the provision of pharmacy services and pharmaceutical care in an institutional setting. Topics include pharmaceutical procurement and distribution, quality control, formulary system, provision of drug information, inpatient and outpatient provision of pharmaceutical care, and administrative aspects of institutional pharmacy.

5102. Professional Experience in Ambulatory Care Pharmacy

(264) Either semester. Four credits. Prerequisite: PHRM 5007, 5008, 5009, 5011. *Jeffery*

The student will apply knowledge of disease therapeutics and communication skills to the provision of pharmaceutical care in the ambulatory setting. Emphasis is on optimizing medication-related outcomes in patients through medication assessment, multidisciplinary treatment planning, efficacy and safety assessment, and patient education. Direct patient contact.

5103. Professional Experience in General Medicine

(265) Either semester. Four credits. Prerequisite: PHRM 5007, 5008, 5009, 5011. *Hritcko*

The student will apply knowledge of therapeutics of general medical disorders to the provision of pharmaceutical care to general medicine inpatients. Emphasis is on rational selection and use of medications in an effective, safe, and cost-conscious manner. Optimization of medication-related outcomes is stressed and includes medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring, and patient education. Direct patient contact.

5104. Professional Experience in Cardiology

(266) Either semester. Four credits. Prerequisite: PHRM 5007, 5008, 5009, 5011. *White*

The student will apply knowledge of therapeutics of cardiovascular disorders to the provision of pharmaceutical care in cardiology patients. Emphasis is on optimization of medication-related outcomes in critically-ill cardiac patients through medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring, and patient education. Direct patient contact.

5105. Professional Experience in Infectious Disease

(267) Either semester. Four credits. Prerequisite: PHRM 5007, 5008, 5009, 5011. *Aeschlimann*

The student will apply knowledge of pharmacotherapy of infectious disease to the provision of pharmaceutical care to infectious disease inpatients. Emphasis is on optimization of medication-related outcomes in patients with serious infectious diseases through past and current medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring, and patient education. Direct patient contact.

5106. Professional Experience in Oncology

(268) Either semester. Four credits. Prerequisite: PHRM 5007, 5008, 5009, 5011. *Pham*

The student will apply knowledge of therapeutics of adult neoplastic disorders to the provision of pharmaceutical care to oncology patients. Emphasis is on rational drug selection of curative or palliative medications in an effective, safe, and cost-conscious manner. Optimization of medication-related outcomes is stressed and includes medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring, and patient education. Direct patient contact.

5107. Professional Experience in Psychiatry

(269) Either semester. Four credits. Prerequisite: PHRM 5007, 5008, 5009, 5011. *Caley*

The student will apply knowledge of the therapeutics of psychiatric disorders and communication skills to the provision of pharmaceutical care to psychiatric inpatients. Emphasis is on the optimization of medication-related outcomes in psychiatric patients through past and current medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring, and patient education. Direct patient contact.

5108. Professional Experience in Pediatrics

(270) Either semester. Four credits. Prerequisite: PHRM 5007, 5008, 5009, 5011. *Hritcko*

The student will apply knowledge of the therapeutics of pediatric disorders to the provision of pharmaceutical care to non-intensive care pediatric inpatients. Emphasis is on the optimization of medication-related outcomes in pediatric patients through medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring, and patient education. Direct patient contact.

5109. Professional Experience in Geriatrics

(271) Either semester. Four credits. Prerequisite: PHRM 5007, 5008, 5009, 5011. *Chapron, Jeffery*

The student will apply knowledge of therapeutics of chronic and acute disorders in the elderly to the provision of pharmaceutical care in a skilled nursing facility. Emphasis is on rational selection of medications in an effective, safe, and cost-conscious manner. Optimization of medication-related outcomes in geriatric patients is stressed and includes medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring, and patient education. Direct patient contact.

5110. Professional Experience in Community Practice II

(272) Either semester. Four credits. Prerequisite: PHRM 5007, 5008, 5009, 5011. *Hritcko*

A continuation of PHRM 5100. The student will expand the application of drug therapy knowledge and communication skills to the provision of pharmaceutical care in a community pharmacy. Emphasis is on continued development of patient assessment and patient education skills in optimizing response to medications. Direct patient contact.

5111. Professional Experience in Critical Care

(273) Either semester. Four credits. Prerequisite: PHRM 5007, 5008, 5009, 5011. *White*

The student will apply knowledge of pharmacotherapy of major medical disorders and of post-surgical drug therapy to the provision of pharmaceutical care to critical care patients in medical, surgical, and specialized intensive care units. Emphasis is on optimization of medication-related outcomes in seriously-ill patients through medication assessment, multidisciplinary treatment planning, and efficacy and safety monitoring. Direct patient contact.

5112. Professional Experience in Dermatology

(274) Either semester. Four credits. Prerequisite: PHRM 5007, 5008, 5009, 5011. *Hritcko*

The student will apply knowledge of pharmacotherapy of common dermatological diseases to the provision of pharmaceutical care to patients with these diseases. Emphasis is on optimization of medication-related outcomes in patients with common dermatological disorders through past and current medication assessment, efficacy and safety monitoring, and patient education.

5113. Professional Experience in Drug Control

(275) Either semester. Four credits. Prerequisite: PHRM 5007, 5008, 5009, 5011. *Hritcko*

The student will apply knowledge of pharmacy and state and Federal pharmacy laws to the drug control activities of the Drug Control Division of the Department of Consumer Protection of the State of Connecticut. Emphasis is on active participation in daily activities of drug control officers in enforcing state and Federal drug control laws.

5114. Professional Experience in Emergency Medicine

(276) Either semester. Four credits. Prerequisite: PHRM 5007, 5008, 5009, 5011. *Hritcko*

The student will apply knowledge of pharmacotherapy of medical, surgical, toxicologic, and psychiatric emergencies to the provision of pharmaceutical care for adults and children treated in the emergency department. Emphasis is on optimization of medication-related outcomes in patients in need of emergency treatment, including medication assessment, efficacy and safety monitoring, and patient education.

5115. Professional Experience in Home Health Care

(277) Either semester. Four credits. Prerequisite: PHRM 5007, 5008, 5009, 5011. *Jeffery*

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 Institutional Pharmacy II

(278) Either semester. Four credits. Prerequisite: PHRM 5007, 5008, 5009, 5011. *Hritcko*

A continuation of PHRM 5101. The student will expand application of pharmacy knowledge and skills to the provision of pharmacy services in an institutional setting. Emphasis is on problem-solving project activity related to the provision of pharmaceutical care by the Department of Pharmacy.

5117. Professional Experience in Industry

(279) Either semester. Four credits. Prerequisite: PHRM 5007, 5008, 5009, 5011. *Chapron*

The student will apply knowledge of pharmacy and pharmaceutical science to the practice of pharmacy in the pharmaceutical industry. Emphasis is on development of skills needed in basic pharmaceutical science, information dissemination, drug development, and product marketing.

5118. Professional Experience in Managed Care

(280) Either semester. Four credits. Prerequisite: PHRM 5007, 5008, 5009, 5011. *Jeffery*

The student will apply pharmacy knowledge and communication skills to the practice of managed care pharmacy. Emphasis is on the development of strategies that optimize pharmacotherapy of major medical diseases, surgical procedures, and psychiatric disorders within the economic constraints of a managed care health care delivery system.

5119. Professional Experience in Nuclear Pharmacy

(281) Either semester. Four credits. Prerequisite: PHRM 5007, 5008, 5009, 5011. *Hritcko*

The student will apply pharmaceutical science knowledge and communication skills to the provision of pharmaceutical care in nuclear pharmacy. Emphasis is on optimization of therapeutic outcomes related to diagnostic and therapeutic use of radioisotopes, including medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring, and patient education.

5120. Professional Experience in Nutrition

(282) Either semester. Four credits. Prerequisite: PHRM 5007, 5008, 5009, 5011. *Hritcko*

The student will apply knowledge of therapeutics of nutritional disorders to the provision of pharmaceutical care to patients with these disorders. Emphasis is on optimization of medication-related outcomes in nutrition disorder patients through current and past medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring, and patient education.

5121. Professional Experience in Obstetrics/ Gynecology

(283) Either semester. Four credits. Prerequisite: PHRM 5007, 5008, 5009, 5011. *Hritcko*

The student will apply knowledge of pharmacotherapy of OB-GYN disorders to the provision of pharmaceutical care to patients with these disorders. Emphasis is on optimization of medication-related outcomes in patients with OB-GYN disorders through past and current medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring, and patient education.

5122. Professional Experience in a Skilled Care Nursing Facility

(284) Either semester. Four credits. Prerequisite: PHRM 5007, 5008, 5009, 5011. *Chapron*

The student will apply knowledge of pharmacotherapy of medical diseases and psychiatric disorders and communication skills to patients in a skilled care nursing facility. Emphasis is on optimization of medication-related outcomes in skilled care nursing facility patients through medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring, and patient education.

5123. Professional Experience in Surgery

(285) Either semester. Four credits. Prerequisite: PHRM 5007, 5008, 5009, 5011. *Hritcko*

The student will apply knowledge of pharmacotherapy to pre-surgical, surgical, and post-surgical use of drugs. Emphasis is on the optimization of medication-related outcomes in the surgical patient, including medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring, and patient education. Direct patient contact.

5124. Professional Experience in General Medicine II

(286) Either semester. Four credits. Prerequisite: PHRM 5103. May be taken concurrently with PHRM 5103. *Hritcko*

A continuation of PHRM 5103. The student will expand, in depth and in breadth, the application of pharmacotherapy principles to the provision of pharmaceutical care to general medicine inpatients. Emphasis is on continued development of the process of rational drug selection that encompassed the use of medications in an effective, appropriate, safe, and cost effective manner. Direct patient contact.

5125. Professional Experience in Ambulatory Care

(287) Either semester. Four credits. Prerequisite: PHRM 5102. May be taken concurrently with PHRM 5102. *Jeffery*

A continuation of PHRM 5102. The student will expand, in depth and in breadth, the application of pharmacotherapy principles to the provision of pharmaceutical care to general medicine outpatients. Emphasis is on continued development of the process of rational drug selection that encompassed the use of medications in an effective, appropriate, safe, and cost effective manner. Direct patient contact.

5126. Professional Experience in Pharmacist-Directed Anticoagulation Service

(288) Either semester. Four credits. Prerequisites: PHRM 5007, 5008, 5009, 5011. *Chapron*

The student will apply knowledge of pharmacotherapy of acute and chronic thrombotic disorders to the provision of pharmaceutical care to patients requiring anticoagulation therapy. Emphasis is on the optimization of medication-related outcome in anticoagulated patients through past and current medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring, and patient education. Direct patient contact.

5127. Professional Experience in Gastroenterology

(289) Either semester. Four credits. Prerequisites: PHRM 5007, 5008, 5009, 5011. *Chapron*

The student will apply knowledge of pharmacotherapy of acute and chronic gastroenterologic disorders to the provision of pharmaceutical care to patients requiring such therapy. Emphasis is on the optimization of medication-related outcome in gastroenterologic patients through past and current medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring, and patient education. Direct patient contact.

5128. Professional Experience in Hospice Care

(290) Either semester. Four credits. Prerequisites: PHRM 5007, 5008, 5009, 5011. *Pham*

The student will apply knowledge of pharmacotherapy of the final stage of terminal disorders to the provision of pharmaceutical care to hospice patients requiring palliative therapy. Emphasis is on the optimization of medication-related outcome in hospice patients through past and current medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring, and family education. Direct patient contact.

5129. Professional Experience in Sub-acute Care and Chronic Disease and Rehabilitate Medicine

(291) Either semester. Four credits. Prerequisites: PHRM 5007, 5008, 5009, 5011. *Chapron*

The student will apply knowledge of pharmacotherapy of chronic and subacute disorders to the provision of pharmaceutical care to patients undergoing physical rehabilitation. Emphasis is on the optimization of medication-related outcome in rehabilitation patients through past and current medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring, and patient education. Direct patient contact.

5195. Special Topics in Clinical Rotations

(298) Either semester. Credits by arrangement. This course may be repeated for credit.

5199. Undergraduate Experiential Research Rotations

(299) Second semester. Credits by arrangement. Recommended preparation: Cumulative GPA of 2.8 or higher.

Pharmacy (PHRX)

Associate Dean: Andrea K. Hubbard, Ph.D.

Office: Pharmacy/Biology Building, Room 351

For major requirements, see the School of Pharmacy section of this *Catalog*.

The following courses are open only to students enrolled in the School of Pharmacy.

3000. Cellular Biology

(201) First semester. Two credits.

Introduction to basic principles in cell biology, intracellular signaling and gene expression as well as receptor site theory.

3001. Immunology and Biotechnology

(202) First semester. Three credits.

Principles of immunology underlying disease processes and the synthesis and role of selected biopharmaceuticals in modulating disease.

3002. Foundations in Bioorganic Chemistry

(203) First semester. Four credits.

Fundamental knowledge of medicinal and natural products chemistry, metabolic biotransformation, drug design, vitamins, steroids and eicosanoids, and clinical chemistry.

3003. Nutrition

(204) Second semester. Two credits.

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.

3006. Drug Information I

(206) First semester. One credit.

An introduction into identification, analysis and reporting of information from textbooks, online resources and journal articles designed to familiarize students with medical literature. Concepts of primary, secondary and tertiary literature, peer review, drug information databases and medical literature databases.

3007. Drug Information II

(207) Second semester. Two credits. Prerequisite: PHRX 3006.

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.

3011. Correlated Pharmacy Problem Solving I

(211) Second semester. One credit.

Small-group discussions to integrate the knowledge and principles learned in pharmacy law and ethics, pathophysiology, pharmacology, medicinal chemistry, pharmaceuticals, and pharmacotherapy of both prescription and non-prescription medications.

3020. Pharmacy Practice Experience I

(221) First semester. One credit.

Development of patient care skills to include taking medication histories, assessing patient medication regimens, engaging in pharmacy drug-distribution and professional networking. Emphasis on interpersonal communication; activities at selected pharmacy practice sites.

3021. Pharmacy Practice Experience II

(222) Second semester. Two credits.

Development of patient care skills to include taking medication histories, assessing patient medication regimens, engaging in pharmacy drug-distribution and professional networking. Emphasis on interpersonal communication; activities at selected pharmacy practice sites.

3030. Pharmacokinetics/Biopharmaceutics

(231) First semester. Three credits.

Principles of pharmacokinetics and biopharmaceutics in the design of both dosage forms and dosing regimens.

3031. Foundations in Pharmaceutics I

(232) Second semester. Four credits.

Principles underlying the formulation, dissolution, stability and release of drug products for optimum de-

livery. Dosage forms discussed include colloids, suspensions, emulsions, suppositories, aerosols, ointments and transdermals.

3032. Dosage Forms Preparation Laboratory I

(233) Second semester. One credit.

Preparation of sterile and non-sterile dosage forms, with attention to solutions, solids and dispersed systems.

3040. Autonomic and Neurologic Conditions Module

(241) Second semester. Five credits.

Principles of pathophysiology, pharmacology, medicinal chemistry, clinical pharmacokinetics and pharmacotherapy (including both prescription and non-prescription medications) as they apply to neurologic drug therapy management.

3050. Public Health & Healthcare Policy

(255) First semester. Three credits.

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.

4000. Pharmacoeconomics

(205) Second semester. One credit. Prerequisite: ECON 1201.

Application of pharmacoeconomic principles to formulary management, health-related quality of life, cost-benefit analysis, and pharmacoeconomic literature analysis.

4001. Current Topics in Pharmacy

(208) Either semester. Three credits. Prerequisite: PHRX 3006, 3007.

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.

4010. Correlated Pharmacy Problem Solving II

(212) First semester. One credit.

Small-group discussion to integrate the knowledge and principles learned in pharmacy law and ethics, pathophysiology, pharmacology, medicinal chemistry, pharmaceuticals, and pharmacotherapy of both prescription and non-prescription medications.

4011. Correlated Pharmacy Problem Solving III

(213) Second semester. One credit.

Small-group discussion to integrate the knowledge and principles learned in pharmacy law and ethics, pathophysiology, pharmacology, medicinal chemistry, pharmaceuticals, and pharmacotherapy of both prescription and non-prescription medications.

4020. Pharmacy Practice Experience III

(223) First semester. One credit.

Development of patient care skills to include taking medication histories, assessing patient medication regimens, engaging in pharmacy drug-distribution and professional networking. Emphasis on interpersonal communication; activities at selected pharmacy practice sites.

4021. Pharmacy Practice Experience IV

(224) Second semester. Two credits.

Development of patient care skills to include taking medication histories, assessing patient medication regimens, engaging in pharmacy drug-distribution and professional networking. Emphasis on interpersonal communication; activities at selected pharmacy practice sites.

4030. Foundations in Pharmaceutics II

(234) First semester. Three credits. Prerequisite: PHRX 3030, 3031.

Principles and factors affecting performance of dosage forms classified as dispersed systems: suspensions, emulsions, suppositories, aerosols, ointments and transdermals.

4031. Dosage Forms Preparation Laboratory II

(235) First semester. One credit.

Dosage forms preparation and basic techniques for compounding sterile and non-sterile dosage forms.

4040. Psychiatry Module

(242) First semester. Five credits. Prerequisite: PHRX 3040.

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

(243) First semester. Two credits. Prerequisite: PHRX 3001.

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

(244) Second semester. Two credits.

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

(245) Second semester. Three credits.

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

(246) Second semester. One credit.

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

(256) First semester. Two credits.

Community pharmacy planning and operations including pharmacy financial management (institutional/community/long-term care), human resources, marketing and operations of chain and independent community pharmacy.

4051. Pharmacy Law and Ethics

(257) Second semester. Two credits.

A study of federal and state pharmacy practice laws with regards to ethical principles of patient care.

4052. Advanced Compounding

First semester. Two credits. Prerequisite: PHRX 4031.

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.

5010. Correlated Pharmacy Problem Solving IV

(214) First semester. One credit.

Small-group discussion to integrate the knowledge and principles learned in pharmacy law and ethics, pathophysiology, pharmacology, medicinal chemistry, pharmaceuticals, and pharmacotherapy of both prescription and non-prescription medications.

5011. Correlated Pharmacy Problem Solving V
(215) Second semester. One credit.

Small-group discussion to integrate the knowledge and principles learned in pharmacy law and ethics, pathophysiology, pharmacology, medicinal chemistry, pharmaceuticals, and pharmacotherapy of both prescription and non-prescription medications.

5020. Pharmacy Practice Experience V
(225) First semester. One credit.

Development of patient care skills to include taking medication histories, assessing patient medication regimens, engaging in pharmacy drug-distribution and professional networking. Emphasis on interpersonal communication; activities at selected pharmacy practice sites.

5021. Pharmacy Practice Experience VI
(226) Second semester. Two credits.

Development of patient care skills to include taking medication histories, assessing patient medication regimens, engaging in pharmacy drug-distribution and professional networking. Emphasis on interpersonal communication; activities at selected pharmacy practice sites.

5040. Cardiovascular Module
(247) First semester. Four credits.

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
(248) First semester. Two credits.

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
(249) First semester. Two credits.

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
(250) Second semester. Four credits.

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
(251) Second semester. Three credits.

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
(253) Second semester. Four credits.

Development of knowledge and skills necessary to make appropriate, patient-population specific, pharmacotherapeutic contributions to patient care.

5046. Clinical Toxicology
(254) Second semester. Two credits.

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.

5047. Pharmacy Practice Laboratory
(258) First semester. Three credits.

Skills to provide pharmacist care in drug delivery and drug-distribution systems, the use of medication delivery and monitoring devices and the use of pharmacy references to drug information requests. Introduction to wellness screenings, vaccinations, patient education, collaborative practice agreements, and medication therapy management services.

5048. Patient Assessment
(259) First semester. Two credits.

Completion of a "Pharmacist's Work-up of Drug Therapy" using the Helper/Strand concept of identifying and resolving drug-related problems; patient assessment skills essential in the provision of pharmaceutical care to patients.

5050. Pediatric Pharmacotherapy

Second semester. Two credits. Prerequisite: B.S. in Pharmacy Studies. *Ellis*

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

First semester. One credit. One class period. Prerequisite: B.S. in Pharmacy Studies. *Gerald*

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

(219) Second semester. Two credits. Prerequisite: PHRX 4043.

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.

5100. Professional Experience in Community Pharmacy

Either semester. Four credits. Hours by arrangement. Prerequisite: PHRX 5047, 5048. *Hritcko*

The student will apply drug therapy knowledge and communication skills to the provision of pharmaceutical care in a community pharmacy. Emphasis is on further development of skills in patient assessment and patient education in optimizing response to pharmacotherapy. Introduction to the administrative aspects of the provision of pharmaceutical care in the community pharmacy is provided. Direct patient contact.

5101. Professional Experience in Institutional Pharmacy I

Either semester. Four credits. Prerequisite: PHRX 5047, 5048. *Hritcko*

The student will apply pharmacy knowledge and skills to the provision of pharmacy services and pharmaceutical care in an institutional setting. Topics include pharmaceutical procurement and distribution, quality control, formulary system, provision of drug information, inpatient and outpatient provision of pharmaceutical care, and administrative aspects of institutional pharmacy.

5102. Professional Experience in Ambulatory Care Pharmacy

Either semester. Four credits. Prerequisite: PHRX 5047, 5048. *Jeffery*

The student will apply knowledge of disease therapeutics and communication skills to the provision of pharmaceutical care in the ambulatory setting. Emphasis is on optimizing medication-related outcomes

in patients through medication assessment, multidisciplinary treatment planning, efficacy and safety assessment, and patient education. Direct patient contact.

5103. Professional Experience in General Medicine

Either semester. Four credits. Prerequisite: PHRX 5047, 5048. *Hritcko*

The student will apply knowledge of therapeutics of general medical disorders to the provision of pharmaceutical care to general medicine inpatients. Emphasis is on rational selection and use of medications in an effective, safe, and cost-conscious manner. Optimization of medication-related outcomes is stressed and includes medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring, and patient education. Direct patient contact.

5104. Professional Experience in Cardiology

Either semester. Four credits. Prerequisite: PHRX 5047, 5048. *White*

The student will apply knowledge of therapeutics of cardiovascular disorders to the provision of pharmaceutical care in cardiology patients. Emphasis is on optimization of medication-related outcomes in critically-ill cardiac patients through medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring, and patient education. Direct patient contact.

5105. Professional Experience in Infectious Disease

Either semester. Four credits. Prerequisite: PHRX 5047, 5048. *Aeschlimann*

The student will apply knowledge of pharmacotherapy of infectious disease to the provision of pharmaceutical care to infectious disease inpatients. Emphasis is on optimization of medication-related outcomes in patients with serious infectious diseases through past and current medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring, and patient education. Direct patient contact.

5106. Professional Experience in Oncology

Either semester. Four credits. Prerequisite: PHRX 5047, 5048. *Pham*

The student will apply knowledge of therapeutics of adult neoplastic disorders to the provision of pharmaceutical care to oncology patients. Emphasis is on rational drug selection of curative or palliative medications in an effective, safe, and cost-conscious manner. Optimization of medication-related outcomes is stressed and includes medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring, and patient education. Direct patient contact.

5107. Professional Experience in Psychiatry

Either semester. Four credits. Prerequisite: PHRX 5047, 5048. *Caley*

The student will apply knowledge of the therapeutics of psychiatric disorders and communication skills to the provision of pharmaceutical care to psychiatric inpatients. Emphasis is on the optimization of medication-related outcomes in psychiatric patients through past and current medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring, and patient education. Direct patient contact.

5108. Professional Experience in Pediatrics

Either semester. Four credits. Prerequisite: PHRX 5047, 5048. *Hritcko*

The student will apply knowledge of the therapeutics of pediatric disorders to the provision of pharmaceutical care to non-intensive care pediatric inpatients. Emphasis is on the optimization of medication-related

outcomes in pediatric patients through medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring, and patient education. Direct patient contact.

5109. Professional Experience in Geriatrics

Either semester. Four credits. Prerequisite: PHRX 5047, 5048. *Chapron, Jeffery*

The student will apply knowledge of therapeutics of chronic and acute disorders in the elderly to the provision of pharmaceutical care in a skilled nursing facility. Emphasis is on rational selection of medications in an effective, safe, and cost-conscious manner. Optimization of medication-related outcomes in geriatric patients is stressed and includes medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring, and patient education. Direct patient contact.

5110. Professional Experience in Community Practice II

Either semester. Four credits. Prerequisite: PHRX 5047, 5048. *Hritcko*

A continuation of PHRX 5100. The student will expand the application of drug therapy knowledge and communication skills to the provision of pharmaceutical care in a community pharmacy. Emphasis is on continued development of patient assessment and patient education skills in optimizing response to medications. Direct patient contact.

5111. Professional Experience in Critical Care

Either semester. Four credits. Prerequisite: PHRX 5047, 5048. *White*

The student will apply knowledge of pharmacotherapy of major medical disorders and of post-surgical drug therapy to the provision of pharmaceutical care to critical care patients in medical, surgical, and specialized intensive care units. Emphasis is on optimization of medication-related outcomes in seriously ill patients through medication assessment, multidisciplinary treatment planning, and efficacy and safety monitoring. Direct patient contact.

5112. Professional Experience in Dermatology

Either semester. Four credits. Prerequisite: PHRX 5047, 5048. *Hritcko*

The student will apply knowledge of pharmacotherapy of common dermatological diseases to the provision of pharmaceutical care to patients with these diseases. Emphasis is on optimization of medication-related outcomes in patients with common dermatological disorders through past and current medication assessment, efficacy and safety monitoring, and patient education.

5113. Professional Experience in Drug Control

Either semester. Four credits. Prerequisite: PHRX 5047, 5048. *Hritcko*

The student will apply knowledge of pharmacy and state and Federal pharmacy laws to the drug control activities of the Drug Control Division of the Department of Consumer Protection of the State of Connecticut. Emphasis is on active participation in daily activities of drug control officers in enforcing state and Federal drug control laws.

5114. Professional Experience in Emergency Medicine

Either semester. Four credits. Prerequisite: PHRX 5047, 5048. *Hritcko*

The student will apply knowledge of pharmacotherapy of medical, surgical, toxicologic, and psychiatric emergencies to the provision of pharmaceutical care for adults and children treated in the emergency department. Emphasis is on optimization of medication-related outcomes in patients in need of emergency treatment, including medication assessment, efficacy and safety monitoring, and patient education.

5115. Professional Experience in Home Health Care

Either semester. Four credits. Prerequisite: PHRX 5047, 5048. *Jeffery*

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 Institutional Pharmacy II

Either semester. Four credits. Prerequisite: PHRX 5047, 5048. *Hritcko*

A continuation of PHRX 5101. The student will expand application of pharmacy knowledge and skills to the provision of pharmacy services in an institutional setting. Emphasis is on problem-solving project activity related to the provision of pharmaceutical care by the Department of Pharmacy.

5117. Professional Experience in Industry

Either semester. Four credits. Prerequisite: PHRX 5047, 5048. *Chapron*

The student will apply knowledge of pharmacy and pharmaceutical science to the practice of pharmacy in the pharmaceutical industry. Emphasis is on development of skills needed in basic pharmaceutical science, information dissemination, drug development, and product marketing.

5118. Professional Experience in Managed Care

Either semester. Four credits. Prerequisite: PHRX 5047, 5048. *Jeffery*

The student will apply pharmacy knowledge and communication skills to the practice of managed care pharmacy. Emphasis is on the development of strategies that optimize pharmacotherapy of major medical diseases, surgical procedures, and psychiatric disorders within the economic constraints of a managed care health care delivery system.

5119. Professional Experience in Nuclear Pharmacy

Either semester. Four credits. Prerequisite: PHRX 5047, 5048. *Hritcko*

The student will apply pharmaceutical science knowledge and communication skills to the provision of pharmaceutical care in nuclear pharmacy. Emphasis is on optimization of therapeutic outcomes related to diagnostic and therapeutic use of radioisotopes, including medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring, and patient education.

5120. Professional Experience in Nutrition

Either semester. Four credits. Prerequisite: PHRX 5047, 5048. *Hritcko*

The student will apply knowledge of therapeutics of nutritional disorders to the provision of pharmaceutical care to patients with these disorders. Emphasis is on optimization of medication-related outcomes in nutrition disorder patients through current and past medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring, and patient education.

5121. Professional Experience in Obstetrics/Gynecology

Either semester. Four credits. Prerequisite: PHRX 5047, 5048. *Hritcko*

The student will apply knowledge of pharmacotherapy of OB-GYN disorders to the provision of pharmaceutical care to patients with these disorders. Emphasis is on optimization of medication-related outcomes in patients with OB-GYN disorders through past and current medication assessment, multidisciplinary

treatment planning, efficacy and safety monitoring, and patient education.

5122. Professional Experience in a Skilled Care Nursing Facility

Either semester. Four credits. Prerequisite: PHRX 5047, 5048. *Chapron*

The student will apply knowledge of pharmacotherapy of medical diseases and psychiatric disorders and communication skills to patients in a skilled care nursing facility. Emphasis is on optimization of medication-related outcomes in skilled care nursing facility patients through medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring, and patient education.

5123. Professional Experience in Surgery

Either semester. Four credits. Prerequisite: PHRX 5047, 5048. *Hritcko*

The student will apply knowledge of pharmacotherapy to pre-surgical, surgical, and post-surgical use of drugs. Emphasis is on the optimization of medication-related outcomes in the surgical patient, including medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring, and patient education. Direct patient contact.

5124. Professional Experience in General Medicine II

Either semester. Four credits. Prerequisite: PHRX 5103. May be taken concurrently with PHRX 5103. *Hritcko*

A continuation of PHRX 5103. The student will expand, in depth and in breadth, the application of pharmacotherapy principles to the provision of pharmaceutical care to general medicine inpatients. Emphasis is on continued development of the process of rational drug selection that encompassed the use of medications in an effective, appropriate, safe, and cost effective manner. Direct patient contact.

5125. Professional Experience in Ambulatory Care

Either semester. Four credits. Prerequisite: PHRX 5102. May be taken concurrently with PHRX 5102. *Jeffery*

A continuation of PHRX 5102. The student will expand, in depth and in breadth, the application of pharmacotherapy principles to the provision of pharmaceutical care to general medicine outpatients. Emphasis is on continued development of the process of rational drug selection that encompassed the use of medications in an effective, appropriate, safe, and cost effective manner. Direct patient contact.

5126. Professional Experience in Pharmacist-Directed Anticoagulation Service

Either semester. Four credits. Prerequisite: PHRX 5047, 5048. *Chapron*

The student will apply knowledge of pharmacotherapy of acute and chronic thrombotic disorders to the provision of pharmaceutical care to patients requiring anticoagulation therapy. Emphasis is on the optimization of medication-related outcome in anticoagulated patients through past and current medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring, and patient education. Direct patient contact.

5127. Professional Experience in Gastroenterology

Either semester. Four credits. Prerequisite: PHRX 5047, 5048. *Chapron*

The student will apply knowledge of pharmacotherapy of acute and chronic gastroenterologic disorders to the provision of pharmaceutical care to patients requiring such therapy. Emphasis is on the optimization of medication-related outcome in gastroenterologic patients through past and current medication assessment, multidisciplinary treatment

planning, efficacy and safety monitoring, and patient education. Direct patient contact.

5128. Professional Experience in Hospice Care
Either semester. Four credits. Prerequisite: PHRX 5047, 5048. *Pham*

The student will apply knowledge of pharmacotherapy of the final stage of terminal disorders to the provision of pharmaceutical care to hospice patients requiring palliative therapy. Emphasis is on the optimization of medication-related outcome in hospice patients through past and current medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring, and family education. Direct patient contact.

5129. Professional Experience in Sub-acute Care and Chronic Disease and Rehabilitate Medicine

Either semester. Four credits. Prerequisite: PHRX 5047, 5048. *Chapron*

The student will apply knowledge of pharmacotherapy of chronic and subacute disorders to the provision of pharmaceutical care to patients undergoing physical rehabilitation. Emphasis is on the optimization of medication-related outcome in rehabilitation patients through past and current medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring, and patient education. Direct patient contact.

5195. Special Topics in Clinical Rotations

Either semester. Credits by arrangement. This course may be repeated for credit.

5199. Undergraduate Experiential Research Rotations

Second semester. Credits by arrangement. Recommended preparation: Cumulative GPA of 2.8 or higher.

Philosophy (PHIL)

Head of Department: Professor Crawford L. Elder
Department Office: Room 101, Manchester Hall

For major requirements, see the College of Liberal Arts and Sciences section of this *Catalog*.

1101. Problems of Philosophy

(101) Either semester. Three credits. No student may receive more than 6 credits for PHIL 1101, 1102, 1103, 1104, 1105, 1106, 1107.

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

(102) Either semester. Three credits. No student may receive more than 6 credits for PHIL 1101, 1102, 1103, 1104, 1105, 1106, 1107.

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. CA1.

1103. Philosophical Classics

(103) Either semester. Three credits. No student may receive more than 6 credits for PHIL 1101, 1102, 1103, 1104, 1105, 1106, 1107.

Discussion of selections from such philosophers as Plato, Aristotle, Descartes, and Hume. CA 1.

1104. Philosophy and Social Ethics

(104) Either semester. Three credits. No student may receive more than 6 credits for PHIL 1101, 1102, 1103, 1104, 1105, 1106, 1107.

Topics may include the nature of the good life, the relation between social morality and individual rights, and practical moral dilemmas. At least one section each

term emphasizes women-men issues: sex relations, sex roles, sex equality, abortion, the family, etc. Other sections may emphasize issues concerning Science and Technology or Political Philosophy. CA 1.

1105. Philosophy and Religion

(105) Either semester. Three credits. No student may receive more than 6 credits for PHIL 1101, 1102, 1103, 1104, 1105, 1106, 1107.

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.

1105W. Philosophy and Religion

(105W) Prerequisite: ENGL 1010 or 1011 or 3800. CA 1.

1106. Non-western and Comparative Philosophy

(106) Either semester. Three credits. No student may receive more than 6 credits for PHIL 1101, 1102, 1103, 1104, 1105, 1106, 1107.

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

(107) Either semester. Three credits. No student may receive more than 6 credits for PHIL 1101, 1102, 1103, 1104, 1105, 1106, 1107.

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.

1165W. Philosophy and Literature

(185W) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800.

Philosophical problems raised by, and illuminated in, major works of literature. CA 1.

1175. Ethical Issues in Health Care

(175) Either semester. 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

(170W) (Also offered as HRTS 2170W.) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800; 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

(205) Either semester. Three credits. Prerequisite: At least one of PHIL 1101, 1102, 1103, 1104, 1105, 1106, 1107.

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.

2210. Metaphysics and Epistemology

(210) Either semester. Three credits. Prerequisite: At least one of PHIL 1101, 1102, 1103, 1104, 1105, 1106, 1107.

Topics may include time, personal identity, free-will, the mind-body problem, skepticism, induction, perception, *a priori* knowledge.

2210W. Metaphysics and Epistemology

(210W) Prerequisite: At least one of PHIL 1101, 1102, 1103, 1104, 1105, 1106, 1107; ENGL 1010 or 1011 or 3800.

2211Q. Symbolic Logic I

(211Q) Either semester. Three credits. Prerequisite: At least one of LING 1010, POLS 1002, PHIL 1101, 1102, 1103, 1104, 1105, 1106, 1107. Recommended preparation: MATH 1010 or equivalent.

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

(212) Either semester. Three credits. Prerequisite: At least one of PHIL 1101, 1102, 1103, 1104, 1105, 1106, 1107.

Issues concerning the nature and foundations of scientific knowledge, including, for example, issues about scientific objectivity and progress.

2212W. Philosophy of Science

(212W) Prerequisite: At least one of PHIL 1101, 1102, 1103, 1104, 1105, 1106, 1107; ENGL 1010 or 1011 or 3800.

2213. Philosophy of Social Science

(213) Either semester. Three credits. Prerequisite: At least one of PHIL 1101, 1102, 1103, 1104, 1105, 1106, 1107.

Nature and extent of social phenomena; nature and consequence of group membership; methods of investigation of social phenomena; problems of interpretation. Related doctrines of classic and contemporary theorists such as Durkheim, Weber, Simmel, Wittgenstein.

2215. Ethics

(215) Either semester. Three credits. Prerequisite: At least one of PHIL 1101, 1102, 1103, 1104, 1105, 1106, 1107.

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

(215W) Prerequisite: At least one of PHIL 1101, 1102, 1103, 1104, 1105, 1106, 1107; ENGL 1010 or 1011 or 3800.

2217. Social and Political Philosophy

(217) Either semester. Three credits. Prerequisite: At least one of PHIL 1101, 1102, 1103, 1104, 1105, 1106, 1107.

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.

2217W. Social and Political Philosophy

(217W) Prerequisite: At least one of PHIL 1101, 1102, 1103, 1104, 1105, 1106, 1107; ENGL 1010 or 1011 or 3800.

2221. Ancient Philosophy

(221) (Also offered as CAMS 3257.) Either semester. Three credits. Prerequisite: At least one of PHIL 1101, 1102, 1103, 1104, 1105, 1106, 1107.

Greek philosophy from its origin in the Pre-Socratics through its influence on early Christianity. Readings from the works of Plato and Aristotle.

2221W. Ancient Philosophy

(221W) Prerequisite: At least one of PHIL 1101, 1102, 1103, 1104, 1105, 1106, 1107; ENGL 1010 or 1011 or 3800.

2222. Seventeenth and Eighteenth-Century Philosophy

(222) Either semester. Three credits. Prerequisite: At least one of PHIL 1101, 1102, 1103, 1104, 1105, 1106, 1107.

Central philosophical issues as discussed by philosophers such as Descartes, Locke, Berkeley, Hume and Kant.

2222W. Seventeenth and Eighteenth-Century Philosophy

(222W) Prerequisite: At least one of PHIL 1101, 1102, 1103, 1104, 1105, 1106, 1107; ENGL 1010 or 1011 or 3800.

2245. Philosophy and Economics

(245) (Also offered as ECON 2126.) Either semester. Three credits. Prerequisite: ECON 1200 or ECON 1201.

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.

3200. Philosophical Issues in Contemporary Life

(200) Either semester. Three credits. Prerequisite: At least one of PHIL 1101, 1102, 1103, 1104, 1105, 1106, 1107; open to juniors or higher. May be repeated with a change in topic for a maximum of six credits.

Philosophical dimensions of problems in contemporary life. Topics vary by semester.

3214. Symbolic Logic II

(214) Second semester. Three credits. Prerequisite: PHIL 2211.

Logical concepts developed in PHIL 2211 applied to the study of philosophical issues in the foundations of mathematics.

3216. Environmental Ethics

(216) Either semester. Three credits. Prerequisite: At least one of PHIL 1101, 1102, 1103, 1104, 1105, 1106, 1107; open to juniors or higher.

Inquiry into obligations to, or concerning, the environment, particularly the moral standing of animals, species, ecosystems, and natural objects.

3216W. Environmental Ethics

(216W) Prerequisite: At least one of PHIL 1101, 1102, 1103, 1104, 1105, 1106, 1107; ENGL 1010 or 1011 or 3800; open to juniors or higher.

3218. Feminist Theory

(218) Either semester. Three credits. Prerequisite: At least one of PHIL 1101, 1102, 1103, 1104, 1105, 1106, 1107 or WS 1103, 1104, or 1124.

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

(219) (Also offered as HRTS 3219.) Either semester. Three credits. Prerequisite: One three-credit course in Philosophy or instructor consent; open to juniors or higher. With a change in content, 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

(220) Either semester. Three credits. Prerequisite: At least one of PHIL 1101, 1102, 1103, 1104, 1105, 1106, 1107. *Bloomfield, Parekh*

Ontology and epistemology of human rights investigated through contemporary and/or historical texts.

3224W. Nineteenth-Century Philosophy

(224W) Prerequisite: At least one of PHIL 1101, 1102, 1103, 1104, 1105, 1106, 1107; ENGL 1010 or 1011 or 3800.

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

(225W) Either semester. Three credits. Prerequisite: At least one of PHIL 2210, 2221, 2222; ENGL 1010 or 1011 or 3800.

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

(226) Either semester. Three credits. Prerequisite: At least one of PHIL 1101, 1102, 1103, 1104, 1105, 1106, 1107, 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

(228) Either semester. Three credits. Prerequisite: At least one of PHIL 1101, 1102, 1103, 1104, 1105, 1106, 1107; open to juniors or higher.

Doctrines advanced by recent American philosophers.

3230. Contemporary Marxism and Its Foundation

(230) Either semester. Three credits. Prerequisite: At least one of PHIL 1101, 1102, 1103, 1104, 1105, 1106, 1107, which may be taken concurrently.

Marx's criticisms of capitalism; the distinctive functional explanations Marx offered for the relations of production and the superstructure; application of such explanations to aspects of American culture.

3231. Philosophy of Religion

(231) Either semester. Three credits. Prerequisite: At least one of PHIL 1101, 1102, 1103, 1104, 1105, 1106, 1107.

Various religious absolutes, their meaning and validity, existentialism and religion, the post-modern religious quest.

3234. Phenomenology

(234) Second semester. Three credits. Prerequisite: At least one of PHIL 1101, 1102, 1103, 1104, 1105, 1106, 1107.

Husserl's theory of meaning; its promise of silencing skepticism and setting philosophy on a new footing; the challenge to it posed by applying it to talk about other minds.

3241. Language: Meaning and Truth

(241) Either semester. Three credits. Prerequisite: PHIL 1102 or 2211, and at least one of PHIL 2210, 2221, 2222.

An analysis of the concepts used in thinking about language.

3247. Philosophy of Psychology

(247) Either semester. Three credits. Prerequisite: Any one of PSYC 2500, 3500, 3550W, 3551W, or 3552; and at least 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 neuropsychological models and the brain.

3247W. Philosophy of Psychology

(247W) Prerequisite: Any one of PSYC 2500, 3500, 3550W, 3551W, or 3552; and at least one three-credit philosophy course or instructor consent; ENGL 1010 or 1011 or 3800.

3249. Philosophy and Neuroscience

(249) Either semester. Three credits. Prerequisite: At least one 2000-level or above, three-credit course in Physiology and Neurobiology (PNB), and at least one three-credit course in philosophy or consent of instructor.

Philosophical issues in neuroscience. Topics may include theories of brain function, localization of function, reductionism, neuropsychological deficits, computational models in neuroscience, connectionism, and evolution.

3249W. Philosophy and Neuroscience

(249W) Prerequisite: At least one 2000-level or above, three-credit course in Physiology and Neurobiology (PNB), and at least one three-credit course in philosophy or consent of instructor; ENGL 1010 or 1011 or 3800.

3250. Philosophy of Mind

(250) Either semester. Three credits. Prerequisite: At least one 2000-level or above, 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

(250W) Prerequisite: At least one 2000-level or above, three-credit philosophy course.; ENGL 1010 or 1011 or 3800.

3256. Philosophy of Perception

(256) Either semester. Three credits. Prerequisite: Any one of PSYC 2501, 3501, 3550W, or 3552; or at least one 2000-level or above, three-credit philosophy course.

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

(256W) Prerequisite: Any one of PSYC 2501, 3501, 3550W, or 3552; or at least one 2000-level or above, three-credit philosophy course; ENGL 1010 or 1011 or 3800.

3261. Medieval Philosophy

(261) Either semester. Three credits. Prerequisite: At least one of PHIL 1101, 1102, 1103, 1104, 1105, 1106, 1107; open to juniors or higher.

Readings from the principal philosophers between the fourth and fourteenth centuries.

3261W. Medieval Philosophy

(261W) Prerequisite: At least one of PHIL 1101, 1102, 1103, 1104, 1105, 1106, 1107; ENGL 1010 or 1011 or 3800; open to juniors or higher.

3263. Oriental Philosophy and Religion

(263) Either semester. Three credits. Prerequisite: At least one of PHIL 1101, 1102, 1103, 1104, 1105, 1106, 1107; open to juniors or higher.

The historical, religious, and philosophical development of Hinduism, Buddhism, Tantrism, and Taoism.

3264. Classical Chinese Philosophy and Culture (264) Either semester. Three credits. Prerequisite: At least one of PHIL 1101, 1102, 1103, 1104, 1105, 1106, 1107.

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

(298) Either semester. Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary.

3298. Variable Topics

(297) Either semester. Three credits. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary.

3299. Independent Study

(299) Either or both semesters. Credits and hours by arrangement. Advanced and individual work. Open only with consent of instructor. May be repeated for credit with a change in topic.

4293. Foreign Study

(293) Either or both semesters. Credits and hours by arrangement up to a maximum of six credits. Consent of Department Head required, preferably prior to the student's departure.

Special topics taken in a foreign study program.

4296W. Senior Thesis in Philosophy

(296W) Either semester. Three credits. Hours by arrangement. Prerequisite: ENGL 1010 or 1011 or 3800. Open only with consent of instructor and Department Head. Independent study authorization form required. Prerequisite: Twelve credits in Philosophy at the 2000-level or above or above, three of which may be taken concurrently.

Physical Therapy (PT)

The Undergraduate program in Physical Therapy is no longer offered; a Doctorate in Physical Therapy is offered by the Graduate School.

3280W. Research for Physical Therapists

(280W) Summer. Three credits. Hours by arrangement. Prerequisite: ENGL 1010 or 1011 or 3800 and a course in statistics; open only to students in the Pre-Physical Therapy majors; others by consent of instructor.

Preparation of physical therapists to be consumers and initiators of research in clinical settings. Topics include accessing and critiquing information, formulating research questions and hypotheses, designing research projects, conducting research ethically, analyzing data, and disseminating research. Students write a research proposal relevant to physical therapy practice.

Physics (PHYS)

Head of Department: Professor William C. Stwalley
Department Office: Room 101, Physics Building

For major requirements, see the College of Liberal Arts and Sciences section of this *Catalog*.

1010Q. Elements of Physics

(101Q) Either semester. Four credits. Three class periods and one 2-hour laboratory period. Recommended preparation: MATH 1010 or the equivalent. Not open for credit to students who have passed PHYS 1201, 1401, 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

(154Q) Either semester. Three credits. Recommended preparation: MATH 1010 or equivalent. Not open to students who have passed PHYS 1025Q.

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, astrobology. Night observing sessions are an integral part of the course. CA 3.

1025Q. Introductory Astronomy with Laboratory

(155Q) Either semester. Four credits. Three class periods and one 2-hour laboratory period. Recommended preparation: MATH 1010 or equivalent. Not open to students who have passed PHYS 1020Q.

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, astrobology. 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

(103Q) Either semester. Three credits. Recommended preparation: MATH 1010 or the equivalent. Not applicable to any requirement that specifies a course in "general physics."

Concepts of physics applied to current problems of the physical environment: energy, transportation, pollution. No previous knowledge of physics is assumed. CA 3.

1035Q. Physics of the Environment with Laboratory

(104Q) Either semester. Four credits. Three class periods and one 2-hour laboratory period. Recommended preparation: MATH 1010 or the equivalent. No previous knowledge of physics is assumed. Not open for credit to students who have passed PHYS 1030Q.

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. CA 3-LAB.

1050. Inquiry-Based Physics

(105) Second semester. Four credits. One class period and three 2-hour laboratory periods. *Best*

Selected topics from physics, with an emphasis on a depth of understanding. Provides background for teaching physical science as a process of inquiry, and develops scientific literacy. Particularly for pre-service elementary school teachers.

1075Q. Physics of Music

(107Q) First semester. Four credits. Three class periods and one 2-hour laboratory period. Recommended preparation: MATH 1010 or the equivalent.

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-1202Q. General Physics

(121Q-122Q) Either semester. Four credits each semester. Three class periods and one 3-hour laboratory period. Prerequisite: MATH 1060 or 1110 or 1120 or

passing score on the Calculus Placement Survey or equivalent. PHYS 1201 not open for credit to students who have passed PHYS 1401, 1501 or 1601. PHYS 1202 not open for credit to students who have passed PHYS 1402, 1502 or 1602. PHYS 1201 required for PHYS 1202.

Basic facts and principles of physics. The laboratory offers fundamental training in precise measurements. CA 3-LAB.

1230. General Physics Problems

(123) Either semester. Three credits. Prerequisite: PHYS 1202 and MATH 1122 or 1132, both of which may be taken concurrently. Not open for credit to students who have passed PHYS 1501 or 1601.

Problems, emphasizing applications of calculus, dealing with topics in general physics. Intended for those students who have taken or are taking PHYS 1202 and who desire to have a calculus-based physics sequence equivalent to PHYS 1401-1402.

1300. Physics for the Health Sciences

(127) Second semester. Three credits. Prerequisite: MATH 1120 and 1121, or MATH 1131, or MATH 1151. Not open for credit to students who have passed PHYS 1230, 1401, 1402, 1601, 1602, 1501, or 1502.

Survey of the principles of physics and their application to the health sciences. Basic concepts of calculus are used. Examples from mechanics, electricity and magnetism, thermodynamics, fluids, waves, and atomic and nuclear physics.

1401Q-1402Q. General Physics with Calculus

(131Q-132Q) Either semester. Four credits each semester. Three class periods and one 3-hour laboratory period. Recommended preparation for PHYS 1401: MATH 1121 or 1131. Prerequisite for PHYS 1402: PHYS 1401. Recommended preparation for PHYS 1402: MATH 1122 or 1132. PHYS 1401 is not open for credit to students who have passed PHYS 1501 or 1601. PHYS 1402 not open for credit to students who have passed PHYS 1502 or 1602. PHYS 1401 may be taken for not more than 2 credits, with the permission of the instructor, by students who have received credits for PHYS 1201. PHYS 1402 may be taken for not more than 2 credits, with the permission of the instructor, by students who have received credit for PHYS 1202.

Quantitative study of the basic facts and principles of physics. The laboratory offers fundamental training in physical measurements. Recommended for students planning to apply for admission to medical, dental or veterinary schools and also recommended for science majors for whom a one year introductory physics course is adequate. CA 3-LAB.

1501Q. Physics for Engineers I

(151Q) Either semester. Four credits. Three class periods and one 3-hour laboratory period. Recommended preparation: PHYS 1010 or secondary school physics; and CE 2110, as well as either MATH 2110 or 2130 which may be taken concurrently. Not open for credit to students who have passed PHYS 1401 or 1601. PHYS 1501 may be taken for not more than 2 credits, with the permission of the instructor, by students who have received credit for PHYS 1201.

Basic facts and principles of physics. Elementary concepts of calculus are used. Classical dynamics, rigid-body motion, harmonic motion, wave motion, acoustics, relativistic dynamics, thermodynamics. CA 3-LAB.

1502Q. Physics for Engineers II

(152Q) Either semester. Four credits. Three class periods and one 3-hour laboratory period. Prerequisite: PHYS 1501. Not open for credit to students who have passed PHYS 1402 or 1602. PHYS 1502 may be taken for not more than 2 credits, with the permission of the

instructor, by students who have received credit for PHYS 1202.

Electric and magnetic fields, electromagnetic waves, quantum effects, introduction to atomic physics. CA 3-LAB.

1530. General Physics Problems for Engineers (125) Either semester. Four credits. Three class periods and one 1-hour recitation period. Prerequisite: PHYS 1202 and MATH 1122 or 1132, both of which may be taken concurrently. Not open for credit to students who have passed PHYS 1230, 1501 or 1601.

Problems, emphasizing applications of calculus, dealing with topics in general physics. Intended for those students who have taken or are taking PHYS 1202 and who desire to have a calculus-based physics sequence equivalent to PHYS 1501-1502 or 1601-1602.

1600Q. Introduction to Modern Physics

(140Q) First semester. Four credits. Three class periods, one recitation period, and one 3-hour laboratory period. Recommended preparation: MATH 1010 or the equivalent and MATH 1060, which may be taken concurrently, or passed the Calculus Placement Survey.

Quantitative exploration of the structure of matter, including gas laws, electric and magnetic forces, the electron, x-rays, waves and light, relativity, radioactivity, and spectra. Recommended for prospective Physics majors. CA 3-LAB.

1601Q. Fundamentals of Physics I

(141Q) Second semester. Four credits. Three class periods and one 3-hour laboratory period. Recommended preparation: MATH 1121 or 1131 or 1151, any of which may be taken concurrently. MATH 1151 is preferred for Physics majors. Not open for credit to students who have passed PHYS 1401 or 1501. May be taken for not more than three credits, with the permission of the instructor, by students who have received credit for PHYS 1201.

Fundamental principles of mechanics, statistical physics, and thermal physics. Basic concepts of calculus are used. Recommended for prospective Physics majors. CA 3-LAB.

1602Q. Fundamentals of Physics II

(142Q) First semester. Four credits. Three class periods and one 3-hour laboratory period. Recommended preparation: PHYS 1601, and MATH 1122 or 1132 or 1152, any of which may be taken concurrently. MATH 1152 is preferred for Physics majors. Not open for credit to students who have passed PHYS 1402 or 1502. May be taken for not more than three credits, with the permission of the instructor, by students who have received credit for PHYS 1202.

Fundamental principles of electromagnetism, optics and wave propagation. Basic concepts of calculus are used. Recommended for prospective Physics majors. CA 3-LAB.

2200C. Computational Physics

(220C) Second semester. Three credits. Two class periods and one 2-hour laboratory period. Prerequisite: PHYS 1230 or 1402 or 1502 or 1530 or 1602 and MATH 2410, any of which may be taken concurrently; or instructor consent.

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

(230) Second semester. Three credits. Prerequisite: PHYS 1230 or 1530 or PHYS 1402 or 1602 or PHYS 1502, which may be taken concurrently; or PHYS 1202 with consent of instructor.

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.

2501WC-2502C. Laboratory in Electricity, Magnetism, and Mechanics

(258WC-259C) Both semesters. Three credits each semester. One class period, one 3-hour laboratory period, and additional assignments on the theoretical interpretation of experiments. One hour lecture per week. Time by arrangement. A written presentation of methods and results is required for each experiment. Prerequisite: First semester, PHYS 1201 or 1401 or 1501 or 1601; Second semester, PHYS 1202 or 1402 or 1502 or 1602. Both semesters, Prerequisite: ENGL 1010 or 1011 or 3800.

Experiments with mechanical phenomena. Experiments with electric and magnetic phenomena, including their interaction with matter. The handling of experimental data. The use of computers in experimental physics.

3101. Mechanics I

(242) First semester. Three credits. Prerequisite: PHYS 1602; or, with consent of instructor, PHYS 1230 or 1530 or 1402 or 1502 or 3103; MATH 2110 or 2130, which may be taken concurrently.

Newton's Laws of motion applied to mass points, systems of particles, and rigid bodies.

3102. Mechanics II

(246) Second semester. Three credits. Prerequisite: MATH 2410 or 2420 and PHYS 3101 or CE 2120.

Further applications of Newton's Laws; continuous media; Lagrange's and Hamilton's formulation of dynamics.

3103. Intermediate Physics I

(209) First semester. Three credits. Prerequisite: PHYS 1402 or 1502 or 1602 or, with consent of instructor, PHYS 1202.

Classical mechanics, electricity, and magnetism.

3104. Intermediate Physics II

(210) Second semester. Three credits. Prerequisite: PHYS 1402 or 1502 or 1602 or, with consent of instructor, PHYS 1202.

Kinetic theory, introduction to quantum mechanics.

3150. Electronics

(256) Second semester. Three credits. Two class periods and one 3-hour laboratory period. Prerequisite: PHYS 1230, 1402, 1502 or 1602 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

(255) First semester. Three credits. Prerequisite: PHYS 1602; or, with consent of instructor, PHYS 1230 or 1530 or 1402 or 1502 or 3104; MATH 2110 and 2410, or 2130 and 2420.

Properties of electric and magnetic fields; direct and alternating current circuits.

3202. Electricity and Magnetism II

(257) Second semester. Three credits. Prerequisite: PHYS 3201.

Mathematical theory of the electromagnetic field; electric and magnetic properties of matter.

3300. Statistical and Thermal Physics

(271) First semester. Three credits. Prerequisite: PHYS 1230 or 1530 or 1402 or 1502 or 1602; MATH 2110 and 2410, or 2130 and 2420.

The laws of thermodynamics and their microscopic statistical basis; entropy, temperature, Boltzmann factor, chemical potential, Gibbs factor, and the distribution functions.

3401-3402. Introductory Quantum Mechanics

(261-262) Both semesters. Three credits each semester. Prerequisite: PHYS 2300; MATH 2110 and 2410, or 2130 and 2420.

Elementary principles of quantum mechanics; applications to electrons, atoms, molecules, nuclei, elementary particles, and solids.

3989. Undergraduate Research

(290) Either semester. Credits, not to exceed three each semester, and hours by arrangement. Open only with consent of instructor. 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

(293) Either or both semesters. Credits and hours by arrangement. 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 the advisor.

Special topics taken in a foreign study program.

4094. Seminar in Current Topics

(291) Either or both semesters. One credit. One class period. To be taken concurrently with any of the following: PHYS 3101, 3102, 3201, 3202, 3401, 3402, 3300 or 4150. Open only with consent of instructor. With a change in content this course may be repeated for credit only once.

Lectures on topics relevant to current research.

4095. Special Topics

(298) Either semester. Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary.

4096W. Research Thesis in Physics

(292W) Either semester. Three credits. Hours by arrangement. Prerequisite: ENGL 1010 or 1011 or 3800. Open only with instructor consent.

Research investigation for the advanced undergraduate. Research and writing of a Thesis are required. Final public presentation is recommended.

4098. Variable Topics

(295) Either semester. Three credits. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary.

4099. Independent Study

(299) Either or both semesters. Credits by arrangement, not to exceed 3 each semester. Open only with consent of instructor. With a change of topic, this course may be repeated for credit.

4100. Physics of the Earth's Interior

(277) (Also offered as GEOL 4550) First semester. Three credits. Prerequisite: PHYS 1230 or 1402 or 1502 or 1602, which may be taken concurrently; MATH 1121 or 1131 or 1151, which may be taken concurrently, not open to students who have taken GEOL 264Q. *Cormier*

The composition, structure, and dynamics of the Earth's core, mantle, and crust inferred from observations of seismology, geomagnetism, and heat flow.

4130. Fundamentals of Planetary Science

(278) (Also offered as GEOL 4560). Second semester. Three credits. Prerequisite: PHYS 1230 or 1402 or 1502 or 1602, which may be taken concurrently; MATH 1122 or 1132 or 1152, which may be taken

concurrently, not open to students who have taken GEOL 266Q. *Cornier*

Evolution of the solar system, celestial mechanics, tidal friction, internal composition of planets, black-body radiation, planetary atmospheres.

4140. Principles of Lasers

(275) Second semester. Three credits. Prerequisite: PHYS 3202 and 3401 or instructor consent. 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

(281) First semester. Four credits. Three class periods and one 3-hour laboratory period. Recommended preparation: PHYS 3103 or 3201, either of which may be taken concurrently, or instructor consent.

An introduction to geometrical and physical optics. Thick lenses, stops, aberrations, interference, diffraction, polarization.

4210. Introduction to Solid State Physics

(273) First semester. Three credits. Prerequisite: PHYS 1230 or 1530 or 1402 or 1502 or 1602.

Crystal lattices, lattice waves, thermal and electronic properties, imperfections in solids.

4300. Astrophysics and Modern Cosmology

(276) (Also offered as PHYS 6300.) Second semester. Three credits. Prerequisite: PHYS 3101 or 3103, PHYS 3104 or 3201, and PHYS 2300; or instructor consent.

Basic principles of contemporary astrophysics; applications to stars, galaxies, and modern cosmology.

4350. Nuclei and Particles

(274) Second semester. Three credits. Prerequisite: PHYS 3401 or equivalent.

Properties of nuclei and particles, conserved quantities, isospin, quark model, Fermi gas model, electroweak interaction, high energy scattering.

4900C. Experimental Physics Design Laboratory

(285C) Either semester. Three credits. Two 3-hour laboratory periods and additional reading assignments. 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. Prerequisite: PHYS 2300, 3101 or 3102, and 3202; PHYS 3401, which may be taken concurrently; and PHYS 2501 or 2502 or ECE 3608 or MMAT 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.

Physiology and Neurobiology (PNB)

Head of Department: Professor Larry Renfro
Department Office: Room 67, Torrey Life Science Building

For major requirements, see the College of Liberal Arts and Sciences section of this *Catalog*.

2250. Animal Physiology

(250) First semester. Three credits. Prerequisite: BIOL 1107 and either 1108 or 1110. *Crivello, Renfro*

Physiological mechanisms and regulation in vertebrate animals.

2264-2265. Human Physiology and Anatomy

(264-265) Both semesters. Four credits each semester. Three class periods and one 3-hour laboratory. Prerequisite: BIOL 1107, and one of CHEM 1122 or 1124Q or 1127Q. Not open to students who have passed PNB 2274-2275. These courses must be taken in sequence to obtain credit, and may not be counted toward the Biological Sciences or Physiology and Neurobiology majors.

Fundamentals of human anatomy and physiology for students in medical technology, physical therapy, nursing, and education (Sport Science). A fee of \$20 is charged for each course.

2274-2275. Enhanced Human Physiology and Anatomy

(274-275) Both semesters. Four credits each semester. Three class periods and one 3-hour laboratory. Prerequisite: BIOL 1107, and either CHEM 1124Q or 1127Q. Not open to students who have passed PNB 2264-2265. Must be taken in sequence to obtain credit. *Chapple, Moiseff, Nishiyama, Rubio*

Fundamentals of human physiology and anatomy enhanced through inquiry-based laboratories. A fee of \$20 is charged for each course.

3180. Field Study in Physiology and Neurobiology

Either semester. Variable (1 to 4) credits. Hours by arrangement. Open with consent of department head. 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.

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.

3225. Biological Rhythms

(225) Second semester. Three credits. Prerequisite: One 2000-level course in PNB or instructor consent; open to juniors or higher.

Neuroendocrine and environmental factors in the control of biological rhythmicity, especially circadian and annual rhythms. Emphasis on animals.

3230. Hormones and Behavior

(230) First semester. Three credits. Prerequisite: One 2000-level course in PNB or instructor consent; open to juniors or higher.

Hormones and regulation of behaviors: reproductive, parental, social, and aggressive behaviors, as well as migration, hibernation, learning and memory.

3235. Fish Physiology and Endocrinology

(235) Second semester. Three credits. Prerequisite: One 2000-level course in PNB or instructor consent; open to juniors or higher. *Chapple, Chen, Crivello, Renfro*

Mechanisms and regulation of basic physiological processes in fish. Mainly teleost fishes of commercial value; also invertebrate physiological processes important to aquaculture.

3251. Biology of the Brain

(251) Second semester. Three credits. Two class periods. Prerequisite: One 2000-level course in PNB or instructor consent; open to juniors or higher. *LoTurco*

Brain functions, from molecular and cellular to overall central nervous system organization. Topics of current scientific interest.

3252. Physiological Model Systems

(252) Second semester, alternate years. Three credits. Prerequisite: PNB 2250, 2274-2275, or instructor consent; open to juniors or higher. Recommended preparation: undergraduate class in basic comparative animal physiology. *Crivello, Renfro*

Advanced, in-depth examination of animal comparative physiology.

3262. Mammalian Endocrinology

(262) Second semester. Two credits. Two class periods. Prerequisite: One 2000-level course in PNB or instructor consent; open to juniors or higher. *Gallo*

Functions of hormones in mammalian physiology emphasizing humans.

3263WQ. Investigations in Neurobiology

(263WQ) First semester. Three credits. One 1-hour discussion, one 4-hour laboratory period. Prerequisite: PNB 2250 or PNB 2274-2275; ENGL 1010 or 1011 or 3800; open to juniors or higher. *Moiseff*

Experimental investigations in neurobiology. Emphasis on designing and carrying out independent research projects, and on communicating the results. A fee of \$20 is charged for this course.

3276. Molecular Neuroanatomy

(280) First semester, alternate years. Three credits. Prerequisite: One 2000-level course in PNB or instructor consent; open to juniors or higher. Recommended preparation: MCB 2000 or 3010. *Rubio, Walikonis*

Introduction to molecular neurobiology and the anatomy of the brain, and integration of the molecular systems with anatomical structure and function.

3277. Molecular Physiology of the Heart

(281) First semester. Three credits. Prerequisite: PNB 2274-2275 and MCB 2000 or 3010; open to juniors or higher. Recommended preparation: MCB 2210. *Proenza*

Introduction to the molecular basis of cardiac physiology. Electrical excitation and conduction, excitation-contraction coupling, contractile proteins, regulation, pathophysiology. Focus on modern molecular methods and topics of current scientific investigation.

3278. Patient and the Healer

(278) First semester. Two credits. Two class periods. Consent of instructor 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.

3279. Insights into Dental Science and Clinical Medicine

(279) Second semester. One credit. One 2-hour lecture period over a ten-week period. Open to honors students. Open to non-honors students with instructor consent.

A seminar series in which Medical and Dental School faculty from the Farmington Campus provide exposure to the basic sciences supporting dental and medical clinical practices.

3293. Foreign Study

(293) Either or both semesters. Credits and hours by arrangement. Prerequisite: Open to juniors or higher. May be repeated for credit. 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.

Special topics taken in a foreign study program.

3294. Undergraduate Seminar

(297) Either or both semesters. Credits and hours by arrangement. Prerequisite: Open to juniors or higher. May be repeated for credit with a change in topic.

3295. Special Topics

(298) Either semester. Credits and hours by arrangement. Prerequisites and recommended preparation vary; open to juniors or higher. With a change in content, may be repeated for credit.

3298. Variable Topics

(295) Either semester. Three credits. Prerequisite: Open to juniors or higher. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary.

3299. Independent Study

(299) Either or both semesters. Credits and hours by arrangement. Open only with consent of instructor and the department honors committee. May be repeated for credit with change in topic.

Designed for the advanced undergraduate student who desires to pursue a special problem as an introduction to independent investigation.

4296W. Senior Research Thesis in Physiology and Neurobiology

(292W) Either semester. Three credits. Hours by arrangement. Prerequisite: Three credits of PNB 3299, which may be taken concurrently; ENGL 1010 or 1011 or 3800; 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.

Plant Science (PLSC)

Head of Department: Professor Mary E. Musgrave
Department Office: Room 119, W.B. Young Building

For major requirements, see the College of Agriculture and Natural Resources section of this *Catalog*.

1000. Orientation to Plant Science and Landscape Architecture

(100) First semester. One credit. One class period. (Taught jointly with SAPL 100.) Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

An introduction to programs, careers, and research in Plant Science and Landscape Architecture.

1125. Insects, Food and Culture

(125) First semester. Three credits. Three class periods. *Legrand*

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

(150) Second semester, alternate years (odd). 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.

3230. Biotechnology - Science, Application, Impact, Perception

(246) First semester. Three credits. *von Bodman*

Scientific, legal, and ethical aspects of Biotechnology application in agriculture, health medicine, forensics, and the environment. Designed for students with diverse departmental affiliations.

3240. Plant Biotechnology

(243) Second semester. Three credits. Prerequisites: One of BIOL 1110, MCB 2211, MCB 3010. *Li*

Principles of recombinant DNA and plant gene transfer technologies. Applications of plant biotechnology in agriculture, horticulture, forestry, human/animal health care, and pharmaceutical industry. Social and environmental impacts of plant biotechnology.

3250. Plant Gene Transfer Techniques

(285) Second semester. Three credits. *Li*

Techniques of plant gene delivery and transgenic plant production. Verification and analysis of transgenic plants. A fee of \$75 is charged for this course.

3810. Plant Diseases

(203) First semester. Three credits. Two class periods and one 2-hour laboratory. Prerequisite: BIOL 1108 or 1110; open to juniors or higher. *von Bodman*

The causes, development and management of diseases of economic plants. Lectures cover general principles and laboratories review specific examples of plant diseases of horticultural and agronomic crops.

3820. Ecology and Control of Weeds

(257) First semester. Three credits. Two class periods and one 2-hour laboratory. Prerequisite: BIOL 1110. *Guillard*

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. Insect Pest Management

(288) First semester, even-numbered years. Three credits. Two class periods and one 2-hour laboratory. *Legrand*

Biology and management of insects with an emphasis on pests of ornamental plants and turf. Identification of key pests and their damage symptoms, monitoring insect populations and management strategies and tactics.

3840. Integrated Pest Management

(204) Second semester. Three credits. Taught jointly with SAPL 840. Not open for credit to graduate students. *Legrand*

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.

3990. Field Study Internship

(287) Either semester or summer. One to six credits. Hours by arrangement. Open to Junior - Senior students who have demonstrated professional potential as identified by their advisor. Open only with consent of Head of the Department of Plant Science and the advisor. 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).

Students will work with professionals in an area of research or management.

3995. Special Topics

(298) Either semester. Credits and hours by arrangement. May be repeated for credit with a change of topic. Open only with consent of instructor.

Topics and credits to be published prior to the registration period preceding the semester offerings.

3999. Independent Study

(299) Either or both semesters. Credits and hours by arrangement. Open to qualified students with consent of instructor and Department Head. Students are expected to submit written reports. Course may be repeated for credit.

4210. Plant Physiology: How Plants Work

(216) Second semester. Three credits. Three class periods. Prerequisite: BIOL 1110 and CHEM 1122 or 1127 or 1147. Not open for credit to students who have passed PLSC 213. *Auer*

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.

4215. Plant Physiology Lab: Investigations into How Plants Work

(217) Second semester. One credit. One two-hour laboratory. Corequisite: PLSC 4210. Not open for credit to students who have passed PLSC 213. *Auer*

Independent research projects investigating plant physiology, development and response to the environment. Principles of experimental design, data analysis and scientific communication.

4994. Seminar

(295) Either semester. One credit. Open only with consent of instructor. Course may be repeated for credit.

Professional presentations of current topics in Plant Science.

Polish (PLSH)

Head of Department: Associate Professor Norma Bouchard

Department Office: Room 228, J.H. Arjona Building

1101-1102. Elementary Levels I and II

(101-102)

1103-1104. Intermediate Levels I and II

(103-104) 1101 and 1103 are offered in the first semester, and 1102 and 1104 in the second. Please refer to the Critical Languages course descriptions in this publication. Consult the Program Director in Arjona 128 or at manuela.m.wagner@UConn.edu for more information.

Political Science (POLS)

Department Head: Professor Howard Reiter

Department Office: Room 137, Monteith Building

For major requirements, see the College of Liberal Arts and Sciences section of this *Catalog*.

1002. Introduction to Political Theory

(106) Either semester. Three credits.

Major themes of political theory such as justice, obligation, and equality, and their relevance to contemporary political concerns. CA 1.

1007. Introduction to Human Rights

(125) (Also offered as HRTS 1007.) Either semester. 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.

1202. Introduction to Comparative Politics

(121) Either semester. Three credits.

A survey of institutions, politics, and ideologies in democratic and non-democratic states. CA 2. CA 4-INT.

1202W. Introduction to Comparative Politics

(121W) Prerequisite: ENGL 1010 or 1011 or 3800. CA 2. CA 4-INT.

1207. Introduction to Nonwestern Politics

(143) Either semester. 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

(132) Either semester. Three credits.

The nature and problems of international politics. CA 2. CA 4-INT.

1402W. Introduction to International Relations

(132W) Prerequisite: ENGL 1010 or 1011 or 3800. CA 2. CA 4-INT.

1602. Introduction to American Politics

(173) Either semester. Three credits.

Analysis of the organization and operation of the American political system. CA 2.

1602W. Introduction to American Politics

(173W) Prerequisite: ENGL 1010 or 1011 or 3800. CA 2.

2072QC. Quantitative Analysis in Political Science

(291QC) Either semester. Three credits. Recommended preparation: High school Algebra II and MATH 1010 or equivalent.

Explanation of the quantitative methods used in political science. Application of these methods for the analysis of substantive political questions.

2222. Political Institutions and Behavior in Western Europe

(231) Either semester. Three credits.

Comparative analysis of the governments and politics of Western Europe.

2222W. Political Institutions and Behavior in Western Europe

(231W) Prerequisite: ENGL 1010 or 1011 or 3800.

2607. American Political Parties

(241) Either semester. Three credits. Prerequisite: POLS 1602.

An analysis of the aims, organization, and growth of parties in the United States.

2622. State and Local Government

(274) Either semester. Three credits.

The practical working of democracy and the role of state and local governments.

2998. Political Issues

(296) Either semester. Three credits. May be repeated for credit with a change in subject matter.

An exploration of the fundamental nature of political conflicts on the national and international levels.

2998W. Political Issues

(296W) Prerequisite: ENGL 1010 or 1011 or 3800.

3002. Classical and Medieval Political Theory

(201) First semester. 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

(202) Second semester. Three credits. Prerequisite: Open to juniors or higher.

Major political doctrines of the contemporary period, and their influence upon political movement and institutions as they are reflected in the democratic and nondemocratic forms of government.

3022W. Western Marxist Tradition

(206W) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800; 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.

3032. American Political Thought and Ideology

(207) Second semester. 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.

3042. The Theory of Human Rights

(205) (Also offered as HRTS 3042.) Either semester. 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.

3052. Women and Politics

(204) (Also offered as WS 3052.) Either semester. 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.

3202. Comparative Political Parties and Electoral Systems

(233) Either semester. 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

(233W) Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher.

3206. Comparative Political Economy

(232) Either semester. 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

Either semester. Three credits. Recommended preparation: POLS 1202 or 1207.

Historical and contemporary role of oil in comparative politics and international relations.

3212. Comparative Perspectives on Human Rights

(258) (Also offered as HRTS 3212.) First semester. 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.

3216. Women in Political Development

(203) (Also offered as WS 3216.) Second semester. Three credits. Prerequisite: Open to juniors or higher.

Analysis of the role of women in the process of political development in Africa, Asia and Latin America. The importance of gender to the understanding of development and modernization will be explored and the ways in which change in traditional societies has affected the position of women, economically, socially and politically will be examined.

3225. Politics in Eastern Europe

(230) Second semester. Three credits. Prerequisite: Open to juniors or higher.

The politics of the East European states in a comparative and analytical framework, stressing

ideology, political culture, participation, and elite behavior.

3228. Politics of Russia and the Former Soviet Union

(237) First semester. 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.

3232. Comparative Politics of North America

(223) Second semester. Three credits. Recommended preparation: POLS 1202. Prerequisite: Open to juniors or higher.

Commonalities and differences in the political systems of the NAFTA countries, Canada, Mexico and the United States. Issues include political culture and value systems; electoral politics, approaches to federalism and regionalism; public opinion and support for NAFTA and its expansion; migration, political integration, the treatment of indigenous peoples, ethnic and gender representation; and decentralization and the role of municipal government in the provinces/states.

3235. Latin American Politics

(235) First semester. 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

(238) Either semester. Three credits.

The development of democratic attitudes, norms, and behavior in Latin America. CA 2.

3237W. Democratic Culture and Citizenship in Latin America

(238W) Prerequisite: ENGL 1010 or 1011 or 3800. CA 2.

3245. Chinese Government and Politics

(229) Second semester. Three credits. Prerequisite: Open to juniors or higher.

Chinese political processes, with emphasis on ideology and problems of development.

3252. Politics in Africa

(239) (Also offered as AFAM 3252) Either semester. 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

(244) First semester. 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.

3402. Contemporary International Politics

(211) Either semester. 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

(212) Either semester. 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

(212W) Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher.

3410. International Political Economy

(216) Either semester. Three credits. Prerequisite: Open to juniors or higher.

Politics of international economic relations: trade, finance, foreign direct investment, aid.

3414. National and International Security

(221) Either semester. 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

(225) (Also offered as HRTS 3418.) Either semester. 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

(225W) Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher.

3422. International Negotiation and Bargaining

(220) Second semester. 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

(208) Second semester. 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.

3432. American Diplomacy

(215) First semester. 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.

3437. Recent American Diplomacy

(217) Second semester. 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

(214W) Second semester. One credit. Corequisite: POLS 3437. Prerequisite: ENGL 1010 or 1011 or 3800.

3442. The Politics of American Foreign Policy

(219) Either semester. 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

(224) Either semester. 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.

3452. Inter-American Relations

(218) Second semester. Three credits. Prerequisite: Open to juniors or higher.

Major problems in inter-American relations; the Western hemisphere in contemporary world politics.

3457. Foreign Policies of the Russian Federation and the Former USSR

(222) Second semester, alternate years. 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

(226) Either semester. 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

(234) Either semester. Three credits.

Political relations between Arabs and Israelis with an emphasis on war and diplomacy.

3464W. Arab-Israeli Conflict

(234W) Prerequisite: ENGL 1010 or 1011 or 3800.

3472. South Asia in World Politics

(279) Either semester. 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.

3472W. South Asia in World Politics

(279W) Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher.

3602. The Presidency and Congress

(275) First semester. Three credits. Prerequisite: Open to juniors or higher.

The contemporary Presidency and its interactions with the Congress in the formation of public policy.

3604. Congress in Theory and Practice

Either semester. Three credits.

Analysis of the U.S. Congress, including representation, elections, policy formation, law making, and organization.

3612. Political Opinion and Electoral Behavior

(242) Either semester. Three credits. Prerequisite: Open to juniors or higher.

Analysis of public opinion and its potential to affect government policies. Emphasis on explaining elections and the basis for voters' decisions.

3617. American Political Economy

(273) Either semester. 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.

3627. Connecticut State and Municipal Politics

(270) First semester, alternate years. Three credits. Prerequisite: Open to juniors or higher.

An examination of contemporary Connecticut politics on the state and municipal levels.

3632W. Urban Politics

(263W) (Also offered as URBN 3632W.) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher.

Political systems and problems confronting urban governments.

3642. African-American Politics

(248) (Also offered as AFAM 3642) Either semester. 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

(245) (Also offered as AFAM 3647) Either semester. 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

(247) (Also offered as AFAM 3652 and WS 3652) Either semester. 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

(249) (Also offered as PRLS 3270.) Either semester. 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.

3802. Constitutional Law

(252) Either semester. 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

(256) (Also offered as HRTS 3807.) Either semester. 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

(253) Second semester. Three credits. Prerequisite: POLS 1602; open to juniors or higher.

The Supreme Court in the Political Process.

3817. Law and Society

(251) (Formerly offered as POLS 254.) Either semester. Three credits. Prerequisite: Open 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

(250) Either semester. 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, television, and other media of popular culture.

3827. Politics of Crime and Justice

(255) Either semester. 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

(259) Either semester. Three credits. Prerequisite: Open to juniors or higher.

International and domestic legal concepts concerning jurisdiction in a maritime setting.

3842. Public Administration

(260) Either semester. 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

(276) Second semester. 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.

3850W. Politics and Ethics

First semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800.

Analysis of relationship between power and ethics in political life. Examination of ethical perspectives on political decisions and issues.

3852. Politics of Budgeting

(264) Either semester. Three credits. Prerequisite: Open to juniors or higher.

Examination of the decision-making processes and role of the budget in public bureaucracies and policy implementation. Contemporary controversies in budgeting are used to illustrate and apply basic principles.

3857. Politics, Society, and Education Policy

(261) Either semester. 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

(297) Either or both semesters. Credits up to 12. Hours by arrangement. Open only with consent of the department head. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

3993. Foreign Study

(287) Either or both semesters. Credits (up to a maximum of 15) and hours by arrangement. 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.

Special topics taken in a foreign study program.

3995. Special Topics

(298) Either semester. Credits and hours by arrangement. Prerequisite: Open to juniors or higher. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary.

3999. Independent Study

(299) Either or both semesters. Credits and hours by arrangement. This course may be repeated for credit with a change in subject matter. Open only with consent of instructor and department head.

4994. Senior Seminar

(289) First semester. Three credits. Prerequisite: Open to juniors or higher. Open only with consent of instructor.

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

(288W) Either semester. Three credits. Hours by arrangement. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher. Open only by instructor consent. All honors students writing an honors thesis in Political Science must take this course in each of their last two semesters. Course may be repeated once for credit.

Portuguese (PORT)

Head of Department: Associate Professor Norma Bouchard

Department Office: Room 228, J.H. Arjona Building

Consult the Departmental Handbook for courses offered in the appropriate semesters and further description of these courses.

1193. Foreign Study

(193) Either or both semesters. Credits and hours by arrangement. May be repeated for credit. Consent of Department Head required, normally before the student's departure.

Special topics taken in a foreign study program.

3293. Foreign Study

(293) Either or both semesters. Credits and hours by arrangement. 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 the advisor.

Special topics taken in a foreign study program.

3295. Special Topics

(298) Either semester. Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary.

3298. Variable Topics

(295) Either semester. Three credits. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary.

3299. Independent Study

(299) Either or both semesters. Credits and hours by arrangement. Open only with consent of instructor. With a change in content, may be repeated for credit.

Psychology (PSYC)

Head of Department: Professor Charles Lowe

Department Office: Room 100, Bousfield Psychology Building

For major requirements, see the College of Liberal Arts and Sciences section of this *Catalog*.

1100. General Psychology I

(132) Either semester. Three credits. Two class periods and one 1-hour demonstration discussion. Ordinarily this course should be taken in the fall semester.

Basic principles that underlie mental processes and behavior; research methodology, biopsychology, sensation, perception, learning, memory and language. CA 3.

1101. General Psychology II

(133) Either semester. Three credits. Prerequisite: PSYC 1100. Not open for credit to students who have passed PSYC 1103. May not be taken concurrently with PSYC 1103.

Psychology as a social science. Research methodology, developmental, personality, clinical, abnormal and social psychology. CA 2.

1103. General Psychology II (Enhanced)

(135) Either semester. Four credits. Three lecture periods and one 1-hour discussion section. 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

(202Q) Either semester. Four credits. Three 1-hour lectures and one 2-hour laboratory/discussion. Prerequisite: PSYC 1100 and 1101 or 1103 and STAT 1000 or 1100 (or Statistics Q 1000-level).

Design, analysis, and reporting of psychological research. Experimental and quasi-experimental designs, laboratory and correlational techniques, research ethics.

2100WQ. Principles of Research in Psychology

(202WQ) Either semester. Four credits. Three 1-hour lectures and one 2-hour laboratory/discussion. Prerequisite: PSYC 1100 and 1101 or 1103 and STAT 1000 or 1100 (or Statistics Q 1000-level); ENGL 1010 or 1011 or 3800.

Design, analysis, and reporting of psychological research. Experimental and quasi-experimental designs, laboratory and correlational techniques, research ethics.

2101. Introduction to Multicultural Psychology

(275) Either semester. Three credits. Prerequisite: PSYC 1100 and 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.

2200. Physiological Psychology

(257) Either semester. Three credits. Prerequisite: BIOL 1102 or 1107 or PNB 2264-2265, and PSYC 1100.

Physiological processes related to motivation, emotion, sensory processes, motor skills, learning, and psychiatric conditions.

2201. Drugs and Behavior

(259) Second semester. 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.

2300. Abnormal Psychology

(245) Either semester. Three credits. Prerequisite: PSYC 1100 and PSYC 1101 or 1103.

Nature of abnormal behavior, theories and data regarding symptoms, etiology, treatment and prevention of mental disorders.

2300W. Abnormal Psychology

(245W) Prerequisite: PSYC 1100 and PSYC 1101 or 1103; ENGL 1010 or 1011 or 3800.

2301. The Study of Personality

(243) Either semester. Three credits. Prerequisite: PSYC 1100 and PSYC 1103 or 1101.

Theories, methods, and research in both clinical and experimental approaches to personality.

2400. Developmental Psychology

(236) Either semester. Three credits. Prerequisite: PSYC 1100 and PSYC 1101 or 1103.

Social behavior, personality, perception, cognition, language, intelligence, learning, biobehavioral processes, and research methodology in developmental perspective.

2500. Learning

(220) Either semester. Three credits. Prerequisite: PSYC 1100 and 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

(256) Either semester. Three credits. Prerequisite: PSYC 1100, and 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.

2600. Industrial/Organizational Psychology

(268) Either semester. Three credits. Prerequisite: PSYC 1100 and 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

(240) Either semester. Three credits. Prerequisite: PSYC 1100 and 1101 or 1103.

Attitudes, social cognition, social influence, interpersonal relations, group dynamics.

2701. Social Psychology of Multiculturalism

(276) Either semester. Three credits. PSYC 1100 and 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

(291) Either semester. Three credits. Prerequisite: PSYC 1100 and PSYC 1101 or 1103.

Philosophical and scientific origins and major schools, including structuralism, functionalism, behaviorism, gestalt, and psychoanalysis.

3100W. The History and Systems of Psychology

(291W) Prerequisite: PSYC 1100 and PSYC 1101 or 1103; ENGL 1010 or 1011 or 3800.

3101. Psychological Testing

(281) Either semester. Three credits. Prerequisite: PSYC 2100Q or 2100WQ.

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

(246) (Also offered as WS 3102.) Either semester. Three credits. Prerequisite: Three credits of 2000 to 3000-level psychology.

Gender roles, socialization, women and work, women's relationships, violence against women, and other topics. Theory and research. CA 4.

3102W. Psychology of Women

(246W) (Also offered as WS 3102W.) Prerequisite: Three credits of 2000 to 3000-level psychology; ENGL 1010 or 1011 or 3800. CA 4.

3103. Motivation and Emotion

(255) (Also offered as COMM 3103.) Either semester. Three credits. Prerequisite: PSYC 1100, and PSYC 1101 or 1103; open to juniors or higher.

Cognition, brain mechanisms, biofeedback, aggression, sex, competence, social influence, and conformity.

3104. Environmental Psychology

(248) Either semester. Three credits. Prerequisite: PSYC 2700.

Reciprocal relationships between built and natural environments and human behavior.

3105. Health Psychology

(251) Either semester. Three credits. Prerequisite: PSYC 1100, and 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

(270) (Also offered as AFAM 3106.) First semester. Three credits. Prerequisite: PSYC 1100 and 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.

3106W. Black Psychology

(270W) (Also offered as AFAM 3106W.) Prerequisite: PSYC 1100 and PSYC 1101 or 1103; ENGL 1010 or 1011 or 3800. CA 4.

3200. Introduction to Behavioral Genetics

(205) First semester. 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

(205W) Prerequisite: PSYC 1100 or BIOL 1102, 1103, 1107 or 1108; ENGL 1010 or 1011 or 3800; open to juniors or higher.

3201. Animal Behavior

(253) (Also offered as EEB 3201.) Either semester. Three credits. Prerequisite: BIOL 1102 or 1107, and PSYC 1100.

Principles of animal behavior derived from a review of descriptive and analytic studies in laboratory and field. Sometimes offered in multimedia format.

3250. Laboratory in Animal Behavior and Learning

(263) First semester. Three credits. One 3-hour lecture and additional laboratory hours. Prerequisite: PSYC 2100Q or PSYC 2100WQ and PSYC 2500 or 2200 or 3201, and consent of instructor.

A laboratory course to supplement PSYC 3201.

3250W. Laboratory in Animal Behavior and Learning

(263W) Prerequisite: PSYC 2100Q or PSYC 2100WQ and PSYC 2500 or 2200 or 3201, and consent of instructor; ENGL 1010 or 1011 or 3800.

3251. Laboratory in Physiological Psychology

(267) Semester by arrangement. Three credits. One 3-hour laboratory period and additional hours by arrangement. Prerequisite: PSYC 2100Q or 2100WQ, and PSYC 2200, which may be taken concurrently.

Techniques employed in experimental investigation of the anatomical and physiological bases of behavior.

3251W. Laboratory in Physiological Psychology

(267W) Prerequisite: PSYC 2100Q or 2100WQ, and PSYC 2200, which may be taken concurrently; ENGL 1010 or 1011 or 3800.

3252. Drugs and Behavior Laboratory

(252) Either semester. Three credits. Prerequisite: PSYC 2100Q or 2100WQ and PSYC 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, antidepressants, antiparkinsonian drugs, anxiolytics, sedative/hypnotics.

3300. Emotional/Behavioral Disorders of Childhood

(249) Either semester. Three credits. Prerequisite: PSYC 2400.

Theory, research, treatment, and prevention in developmental psychopathology from infancy through adolescence.

3300W. Emotional/Behavioral Disorders of Childhood

(249W) Prerequisite: PSYC 2400; ENGL 1010 or 1011 or 3800.

3301. Introduction to Clinical Psychology

(269) Either semester. Three credits. Prerequisite: PSYC 2300 or 2300W.

History of clinical psychology as a profession; graduate training and ethical responsibilities; assessment and treatment of psychological disorders; and clinical sub-specialties.

3350. Laboratory in Personality

(244) First semester. Three credits. One 2-hour laboratory period. Class experimentation and some practice in research writing. Prerequisite: PSYC 2100Q or 2100WQ or STAT 1100, PSYC 2301 and consent of instructor.

Experimental design and methodology in personality research, followed by a class project written individually by each student.

3350W. Laboratory in Personality

(244W) Prerequisite: PSYC 2100Q or 2100WQ or STAT 1100, PSYC 2301 and consent of instructor; ENGL 1010 or 1011 or 3800.

3370. Current Topics in Clinical Psychology

(250) Either semester. Three credits. Prerequisite: PSYC 3750 or 2300/2300W or instructor consent. May be repeated for credit with a change of topic.

3370W. Current Topics in Clinical Psychology

(250W) Prerequisite: PSYC 3750 or 2300/2300W or instructor consent; ENGL 1010 or 1011 or 3800.

3400. Theories in Developmental Psychology

(238) Either semester. 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.

3401. Psychology of Aging

(272) Either semester. Three credits. Prerequisite: PSYC 1100 and PSYC 1101 or 1103.

Psychological theories and research on adult development and aging. Focus on self development from adolescence through young adulthood, midlife and later life.

3450W. Laboratory in Developmental Psychology

(232W) Second semester. Four credits. Prerequisite: PSYC 2400 and PSYC 2100Q or 2100WQ; ENGL 1010 or 1011 or 3800.

The techniques necessary for performing psychological research on young children; advanced topics.

3470. Current Topics in Developmental Psychology

(239) Either semester. Three credits. Prerequisite: PSYC 2400 or instructor consent. With change of topic, 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

(239W) Prerequisite: PSYC 2400 or instructor consent; ENGL 1010 or 1011 or 3800.

3500. The Psychology of Language

(221) First semester. Three credits. Prerequisite: PSYC 1100 and PSYC 1101 or 1103.

Those aspects of language that make it a uniquely efficient vehicle for communication and thought.

3501. Sensation and Perception

(254) Either semester. Three credits. Prerequisite: PSYC 1100, and PSYC 1101 or 1103.

Sensory and perceptual processes in vision, hearing, touch, taste, and smell.

3502. Psychology of Consciousness

(206) First semester. 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 Modelling of Cognitive Processes

(260) Semester by arrangement. Three credits. Prerequisite: PSYC 2501 or 3501.

Symbolic and connectionist approaches to modeling vision, problem solving, planning, deduction, language understanding, learning, and memory.

3550W. Laboratory in Cognition

(210W) Semester by arrangement. Three credits. One 3-hour laboratory period and additional hours by arrangement. Prerequisite: PSYC 2100Q or 2100WQ, and PSYC 2500 or 2501, which may be taken concurrently; ENGL 1010 or 1011 or 3800.

Selected experiments from the following topics: memory processes, categorization, language comprehension and problem solving.

3551W. Psycholinguistics Laboratory

(211W) Either semester. Three credits. Two 3-hour laboratory periods. Prerequisite: PSYC 2100Q or 2100WQ; ENGL 1010 or 1011 or 3800. Recommended preparation: PSYC 2501 or 3500 or LING 2020. 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

(215) Semester by arrangement. Three credits. Two 3-hour laboratory periods. Prerequisite: PSYC 2100Q or 2100WQ, and PSYC 3501, which may be taken concurrently.

Techniques for the study of sensory capacities and perceptual processes.

3600. Social-Organizational Psychology

(282) Either semester. Three credits. Prerequisite: PSYC 2600 or 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.

3600W. Social-Organizational Psychology

(282W) Prerequisite: PSYC 2600 or 2700; ENGL 1010 or 1011 or 3800.

3601. Human Factors Design

(278) Either semester. 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.

3601W. Human Factors Design

(278W) Prerequisite: PSYC 1100; ENGL 1010 or 1011 or 3800.

3670. Current Topics in Industrial/Organizational Psychology

(280) Either semester. Three credits. Prerequisite: PSYC 2600 or 3601 or instructor consent. May be repeated for credit with a change of topic.

3670W. Current Topics in Industrial/Organizational Psychology

(280W) Prerequisite: PSYC 2600 or 3601 or instructor consent; ENGL 1010 or 1011 or 3800.

3750. Laboratory in Social Psychology

(242) Semester by arrangement. Three credits. Two class periods and one 2-hour research/laboratory period. Prerequisite: PSYC 2100Q or 2100WQ or STAT 1100; PSYC 2700; and consent of instructor.

Methods and techniques of research in social psychology. Supervised research investigations.

3750W. Laboratory in Social Psychology

(242W) Prerequisite: PSYC 2100Q or 2100WQ or STAT 1100; PSYC 2700; ENGL 1010 or 1011 or 3800; and consent of instructor.

3770. Current Topics in Social Psychology

(241) Semester by arrangement. Three credits. Prerequisite: PSYC 2700 and consent of instructor. With a change in content, this course 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

(241W) Prerequisite: PSYC 2700 and consent of instructor; ENGL 1010 or 1011 or 3800.

3880. Field Experience

(294) Either semester. Credits, not to exceed six per semester, and hours by arrangement. Prerequisite: PSYC 1100 and PSYC 1101 or 1103. Open only with consent of instructor. With a change in content, this course may be repeated for credit. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

Supervised field work in clinical, community, or organizational settings.

3883. Foreign Study

(290) Either or both semesters. Credits and hours by arrangement. May be repeated for credit. Consent of Department Head or advisor may be required prior to the student's departure.

Special topics taken in a foreign study program.

3884. Seminar in Psychology

(295) Semester by arrangement. Three credits. Prerequisite: PSYC 1100 and PSYC 1101 or 1103 and consent of instructor. With a change in content, may be repeated for credit.

Recent developments in psychology. Topics vary with each offering.

3885. Special Topics

(298) Either semester. Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary.

3889. Undergraduate Research

(297) Either semester. Credits, not to exceed six per semester, and hours by arrangement. Open only with consent of instructor. Recommended preparation:

PSYC 2100Q or 2100WQ. With a change in content, this course may be repeated for credit.

Participant activities related to research.

3899. Independent Study

(299) Either semester. Credits and hours by arrangement. Prerequisite: PSYC 2100Q or 2100WQ. Open only with consent of instructor. With a change in content this course 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

(296W) Either semester. Three credits. Hours by arrangement. Prerequisite: Three credits of PSYC 3889 or PSYC 3899; ENGL 1010 or 1011 or 3800. Open only to Honors students with consent of instructor and Department Head.

Public Policy (PP)

Department Head: Associate Professor Amy Donahue
Office: 4th Floor, 1800 Asylum Avenue,
West Hartford, CT

Some Public Policy courses may be offered only at the Greater Hartford Campus.

1001. Introduction to Public Policy

(101) Either semester. 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.) Either semester. Three credits.

Theory and practice of surveys, including overall project design, questionnaire development, sampling, methods of data collection and data analysis.

3001. Public Policy

(276) Either semester. 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

(220) Either semester. Three credits.

Research design for policy analysis, impact analysis, implementation analysis, program evaluation.

3011Q. Public Policy Research Methods II

(221Q) Either semester. Three credits. Prerequisite: PP 3010 and STAT 1000Q or STAT 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

(223) Either semester. Three credits.

Exploration of policy analysis using case studies on various contemporary policy topics.

3020W. Cases in Public Policy

(223W) Prerequisite: ENGL 1010 or 1011 or 3800.

3030. Investigating Public Opinion

(242) Either semester. Three credits.

Concepts, theories, and substance of public opinion and its affect on public policy.

3031. Public Administration in Theory and Practice

(260) Either semester. 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. Managing Public Money
(264) Either semester. Three credits.

Introduction to the policy and management issues surrounding how governments spend the money they raise.

3082. Practicum in Public Policy
(222) Either semester. Three credits.

Policy workshop on the practical application of making public policy.

3091. Internship

(297) Either or both semesters. Credits up to 12. Hours by arrangement. Open only with consent of the department head.

3098. Public Policy Issues

(296) Either semester. Three credits. May be repeated for credit with a change in subject matter.

An exploration of fundamental issues in public policy, public management and public opinion.

3099. Independent Study

(299) Either or both semesters. Credits and hours by arrangement. May be repeated for credit with a change in subject matter. Open only with consent of instructor.

4031. Financial Management for Public and Nonprofit Organizations

(265) (Formerly offered as POLS 265.) Either semester. Three credits.

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

(266) (Formerly offered as POLS 266.) Either semester. Three credits.

An examination of the municipal bond market, capital budgeting techniques, and related public policy issues.

4033. State and Local Fiscal Problems

(274) Either semester. Three credits.

Analytical tools and concepts to evaluate policies related to government revenues, the delivery of public services, and intergovernmental relations.

4034. Social Policy

(277) (Formerly offered as POLS 277.) Either semester. Three credits.

Examination of the concepts and principles of public policy analysis, with applications to important social issues.

4095. Special Topics

(298) Either semester. Credits and hours by arrangement. May be repeated for credit with a change in subject matter. Prerequisites and recommended preparation vary.

Puerto Rican & Latino Studies (PRLS)

Director, Institute for Puerto Rican & Latino Studies:
Assistant Professor Guillermo Irizarry
Office: Room 413, Beach Hall, 4th floor

3210. Contemporary Issues in Latino Studies
(210) Either semester. 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

(211) Either semester. 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

(220) (Also offered as HIST 3674.) Either semester. Three credits. Prerequisite: Open to juniors or higher. *Silvestrini*

Settlement and growth of Hispanic-origin populations in the United States today, from Spanish and Mexican settlement of western United States to the growth of Latino communities. Student oral history project. CA 1. CA 4.

3221. Latinos/as and Human Rights

(221) (Also offered as HIST 3575 and HRTS 3221) Either semester. Three credits. Prerequisite: Open to juniors or higher. *Silvestrini*

Latino/a issues related to human, civil and cultural rights, and gender differences.

3230. Latina Narrative

(230) (Also offered as WS 3258.) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800 or instructor consent. *Gonzalez*

Feminist topics in contemporary Latina literature and cultural studies.

3231. Fictions of Latino Masculinity

(231) (Also offered as WS 3259.) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800 or instructor consent. *Gonzalez*

Topics in Latino literature and cultural studies with an emphasis on masculinity and male authors.

3232. Latina/o Literature

(232) (Also offered as ENGL 3605.) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800 or instructor consent; open to juniors or higher. *Gonzalez*

Extensive readings in Latina/o literature from the late nineteenth century to the present. CA 4.

3233. Studies in Latina/o Literature

(233) (Also offered as ENGL 3607.) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800 or instructor consent; open to juniors or higher. May be repeated for credit with a change of topic. *Gonzalez*

Advanced study of a theme, form, author, or movement in contemporary Latina/o literature.

3241. Latin American Minorities in the United States

(241) (Also offered as ANTH 3041.) Either semester. 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

(250) (Also offered as HDFS 3442) Either semester. Three credits. Prerequisite: Open to juniors or higher. *Gonzalez*

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 (eg. migration, acculturation, SES).

3251. Latinos: Sexuality and Gender

(251) (Also offered as HDFS 3268.) Either semester. 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

(264) (Also offered as WS 3260 and COMM 3321.) Second semester. Three credits. Prerequisite: Open to juniors or higher. *Rios*

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

(294) (Also offered as SPAN 3265) Either semester. 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

(270) (Also offered as POLS 3662.) Either semester. Three credits. Prerequisite: Open to juniors or higher. *Pantoja*

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

(271) Either semester. Three credits. *Pantoja*
U.S. immigration policy, trans-border politics, and the impact diasporas and ethnic lobbies have on U.S. foreign policy, with the emphasis on Latino diasporas.

3295. Special Topics in Puerto Rican and Latino Studies

(298) Either or both semesters. Three credits. With a change in topic, may be repeated for credit.

Special topics in Puerto Rican and Latino Studies.

3298. Variable Topics in Puerto Rican and Latino Studies

(295) Either semester. Three credits. With a change in topic, may be repeated for credit.

Intensive study of specialized topics not ordinarily covered in the undergraduate curriculum, taught by visiting scholars or joint appointment faculty.

3299. Independent Study in Puerto Rican and Latino Studies

(299) Either semester. Credits and hours by arrangement. With a change in content, this course may be repeated for credit. Consent of the instructor.

3660W. History of Migration in Las Américas

(234W) (Also offered as HIST 3660W and LAMS 3660W.) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher. Recommended preparation: PRLS 3210, LAMS 1190, ANTH 3042, HIST 3609, HIST 3635, or HIST 3674/PRLS 3220. Spanish useful, but not required. Instructor consent. *Gabany-Guerrero, Overmyer-Velázquez*

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.

4212. Field Internship in Latino Studies

(212) Either semester. One to three credits; may be repeated for up to six credits.

Work in cultural community-oriented setting(s).

4320. Media and Special Audiences

(260) (Also offered as COMM 4320) Either semester. Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: COMM 1000. *Rios*

Media content and audience responses. Ethnic, racial, and gender issues in mainstream and ethnic media. Special audiences include Latina/os, African Americans, Asian Americans, Women, Gays, Lesbians.

Russian (RUSS)

Head of Department: Associate Professor Norma Bouchard

Department Office: Room 228, J.H. Arjona Building

Consult the Departmental Handbook for courses offered in the appropriate semesters and further description of these courses.

1193. Foreign Study

(193) Either or both semesters. Credits and hours by arrangement. May be repeated for credit. Consent of Department Head required, normally before the student's departure.

3293. Foreign Study

(293) Either or both semesters. Credits and hours by arrangement. May be repeated for credit. Consent of Department Head required, normally to be granted prior to the student's departure.

Special topics taken in a foreign study program.

3295. Special Topics

(298) Either semester. Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary.

3298. Variable Topics

(295) Either semester. Three credits. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary.

3299. Independent Study

(299) Either semester. Credits and hours by arrangement. Open only with consent of instructor. May be repeated for credit.

Science (SCI)

Director: College of Liberal Arts and Sciences
Dean's Office

1051. Geoscience through American Studies

(103) Either semester. Three credits. Open only to Honors students. Not open to students who have passed GEOL 1050 or 1051. *Thorson*

Reading-intensive foundation course in geology taught from the perspective of American Studies. A small-group, honors-only enhancement of GEOL 1051. Readings from American history and literature will be linked to the geology course content. An individual project in the student's area of interest is required. CA 3.

1150. Unifying Concepts in Biology, Chemistry and Physics

(150) First semester. Four credits. Three lecture periods and one 2-hour laboratory. Prerequisite: MATH 1010 or equivalent. *Knox, Markowitz, Shaw, Terry*

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

(193) Either or both semesters. Credits and hours by arrangement. May be repeated for credit. 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.

Special topics taken in a foreign study program.

2206. History of Science

(206) (Also offered as HIST 2206.) First semester. Three credits. *Roe*

Development of modern science and technology in relation to culture, politics, and social issues. CA 1.

2400. The Nature of Scientific Thought

(240) Second semester. Three credits.

An inquiry into the underlying assumptions and aims of scientific knowledge. Emphasis is placed on philosophical issues generated by current theories in the physical and biological sciences. Instructors approved by the Head of the Philosophy Department.

2410. Seminar in the Nature of Scientific Thought

(241) Second semester. One credit. One class period.

Prerequisite: SCI 2400 must be taken concurrently.

Discussions based on the content of SCI 2400.

Sociology (SOCI)

Head of Department: Professor Davita Silfen Glasberg
Department Office: Room 115, Manchester Hall

For major requirements, see the College of Liberal Arts and Sciences section of this *Catalog*.

1001. Introduction to Sociology

(107) Either semester. Three credits.

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

(107W) Prerequisite: ENGL 1010 or 1011 or 3800. CA 2.

1251. Social Problems

(115) Either semester. Three credits.

Major social problems, their sources in the organization of society, public policies for their alleviation, and questions of ethics and social justice: alcohol and drug abuse, physical and mental illness, sexual variances, poverty and inequality, ethnic and racial prejudice and discrimination, women and gender, the changing family, violence, crime and delinquency, the environment, urban problems, and population planning and growth. CA 2.

1251W. Social Problems

(115W) Prerequisite: ENGL 1010 or 1011 or 3800. CA 2.

1501. Race, Class, and Gender

(125) Either semester. Three credits.

Race, class, and gender, as they structure identities, opportunities, and social outcomes. CA 2. CA 4.

1501W. Race, Class, and Gender

(125W) Prerequisite: ENGL 1010 or 1011 or 3800. CA 2. CA 4.

1701. Society in Global Perspective

(133) Either semester. 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.

2210. Interaction and the Conduct of Social Research

(210) Either semester. Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: six credits of introductory social science courses. Instructor consent.

Sociological analysis of methodological, socio-relational, and structural factors affecting social research and clinical or community work with individuals and groups.

2301. Criminology

(216) Either semester. Three credits.

Theories and research on crime, criminal law, and the criminal justice system.

2301W. Criminology

(216W) Prerequisite: ENGL 1010 or 1011 or 3800.

2827. Revolutionary Social Movements Around the World

(227) Either semester. Three credits. One 3-hour class per week.

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

(227W) Prerequisite: ENGL 1010 or 1011 or 3800.

3201. Methods of Social Research

(205) Either semester. Three credits. Prerequisite: SOCI 1001, 1251, or 1501; open to juniors or higher.

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.

3203. Applying Sociology to Social Issues

(209) Either semester. Three credits. Prerequisite: SOCI 1001 and 3201 or instructor consent; open to juniors or higher.

Applying sociology and its methods to ask research questions, gather information, and evaluate social programs.

3211QC. Quantitative Methods in Social Research

(207QC) Either semester. Three credits. Prerequisite: SOCI 3201 and either STAT 1000 or 1100; or instructor consent; open to juniors or higher.

Practical work in the design and execution of research, hypothesis testing, data analysis, and interpretation.

3213C. Computing in the Social Sciences

(208C) Either semester. Three credits. One 2-hour lecture and one 2-hour laboratory per week. Prerequisite: Q course and SOCI 3201 or equivalent; open to juniors or higher.

Introduction to applied computing skills using a statistical package.

3221. Sociological Perspectives on Asian American Women

(221) (Also offered as AASI 3221 and HRTS 3571.) Either semester. Three credits. Prerequisite: Open to juniors or higher.

An overview of social structures, inter-group relations, and women's rights, focusing on the experience of Asian American women. CA 4.

3222. Asian Indian Women: Activism and Social Change in India and the United States

(222) (Also offered as AASI 3222 and HRTS 3573.) First semester. Three credits. Prerequisite: SOCI 1001, 1251 or 1501; open to juniors or higher.

How gender, class and ethnicity/race structure everyday lives of Asian Indian women in both India and the United States.

3251. Social Theory

(270) Either semester. Three credits. Prerequisite: SOCI 1001, 1251, or 1501; open to juniors or higher.

Sociological theory for advanced undergraduates.

3251W. Social Theory

(270W) Prerequisite: SOCI 1001, 1251, or 1501; ENGL 1010 or 1011 or 3800; open to juniors or higher.

3271. Topics in the Sociology of Culture

(266) Either semester. Three credits. Prerequisite: Open to juniors or higher. May be repeated for credit with a change in topic.

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.

3307. Drugs and Society

(219) Either semester. Three credits. Prerequisite: Open to juniors or higher.

Drug taking as a social problem, the "war on drugs," drug education, treatment and prevention approaches, the illegal drug market.

3307W. Drugs and Society

(219W) Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher.

3311. Deviant Behavior

(217) Either semester. Three credits. Prerequisite: Open to juniors or higher.

Behaviors labeled by society as deviant, such as crime, prostitution, suicide, alcoholism, drug abuse, and mental illness.

3311W. Deviant Behavior

(217W) Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher.

3315. Juvenile Delinquency

(218) Second semester. Three credits. Prerequisite: Open to juniors or higher.

An overview of sociological theory and research on juvenile delinquency.

3315W. Juvenile Delinquency

(218W) Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher.

3351. Society and the Individual

(230) Either semester. Three credits. Prerequisite: Open to juniors or higher.

Modern social systems and the behavior, psychological organization, and development of individuals.

3351W. Society and the Individual

(230W) Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher.

3401. Social Organization

(260) Either semester. 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

(260W) Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher.

3403. Complex Organizations

(265) Either semester. Three credits. Prerequisite: Open to juniors or higher.

Theories and research on complex organizations in society; relationship between organizations and their environments; varieties of organizational forms, structures, and processes.

3403W. Complex Organizations

(265W) Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher.

3407. Energy, Environment, and Society

(259) Either semester. Three credits. Prerequisite: Open to juniors or higher.

Sociological perspectives on energy production, distribution and consumption, environmental, and social organization.

3407W. Energy, Environment, and Society

(259W) Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher.

3411. Work and Occupations

(274) Either semester. Three credits. Prerequisite: Open to juniors or higher.

Occupations, jobs, careers, and the professions, and their effects on the division of labor, on the workplace, and on individuals in the labor force.

3421. Class, Power, and Inequality

(268) (Also offered as HRTS 3421.) Either semester. Three credits. Prerequisite: Open to juniors or higher.

Inequality and its consequences in contemporary societies.

3421W. Class, Power, and Inequality

(268W) Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher.

3425. Social Welfare and Social Work

(285) Either semester. Three credits. Prerequisite: Open to juniors or higher.

Social welfare needs and programs; introduction to social work as a professional service.

3429. Sociological Perspectives on Poverty

(249) (Also offered as HRTS 3429.) Either semester. Three credits. Prerequisite: Open to juniors or higher.

Poverty in the U.S. and abroad, its roots, and strategies to deal with it.

3429W. Sociological Perspectives on Poverty

(249W) Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher.

3451. Sociology of Health

(247) Either semester. Three credits. Prerequisite: Open to juniors or higher.

Social factors related to health, illness, and health-care systems.

3451W. Sociology of Health

(247W) Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher.

3453. Women and Health

(241) (Also offered as WS 3453) Either semester. Three credits. Prerequisite: Open to juniors or higher.

Social factors shaping women's health, health care, and their roles as health-care providers.

3453W. Women and Health

(241W) Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher.

3457. Sociology of Mental Illness

(244) Either semester. Three credits. Prerequisite: Open to juniors or higher.

Madness in human societies; its history, incipience, epidemiology, etiology, institutionalization, and other issues.

3457W. Sociology of Mental Illness

(244W) Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher.

3459. Aging in American Society

(248) (Also offered as HDFS 3240) Either semester. Three credits. Prerequisite: Open to juniors or higher. May be used only once to meet the distribution requirements.

Social gerontology: the role and status of older people in a changing society.

3459W. Aging in American Society

(248W) (Also offered as HDFS 3240W.) Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher.

3471. Sociology of Education

(288) Either semester. Three credits. Prerequisite: Open to juniors or higher.

Education and society; primary schools through universities as agencies for social selection and socialization.

3471W. Sociology of Education

(288W) Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher.

3501. Ethnicity and Race

(240) (Also offered as AFAM 3501.) Either semester. Three credits. Prerequisite: Open to juniors or higher.

Ethnic groups, their interrelations, assimilation, and pluralism. Culture, and identity that arise from differences in race, religion, nationality, region, and language.

3501W. Ethnicity and Race

(240W) Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher.

3503. Prejudice and Discrimination

(243) Either semester. Three credits. Prerequisite: Open to juniors or higher.

Sources and consequences of racial and ethnic prejudice and discrimination.

3503W. Prejudice and Discrimination

(243W) Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher.

3505. White Racism

(236) (Also offered as HRTS 3505 and AFAM 3505.) Either semester. Three credits. Prerequisite: Open to juniors or higher.

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. CA 4.

3511. American Jewry

(242) (Also offered as JUDS 3511.) Either semester. Three credits. Prerequisite: Open to juniors or higher.

Historical, demographic, organizational, and sociopsychological perspectives.

3511W. American Jewry

(242W) Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher.

3521. Sociology of Religion

(253) Either semester. Three credits. Prerequisite: Open to juniors or higher.

Religion in social context: differences of church, denomination, sect, and cult; religious culture, organization, and ideology.

3521W. Sociology of Religion

(253W) Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher.

3601. Sociology of Gender

(252) Either semester. Three credits. Prerequisite: Open to juniors or higher.

Explores processes contributing to social construction of gender; examines the 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; and evaluates how men and women are differentially constituted in the family, in education, work, politics, and language.

3601W. Sociology of Gender

(252W) Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher.

3621. Sociology of Sexualities

(245) (Also offered as WS 3621) Either semester. Three credits. Not open for credit to students who have taken SOCI 246 or 246W.

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. CA 4.

3621W. Sociology of Sexualities

(245W) (Also offered as WS 3621W) Prerequisite: ENGL 1010 or 1011 or 3800. Not open for credit to students who have taken SOCI 246 or 246W. CA 4.

3651. Sociology of the Family

(250) Either semester. 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.

3651W. Sociology of the Family

(250W) Prerequisite: ENGL 1010 or 1011 or 3800.

3701. The Developing World

(258) Either semester. Three credits. Prerequisite: Open to juniors or higher.

Social and economic conditions in Asia, Africa, and Latin America and attempts to improve them.

3701W. The Developing World

(258W) Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher.

3703. Modern Africa

(226) (Also offered as AFAM 3703.) Either semester. Three credits. Prerequisite: Open to juniors or higher.

Cultural patterns, social structure, and political conflict in sub-Saharan Africa.

3703W. Modern Africa

(226W) Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher.

3801. Political Sociology

(269) (Also offered as HRTS 3801.) Either semester. Three credits. Prerequisite: Open to juniors or higher.

Social analysis of power, democracy and voting, society and the state, and political economy.

3801W. Political Sociology

(269W) Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher.

3821. Social Movements and Social Change

(290) Either semester. Three credits. Prerequisite: Open to juniors or higher.

Revolutionary, reform, reactionary, religious, communal, and escapist movements.

3821W. Social Movements and Social Change

(290W) Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher.

3825. African Americans and Social Protest

(235) (Also offered as HRTS 3825 and AFAM 3825.) Either semester. Three credits. Prerequisite: Open to juniors or higher.

Social and economic-justice movements, from the beginning of the Civil Rights movement to the present. 1 or 3800.

3831. Human Rights in the United States

(215) (Also offered as HRTS 3831.) Either semester. Three credits. Prerequisite: Open to juniors or higher.

Sociological analyses of human rights issues in the United States, including economic, racial, and gender justice; prisoner's rights and capital punishment; the role of the United States in international human rights agreements and treaties; and struggles on behalf of human rights.

3833. Topics in Sociology and Human Rights

(292) Either semester. Three credits. Prerequisites and recommended preparation vary; open to juniors or higher. With a change in content, may be repeated for credit.

Variable topics covering theoretical and empirical examination of social, political, economic, legal, and/or cultural issues of human rights from a sociological perspective.

3841. Public Opinion and Mass Communication

(267) Either semester. Three credits. Prerequisite: Open to juniors or higher.

Contemporary public opinion and ideology, the process and effects of mass communication, and the measurement of public opinion.

3841W. Public Opinion and Mass Communication

(267W) Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher.

3901. Urban Sociology

(280) (Also offered as URBN 3275.) Either semester. Three credits.

Social and physical organization of cities and suburbs.

3901W. Urban Sociology

(280W) (Also offered as URBN 3275W.) Prerequisite: ENGL 1010 or 1011 or 3800.

3903. Urban Problems

(281) (Also offered as URBN 3276.) Either semester. Three credits. Prerequisite: Open to juniors or higher.

Social problems of American cities and suburbs, with emphasis on policy issues.

3903W. Urban Problems

(281W) (Also offered as URBN 3276W.) Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher.

3905. Urbanization

(282) Either semester. Three credits. Prerequisite: Open to juniors or higher.

The rapid urbanization of the world's population: its causes, characteristics and consequences.

3905W. Urbanization

(282W) Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher.

3907. City Life

(283) Either semester. Three credits. Prerequisite: Open to juniors or higher.

Ways of life in large cities and suburbs and the culture of modernism.

3907W. City Life

(283W) Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher.

3911. Communities

(284) Second semester. Three credits. Three class periods. 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

(255) Either semester. Three credits. Prerequisite: Open to juniors or higher.

Size, growth, composition and distribution of population; social factors in population change.

3971W. Population

(255W) Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher.

3990. Internship: Field Experience

Either semester. Variable (1-6) credits. Supervised field experience. Hours by arrangement, 42 hours per semester per credit. Prerequisite: Instructor consent required; open to juniors or higher. Corequisite: Must be taken with SOCI 3991/W, unless continuing an internship already initiated. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

3991. Internship: Research Paper

Both semesters. Variable (1-2) credits. Prerequisite: Instructor consent required; open to juniors or higher. Corequisite: Must be taken with SOCI 3990. May be repeated twice, up to 3 credits maximum.

Research paper based on Field Experience.

3991W. Internship: Research Paper

Both semesters. Variable (1-2) credits. Prerequisite: Instructor consent required; ENGL 1010 or 1011 or 3800; open to juniors or higher. Corequisite: Must be taken with SOCI 3990. May not be repeated.

3993. Foreign Study

(293) Either or both semesters. Credits and hours by arrangement up to a maximum of six credits. Prerequisite: Open to juniors or higher. With a change in content, may be repeated for credit. Consent of Department Head required, preferably prior to the student's departure.

Special topics in a foreign-study program.

3995. Special Topics

(298) Either semester. Credits and hours by arrangement. Prerequisite: Open to juniors or higher. With a change in content, may be repeated for credit. A lecture course. Topics vary by semester.

3996W. Senior Thesis in Sociology

(294W) Either semester. Three credits. Prerequisite: Fifteen credits in sociology and consent of instructor and Department Head; ENGL 1010 or 1011 or 3800; open to juniors or higher.

3998. Variable Topics

(297) Either semester. Three credits. Open to juniors or higher. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary.

3999. Independent Study

(299) Either semester. Credits and hours by arrangement. Prerequisite: Open to juniors or higher. Open only with consent of instructor. With a change in content, may be repeated.

Soil Science (SOIL)

Head of Department: Professor Mary E. Musgrave
Department Office: Room 119, W.B. Young Building

For major requirements, see the College of Agriculture and Natural Resources section of this *Catalog*.

2120. Soils

(251) (Formerly offered as PLSC 251.) Second semester. Three credits. Three class periods. Prerequisite: CHEM 1122, 1127 or 1147. Not open for credit to students who have passed PLSC 250. *Schulthess*

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.

2125. Soils Lab

(252) (Formerly offered as PLSC 252.) Second semester. One credit. One 2-hour laboratory period. Prerequisite: SOIL 2120, which may be taken concurrently. Not open to students who have passed PLSC 250. *Schulthess*

Basic laboratory analysis of the physical and chemical properties of soil. Includes weekend field trips.

3220. Soil Formation and Classification

(205) (Formerly offered as PLSC 205.) First semester, alternate years (even). Three credits. Recommended preparation: an introductory course in soil science and an introductory course in geology. Field trips required.

Nomenclature and techniques required to describe and characterize soils as natural bodies occurring on geomorphic surfaces. Theories of soil genesis and major systems of soil taxonomy in theory and in practice.

3253. Soils, Environmental Quality, and Land Use (253) (Formerly offered as PLSC 253.) Second semester, alternate years (even). Three credits. Three class periods plus required field trips. Prerequisite: SOIL 2120.

Principles and procedures for using soils information in solving environmental and land use problems. The functions of soils in natural ecosystems and in the hydrologic cycle will be included.

3410C. Soil Chemistry Components (259C) (Formerly offered as PLSC 259C.) (Also offered as ENVE 3240C.) First semester, alternate years (even). Four credits. Three class periods and one 2-hour computer laboratory period. Prerequisites: CHEM 1128 and 2241. Recommended preparation: SOIL 2120 and 2125. *Schulthess*

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.

3520. Urban and Sports Turf Soils (235) Second semester. Three credits. Prerequisites: SOIL 2120. Jointly taught with SAPL 0352.

Physical and engineering properties of soils and root zone mixes utilized for landscapes, horticulture production, golf course putting greens and athletic fields. Areas of emphasis will include: preparation and evaluation of project specifications, root zone constituent selection, design and installation of drainage systems, evaluating soils and root zone mixes prior to construction by conducting and assessing laboratory performance testing, examining construction techniques and maintaining quality control during construction.

3620. Soil Fertility (258) (Formerly offered as PLSC 258.) First semester. Three credits. Two class periods and one 2-hour laboratory period. Prerequisite: SOIL 2120. Offered in odd-numbered years.

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.

4420. Soil Chemistry Reactions and Equilibria (273) (Formerly offered as PLSC 273.) First semester, alternate years (odd). Three credits. Three class periods. Prerequisite: CHEM 1128 and 2241 and MATH 1120. Recommended preparation: SOIL 2120 and 2125. *Schulthess*

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 principals of soil modification and remediation practices.

Spanish (SPAN)

Head of Department: Associate Professor Norma Bouchard

Department Office: Room 228, J.H. Arjona Building

Consult the Modern and Classical Languages Departmental listing in this *Catalog* for requirements for Majors in Spanish.

Consult the Departmental Handbook for courses offered in the appropriate semesters and further description of these courses.

1001-1002. Elementary Spanish I and II (181-182) Both semesters. Four credits each semester. Four class periods and additional laboratory practice. Not open for credit to students who have had three or more years of Spanish in high school. Students who wish to continue in Spanish but feel ill prepared should contact the head of the Modern and Classical Languages Department.

Development of ability to communicate in Spanish, orally and in writing, to satisfy basic survival needs within a cultural setting.

1003-1004. Intermediate Spanish I and II (183-184) Both semesters. Four credits each semester. Four class periods and additional laboratory practice. Prerequisite: SPAN 1002 or two years of Spanish in high school.

Further development of understanding, speaking, reading, and writing skills within a cultural setting. Readings to enhance cultural awareness of the Spanish-speaking world.

1006. Spanish for Reading Knowledge (186) Either semester. Three credits. Open only to seniors and graduate students. Not open for credit to undergraduates who have had SPAN 1001-1002. May not be used to meet the undergraduate foreign language requirement or as a prerequisite for other Spanish courses.

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.

1007. Major Works of Hispanic Literature in Translation (187) Either semester. Three credits. Knowledge of Spanish is not required.

A study of major works selected from the best of Spanish and Spanish-American literature. CA 1. CA 4-INT.

1008. Christians, Muslims and Jews in Medieval Spain (188) Either semester. Three credits. Taught in English.

Contacts, conflicts and coexistence among the diverse cultures and traditions of medieval Spain: Christian Hispania, Muslim al-Andalus, and Jewish Sefarad. CA 1. CA 4-INT.

1193. Foreign Study (193) Either or both semesters. Credits and hours by arrangement. May be repeated for credit. Consent of Department Head required, normally before the student's departure.

Special topics taken in a foreign study program.

3110. Spanish for Social Workers (210) Either semester. Two credits. Two class periods. Open only to graduate students in the School of Social Work. Offered at the Hartford Campus.

Development of conversational skills within the cultural perspective of Hispanics in the U.S. Emphasis on intake interviewing techniques using vocabulary and structures relevant to human services contexts.

3170. Business Spanish (270) Either semester. 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.

3177. Composition and Reading for Speakers of Spanish (280) Either semester. Three credits. Prerequisite: Consent of instructor.

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 (278) Either semester. Three credits. Prerequisite: SPAN 1004 or three or more years of Spanish in high school.

This course provides a thorough review of grammar and methodical practice in composition leading to command of practical idioms and vocabulary.

3178W. Intermediate Spanish Composition (278W) Prerequisite: SPAN 1004 or three or more years of Spanish in high school; ENGL 1010 or 1011 or 3800.

3179. Spanish Conversation: Cultural Topics (279) Either semester. 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 (200) Either semester. 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 (201) Either semester. 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 (204) Either semester. Three credits. Prerequisite: SPAN 1004.

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 (205) Either semester. 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 (206) Either semester. 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 (207) Either semester. 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

(208) Either semester. Three credits. Recommended preparation: SPAN 3178 or instructor consent. With a change in topic, 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

(214) Either semester. Three credits. Recommended preparation: five semesters of college Spanish. May be repeated for credit with a change in topic.

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

(220) Either semester. 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

(281) Either semester. 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

(282) Either semester. 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

(295) Either semester. 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

(296) Either semester. 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

(291W) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800. Recommended preparation: SPAN 3178/W.

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

(290) Either semester. Three credits. Recommended preparation: SPAN 3178.

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

(288) Either semester. 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

(250) Either semester. Three credits.

Film language and genre in Spanish and Latin American cinema. Taught in English. CA 1. CA 4-INT.

3251. Latin American Film

(209) Either semester. Three credits. One 3-hour class period. 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

(219) Either semester. Three credits. One 3-hour class period. 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

(254) Either semester. Three credits. May be repeated for credit with a change of topic. Taught in English. *Loss, Schiwy*

Selected Latin American national cinema. Focus on identity, aesthetics, and history.

3260. Studies in Spanish-American Literature

(202) Either semester. Three credits. Recommended preparation: SPAN 3201.

Readings and discussions of specific aspects of Spanish-American literature. May be repeated for credit once with a change of topic. Consult department for particulars each year.

3261. Old Spanish Language and Literature

(223) Either semester. Three credits. Prerequisite: SPAN 3231.

Linguistic and literary analysis of Medieval and Renaissance Spanish texts.

3262. Studies in Spanish Golden Age Literature

(224) Either semester. Three credits. Recommended preparation: SPAN 3200. May be repeated for credit once with a change in topic. Consult department for particulars each year.

Readings and discussions of specific aspects of Golden Age literature.

3263. Studies in Spanish Literature of the Eighteenth and Nineteenth Centuries

(225) Either semester. Three credits. Recommended preparation: SPAN 3200. May be repeated for credit once with a change in topic. Consult department for particulars each year.

Readings and discussions of specific aspects of the literature of the period.

3264. Studies in Spanish Literature of the Twentieth Century

(226) Either semester. Three credits. Recommended preparation: SPAN 3200. May be repeated for credit once with a change in topic. Consult department for particulars each year.

Readings and discussions of specific aspects of the literature of the period.

3265. Literature of Puerto Rico and the Spanish Caribbean

(294) (Also offered as PRLS 3265.) Either semester. 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

(297) Either semester. Three credits. Recommended preparation: SPAN 3201.

Lectures, readings and reports on the development of the Spanish-American novel and short story.

3293. Foreign Study

(293) Either or both semesters. Credits and hours by arrangement. 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 the advisor.

Special topics taken in a foreign study program.

3295. Special Topics

(298) Either semester. Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary.

3298. Variable Topics

(289) Either semester. Three credits. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary.

3299. Independent Study

(299) Either or both semesters. Credits and hours by arrangement. Prerequisite: Open to juniors or higher. Open only with consent of instructor. With a change in content, may be repeated for credit.

4200W. Senior Seminar for Spanish Majors: Selected Topics in Hispanic Literature

(292W) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher. With a change of content, may be repeated for credit.

Topics focused on a particular area of Spanish or Latin American literature, culture or linguistics.

Study Abroad in Spain. The University of Connecticut sponsors an academic program at the University of Granada, Spain, which is open to those who have successfully completed a fifth semester Spanish course or the equivalent. Courses include Spanish language and linguistics, literature, culture, history, economics, political science and art history.

Study Abroad in Latin America. Students who have taken at least two years of college-level Spanish are eligible for University of Connecticut sponsored programs in Argentina, Chile, the Dominican Republic and Mexico. Courses are offered in liberal arts and social sciences.

Statistics (STAT)

Head of Department: Professor D. Dey

Department Office: Room 323, College of Liberal Arts and Sciences Building

For major requirements, see the College of Liberal Arts and Sciences section of this *Catalog*.

Credit restrictions: 1000-level statistics courses are not open for credit to students who have passed a 2000-level or above statistics course or who are taking such a course concurrently. Students can receive no more than four credits from STAT 1000QC and 1100QC.

1000QC. Introduction to Statistics I

(100QC) Either semester. Four credits. Recommended Preparation: MATH 1010 or the equivalent. Three class periods and one discussion period. See credit restrictions above.

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.

1100QC. Elementary Concepts of Statistics

(110QC) Either semester. Four credits. Recommended Preparation: MATH 1010 or the equivalent. Three class periods and one discussion period. See credit restrictions above.

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

(201Q) Either semester. Three credits. Prerequisite: STAT 1000 or 1100.

Analysis of variance, multiple regression, chi-square tests, and non-parametric procedures.

3025Q. Statistical Methods (Calculus Level I)

(220Q) Either semester. Three credits each semester. Prerequisite: MATH 1122 or 1132 or 1152. Students may not receive more than three credits from STAT 3025 and STAT 3345.

Basic probability distributions, point and interval estimation, tests of hypotheses, correlation and regression, analysis of variance, experimental design, non-parametric procedures.

3075. Statistical Methods (Calculus Level II)

(221) Either semester. Three credits each semester. Prerequisite: MATH 1122 or 1132 or 1152.

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

(242Q) Either semester. Three credits. Prerequisite: STAT 2215 or 3025 or instructor consent. Credit may not be received for both STAT 3115 and 5315.

Straight-line regression, multiple regression, regression diagnostics, transformations, dummy variables, one-way and two-way analysis of variance, analysis of covariance, stepwise regression.

3345Q. Probability Models for Engineers

(224Q) Either semester. Three credits. Prerequisite: MATH 2110 or 2130. Students may not receive more than three credits from STAT 3025 and STAT 3345 or from STAT 3345 and STAT 3375.

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

(230Q) Both semesters. Three credits. Prerequisite: MATH 2110 or 2130. Students may not receive credit for both STAT 3345 and STAT 3375, or both STAT 3375 and STAT 5585.

The mathematical theory underlying statistical methods. Probability spaces, distributions in one and several dimensions, generating functions, limit theorems, sampling, parameter estimation. Neyman-Pearson theory of hypothesis testing, correlation, regression, analysis of variance.

3445. Introduction to Mathematical Statistics

(231) Both semesters. Three credits. Prerequisite: STAT 3375Q. Students may not receive credit for both STAT 3445 and STAT 5685.

The mathematical theory underlying statistical methods. Probability spaces, distributions in one and several dimensions, generating functions, limit theorems, sampling, parameter estimation. Neyman-Pearson theory of hypothesis testing, correlation, regression, analysis of variance.

3484. Undergraduate Seminar I

(200) Either semester. One credit. Prerequisite: STAT 2215 or 3115; and STAT 3025 or 3375.

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.

3494W. Undergraduate Seminar II

(202W) Either semester. One credit. Prerequisite: STAT 2215 or 3115; and STAT 3025 or 3375, and STAT 3484; ENGL 1010 or 1011 or 3800.

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, building upon the writing experience in STAT 3484.

3515Q. Design of Experiments

(243Q) Second semester. Three credits. Prerequisite: STAT 2215 or 3025 or instructor consent. Credit may not be received for both STAT 3515 and 5515.

Methods of designing experiments utilizing regression analysis and the analysis of variance.

3675QC. Statistical Computing

(261QC) Second semester. Four credits. Prerequisite: STAT 3025 or STAT 3375. Recommended preparation: An applied statistics course. Open only with consent of instructor.

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

(235) (Also offered as MATH 3170.) Either semester. Three credits. Prerequisite: STAT 3025 or 3345 or 3375 or MATH 3160 Not open for credit to students who have passed MATH 3170.

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

(298) Either semester. Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary.

4188. Variable Topics

(295) Either semester. Three credits. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary.

4190. Field Study Internship

(294) Either semester. Credits and hours by arrangement. Prerequisites: Completion of Freshman - Sophomore General CLAS requirements. Completion with a grade of "C" or better of STAT 3025 or STAT 3375 and STAT 3115 or STAT 3515. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

Supervised field work relevant to some area of Statistics 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).

4299. Independent Study

(299) Either semester. Credits and hours by arrangement. Open only with consent of instructor. May be repeated for credit.

4389. Undergraduate Research

(296) Either semester. Three credits. Hours by arrangement. Open only with consent of instructor.

Supervised research in probability or statistics. A final written report and oral presentation are required.

4475C. Statistical Quality Control and Reliability

(271C) Either semester. 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

(252) Either semester. Three credits. Prerequisite: STAT 3445 or instructor consent.

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.

4535. Introduction to Operations Research

(286) (Also offered as MATH 4735 and STAT 5535.) Either semester. Three credits. Prerequisite: MATH 3160 or STAT 3025 or 3375. Not open for credit to students who have passed MATH 4735 or STAT 5535.

Introduction to the use of mathematical and statistical techniques to solve a wide variety of organizational problems. Topics include linear programming, network analysis, queueing theory, decision analysis.

4625. Introduction to Biostatistics

(272) Either semester. Three credits. Prerequisite: STAT 3025 or instructor consent.

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.

4625Q. Introduction to Biostatistics

(272Q) Either semester. Three credits. Prerequisite: STAT 3025 or an applied statistics course along with either STAT 3375 or MATH 3160 or instructor consent.

4675. Probability and Statistics Problems

(284) Either semester. One or two credits. Hours by arrangement. Prerequisite: MATH 3160 and STAT 3375. Not open for credit to students who have passed MATH 3660Q.

Designed to help students prepare for the second actuarial examination.

4825C. Applied Time Series

(280C) Either semester. Three credits. Prerequisite: STAT 3445 or instructor consent.

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.

4875. Nonparametric Methods

(253) First semester. Three credits. Prerequisite: STAT 3445 or instructor consent.

Basic ideas, the empirical distribution function and its applications, uses of order statistics, one- two- and c-sample problems, rank correlation, efficiency.

Turfgrass Science (TURF)

Head of Department: Professor Mary E. Musgrave
Department Office: Room 119, W.B. Young Building

For major requirements, see the College of Agriculture and Natural Resources section of this *Catalog*.

1100. Turfgrass Management

(124) (Formerly offered as PLSC 124.) First semester. Three credits. Two class periods and one 2-hour laboratory. Not open to students who have passed PLSC 289. Taught jointly with SAPL 0110. *Guillard*

An overview of turfgrass adaptation, selection, and management. Topics include turfgrass growth, physiology, soil interactions, weeds and diseases, morphology and identification, establishment, and maintenance. Cultural system practices for lawns, golf courses, athletic fields, and other turf areas.

3100. Golf Course Management

(283) (Formerly offered as PLSC 283.) Second semester. Three credits. Taught jointly with SAPL 0210. Not open for credit to graduate students. *Rackliffe*

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.

3200. Turfgrass Physiology and Ecology

(224) (Formerly offered as PLSC 224.) Second semester. Three credits. Three class periods. Prerequisite: TURF 1100; open to juniors or higher. *Guillard*

Turfgrass physiology related to growth and development. Response to temperature, light, water, traffic, and wind. Turfgrass community dynamics, competition, and environmental effects of turfgrass culture.

3200W. Turfgrass Physiology and Ecology

(224W) (Formerly offered as PLSC 224W.) Prerequisite: TURF 1100; ENGL 1010 or 1011 or 3800; open to juniors or higher. *Guillard*

3300. Principles of Turfgrass Irrigation Systems

(219) (Formerly offered as PLSC 219.) First semester. Three credits. Two class periods and one 2-hour laboratory. Taught jointly with SAPL 0230. Not open for credit to graduate students. *Rackliffe*

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.

3400. Professional Development for Turfgrass Industries

(220) (Formerly offered as PLSC 220.) Second semester. Two credits. Two hour class periods. Taught jointly with SAPL 0240. Not open for credit to graduate students. *Rackliffe*

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.

3720. Golf Course Design

(284) (Formerly offered as PLSC 284.) First semester. Two credits. Taught jointly with SAPL 720. Not open for credit to graduate students. *Guillard*

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.

3800. Turfgrass Pests and Control

(223) (Formerly offered as PLSC 223.) First semester. Three credits. Two class periods and one 2-hour laboratory. Taught jointly with SAPL 800. Not open for credit to graduate students. *Rackliffe*

Turfgrass weed, insect, disease and vertebrate identification and control. Emphasis on biological controls and IPM. Field trips required.

Urban and Community Studies (URBN)

Director, Urban and Community Studies Program
(for the TriCampus): Robert Fisher
Office: Room 220, Undergraduate Building,
West Hartford

Coordinator, Urban and Community Studies Program
(for Storrs): Alexander Vias
Office: Room 438, College of Liberal Arts and
Sciences Building

For major requirements, see the College of Liberal Arts and Sciences section of this *Catalog*.

1200. The City in the Western Tradition

(130) (Also offered as GEOG 1200.) Either semester. Three credits.

A broad discussion of the role and structure of the city in the western tradition from the classical period to contemporary America. 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 the western city. CA 1.

1300W. Exploring Your Community

(140W) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800.

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. Includes a service learning component. CA 2. CA 4.

2000. Introduction to Urban Studies

(230) Second semester. 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 Studies

(230W) Prerequisite: ENGL 1010 or 1011 or 3800.

2100. Survey Research Methods

(220) (Also offered as PP 2100.) Either semester. Three credits.

Theory and practice of surveys, including overall project design, questionnaire development, sampling, methods of data collection and data analysis.

3000. Urban Anthropology

(248) First semester. Three credits.

A general course on urbanization, emphasizing contrasts between "developed" and "developing" countries.

3200. Urban Geography

(233) (Formerly offered as URBN 212.) (Also offered as GEOG 3200.) Either semester. Three credits.

Analysis of the growth, distribution, and functional patterns within and among Western cities. Application of urban geographical concepts to city planning problems.

3275. Urban Sociology

(280) (Also offered as SOCI 3901.) Either semester. Three credits.

Social and physical organization of cities and suburbs.

3275W. Urban Sociology

(280W) (Also offered as SOCI 3901W.) Prerequisite: ENGL 1010 or 1011 or 3800.

3276. Urban Problems

(281) (Also offered as SOCI 3903.) Either semester. Three credits. Prerequisite: Open to juniors or higher.

Social problems of American cities and suburbs with emphasis on policy issues.

3276W. Urban Problems

(281W) (Also offered as SOCI 3903W.) Prerequisite: ENGL 1010 or 1011 or 3800; open to juniors or higher.

3439. Urban and Regional Economics

(259) (Also offered as ECON 3439.) Second semester. Three credits. Prerequisite: ECON 2201. Recommended preparation: ECON 1200, 1202, and one of: MATH 1071Q, 1110Q, 1121Q, 1131Q, or 1151Q.

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.

3541. The History of Urban America

(241) (Also offered as HIST 3541.) Second semester. Three credits.

The development of urban America with emphasis on social, political, physical, and environmental change in the industrial city. The development of urban America with emphasis on social, political, physical, and environmental change in the industrial city.

3541W. The History of Urban America

(241W) (Also offered as HIST 3541W.) Prerequisite: ENGL 1010 or 1011 or 3800.

3632W. Urban Politics

(263W) (Also offered as POLS 3632W.) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800 ; open to juniors or higher.

Political systems and problems confronting urban governments. Political systems and problems confronting urban governments.

3981. Internship in Urban Studies: Seminar

(232) Either semester. Credits, not to exceed three, by arrangement. To be elected concurrently with URBN 3991. Prerequisite: Consent of instructor.

Description, analysis, and evaluation of the fieldwork portion (URBN 3991) of the internship. Written reports are required. Description, analysis, and evaluation of the fieldwork portion (URBN 3991) of the internship. Written reports are required.

3991. Internship in Urban Studies: Field Study

(231) Either semester. Credits, not to exceed three, by arrangement. Hours by arrangement with hosting agency. To be elected concurrently with URBN 3981. Prerequisite: Consent of instructor. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

A fieldwork internship program under the direction and supervision of a member of the Urban Studies faculty. Students will be placed in agencies or industries where their academic training will be applied. One 8-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.

3995. Special Topics

(298) Either semester. Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary.

3998. Variable Topics

(295) Either semester. Three credits. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary.

4000. Understanding Your Community

(290) Either semester. Three credits. Recommended preparation: Three courses within the Urban and Community Studies major. With a change in content, 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.

4000W. Understanding Your Community

(290W) Prerequisite: ENGL 1010 or 1011 or 3800.

4999. Independent Study

(299) Either or both semesters. Credits and hours by arrangement. Prerequisite: Consent of instructor. May be repeated for credit.

Vietnamese (VIET)

Head of Department: Associate Professor Norma Bouchard

Department Office: Room 228, J.H. Arjona Building

1101-1102. Elementary Levels I and II

(101-102)

1103-1104. Intermediate Levels I and II

(103-104)

1101 and 1103 are offered in the first semester, and 1102 and 1104 in the second. Please refer to the Critical Languages course descriptions in this publication. Consult the Program Director in Arjona 128 or at manuela.m.wagner@UConn.edu for more information.

Women's Studies (WS)

Director, Women's Studies Program: Manisha Desai
Office: Room 426 Beach Hall

For major requirements, see the College of Liberal Arts and Sciences section of this *Catalog*.

1103. Introduction to Women's Studies in the Social Sciences

(103) First semester. Three credits.

An introduction to research on women and gender in a variety of social science fields. Considers interpersonal relationships, socioeconomic status, power and authority as women experience them and explores the myths and realities of difference between women and men, and of differences among women of different race, class or ethnic backgrounds in the U.S.

1104. Feminisms and the Arts

(104) Either semester. Three credits. *D'Alleva*

Interdisciplinary exploration of the work of women artists in drama, the visual arts, music, literature, and/or film. Key issues of feminist criticism in the arts are discussed. CA 1. CA 4.

1105. Gender in Everyday Life

(105) Either semester. Three credits.

Explores how the biological fact of sex is transformed into a system of gender stratification in our everyday lives. Examines the social position of women in the family, work, and politics while maintaining sensitivity to the diversity of women's experiences across class, racial-ethnic groups, cultures, and regions. Experience in introductory research methods to analyze the social construction and structural organization of gender. CA 2. CA 4.

1121. Women in History

(121) (Also offered as HIST 1203.) Either semester. 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.

1124. Gender in Global Perspective

(124) Either semester. Three credits.

Exploration of the construction and reproduction of gender inequality in global perspective. Study of the social position and relations of women and men (political, economic, cultural and familial) in selected nonwestern societies. Diversity of women's and men's experiences across class, racial-ethnic groups, sexualities, cultures, and regions. CA 2. CA 4-INT.

1193. Foreign Study

(193) Either or both semesters. Credit and hours by arrangement. May be repeated for credit. Consent of program director required, normally before the student's departure.

3052. Women and Politics

(204) (Also offered as POLS 3052.) Either semester. 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

(246) (Also offered as PSYC 3102.) Either semester. Three credits. Prerequisite: Three credits of 2000-level or above psychology. *Crawford*

Gender roles, socialization, women and work, women's relationships, violence against women, and other topics. Theory and research. CA 4.

3102W. Psychology of Women

(246W) (Also offered as PSYC 3102W.) Prerequisite: Three credits of 2000-level or above psychology; ENGL 1010 or 1011 or 3800. CA 4.

3209. Ethnicities, Sexualities, Modernisms

(290) (Also offered as ARTH 3040.) Either semester. Three credits. Prerequisite: Open to juniors or higher.

Topics in twentieth-century visual culture (film, advertising, fine arts, crafts, literatures), with emphasis upon matters related to social constructions of ethnicity and sexuality, and upon issues raised by feminist and postcolonial theories.

3216. Women in Political Development

(203) (Also offered as POLS 3216.) Second semester. Three credits. Prerequisite: Open to juniors or higher.

Creevey

Analysis of the role of women in the process of political development in Africa, Asia and Latin America. The importance of gender to the understanding of development and modernization will be explored and the ways in which change in traditional societies has affected the position of women, economically, socially, and politically will be examined.

3217. Women and Film

(217) Either semester. Three credits.

Feminist analysis of Hollywood film. Investigates women's roles as filmmaker, writer, editor, and actress as well as messages communicated to female viewers.

3250. Feminisms

(250) Three credits. Prerequisite: WS 1103, 1104, or 1124.

Current feminist theories and related social and political issues.

3251. Women and Body Art

(251) Either semester. Three credits.

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.

3252. Genders and Sexualities

(252) First semester. Three credits.

Overview of lesbian, gay, bisexual, and transgender issues.

3255W. Sexual Citizenship

(255W) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800. *Naples*

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.

3258. Latina Narrative

(258) (Also offered as PRLS 3230.) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800 or instructor consent. *Gonzalez*

Feminist topics in contemporary Latina literature and cultural studies.

3259. Fictions of Latino Masculinity

(259) (Also offered as PRLS 3231.) Either semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800 or instructor consent. *Gonzalez*

Topics in Latino literature and cultural studies with an emphasis on masculinity and male authors.

3260. Latinas and Media

(260) (Also offered as PRLS 3264 and COMM 3321.) Second semester. Three credits. Prerequisite: Open to juniors or higher. *Rios*

The role of ethnicity and race in women's lives. Special attention to communication research on ethnic and racial minority women. CA 4.

3263. Women and Violence

(263) (Also offered as HRTS 3263.) Either semester. Three credits.

A discussion of the various forms of violence against women in our society, including rape, battering, incest and pornography; treats the social, political and personal meaning of violence.

3264. Gender in the Workplace

(264) First semester. Three credits.

An examination of the role of gender in shaping the American workplace and the lives of workers. Discussion of important issues such as comparable worth and sexual harassment drawing on research done in a variety of social science disciplines.

3265W. Women's Studies Research Methodology

(265W) First semester. Three credits. Prerequisite: WS 1103 or WS 1104 or WS 1124 or HIST 1203; ENGL 1010 or 1011 or 3800; Open only to WS majors. Women's Studies majors are strongly urged to take this course as early as possible and before PHIL 3218.

Analyses of gender bias in research design and practice, problems of androcentric values, and over-generalization in research. Varieties of feminist research methods and their implications for the traditional disciplines. Student projects using different methodologies.

3266. Women and Ethnicity: Changing Roles in a Changing Society

(266) Either semester. Three credits.

An examination of the intersections of gender, race and culture as these are played out in women's studies, oral histories, and other forms of testimony. Readings and discussions will explore the myths and realities of Asian-American, Latin, and African-American women's experiences using a sociohistorical perspective.

3267. Women and Poverty

(267) Second semester. Three credits.

Focus on poverty in the United States with special attention to its effects on women and their families, including emphasis on race and class differences, and on the policies that keep women in poverty and those that will bring them out of it.

3268. Gender and Communication

(268) (Also offered as COMM 3450.) Either semester. Three credits. Prerequisite: COMM 1000 or instructor consent; open to juniors or higher. Not open for credit to students who have passed COMS 4230.

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.

3269. The Women's Movement

(269) Either semester. Three credits.

What is feminism? Who are the feminists and what do they want? How effective has the Women's Movement been in accomplishing its goals? What are the most controversial questions it has raised? Is the Women's Movement dead or dying? We will research and discuss questions like these both through examination of the writings and activities of the contemporary Women's Movement in the United States and through historical and international comparisons.

3271. Seminar on Rape Education and Awareness I

(271) First semester. 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

(272) Second semester. One credit. Prerequisite: WS 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.

3350. Anthropological Perspectives on Women

(231) (Also offered as ANTH 3350) Either semester. 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.

3402. Women in the Bible

(273) (Also offered as ANTH 3402.) Either semester. Three credits. Prerequisite: INTD 3260.

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

(270) (Also offered as ANTH 3403.) Either semester. Three credits. *Linnekin*

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

(208) (Also offered as HIST 3416) Either semester. Three credits. *Shafer*

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.

3453. Women and Health

(241) (Also offered as SOCI 3453.) Either semester. Three credits. Prerequisite: Open to juniors or higher. *Ratcliff*

Social factors shaping women's health, health care, and their roles as health-care providers.

3561. History of Women and Gender in Early America

(210) (Also offered as HIST 3561) Either semester. Three credits. Prerequisite: Open to juniors or higher.

Compares the evolving gender systems of native American groups, transplanted Africans, and immigrant Europeans up to the early Nineteenth Century. Topics include women's work, marriage and divorce, witch-hunting, masculinity, and women's Revolutionary War roles.

3562. History of Women and Gender in the United States, 1790-Present

(215) (Also offered as HIST 3562) Either semester. Three credits. Prerequisite: Open to juniors or higher. Not open to students who have taken HIST 3418 or WS 202.

Women and gender in family, work, education, politics, and religion. Impact of age, race, ethnicity, region, class, and affectional preference on women's lives. Changing definitions of womanhood and manhood.

3621. Sociology of Sexualities

(245) (Also offered as SOCI 3621) Either semester. Three credits. Not open for credit to students who have taken SOCI 246 or 246W. *Bernstein*

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. CA 4.

3621W. Sociology of Sexualities

(245W) (Also offered as SOCI 3621W.) Prerequisite: ENGL 1010 or 1011 or 3800. Not open for credit to students who have taken SOCI 246 or 246W.

3652. Black Feminist Politics

(247) (Also offered as AFAM 3652 and POLS 3652.) Either semester. 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.

3891. Women's Studies Internship Program

(261) Either semester. Three to nine credits. Hours by arrangement. Prerequisite: One Women's Studies course. To be taken concurrently with WS 3894. Open only with consent of Women's Studies Internship Coordinator. Transfer students who wish to major in Women's Studies are not required to take Women's Studies Internship Program.

A field placement 9-18 hours per week in an organization related to the student's major field of study. Such work is overseen by the field work supervisor and the Women's Studies Internship Coordinator.

3894. Women's Studies Internship Seminar

(262) Either semester. Three credits. Open only with consent of Women's Studies Internship Coordinator. *McComiskey*

A weekly seminar on women and work in which students integrate their field experience with readings, class discussion and guest lecturers.

3993. Foreign Study

(293) Either or both semesters. Credit and hours by arrangement. 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

(298) Either semester. Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary.

3998. Variable Topics

(295) Either semester. Three credits. With a change of topic, may be repeated for credit. Prerequisites and recommended preparation vary.

3999. Independent Study

(299) Either semester. Credits and hours by arrangement. This course may be repeated for credit with a change in subject matter. Open only with the consent of the instructor and Women's Studies Program Director.

4994W. Senior Seminar in Women's Studies

(289W) Second semester. Three credits. Prerequisite: ENGL 1010 or 1011 or 3800. Recommended preparation: WS 3265 and PHIL 3218 or instructor consent. For WS majors only. *McComiskey*

Capstone course integrating and analyzing Women's Studies theory and substance through research on a common topic and discussion of advanced texts.

Ratcliffe Hicks School of Agriculture

Director: Professor Cameron Faustman

Office: 211, W.B. Young Building

For major requirements, see the Ratcliffe Hicks section of this *Catalog*.

Courses in the Ratcliffe Hicks School of Agriculture are *not* open to baccalaureate students.

Agricultural and Resource Economics (SARE)

450. Principles of Agricultural and Resource Economics

(50) Either semester. Three credits. Taught concurrently with ARE 1150.

An introduction to agricultural economics, the role of agriculture in today's United States economic system, and relationships that regulate the entire economic environment.

460. Fundamentals of Accounting and Management for the Agribusiness Firm

(60) Second semester. Three credits. Prerequisite or corequisite: SARE 450. Taught jointly with ARE 3210.

An analysis of basic business principles, fundamentals and concepts for business entrepreneurs.

495. Special Topics

(98) Either semester. Credits and hours by arrangement. Open only with consent of instructor. May be repeated for credit with a change of topic. Total credits allowed toward graduation requirements are restricted as outlined in Ratcliffe Hicks Section.

699. Independent Study

(99) Either or both semesters. Credits and hours by arrangement. Consent of instructor required. Students are advised to read the Ratcliffe Hicks School regulation limiting the number of credits which may be applied toward graduation.

An independent study project is mutually arranged between a student and an instructor.

Agriculture (SAAG)

101. Tech Prep

(91) Either semester. Credits and hours by arrangement. Total credits not to exceed 12. Open only to students enrolled in the Agricultural Education Tech Prep program. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory). May be repeated for credit up to a total of 12 credits.

Topics and credits are established through pre-approved articulation agreements.

240. Applied Mathematics

(90) First semester. Three credits. Not open to students who have passed the RHSA math proficiency test.

Practical applications of mathematical principles to problems most likely to be encountered in course work and after graduation. Topics to be included are: Basic arithmetic, percentages, ratios, fraction to decimal conversions and simple algebra. The use of graphs in the metric (SI) system will be covered. This course is required for all RHSA students except those who received exemption by exam.

250. Freshman Seminar

(50) First semester. One credit.

Designed to assist incoming students in adjusting to college and improving their academic performance. Freshmen 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.

301. Introduction to Computer Use

(01) (Formerly offered as SAME 001.) Either semester. Three credits. Two class periods and one 2-hour laboratory period.

Use of computers for solving problems and accessing information. Includes word-processing, spreadsheets, databases and presentation software.

316. Introduction to Agricultural Mechanics

(16) Either semester. Two credits. One class period and one 2-hour laboratory.

Small gas engines, welding and other applications of agricultural equipment in animal science and horticultural operations.

495. Special Topics

(98) Either semester. Credits and hours by arrangement. Open only with consent of instructor. May be repeated for credit with a change of topic.

699. Independent Study

(99) Either or both semesters. Credits and hours by arrangement. Consent of instructor required. Course may be repeated for credit. Total credits allowed toward graduation requirements are restricted as outlined in Ratcliffe Hicks Section.

An independent study project is mutually arranged between a student and an instructor.

Animal Science (SAAS)

101. Introduction to Animal Science

(20) First semester. Three credits. Two class periods and one 2-hour discussion or laboratory period. Taught concurrently with ANSC 1001. *Darre*

The biological, physical and social factors that influence animal production and utilization.

111-112. Anatomy and Physiology of Domestic Animals

(04-05) Both semesters. Three credits. Two class periods and one 2-hour laboratory period. *Dinger, Hoagland*

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. Nutrition and Feeding of Livestock

(06) First semester. Three credits. Two class periods and one 2-hour laboratory period. *Andrew*

Covers the basic nutrients present in feeds and their breakdown and use by animals. Methods of describing the nutritive value and properties of commonly used feedstuffs are discussed. Nutritive requirements, ration formulations, and feeding problems and practices are covered. Field trips may be required.

121. Animal Breeding and Genetics

(07) Second semester. Three credits. Two-hour class period and 2-hour discussion and practice period. *Hoagland*

The principles of genetics, chemistry of nucleic acids, replication, transcription, translation and regulation of genes, population and quantitative genetics, and modern molecular genetic approaches as tools for breeding, and improving livestock production.

202. Behavior and Training of Domestic Animals

(25) Second semester. Three credits. Two class periods and one 2-hour laboratory. Taught concurrently with ANSC 1602. *Darre*

Application of behavior of cattle, horses, sheep, goats, swine, 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.

243. Animal Products

(40) First semester. Three credits. Two class periods and one 3-hour laboratory period. *Mancini*

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.

251. Horse Production

(35) Second semester. Three credits. Two class periods and one 2-hour laboratory period. *Dinger*

Entails the appraisal, structure, use, and management of light horses.

252. Management of the Horse Breeding Farm

(38) Second semester. Three credits. One class period and two 2-hour laboratory or discussion periods. Recommended preparation: SAAS 251. *Dinger*

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

(81) Second semester. Two credits. One 4-hour laboratory or discussion period. Taught concurrently with ANSC 3454. Consent of instructor required. *Bennett*

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.

256. Light Horse Training and Management

(36) First semester. Two credits. One class period and one 3-hour laboratory period. Prerequisite: SAAS 251. *Rademacher*

Includes instruction in the breaking and training of young horses.

257. Methods of Equitation Instruction

(37) Second semester. Two credits. One class period and one 2-hour laboratory or discussion period. Taught concurrently with ANSC 4457. Consent of instructor required. *Rademacher*

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.

261. Dairy Herd Management

(76) First semester of even numbered years. Three credits. Two class periods and one 2-hour laboratory period. Taught concurrently with ANSC 3261. *Kazmer*

Management of dairy cattle including milking procedures, sanitation, selection, nutrition, reproduction, physiology and anatomy of milk secretion and record keeping. Field trip required.

262. Applied Dairy Herd Management

(77) Second semester. Three credits. Two class periods and one 2-hour laboratory period. *Kazmer*

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

(52) Second semester. Three credits. Two class periods and one 2-hour laboratory period. *Darre*

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.

273. Livestock Production

(70) First semester. Four credits. Three class periods and one 2-hour laboratory period. Taught jointly with ANSC 3273. *Hoagland*

Biological and economic aspects of beef, sheep, and swine production. Field trips required.

274. Livestock and Carcass Evaluation

(83) Second semester. Two credits. Two 2-hour laboratory periods. Taught concurrently with ANSC 3674. *Hoagland*

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.

275. Advanced Animal and Product Evaluation

(88) First semester. One credit. Hours by arrangement. Taught concurrently with ANSC 3675. May be repeated for credit once. Consent of instructor required.

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.

276. Introduction to Companion Animals

(27) Second semester. Three credits. Taught concurrently with ANSC 1676.

Basic concepts of the nutrition, physiology, health and management of companion animals.

291. Professional Internship

(96) Either semester. Credits and hours by arrangement. 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). *Andrew, Darre*

294. Seminar

(94) Second semester. One credit. One 2-hour discussion period. *Zinn*

A discussion of current employment opportunities in animal agriculture. In addition, students will prepare resumes and give oral presentations.

295. Special Topics

(98) Either semester. Credits and hours by arrangement. Open only with consent of instructor. May be repeated for credit with a change of topic. 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.

299. Independent Study

(99) Either or both semesters. Credits and hours by arrangement. Consent of instructor required. Students are advised to read the Ratcliffe Hicks regulation limiting the number of credits which may be applied to the minimum graduation requirements.

An independent study project is mutually arranged between student and an instructor.

358. Management Skills and Practices – Horses

(66) Either semester. One credit. Hours by arrangement. May be repeated once for credit. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory). *Bennett*

Practical experience in common management practices is offered by working in the University facilities under supervision.

363. Management Skills and Practices – Dairy Cattle

(65) Either semester. One credit. Hours by arrangement. May be repeated once for credit. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory). *Kazmer*

Practical experience in common management practices is offered by working in the University facilities under supervision.

374. Management Skills and Practices – Beef Cattle

(64) Either semester. One credit. Hours by arrangement. May be repeated once for credit. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory). *Hoagland*

Practical experience in common management practices is offered by working in the University facilities under supervision.

375. Management Skills and Practices – Poultry

(67) Either semester. One credit. Hours by arrangement. May be repeated once for credit. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory). *Darre*

Practical experience in common management practices is offered by working in the University facilities under supervision.

376. Management Skills and Practices – Sheep

(68) Either semester. One credit. Hours by arrangement. May be repeated once for credit. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory). *Hoagland*

Practical experience in common management practices is offered by working in the University facilities under supervision.

377. Management Skills and Practices – Swine

(69) Either semester. One credit. Hours by arrangement. May be repeated once for credit. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory). *Hoagland*

Practical experience in common management practices is offered by working in the University facilities under supervision.

Natural Resources Management and Engineering (SAME)

310. Introduction to Wildlife Management

(10) Second semester. Three credits. Two class periods and one 2-hour laboratory period.

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.

495. Special Topics

(98) Either semester. Credits and hours by arrangement. Open only with consent of instructor. May be repeated for credit with a change of topic. Total credits allowed toward graduation requirements are restricted as outlined in Ratcliffe Hicks Section.

699. Independent Study

(99) Either or both semesters. Credits and hours by arrangement. Consent of instructor required. Course may be repeated for credit. Total credits allowed toward graduation requirements are restricted as outlined in Ratcliffe Hicks Section.

An independent study project is mutually arranged between a student and an instructor.

Pathobiology (SAPB)

301. Health and Disease Management of Animals

(15) Second semester, even years. Three credits. *Bushmich, Khan*

This course will include a study of the causes of diseases, practical preventive control measures and specific mammalian and poultry diseases.

495. Special Topics

(98) Either semester. Credits and hours by arrangement. Open only with consent of instructor. May be repeated for credit with a change of topic. Total credits allowed toward graduation requirements are restricted as outlined in Ratcliffe Hicks Section.

699. Independent Study

(99) Either or both semesters. Credits and hours by arrangement. Consent of instructor required. Course may be repeated for credit. Students are advised to read the Ratcliffe Hicks School regulation limiting the number of credits which may be applied toward graduation.

An independent study project is mutually arranged between a student and an instructor.

Plant Science (SAPL)

100. Orientation to Plant Science and Landscape Architecture

(10) First semester. One credit. One class period. Taught jointly with PLSC 1000. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory). *Musgrave*

An introduction to programs, careers, and research in plant science and landscape architecture.

110. Turfgrass Management

(24) First semester. Three credits. Two class periods and one 2-hour laboratory period. Taught jointly with TURF 1100. *Guillard*

An overview of turfgrass adaptation, selection, and management. Topics include turfgrass growth, physiology, soil interactions, weeds and diseases morphology and identification establishment, and maintenance. Cultural system practices for lawns, golf courses, athletic fields and other turf areas.

120. Introduction to Plant Science

(03) First semester. Four credits. Three class periods and one 2-hour laboratory period.

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.

210. Golf Course Management

(83) Second semester. Three credits. Three class periods. Taught jointly with TURF 3100. *Rackliffe*

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.

230. Principles of Turfgrass Irrigation Systems

(19) First semester. Three credits. Two class periods and one 2-hour laboratory. Taught jointly with TURF 3300. *Rackliffe*

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.

240. Professional Development for Turfgrass Industries

(20) Second semester. Two credits. Two hour class periods. Taught jointly with TURF 3400. Not open for credit to graduate students. *Rackliffe*

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.

300. Introduction to Soil Science

(22) First semester. Three credits. Two class periods and one 2-hour laboratory exercise or field trip. *Henderson*

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.

352. Urban and Sports Turf Soils

(52) Second semester. Three credits. Prerequisites: SAPL 300. Taught jointly with SOIL 3520.

Physical and engineering properties of soils and root zone mixes utilized for landscapes, horticulture production, golf course putting greens and athletic fields. Areas of emphasis will include: preparation and evaluation of project specifications, root zone constituent selection, design and installation of drainage systems, evaluating soils and root zone mixes prior to construction by conducting and assessing laboratory performance testing, examining construction techniques and maintaining quality control during construction.

410. Woody Plants I: Common Trees, Shrubs and Vines

First semester. Three credits. Two class periods and one 2-hour outdoor laboratory. Taught jointly with HORT 3410. Prerequisite SAPL 120. *Brand*

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.

420. Woody Plants II: Uncommon Trees, Shrubs and Vines

(16) Second semester. Three credits. Two class periods and one 2-hour outdoor laboratory. Prerequisite: SAPL 410. Taught jointly with HORT 3420. *Brand*

Taxonomy, identification, ornamental characteristics, cultural requirements and landscape use of uncommon, unusual and rare deciduous and evergreen woody plants utilized in landscapes of the northeastern United States and similar environs.

430. Herbaceous Ornamental Plants

(31) Second semester. Three credits. Taught jointly with HORT 2430. *Kuzovkina*

Identification, nomenclature and culture of over 160 Herbaceous perennials, biennials, annuals and bulbous plants. Live plants and visual presentation are used to highlight plant characteristics and morphology. Lectures include discussions of organic growing, composting, plant morphology, trough and container gardens, and underground storage structure. Field trips to retail and wholesale businesses are a part of this class.

482. Horticulture Production Practicum – Nursery

(74) Second semester. Credits and hours by arrangement. Prerequisite: SAPL 660. Consent of instructor. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

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.

520. Floral Art

(30) Either semester. Two credits. One class period and one 2-hour studio period. Taught concurrently with HORT 2520.

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

(35) Second semester. Two credits. One class period and one 2-hour studio period. Prerequisite SAPL 520. Taught concurrently with HORT 3530.

In-depth study of post-harvest requirements for specialized floral crops. Exposure to novel floral materials and abstract, tribute, high-style, and wedding designs. Retail price structuring, wire services, and mass-production concepts.

540. Horticultural Retailing

(71) First semester. Three credits. Taught concurrently with HORT 3540. *Bonelli*

A discussion of the principles of retailing as applied to the sale of horticultural crops. Emphasis is given to planning, customer preference, competition, merchandising, pricing and inventory as they apply to landscaping, flower shop and garden center management.

550. Evaluating and Staging Horticultural Materials

(59) First semester. One credit. Hours by arrangement. Open only with consent of instructor. This course may be repeated once for credit. *Brand*

Organization and staging of horticultural exhibits and contests suitable for fairs, garden clubs, and community projects.

620. Vegetable Production

(17) First semester. Four credits. Three class periods and one 2-hour field laboratory period. Field trips required. Taught jointly with HORT 3620. *Berkowitz*

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.

640. Plant Propagation

(62) Second semester. Three credits. Two class periods and one 2-hour laboratory period. Taught jointly with HORT 3640. *Brand*

The study of methods used to reproduce agricultural and horticultural crops. Discussion will emphasize sexual and asexual propagation techniques. Field trips are required.

660. Nursery Maintenance

(60) First semester. Three credits. Two class periods and one 2-hour laboratory period.

A consideration of the culture, care and maintenance of shade trees and nursery stock. Laboratory periods will be devoted to planting, pruning and maintenance of shade trees and nursery material. At least one field trip will be required.

670. Greenhouse Operations

(25) First semester. Four credits. Three class periods and one 2-hour laboratory period. Field trips required. Prerequisite: SAPL 120. Taught jointly with HORT 3670. *Elliott*

Introduction to greenhouse systems with emphasis on structures, environmental control, root media, irrigation and fertilization, and pest control, in relation to requirements for plant growth and crop production. Laboratories provide experience in crop production.

675. Greenhouse Crop Production I

(26) Second semester. Three credits. Two class periods and one 2-hour laboratory period. Field trips required. Prerequisite: SAPL 670. Taught jointly with HORT 3675. *Elliott*

Environmental and cultural requirements and scheduling of major greenhouse crops, exclusive of edible produce. Emphasis on cut flowers and flowering potted plants and bedding and garden plants produced for spring and early summer markets. Laboratories provide experience in crop production.

682. Horticulture Production Practicum – Vegetables

(75) Second semester. Credits and hours by arrangement. Prerequisite: SAPL 620. Consent of instructor. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

Students will be responsible for planning, producing, and marketing a vegetable crop on a commercial scale. Requires the availability of private production facilities.

720. Golf Course Design

(84) First semester. Two credits. Two class periods. Taught jointly with TURF 3720. *Guillard*

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.

750. Landscape Plant Maintenance

(45) Second semester. Three credits. Recommended preparation: SAPL 120 and 300. Taught jointly with HORT 2750. *Elliott*

Planting, establishment and maintenance of woody and herbaceous plants in built and managed environments. Plant structural and functional requirements. Preserving and protecting established plants. Soil conditions and modification. Influence of climate and modification of microclimate. Plant selection. Pruning, mulching, water and irrigation, nutrition and fertilization, plant health care and other horticultural practices.

760. Landscape and Planting Design

(69) Second semester. Four credits. Two class periods and two 2-hour laboratory periods. Prerequisite: SAPL 410 and 430, which may be taken concurrently.

The principles and techniques of landscaping the home grounds to include site analysis, drawing techniques, selections of materials, and selecting plants to fit the design.

800. Turfgrass Pests and Control

(23) First semester. Three credits. Two class periods and one 2-hour laboratory. Taught jointly with TURF 3800. *Rackliffe*

Turfgrass weed, insect, disease and vertebrate identification and control. Emphasis on biological controls and IPM. Field trips required.

810. Plant Pest Control

(41) First semester. Three credits. Two class periods and one 2-hour laboratory period.

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

(42) Second semester. Three credits. Three class periods. Prerequisite: SAPL 800 or 810. *Legrand*

An overview of integrated pest management (IPM) techniques, from development to implementation, with horticultural crops.

850. Pesticide Safety and Management

(86) Second semester. Two credits. Two class periods. Taught jointly with HORT 3575.

Pesticide application equipment, pesticide safety and toxicity, equipment calibration, pesticide poisoning, first aid and crop worker protection standards. Managing the use of pesticides to increase safety to applicators and the environment as well as increasing pest management effectiveness utilizing principles of IPM.

991. Internship

(87) Either semester or summer. One to 6 credits. Hours by arrangement. Open to qualified students with consent of advisor and Department Head. This course may be repeated provided that the sum total of credits does not exceed six.

Students will work with professionals in an area of their interest. Written reports, daily logs, and/or evaluations by professional supervisors may be required.

995. Special Topics

(98) Either semester. Credits and hours by arrangement. Open only with consent of instructor. May be repeated for credit with a change of topic. Total credits allowed toward graduation requirements are restricted as outlined in Ratcliffe Hicks Section.

999. Independent Study

(99) Either or both semesters. Credits and hours by arrangement. Consent of instructor required. Course may be repeated for credit. Total credits allowed toward graduation requirements are restricted as outlined in Ratcliffe Hicks Section.

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