

Calendar

Summer Sessions 2003

Students may register by mail, fax, Internet, or in person in advance of each session. Consult the *Summer Sessions 2003 Catalog* for details and deadlines. Session One begins at the **Regional campuses** and at the **Storrs** campus on May 19. (No classes at any campus on Monday, May 26). Session Two begins June 30. (No classes to be held on Friday, July 4.)

Last day for filing petitions for course credit by examination is the end of the first week of classes in each session. Examinations for course credit by examination occur during the fourth week of classes in each session.

Fall Semester 2003

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 to convert Incomplete or Absence grades
Tues.-Mon.	Sept. 16-22	Examinations for course credit by examination
Tues.	Oct. 21	Mid-semester progress reports due students from faculty
Mon.	Oct. 27	Last day to drop a course
		Last day to convert courses on Pass/Fail option to letter grade
Nov. 3 continuously through the second week of classes		Storrs campus registration for spring 2004 semester via Student Administration system
Fri.	Nov. 21	Last day of classes before Thanksgiving recess
Mon.	Dec. 1	Thanksgiving recess ends; classes resume
Fri.	Dec. 5	Last day of fall semester classes
Mon.	Dec. 8	Final examinations begin
Sat.	Dec. 13	Final examinations end
Sun.	Dec. 14	Commencement ceremony

Spring Semester 2004

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 to convert Incomplete or Absence grades
Tues.-Mon.	Feb. 10-16	Examinations for course credit by examination
Fri.	Mar. 5	Last day of classes before spring recess
Mon.	Mar. 15	Spring recess ends; classes resume
Mon.	Mar. 22	Mid-semester progress reports due students from faculty
		Proposed start date for Storrs campus registration for fall 2004 semester via Student Administration system
Sat.	Mar. 27	Emergency closing class make-update
Mon.	Mar. 29	Last day to drop a course
		Last day to convert courses on Pass/Fail option to letter grade
Fri.	Apr. 30	Last day of spring semester classes
Fri.	May 3	Final examinations begin
Sat.	May 8	Final examinations end
Sat.	May 8	Commencement ceremony (graduate)
Sun.	May 9	Commencement ceremony (undergraduate)

Faculty are urged to try not to schedule exams on significant religious holidays, such as Rosh Hashanah, Sept. 27-28; Yom Kippur, Oct. 6; Eid Al-fitr, Nov. 25; Eid Al-adha, Feb. 1; Passover, April 6-13; Good Friday, April 9.

Academic Degree Programs

Degrees

Bachelor of Arts
 Bachelor of Fine Arts
 Bachelor of General Studies

Bachelor of Music
 Bachelor of Science

Bachelor of Science in Engineering
 Bachelor of Science in Pharmacy
 Associate of Applied Science¹

Majors

College of Agriculture and Natural Resources

Agriculture and Natural Resources
 Agronomy
 Animal Science
 Environmental Science
 Horticulture
 Individualized Major
 Landscape Architecture
 Natural Resources
 Nutritional Sciences
 Pathobiology
 Resource Economics

School of Allied Health

Cytotechnology
 Diagnostic Genetic Sciences
 Dietetics
 Individualized Major
 Medical Technology
 Pre Physical Therapy

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

School of Engineering

Biomedical Engineering
 Chemical Engineering
 Chemical Engineering/Materials Engineering
 Civil Engineering
 Civil Engineering/Materials Engineering
 Computer Engineering
 Computer Science
 Computer Science and Engineering
 Electrical Engineering
 Electrical Engineering/Materials Engineering
 Engineering Physics³
 Environmental Engineering
 Management and Engineering for Manufacturing²
 Mechanical Engineering
 Mechanical Engineering/Materials Engineering
 Metallurgy and Materials Engineering

College of Continuing Studies

Individualized Major

School of Family Studies

Human Development and Family Studies
 Individualized Major

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

Anthropology
 Applied Mathematical Sciences
 Biological Sciences
 Biophysics
 Chemistry
 Classics and Ancient Mediterranean Studies
 Coastal Studies
 Cognitive Science
 Communication Sciences
 Ecology and Evolutionary Biology
 Economics
 Engineering Physics³
 English
 Environmental Science
 French
 Geography
 Geology and Geophysics
 German
 History
 Individualized Major
 Italian Literary and Cultural Studies
 Journalism
 Latin American Studies
 Linguistics/Philosophy
 Linguistics/Psychology
 Mathematics
 Mathematics/Actuarial Science
 Mathematics/Statistics
 Middle Eastern Studies
 Molecular and Cell Biology
 Philosophy
 Physics
 Physiology and Neurobiology
 Political Science
 Psychology
 Slavic and East European Studies
 Sociology
 Spanish
 Statistics
 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.

³ The Engineering Physics major is offered jointly by the College of Liberal Arts and Sciences and the School of Engineering, and leads to a Bachelor of Science degree in Engineering.

Neag School of Education

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

School of Nursing

Nursing

School of Pharmacy

Doctor of Pharmacy
 Pharmacy
 Pharmacy Studies

Ratcliffe Hicks School of Agriculture

Animal Science
 Horticulture

Minors

African Studies
 Agribusiness Management
 American Studies
 Anthropology
 Aquaculture
 Art History
 Bioinformatics
 Biological Sciences
 Biomedical Engineering
 Business
 Chemistry
 Classics and Ancient Mediterranean Studies
 Communication Processes
 Criminal Justice
 Dairy Management
 Ecology and Evolutionary Biology
 Economics
 English
 Environmental Engineering
 Environmental Studies
 European Studies
 Food Science
 French
 Geographic Information Science
 Geography
 Geology and Geophysics
 German
 Gerontology
 History
 Human Rights
 Information Technology
 International Studies

Italian Cultural Studies
 Italian Literary Studies
 Judaic Studies
 Landscape Design
 Latino Studies
 Latin American Studies
 Linguistics
 Marine Biology
 Mathematics
 Metallurgy and Materials Engineering
 Middle Eastern Studies
 Molecular and Cell Biology
 Native American Studies
 Neuroscience
 Nutrition for Exercise and Sport
 Oceanography
 Philosophy
 Physics
 Physiology and Neurobiology
 Political Science
 Portuguese
 Psychology
 Religion
 Slavic and East European Studies
 Sociology
 Spanish
 Sport Nutrition
 Statistics
 Theatre Production
 Theatre Studies
 Urban and Community Studies
 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
Animal Science
Natural Resources Management and Engineering
Nutritional Sciences
Pathobiology and Veterinary Science
Plant Science

School of Allied Health

Applied Health Sciences
Health Promotion and Allied Health Sciences
Physical Therapy

School of Business

Accounting
Finance
Management
Marketing
Operations and Information Management

School of Dental Medicine

School of Engineering

Biomedical Engineering
Chemical Engineering
Civil and Environmental Engineering
Computer Science and Engineering
Electrical and Computer Engineering
Mechanical Engineering
Metallurgy and Materials Engineering

College of Continuing Studies

General Studies

School of Family Studies

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
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

School of Medicine

School of Nursing

School of Pharmacy

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.

James Morales, *Director of Undergraduate Admissions*

The University of Connecticut recruits and admits men and women who will profit from the educational opportunities offered in its various schools and colleges. Admission selection procedures identify those students whose credentials indicate potential success in gaining from the University a sound preparation for a satisfying, useful life and a challenging career.

Prospective students must submit to the Office of Undergraduate Admissions:

- Completed admission application: instructions for completing and submitting the application are included with the application.
- Results of the Scholastic Assessment Test 1 (SAT1) sent directly from the Educational Testing Service in Princeton, NJ; or of the American College Testing (ACT) from the ACT National Office in Iowa City, IA.
- Official transcripts of all post secondary work completed must be sent directly from the registrar's office at the previous schools attended, whether or not credit is desired.
- Completed residency affidavit used to classify applicants as Connecticut or out-of-state students.

The applicant is notified of the decision by mail after receipt of all necessary information.

The University of Connecticut subscribes to the Statement of Principles of Good Practice of the National Association of College Admissions Counselors. 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;
- or present a copy of a State Equivalency Diploma.

The applicants' grades should place them in the upper range of their high school graduation class, and they must submit satisfactory scores on the SAT or ACT. Several of the schools and colleges of the University have additional special requirements or recommendations as listed.

Admission With Advanced Standing

Advanced Placement and Credit (AP)

See "Academic Regulations" section of this Catalog.

Connecticut High School Cooperative Program

Selected Connecticut secondary schools with specially selected members of the staff will offer regular University courses at the freshman-sophomore level to superior students. The content of the courses will be determined by the appropriate University department and the examinations must be approved by these departments. Qualified high school students who are admitted to this program and who successfully complete such courses will receive the regular University credit for them. Persons interested in this cooperative program should contact Michael Menard, Program Manager of the Connecticut High School Cooperative Program, University of Connecticut, 348 Mansfield Road, Unit 2171, Storrs, CT 06269-2171, Telephone (860) 486-1045.

Testing for Course Placement/Credit

Most new students must take one or more standardized achievement tests to assess the appropriateness of enrolling for courses in fields such as mathematics and foreign language at an advanced level. Also, certain departments offer standardized achievement tests to determine course placement. In some cases, i.e. chemistry, students may receive credit and/or grades for the courses for which exemption is granted at the time of matriculation. The Department of Counseling Services administers these tests during the spring and summer to provide results for the student's initial registration.

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 ^c	2	3	16
College of Liberal Arts	4	3 ^a	2 ^b	2	2	3	16
School of Allied Health (Junior - Senior) ^e	4	3 ^a	2 ^b	2 ^d	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 ^f	2 1/2	2 1/2	16
School of Family Studies	4	3	2 ^b	2	2	3	16
School of Fine Arts ^g	4	3	2 ^b	2	2	3	16
School of Nursing	4	3	2 ^b	2 ^h	2	3	16
School of Pharmacy (Junior - Senior)	4	3 ^a	2 ^b	2 ^d	2	3	16
Ratcliffe Hicks School of Agriculture ⁱ (Two Year Associate Degree)	4	3	0 ^j	2	2	5	16

^a Recommend 4 years

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

^c Recommend 4 years

^d Recommend 3 years

^e Recommend Health related experience

^f Chemistry or Physics required

^g Music, Acting, and Puppetry majors *require* auditions; Art majors require a portfolio; and Design/Technical Theatre major *requires* an interview

^h Recommend 1 year of Physics

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

^j 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 Schools of Allied Health, Education, and Pharmacy for information about their admission requirements and application procedures.

Deferred Admission

The Undergraduate Admissions Office offers a one year deferred admission to students who have applied and been accepted as freshmen. This policy benefits that student who desires to attend the University but who, for personal and/or financial reasons, wishes to postpone admission. An approved deferral guarantees admission for either of the subsequent two semesters. During the deferred period, a student may not accumulate in excess of nine credits at another institution. Requests for deferral must be in writing and should be received at the Undergraduate Admissions Office no later than one month prior to the start of the semester for which the student was admitted. Transfer students may not defer their admission; however, they may reactivate their application for admission for consideration for either of the two subsequent semesters. Contact Undergraduate Transfer Admissions for information.

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/SED
- SAT or ACT scores (Waived if student is 25 or older or has completed three full-time semesters at the time of application)
- Application fee of \$50 (non refundable)

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
- (b) 2.5 cumulative grade point average (4.0 scale)

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 undertaken a program 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.

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.

International students requesting admission information receive an application that includes detailed instructions about required supporting material (official academic transcripts, personal essay, financial affidavit, TOEFL and SAT or ACT scores). 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, Undergraduate Admissions Office, 3121 Hillside Road, Unit 3088, Storrs, CT 06269-3088 U.S.A.

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 statement 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. Services offered include:

- Pre-admission counseling and new student orientation.
- Individualized academic accommodations and counseling.
- Residential accommodations and counseling.
- Financial aid counseling.
- Personal assistance training and referral.
- Assistive technology training.
- Transportation and parking services.
- Referral and liaison services to other agencies.
- 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 06268-4174; Voice (860) 486-2020, TDD (860) 486-2077, Fax: (860) 486-4412.

Students With Specific Learning Disabilities

Through the University of Connecticut's Program for College Students with Learning Disabilities (UPLD), students with specific learning disabilities may receive support services including direct instruction in learning strategies and assistance in arranging appropriate accommodations. To access UPLD services, students are required to submit documentation that meets the University's Guidelines which are included on the UPLD's website at: <http://www.cped.uconn.edu> or in the University of Connecticut *Policies and Procedures Regarding Students with Disabilities*.

For information, contact Joseph W. Madaus, Ph.D., Director, University Program for College Students with Learning Disabilities, University of Connecticut, 362 Fairfield Road, Unit 2064, Storrs, CT 06269-2064; Voice (860) 486-0178.

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 controlled 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, the Lowell Technological Institute, and the public two-year colleges and technical institutes. The University of Connecticut charges 50 percent above in-state tuition for those students admitted under the New England Regional Student Program.

The purpose of the program is to expand opportunities in higher education for New England residents by making equally available to all students those programs not commonly offered at every institution. This practice reduces duplication of courses and thus uses most efficiently the higher educational facilities in each state.

Students may obtain detailed information about this exceptional program through the University of Connecticut's Undergraduate Admissions Office, or from any high school guidance counselor, or from the New England Board of Higher Education, 45 Temple Place, Boston, MA 02111 (617) 357-9620, website: <http://www.nebhe.org>, e-mail: nebhe@nebhe.org.

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

Programs	Eligible State Residents
College of Agriculture & Natural Resources	
Landscape Architecture	ME, NH, VT
Pathobiology	MA, ME, RI, VT
* School of Allied Health	
Cytotechnology	RI, VT
Diagnostic Genetic Sciences	ME, MA, NH, RI, VT
Dietetics	ME, 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
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
Middle Eastern Studies	ME, NH, RI, VT
Physiology and Neurobiology	ME, MA, NH, RI
Portuguese	ME, NH, RI, VT
Statistics	MA, RI
School of Engineering	
Biomedical Engineering	MA, ME, VT
Chemical Engineering	VT
Engineering Physics	RI, VT
Management and Engineering for Manufacturing	ME, MA, NH
Metallurgy and Materials 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

*These Schools and Colleges and their respective programs are Junior - Senior level. Students enter these programs at the junior level. Freshman and sophomore years are not offered at reduced tuition.

Associate Degree Programs

Ratcliffe Hicks School of Agriculture	
Animal Science ¹	MA, ME, RI, VT
Horticulture	RI
¹ Equine and Dairy/Livestock options	

College of Continuing Studies

Bachelor of General Studies

The Bachelor of General Studies (BGS) program is a junior-senior year university degree program administered by the College of 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. 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) 626-6800
Waterbury (203) 575-8260	West Hartford (860) 570-9195

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) 486-3832, Fax: (860) 486-3845, E-mail: conted3@uconnvm.uconn.edu

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>

College of Continuing Studies:

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

Fees and Expenses

The schedule of fees which follows is comprehensive and is expected to prevail during the 2003-2004 academic year, but the Board of Trustees and the Board of Governors for Higher Education reserve the right, at any time, to authorize changes. Please note that revisions in the State budget may force fee changes. Information on the fees applicable to Extension courses and the Bachelor of General Studies degree program is not included but may be found in the bulletins of the Division of Extended and Continuing Education.

Application Fee

A fee of \$50 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.

Room Deposit

A room deposit of \$140 is required prior to March 7 for any continuing resident student at Storrs. Students at the University regional campuses who branch to Storrs must pay a \$140 deposit when filing a room application. Payment of this deposit must be made by April 15 to secure this contract and presumes acceptance of same.

New students are not required to pay a separate room deposit. Payment of the Acceptance Fee when due will secure this contract.

The deposit will **not** be refunded unless the student is denied housing, academically dismissed, or placed in a required academic program commitment away from campus.

General University Fee

Students on the Storrs campus pay a general University fee of \$546 each semester. Students at the regional campuses pay a general University fee each semester of \$68 at Avery Point, Hartford, Stamford, and Waterbury; students at Torrington pay a general University fee of \$44 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 \$2,630 per semester. Students classified as full-time out-of-State students pay tuition of \$8,022 per semester. Full-time students eligible for the New England Regional Student Program pay tuition of \$3,946 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.

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 nonrefundable fee of \$7 each semester for the support of the student newspaper.

Student Union Fee

All undergraduate students at Storrs pay a nonrefundable fee of \$18 each semester to cover the cost of the student activities program administered by the Student Union Board of Governors.

WHUS Fee

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

Student Government Fee

All undergraduate students at Storrs pay a nonrefundable fee of \$48 each semester for the support of student governmental activities and the student yearbook. A nonrefundable fee is charged each semester for support of student government to all regional campus students: Avery Point, \$35; Hartford, \$30; Stamford, \$15; Torrington, \$20; Waterbury, \$35.

Student Transit Fee

All undergraduate students at Storrs pay a nonrefundable fee of \$20 each semester for the support of the bus service on campus.

UCTV Fee

All undergraduate students at Storrs pay a nonrefundable fee of \$3 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 \$1,835 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 and take their meals under the board plan in effect for that residence. The board fee for the meal plan is \$1,609 per semester. The meal plans provide three meals per day seven days per week while classes are in session. A prepaid meal plan is not transferable from one individual to another except as designated by the University.

No refunds for individual meals can be made except when a person misses 15 or more consecutive meals because of personal illness off campus or a College-sponsored field trip. In these instances, refunds may be made based on the raw food cost. (Special arrangements are made for students absent on student teaching or other extended curricular assignments.)

All other students may purchase meals on an a la carte basis at Jonathan's (Student Union Complex) or may elect to purchase a meal plan in a dining hall.

On weekends, meals are available on an a la carte cash basis at Jonathan's and the dining halls which are open.

Infrastructure Maintenance Fee

All students are subject to an infrastructure maintenance fee of \$141 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, 2003; the spring semester is payable prior to January 8, 2004. 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.

Any student who has applied for housing for the fall or the spring semester and gives notice of cancellation to the Department of Residential Life prior to August 1, 2003 and January 8, 2004 respectively, is responsible for payment of \$140 of the residence hall 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 \$15 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.

Cancellations and Refunds

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 Dean of Students.

Where notice of cancellation is received through the first day of classes of a semester, full refund (less the nonrefundable acceptance fee and room deposit fee) is made if fees have been paid in full.

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 ¹	

Nonrefundable Fees

Acceptance fee
Room Deposit fee (See "Room Deposit" section for explanation)
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 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 \$6.

Allied Health Student Materials Fee

All undergraduate students pay two one-time fees for each of their first two semesters enrolled in the School for laboratory supplies and consumables. The current fee is \$50 per semester (lifetime total of \$100.00 per student per degree).

Applied Music Fee

A fee is charged for all students receiving private instrumental or vocal instruction. The current fee is \$115 for one half-hour lesson per week or \$230 for a one-hour lesson per week for each semester.

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. The fee for leases starting in the Fall of 2003 is \$400 per semester. This fee may be adjusted for leases starting in subsequent semesters as technologies change.

Drama Fee

A fee is charged for Dramatic Arts students in BFA and MFA Design and Technology, BFA, MA, and MFA Puppetry, and BA 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 in the sophomore year to cover the cost of a leased computer and specialized software, a drawing equipment package, fieldtrip transportation and printing costs. The current fee is \$600 for each semester.

Nursing Fee

A fee is charged for School of Nursing students beginning in the fourth semester for laboratory supplies used in teaching. The fee continues each semester until graduation. The current fee is \$10 for each semester.

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.

(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 online, go to <http://www.continuingstudies.uconn.edu> or see the *Summer Sessions Catalog*. In addition, there is a one-time summer enrollment fee of \$45 for University of Connecticut degree students and \$65 for all others. Students at the Storrs campus pay \$8 each session for the support of the Student Union and its programs.

University housing is available to all credit students and those who register for full-time thesis preparation. For further information, refer to the *Summer Sessions Catalog* or online at <http://www.continuingstudies.uconn.edu>.

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.html>

Residential Life

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

Dining Services

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

Parking Services

<http://216.87.181.147/home.asp>

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.

What is Financial NEED?

Need is defined as the difference between the cost of education and what the parents and student might reasonably be expected to contribute to college costs. This contribution (Expected Family Contribution or EFC) is determined by using the federal methodology as administered by the U.S. Department of Education. The EFC is calculated based on data provided on the Free Application for Federal Student Aid (FAFSA). The figure determines a student's eligibility for need-based financial aid only.

Need Reduction Gap

Due to limited funding the University of Connecticut is unable to meet 100% of a student's established financial need. Therefore, a predetermined amount will be subtracted from a student's need prior to awarding financial aid.

How to Apply for Financial Aid

Complete the **Free Application for Federal Student Aid (FAFSA) or Renewal FAFSA**. The FAFSA is available from high school guidance counselors or any college financial aid office. If you have Internet access, you can file a FAFSA (or a Renewal FAFSA, if you are eligible and still live at your 2002-2003 address) at: <http://www.fafsa.ed.gov>

Application for all need-based financial aid programs begins with submission of the FAFSA. UConn uses only the FAFSA for the awarding of federal, state, and University funds.

Mail early enough after January 1 so that your FAFSA is received at the federal processor by the deadline of March 1. Applications not received and logged in by March 1 will be considered late. Please note that on-time status will not be determined by postmark dates or postage receipts, and late applicants will be considered only for Federal Pell Grant and Federal Stafford Loan funds. 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 for yourself and your parents to the UConn Office of Student Financial Aid Services.

Read the instructions carefully and answer all the questions. List 001417 under "Federal school code," and the University of Connecticut under "Name of college." In the "College street address and city" space, list Storrs. Indicate CT in the "State" space.

If you have a question about an item on your FAFSA or for more information about eligibility requirements, please call the U.S. Department of Education at 1-800-433-3243.

Award Notification Letter

The Office of Student Financial Aid Services mails an award notification to you which indicates the types and amounts of aid offered and asks you to accept or decline each award, then return your reply copy within 30 days. Be prepared to follow through with any additional requests for information.

Verification

Verification is the federal process which requires the comparison of data reported on the FAFSA with income tax returns and other requested documents. The Office of Student Financial Aid Services will notify you if you have been selected to submit income documentation.

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 from the Office of Student Financial Aid Services.

For More Information

An excellent, detailed source of information regarding federal aid programs and the financial aid process is *The Student Guide*, available at the University of Connecticut Office of Student Financial Aid Services, 233 Glenbrook Road, Unit 4116, Wilbur Cross Building, Storrs, CT 06269-4116, (860) 486-2819. If you have access to the Internet, please visit our web site at: <http://www.ucc.uconn.edu/~wwwfaid> or the U.S. Department of Education at: <http://www.ed.gov/>

An additional brochure, *Financing Your UConn Education*, which contains pertinent information specific to UConn's financial aid programs, is also available from the Office of Student Financial Aid Services.

If you have any questions or need assistance, contact the office. Please have your social security number available when calling. A Client Services staff member will assist you.

Types of Financial Aid Available

Federal Loan Programs

Federal Stafford Loans (FSL) are offered to students attending the University at least half-time. "Subsidized" FSL eligibility is based on financial need. Interest is subsidized by the federal government. If a student does not qualify for a subsidized FSL, he/she may borrow an "Unsubsidized" FSL. The student is responsible for the interest which accrues on the loan and has the option to either pay the interest while in school or defer payment of the interest until principal payments begin six months following graduation.

Annual loan limits for dependent undergraduate students are: \$2,625 for freshmen (0-23 credits), \$3,500 for sophomores (24-53 credits), \$5,500 for other undergraduates (54+ credits). Eligible independent undergraduate students may receive up to \$4,000 additional Unsubsidized FSL in the first and second years, and \$5,000 additional Unsubsidized FSL in the third year and beyond.

Students requiring less than an academic year to graduate will have eligibility prorated in accordance with federal regulations.

Federal Perkins Loans are offered to eligible full-time students. These funds are awarded in classification order. Typically all funds are exhausted after freshmen and sophomore classes are awarded. These funds must be repaid.

Federal Parent Loans for Undergraduate Students (PLUS) enables parents with good credit histories to borrow for each dependent child who is enrolled at least half-time. The yearly loan limit is the cost of education minus any financial aid a student receives. If a parent is denied a Federal PLUS Loan (documentation required each academic year), the dependent student would then be eligible to receive an additional Unsubsidized Federal Stafford Loan.

Both FSL and PLUS are made copayable to the student/parent and the University of Connecticut and disbursed in at least two payments. Up to four percent is deducted from the amount borrowed (1% insurance and 3% origination fee).

Alternative Loan Options If need-based financial sources are not sufficient to cover a student's educational expenses, a variety of alternative loans options are available.

Grants

Federal Pell Grants are offered to qualified students pursuing their first undergraduate degree. They do not require repayment.

Federal Supplemental Education Opportunity Grants are offered to full-time undergraduates with exceptional financial need (typically Pell Grant recipients). They do not require repayment.

University Grants and Tuition Remission Grants are offered to eligible full-time undergraduates pursuing their first undergraduate degree. These funds do not require repayment.

University of Connecticut Scholarships are offered to incoming students through the Office of Admissions. These are merit-based and all students are considered according to grade point average, SAT scores and rank in class. The Office of Admissions notifies students if they are eligible for any of these awards. Upper class students with high academic achievement should inquire at their academic departments for scholarships within their field of study. The Office of Student Financial Aid Services and the Alumni Office also maintain information about numerous scholarships. Please contact their offices directly.

Note: if a student receives any award or scholarship from a local high school or other outside agency, he/she must notify the Office of Student Financial Aid Services in writing. The student's financial aid package may be subject to change.

Part-time Employment

Federal Work Study (FWS) is a federally funded financial aid work program for students with a demonstrated financial need. **Unlike other forms of financial aid, a Federal Work Study award is not applied to a student's fee bill; students receive bi-weekly paychecks for hours worked.**

Students awarded Federal Work Study may work in positions at the Storrs and regional campuses or at approved, non-profit, state, municipal or federal agencies. Off campus Community Service positions are also available.

The Student Labor Program is a work program open to all University of Connecticut students and is designed to supplement regular staff with students seeking part-time employment.

The Office of Student Financial Aid Services advertises available positions on its website. For more information about part-time employment and lists of on campus jobs, access the website at: <http://www.studentjobs.uconn.edu/>

Veterans Administration Educational Assistance and Tuition Waiver Program

The Office of Student Financial Aid Services provides information concerning benefits under the various educational assistance programs provided by the Veterans Administration. Students who attend the University and receive educational assistance under the following chapters must contact the Office of Student Financial Aid Services prior to the beginning of each semester: Chapter 35 (Vocational Rehabilitation Training Act for disabled veterans); Chapter 35 (Dependents Educational Assistance Act: children, wives, and widows of totally disabled and deceased veterans – service connected deaths); Chapter 1606 (Montgomery G.I. Bill – Selected Reserve); Chapter 30 (Montgomery G.I. Bill – Active Duty). Veterans must notify the Office of Student Financial Aid Services every semester of their registration for certification of enrollment. In addition, any changes in veteran status (credit load, withdrawal, number of dependents, etc.) must be reported.

Additionally, veterans may qualify for a tuition waiver under the State of Connecticut tuition waiver program. Veterans must provide a certified form DD214 (separation of service) and must be recognized as a minimum one year resident of Connecticut at the time of admission or readmission to the University. Please see the tuition waiver criteria in the Fees and Expenses section of the *Catalog*.

Veterans seeking fee waiver applications or assistance should contact the Office of Student Financial Aid Services, 233 Glenbrook Road, Unit 4116, Wilbur Cross Building, Storrs, CT 06269-4116, (860) 486-2819.

These University of Connecticut websites make policies available.

Student Conduct Code: <http://www.dosa.uconn.edu/code2.html>

Family Education and Privacy Act: <http://www.registrar.uconn.edu/ferpannu.html>

Other University websites provide information.

Student Financial Aid Services

Financial Aid

<http://www.ucc.uconn.edu/~wwwfaid>

Veterans

<http://vm.uconn.edu/~wwwvets/>

Student Employment

<http://vm.uconn.edu/~wwwjobs/>

General Information

Dean of Students Office

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

Athletics

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

Student Activities and Union Programs

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

Recreational Services

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

Library Services

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

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, Contact Person, Location

Academic Center for Entering Students*, Steve Jarvi, *Goodyear Hall, First Floor*

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

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

Continuing Education, Laurel Raubschultz, *Bishop Center*

Education, Steve Smith, *Gentry Building, Room 231*

Engineering, Marty Wood, *Engineering II Building, Room 326*

Family Studies, Mary Alice Neubeck, *Family Studies Building, Room 120*

Fine Arts, Mary Ellen Junda, *Fine Arts Building, Room 202*

Health and Human Development, Eva Gorbants, Judy Tiberio,
Storrs Hall Annex, Room 6

Liberal Arts and Sciences, **Monica Kettle**, *CLAS Building, Room 345*

Nursing, Kathleen Hiatt, *Storrs Hall, Room 109 and 110*

Pharmacy, Kenneth Speranza, *Hewitt Building, Room 151*

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

* Please note that the ACES Advisory Center will be moving to the *Center for Undergraduate Education, Room 111*.

Academic Center for Entering Students. The Academic Center for Entering Students (ACES) provides academic advising for all students entering the College of Liberal Arts and Sciences. Entering students might have one of several possible major designations. A significant portion of students will choose to be Exploratory majors upon entering the University, and will spend some time investigating any number of possible academic interests. Others will pursue admission to one of the university's schools or colleges as either a "Pre" or "Shadow" student. Some will designate an interest in one of the academic majors offered within the College of Liberal Arts and Sciences. The goal of the Academic Center for Entering Students is to pair every ACES student with an appropriate major(s) and assign him or her to a school or college as early as possible in the academic

career. Each ACES student is assigned an ACES advisor who will work with the student until he or she declares a major and moves to one of the University's schools or colleges. The advisors at ACES, along with advisors from the university's schools and colleges and all of the University's student support services, work to ensure that both students and academic programs reach their full potential. The ACES advisors work with students to discuss their goals, interests, and strengths and to pursue their academic interests accordingly.

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 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; 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, and other programs which promote educational opportunity for all.

Questions should be directed to Bidya Ranjeet, Director of Student Support Services at Bidya.Ranjeet@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.

Office of Special Programs. The Office of Special Programs (formerly Counseling Services) provides students with short-term services, programs, and events designed to: enhance academic success, facilitate individual support and decision-making, make healthy lifestyle choices, and address the misuse of alcohol and other drugs. If a student is in need of longer-term assistance, a referral to an appropriate service provider will be made. Please also refer to the "Peer Tutoring" description within this section of the *Catalog*.

Dean of Students Office. Dean of Students (DOS) Office serves in the capacity of ombudsman for the campus community, chief advocate for students, organizational home for all campus judicial matters, and administrator of campus 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 middle and high school 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 180), 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 182) 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.

Math Learning Center. The Math Learning Center is staffed by undergraduate and graduate math students from actuarial, applied, and pure math concentrations. The facility is open all day every day and provides a quiet place to study, and during certain hours one-on-one and small group tutoring is available.

The Math Learning Center is open to students who need assistance with math. The purpose of the Center is to help students with specific questions about their work. Any UConn student in any discipline is welcome to visit the Math Learning Center with questions, however, the services provided are primarily directed toward all 100-level math courses and some 200-level courses. Current enrollment is not a requirement for tutoring assistance.

National Scholarship Information Office. The National Scholarship Office provides information to all undergraduates, who are interested in the major national scholarships such as the Truman, Rhodes, Marshall, and Mellon. Efforts to distribute information and guide students toward success in these national competitions are coordinated by Kathy Usher, Assistant Director of the Honors Program. This website will provide additional information for interested students: <http://www.honors.uconn.edu/natsinfo.html>

Peer Tutoring. The Office of Special Programs in conjunction with the Department of Residential Life provides a free peer tutoring program to University of Connecticut students in various locations on campus. Graduate and undergraduate students provide academic assistance in MATH 101-115, STAT 100 and 110, CHEM 127 and 128, PHYS 101, 121, 122, 131 and 132, Spanish, French, German and Italian. This service is offered Sunday through Wednesday evenings throughout the semester. For further details, please call (860) 486-4130.

Program for College Students with Learning Disabilities. The University Program for College Students with Learning Disabilities (UPLD) is a comprehensive program available to assist qualified students with LD to become independent and successful learners within the regular University curriculum. The services are designed to complement, but not duplicate, the University’s existing campus services and programs.

In order to access services, students must refer themselves to UPLD and submit documentation that verifies eligibility under Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990. Documentation must meet established University Guidelines for Documentation of a Specific Learning Disability, must be current, comprehensive, and provide clear and specific evidence and identification of a learning disability. In the case of a student whose disability does not include a specific LD (e.g., ADD/ADHD), support services are available from the Center for Students with Disabilities (CSD).

Three types of program services, Direct Instruction, Monitoring, and Consultation, are offered along a continuum leading to independence. Students can work with a trained staff of learning specialists in individual structured sessions that meet on a weekly, bi-weekly, or monthly basis. As students increase their independence and skills, the level of services may be reduced. There is no cost for services, and services are available for as long as the student needs them. Participation in the program is optional, and students are encouraged to reflect on their need for UPLD services.

Students with specific learning disabilities can also receive reasonable individual accommodations and auxiliary aids by submitting documentation verifying eligibility and need to the Director of UPLD, Joseph W. Madaus, Ph.D., at 362 Fairfield Road, Unit 2064, Storrs, CT, 06269. If students are seeking accommodations only, the Consultation level on the UPLD Continuum is the appropriate service. Students requesting testing

accommodations are strongly encouraged to contact UPLD within the first two weeks of each semester.

Project 3000 by 2000. Project 3000 by 2000 is a Health Professions Partnership Initiative with the University of Connecticut Health Center, Wesleyan University and central Connecticut State University. Project 3000 by 2000 is designed to increase the number of disadvantaged and underrepresented students enrolled in medical, dental and biomedical sciences, allied health, nursing, and pharmacy programs. The program is a six-week, non-credit pre-collegiate summer residential experience that integrates an extensive introduction to college-level mathematics, English, biology and chemistry with seminars related to the health professions and clinical experiences at the UConn Health Center. A study skills course focusing on problem solving, test taking, orientation to the University and freshman resources is also a part of the pre-collegiate experience.

Student Mental Health Services. The Student Mental Health Services offers students an opportunity to discuss, in a confidential and non-judgmental setting, whatever personal concerns they might have. Those experiencing occasional, mild difficulties often benefit from a few individual sessions with a therapist. More severe problems may require additional sessions. Both individual and group therapy are offered. In some cases, psychiatric medications may also be helpful, particularly for individuals who are clinically depressed. By clarifying the causes of their problem, developing some additional strategies for mobilizing their resources, and having the understanding of a professional therapist, they can be relieved of unnecessary distress.

Many students are self-referred, while others are referred by friends, RAs, professors or family members.

Student Mental Health provides a variety of services within the limits of its professional resources. If, after assessment, it is determined in a student’s best interest to be referred elsewhere, assistance will be given in finding specific outside treatment alternatives.

Study Abroad/Study Away. The Study Abroad/Study Away Office is responsible for developing and administering academic programs abroad and in the U.S., including the National Student Exchange (NSE). The University of Connecticut offers a wide variety of programs abroad for students of liberal arts, social sciences, engineering, business and economics in the following countries: Argentina, Australia, Austria, Brazil, Canada, Chile, China, Costa Rica, Czech Republic, Denmark, Dominican Republic, England, France, Germany, Ghana, Hungary, Indonesia, Ireland, Israel, Italy, Japan, Mexico, The Netherlands, Poland, Portugal, Russia, South Africa, Spain, Sweden, Switzerland, Thailand and Vietnam. The University also sponsors the Semester-At-Sea program. Some of the overseas programs require language proficiency, some offer intensive language study starting at the beginning level, while others provide core courses taught in English in combination with language study.

Students interested in a U.S. study away experience may attend one of the 160 different institutions in the U.S. that are part of the NSE, or the Biosphere Earth Semester in Arizona.

Students who enroll in approved study away programs continue to earn University of Connecticut credits that can be used for graduation requirements, and many of the programs offer courses that can be counted towards the major. The 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.

In addition to the academic coordination of the NSE and the forty officially sponsored overseas programs, the Study Abroad/Study Away office provides counseling services to all students wishing to study away and maintains a library of foreign study reference materials and catalogs of NSE member institutions.

Study Skills. To facilitate the development and success of each student, the Department of Counseling Services 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.

The Writing Center. The Writing Center provides students with one-to-one help with their writing. Staff work with writers at every point in the writing process. Writing Center Tutors are available to assist students who need help writing and revising essays, generating or organizing ideas, or understanding the readings required for writing assignments.

UConn American English Language Institute (UCAELI). The Institute’s primary goal is to provide international students with an exceptionally supportive intensive English language program. Coinciding with the University calendar, 16 week sessions are offered each fall and spring. Students may enter and depart at the middle of the session. In

addition, two 6-week sessions are offered in the summer. The program consists of 23 hours of instruction per week for levels of proficiency from beginning to advanced. Students take entrance placement tests and exit proficiency tests each session. A TOEFL Preparation course and Institutional TOEFL exam are also offered each session. UCAELI students have access to an Internet-ready computer lab for coursework and self-study.

Advanced students, upon approval of the director, may elect to take undergraduate or graduate courses in combination with their UCAELI courses.

Departments within UConn may also register conditionally admitted or fully enrolled students for full/part-time, ESL, skill-specific courses at UCAELI. Tutoring for non-native English speaking students may also 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.

Undergraduate Research and Creative Activity Office. The Undergraduate Research and Creative Activity Office was established to provide a broad range of enrichment activities designed to make research and creative activity available to all undergraduates. The Office provides research-related opportunities and information to students interested in pursuing a deeper learning experience. Opportunities for undergraduate research are only limited by the student's imagination. Research can be conducted independently, on a team, directed by a UConn faculty, within the university or in an outside facility. The Office maintains a Web Page containing a library of research sites, a collection of research abstracts, research guidelines and proposals, faculty and student contacts, and funding availability. In addition, updated information regarding National Undergraduate Research Conferences will also be listed as well as the University's own Frontiers of Undergraduate Research and Creativity Activity and Summer Undergraduate Research Competitions. The web page may be accessed via: <http://ugradresearch.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 1995 entering freshmen, the graduation rates by the summer of 2001 were: entered at Storrs is 69.5%; entered at a regional campus 37.2%. 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.

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) 486-4199. All requests should include full name, social security number, Student Administration System Login ID (if known), dates of attendance, complete and accurate addresses of transcript recipients including ZIP codes, and the requester's address and telephone number in the event that there is a problem with the request. All requests, INCLUDING FAXES, MUST BE SIGNED.

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.

Transcripts are sent out ONLY by U.S. Postal Service first class mail, Priority Mail, or Express Mail. For Priority/Express mail service, the request must be accompanied by a pre-paid and pre-addressed envelope(s). Alternate carriers (e.g. UPS, FedEx) are not an option.

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 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 log-in 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 Login 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 log-in number and password become important tools to be used to register for classes, obtain grade transcripts and schedules, and change contact information. Questions regarding log-in numbers and passwords 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. Stickers updating the card for each semester are issued by the Bursar's Office. 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. If the social security number 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.

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 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

Also: Distribution Requirements or Core Requirements

The University Senate voted these requirements to develop verbal and quantitative skills, curiosity, versatility, critical judgment, moral sensitivity and research skills for all undergraduates. Students will learn of other cultures, how to fit their culture in a wide historical context and how scientific theories relate to experiments.

Every student must meet these University-wide requirements, but students should consult the baccalaureate degree requirements listed by their school or college. All the baccalaureate degrees include the requirements listed below, but the school or college may have added to them. Likewise, the school or college may have deleted some of the courses from which the student may choose. The school or college may refer the student to *Academic Regulations* when the requirements and choices duplicate those listed here.

The Bachelor of General Studies program is a junior-senior level program for mature part-time students. The Dean of the College of Continuing Studies may exempt them from the Foreign Language requirement (Group 1) and the one-semester laboratory science requirement (in Group 8).

GROUP 1

Foreign Languages: 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. With anything less than that, the student must take one year (2 semesters) of college level study in a single language.

GROUP 2

Academic Writing: All students must take English 110 or 111. Additionally, all students must take two W courses, which may also satisfy other requirements. (Note: English 110 or 111 is a prerequisite to all W courses.) Students with Advanced Placement English scores of 4 or 5 and students passing ENGL 250 will be exempted from the 110 or 111 requirement. †

GROUP 3

Mathematics: All students must enter with a competency level equivalent to that obtained in Mathematics 101, as evidenced by a passing grade on the Q-Course Readiness Test, *** or take Mathematics 101 as a remedial course without credit toward graduation. Additionally, all students must take two Q courses and one C course, which may also satisfy other requirements. (Note: Mathematics 101 or a passing grade on the Q-Course Readiness Test is a prerequisite to all Q courses.) One Q course must be a mathematics or statistics course unless the student attains a high pass on the Q-Course Readiness Test.

GROUP 4

Literature and the Arts: All students must take two courses: one which emphasizes major works of literature which could be elected from English or Foreign Languages (in English translation or in the foreign language), and one which emphasizes major achievements in art, and/or music and/or the dramatic arts.

Literature category

CAMS 103	Classical Mythology
*CAMS 211	Greek Drama
*CAMS 221	Survey of Classical Latin Literature
CAMS 244	Ancient Fictions
CLCS 101	Classics of World Literature I
CLCS 102	Classics of World Literature II
ENGL 112/112W	Classical and Medieval Western Literature
ENGL 113/113W	Renaissance and Modern Western Literature
ENGL 127/127W	Major Works of English and American Literature
ENGL 205	British Literature I
ENGL 206	British Literature II
ENGL 210	Poetry
ENGL 212	The Modern Novel
ENGL 216	The Short Story
ENGL 219	Drama
ENGL 230/230W	Shakespeare I
*FREN 261	Introduction to Literature I
*FREN 262	Introduction to Literature II
FREN 270W	French Literature and Civilization in English
GERM 240W	German Literature in Translation
GERM 252	Studies in Early German Literature
GERM 253	Studies in German Literature Around 1800
GERM 254	Studies in 19th Century German Literature
GERM 255	Studies in 20th Century German Literature
ILCS 101	The Italian Renaissance
ILCS 158	Italian American Experience in Literature and Film
*ILCS 243	Main Currents of Italian Literature through the Renaissance
*ILCS 244	Main Currents of Italian Literature after the Renaissance
ILCS 255W	Dante's Divine Comedy in English Translation
PORT 140	Major Works of Portuguese and Brazilian Literature in Translation
RUSS 231	Masterpieces of Modern Russian Literature in Translation
RUSS 232	Masterpieces of 19th Century Russian Literature in Translation
SPAN 187	Major Works of Hispanic Literature in Translation
*SPAN 281	Great Works of Spanish Literature from its Origins to the Golden Age
*SPAN 282	Literature of Crisis in Modern Spain

* Indicates foreign language prerequisite.

** 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.

***A quantitative skills test administered by the University.

Arts category

ANTH 252	Native American Arts
ART 135	Art Appreciation
ARTH 137	Introduction to Art History I
ARTH 138	Introduction to Art History II
ARTH 140	Introduction to Asian Art
ARTH 141	Introduction to Latin American Art
ARTH 191	Introduction to Architecture
ARTH 256	Native American Arts
ARTH 285/285W	African Art
DRAM 101	Introduction to the Theatre
DRAM 110	Introduction to Film
DRAM 130	History of Drama I
DRAM 230/230W	Women in Theatre
DRAM 231/231W	African-American Theatre
DRAM 282/282W	Trends in Contemporary Theatre
FREN 171	French Cinema
GERM 171	The German Film
GERM 281	German Film and Culture
ILCS 149	Cinema and Society in Contemporary Italy
ILCS 260W	Italian Cinema
MUSI 190	Non-Western Music
MUSI 191	Music Appreciation
MUSI 193	Introduction to Music History I
MUSI 194	Introduction to Music History II
MUSI 285	Music History and Literature
WS 104	Feminisms and the Arts

GROUP 5

Culture and Modern Society: All students must take HIST 100 or 101, and a course which emphasizes non-Western or Latin American cultures.

Non-Western/Latin American category

ANTH 100	Other People's Worlds: Asia, Africa, the Americas
ANTH 222	Peoples and Cultures of South America
ANTH 223	Pre-Colonial Africa
ANTH 225	Contemporary Africa
ANTH 226	Peoples and Cultures of North America
ANTH 227W	Contemporary Mexico and Central America
ANTH 230	Peoples of the Pacific Islands
ANTH 238	Peoples and Cultures of the Middle East
ECON 204/204W	Economic History of the Middle East
ENGL 120	Major Works of Eastern Literature
ENGL 218	Literature and Culture of the Third World
GEOG 160	World Regional Geography
HIST 106	The Roots of Traditional Asia
HIST 108	Modern World History
HIST 205	The Modern Middle East from 1700 to the Present
HIST 222	History of Pre-Colonial Africa
HIST 223	History of Modern Africa
HIST 281	Latin America in the Colonial Period
HIST 282	Latin America in the National Period
HIST 285	Cuba, Puerto Rico and the Spanish Caribbean
HIST 288W	East Asia since the Mid-Nineteenth Century
LAMS 190/190W	Perspectives on Latin America
PHIL 263	Oriental Philosophy and Religion
PHIL 264	Classical Chinese Philosophy and Culture
POLS 143	Introduction to Non-Western Politics
POLS 203W	Women in Political Development
POLS 228W	East Asian Governments and Politics
POLS 229	Chinese Government and Politics
POLS 239W	Politics in Africa
POLS 279/ 279W	South Asia in World Politics
SOCI 226/226W	Modern Africa
SOCI 227/227W	Revolutionary Social Movements Around the World
*SPAN 201	Ibero-American Civilization and Culture
WS 124	Gender in Global Perspective
WS 203W	Women in Political Development

GROUP 6

Philosophical or Ethical Analysis: All students must take one course in philosophical and/or ethical analysis.

LING 101	Language and Mind
PHIL 101	Problems of Philosophy
PHIL 102	Philosophy and Logic
PHIL 102C	Philosophy and Logic
PHIL 103	Philosophical Classics
PHIL 104	Philosophy and Social Ethics
PHIL 105	Philosophy and Religion
PHIL 106	Non-western and Comparative Philosophy
POLS 106	Introduction to Political Theory
SCI 240	The Nature of Scientific Thought

GROUP 7

Social Scientific and Comparative Analysis: All students must take one course in social science and/or comparative analysis.

ARE 110	Population, Food, and the Environment
ARE 150	Principles of Agricultural and Resource Economics
ANTH 106	Introduction to Anthropology
ANTH 220/220W	Social Anthropology
COMM 100	The Process of Communication
ECON 101	Essentials of Economics
ECON 102	Principles of Economics (Intensive)
ECON 111	Principles of Macroeconomics
ECON 112	Principles of Microeconomics
GEOG 104	Introduction to Geography
GEOG 200	Economic Geography
HIST 121	Women in History
HDFS 190	Individual and Family Development
LING 102	Language and Environment
POLS 121/121W	Introduction to Comparative Politics
POLS 132/132W	Introduction to International Relations
POLS 173/173W	Introduction to American Political Processes
PSYC 133	General Psychology II
PSYC 135	General Psychology II (Enhanced)
SOCI 107/107W	Introduction to Sociology
SOCI 115/115W	Social Problems
SOCI 125/125W	Race, Class and Gender
WS 103	Introduction to Women's Studies in the Social Sciences
WS 105	Gender in Everyday Life

GROUP 8

Science and Technology. All students must take two courses in science and technology, at least one of which must include a semester of laboratory. (Laboratory courses are printed in **boldface type**.) At least one of these two courses must be a course in chemistry, biology, geology or physics.

ANSC 160	The Science of Food (Also offered as NUSC 160)
BIOL 102¹	Foundations of Biology
BIOL 103¹	The Biology of Human Health and Disease (Also offered as PVS 103)
BIOL 107	Principles of Biology
BIOL 108	Principles of Biology
BIOL 110	Introduction to Botany
CHEM 101	Chemistry for an Informed Electorate
CHEM 122	Chemical Principles and Applications
CHEM 127Q-128Q	General Chemistry
CHEM 137Q	Enhanced General Chemistry
CHEM 138Q	Enhanced General Chemistry
GEOG 205	Introduction to Physical Geography
GEOL 101	Introductory Environmental Geology
GEOL 102	Introductory Geology
GEOL 111	The Age of the Dinosaurs
MARN 170	Introduction to Oceanography
MARN 171	Introduction to Oceanography with Laboratory
NUSC 160	The Science of Food (Also offered as ANSC 160)
NUSC 165	Fundamentals of Nutrition
PHAR 150	Toxic Chemicals and Health

¹ BIOL 103/PVS 103 and BIOL 102 may not be combined to satisfy the Group 8 requirement.

² PHYS 101Q and PHYS 107Q may not be combined to satisfy the Group 8 requirement.

* Indicates foreign language prerequisite.

PHYS 101Q²	Elements of Physics
PHYS 103Q	Physics of the Environment
PHYS 104Q	Physics of the Environment with Laboratory
PHYS 107Q²	Physics of Music
PHYS 121Q-122Q	General Physics
PHYS 131Q-132Q	General Physics with Calculus
PHYS 140Q	Introduction to Modern Physics
PHYS 141Q	Fundamentals of Physics I
PHYS 142Q	Fundamentals of Physics II
PHYS 151Q	Physics for Engineers I
PHYS 152Q	Physics for Engineers II
PHYS 155Q	Introductory Astronomy
PLSC 150	Agricultural Technology and Society
PSYC 132	General Psychology
PVS 103¹	The Biology of Human Health and Disease (Also offered as BIOL 103)
SCI 110	Humans and the Changing Global Environment

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, Pharmacy and Allied Health, 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 complete a graduation application by the due dates specified by the Office of the Registrar. The application and additional information pertinent to graduation is available through the "Planning to Graduate" web site: <http://vm.uconn.edu/~wwwregis/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, August 24, and December 31. 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 anticipate completing degree requirements by the following August may participate in the December or May Commencement.

Diplomas. Students do not receive their diplomas at Commencement. The Registrar mails them to graduates by the third month after conferral. 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. A maximum of 3 credits toward the minor may be transfer credits of courses equivalent to University of Connecticut courses. 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. The minor is then recorded on the student's final transcript. 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. A student pursuing two or more degrees concurrently must designate one degree the primary degree. The Dean of Students answers the petitioner in writing.

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 134 credits while Arts and Sciences degrees require at least 120 credits. The Engineering degree has the higher minimum-credit requirement, so the total is 134 + 30, or 164. (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 200-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.

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

¹ BIOL 103/PVS 103 and BIOL 102 may not be combined to satisfy the Group 8 requirement.

² PHYS 101Q and PHYS 107Q may not be combined to satisfy the Group 8 requirement.

Course Information

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

- 01-99 courses in the Ratcliffe Hicks School of Agriculture. Baccalaureate students may not register for these courses.
- 100-199 courses primarily intended for Freshmen and Sophomores.
- 200-299 courses primarily intended for Juniors and Seniors.
- 300 and above courses primarily intended for Graduate students.

Freshmen and Sophomores may enroll in one 200-level course in addition to those 200's foreign language or mathematics courses they may take, provided: (a) their advisor recommends the course and they have the permission of the instructor and their academic dean; (b) the 200-level course does not cause them to postpone required courses.

Students registering for their fourth semester may enroll in 200-level courses not "open to sophomores or higher" provided: (a) they will have at least 54 (62 for Engineering and Pharmacy students) credits by the end of the semester; (b) they have the instructor's consent. Students without the required credits who wish to take 200-level courses not "open to sophomores or higher" must have the consent of the instructor and their academic dean.

Unless their school or college has more stringent requirements, undergraduate seniors with a cumulative grade point average of 2.6 or above may take 300-level courses. Other undergraduates must have the permission of the instructor and the student's academic dean to enroll in a 300-level course.

Skill Codes. The University faculties require students to develop writing, quantitative and computing skills. Courses including one or more of these skills have a letter following the course number showing the skill(s) taught.

- W-courses have major writing assignments aimed at teaching the student to write clearly. All W-courses have English 105 or 110 or 111 or 250 as a prerequisite.
- Q-courses require the student to know and use algebra, or a higher form of mathematics. Passing the Q-course Readiness test or Mathematics 101 is prerequisite to any Q-course.
- C-courses give students hands-on experience in at least one major computer application.
- J-courses teach writing and quantitative skills.
- S-courses teach writing and computing skills.
- V-courses teach quantitative and computing skills.
- Z-courses teach writing, quantitative and computing skills.
- P-courses teach some writing skills, but fewer than a W-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 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 101
- Only 6 credits from Phil 101, 102, 103, 104, 105, 106
- Not both Stat 100 and Stat 110
- Only 2 credits for Math 215 after passing Math 227

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 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 English 103, 104, 105, 109, or for 100 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.

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 Table on Guidelines for Evaluation of CB Advanced Placement Examinations on the following page.

Guidelines for Evaluation of CB Advanced Placement Examinations

AP Exam	Score	UConn Course Equivalent Granted	Credits Granted
Art History	4, 5	ARTH 137 and 138	6
Biology	4, 5	BIOL 107 and 108	8
Chemistry	4, 5	CHEM 127Q and 128Q	8
Computer Science	4, 5	CSE 123C	2
Economics			
Macroeconomics	4, 5	ECON 111	3
Microeconomics	4, 5	ECON 112	3
English (Either English/Comp. or English Lit./Comp.)	4, 5	ENGL 110	4
Environmental Science	4, 5	NRME 100	3
French Language	4, 5	FREN 267	3
French Literature	4, 5	French Literature 200 level	3
German Language	3	Placement into 200's level course	No credit
	4, 5	GERM 233 and 234	6
American History	4, 5	U.S. History 100 level	3
European History	4	European History 100 level	3
	5	HIST 101	3
Latin	4, 5	CAMS 200 level	6
Math AB	4, 5	MATH 115Q	4
Math BC	3	MATH 115Q	4
Math BC	4, 5	MATH 115Q and 116Q	8
Music	3	Music Theory 100 level	3
	4, 5	Music Theory 100 level	6
Physics B*	4, 5	PHYS 121Q and 122Q	8
Physics C Elec&Magnet*	4, 5	PHYS 152Q	4
Physics C Mechanics*	4, 5	PHYS 151Q	4
Psychology	4, 5	PSYC 132 and 133	6
Spanish Language	4, 5	SPAN 278	3
Spanish Literature	4, 5	Spanish Literature 200 level	3
Statistics	4, 5	Statistics Q 100 level	3

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

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.

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. All entering students who have not earned college credits in mathematics or statistics must take a test in high school algebra ("Q-course Readiness Test") before registering. Students failing the test must take Mathematics 101, a remedial course with no credit toward graduation. Students should review their course work in algebra before taking the Q-course Readiness Test. Depending on the student's preparation and course of study, some schools and colleges require entering students to take additional tests in mathematics, foreign languages and English.

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	17	18 If earned 2.6 SGPA or above the previous
For a six-week Summer Session, the maximum is 8 credits.		

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.

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. Student section changes may be arranged within the department and then filed with the Registrar.

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.

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.

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. No student shall receive credit toward the degree from the same course more than once, unless the Catalog description states that the course is repeatable. Courses with the same 3 digit numbers that cover the same course content cannot be counted more than once for credit, i.e. 107 and 107W. The parenthetical cross-references: (Formerly offered as ...) or (Also offered as ...), following a course title indicate that a student may not count the credits for both courses toward a degree.

Without seeking permission, a student may repeat a course previously taken one additional time in order to attempt to earn a higher grade. Only with the permission of both the Dean of the School or College in which the student is enrolled and the instructor of the course, the student may take the course a third time. Under no circumstances may a student take a course more than three times.

A student must also 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 Chemistry 127Q and subsequently passed Chemistry 128Q may not retake Chemistry 127Q without permission.

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 course has been repeated, credit toward the degree 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 Grade Point Average calculation. The registered credit and grade points for the prior taking of the course shall remain on the transcript, but shall be removed from the GPA calculation.

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
Average	C+	2.3	yes	yes
	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 occurs 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, registered semester, the instructor will send the Registrar a grade for the course. Otherwise, the Registrar will convert the I to I F. On the academic record, the permanent letter grade submitted for an I follows the I, e.g., I becomes I B. If the instructor does not submit a grade the Registrar will change the grade to IF 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, registered 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 L, N, and Y are temporary marks posted on a student's academic record when the instructor has not reported a final grade.

- L: recorded when the instructor is late in reporting final grades for an entire section.
- 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.

NOTE: 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, L, 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 of registration. 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, L, N, Y do not prevent the calculation of either the semester or the cumulative grade point average. However, in such cases the grade point averages are placed in parentheses on the academic record.

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 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 Dean of the College of Continuing Studies to place a course on Pass/Fail. The Dean 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 Allied Health Professions, courses taken on Pass/Fail cannot be used to fulfill specified course requirements.
2. In the School of Business, students may not elect the Pass/Fail 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.
3. In the School of Education, students may not elect the Pass/Fail option to fulfill School of Education graduation requirements, University distribution requirements, courses offered in the School of Education which are required for certification as a teacher, major area course work within the School of Education, nor for the 24-36 credits of major course work, as required by specific programs.
4. In the School of Engineering, no course taken on Pass/Fail may be counted for credit toward graduation or be used to meet any course requirement.
5. In the School of Family Studies, courses in the major field and related field cannot be taken on Pass/Fail. No 100-level courses in Family Studies, required as prerequisites to a major, may be taken on Pass/Fail.
6. In the School of Fine Arts, courses taken on Pass/Fail cannot be used to fulfill the English requirement, the distribution requirements or any course requirement in the student's major department or related field(s).
7. In the College of Liberal Arts and Sciences, courses taken on Pass/Fail cannot be used to fulfill the College requirements or the 36 credits in the area of concentration (major and related groups).
8. 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.
9. 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 300 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, instructors give the final examinations during the last class meeting or meetings. 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. (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 undergraduate courses notify students of their mid-semester progress before the end of the eighth week of the semester. Instructors intend the marks to help students evaluate their progress. Students with low marks should consult with the instructor and their advisor. The instructor and department head have responsibility for notifying students. The marks do not become a part of the permanent record.

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

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 may request a review by the instructor of record. If the instructor agrees that a change is justified, the instructor will initiate the grade change according to the procedure described above.

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

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.

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)

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.

- Students who have earned 24 credits or more (considered to be third semester or higher) and who have earned less than a 2.0 semester grade point average or cumulative grade point average.

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

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

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

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

Dismissal. A student who fails to meet these minimum scholastic standards for two consecutively registered semesters 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 Dean 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:

- The School of Allied Health requires a cumulative grade point average of not less than 2.2 in order to gain admission to the professional program. Thereafter, students admitted to the professional programs must maintain the following standards of scholastic achievement to continue in the School. Students who fail to maintain the minimum grade point average or minimum course standard in any of these areas are subject to dismissal from the School of Allied Health. 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; 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 200, MCB 210 and MCB 229.

The *Dietetics Major GPA* includes all courses offered with the following departmental designations: Allied Health; Dietetics; and the following Nutritional Sciences courses: NUSC 200, NUSC 233, NUSC 235 and NUSC 212.

The *Individualized Major GPA* includes the 36 credits of 200 level course work identified on the final plan of study.

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

The *Physical Therapy Major GPA* includes all courses offered with the following departmental designations: Allied Health and Physical Therapy.

Students must earn a "C" or better in all courses in the School of Allied Health. No student may take a course in the School of Allied Health for which another course in the School is a prerequisite unless that student has earned a grade of "C" or better in that prerequisite course. No course in the School of Allied Health may be repeated more than once (for a total of two times).

- Students admitted to the School of Business must earn a 2.4 grade point average by the end of the semester in which they earn a minimum of 24 calculable credits of graded coursework at the University of Connecticut and a 2.55 by the end of the following fulltime equivalent semester to be guaranteed continuation in the School. Students must also earn a minimum of a 2.7 grade point average in all freshman-sophomore courses in order to be guaranteed continuation to the junior year in the School of Business. Normally the 2.7 grade point average review will take place at the end of a student's fourth semester/when a student has completed 60 credits. Students who have not maintained an average of 15 credits per semester may be reviewed after earning 54 credits, just prior to when they are eligible to take 200 level courses. Additionally, students must show substantial progress toward meeting the freshman-sophomore course requirements, especially those courses that are requisites for the 200 level business courses. 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 grade point average of at least 2.0 in their semester grade point average, their cumulative grade point average and in all calculable credits, including any repeated courses, in the School of Business courses for which they have been registered. Students who fail to maintain the minimum grade point average in any of these areas 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 semester and meet the 2.0 grade point average for the semester, cumulative, and business courses or be subject to having their acceptance rescinded.
 - 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.
 - Fine Arts students are required to enroll in a minimum of six credits in major department courses (Art, Dramatic Arts or Music) each semester of full-time study unless, upon recommendation of their department head, an exception is granted by the dean of the school. Students who fail to comply with the minimum credit requirement are subject to dismissal from the school.
 - In the following courses: BIOL 107, CHEM 122, MCB 200, PNB 264, PNB 265, MATH 102, 103, or 107, STAT 110V or 100V, NURS 110, 111, 112, 204, 207, 221 a student in the School of Nursing must have a grade of C or better. In order to progress in the 200-level nursing courses, students must complete all prerequisite courses with a grade of C or better.
- In order to progress, a cumulative GPA of 2.5 is required prior to enrollment in NURS 221, 212, 218, or 219. Students lacking a 2.5 total grade point average 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 School of Nursing for which another course in the School of Nursing is a prerequisite unless the student

has earned a grade of C (2.0) or better in the prerequisite course. No nursing course may be repeated more than once (for a total of two times). Students may be dismissed if there is more than one semester in which they earn a semester grade point average below 2.0 in required nursing courses. A cumulative grade point average of 2.0 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 107, MCB 203 and 229; CHEM 127, 128, 243 and 244; MATH 115, and PHYS 121, 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 below 2.0 in required Pharmacy courses. 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.

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.

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. Students wanting to change from Storrs to a regional campus should contact the Office of the Registrar on the Storrs campus. Regional campus students wanting to change to Storrs or another regional campus should consult their regional campus registrar or office of Student Affairs.

Transfer Credits for Continuing Students. Students wanting 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 get a Request to Transfer Credit 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 credits must have a grade of "C-" (1.7 on 4.0 scale) or above. 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 Programs

The University offers several honors programs to able, highly motivated students. Some of the programs involve extensive study and research in one of the major fields; all give recognition to superior academic achievement. The Dean's List and Cum Laude designation are awarded to students who rank high in their schools or colleges. The Degree with Distinction requires special study for one year. The Honors Scholar Program is a rigorous, two- to four-year academic opportunity. Graduation as a University Scholar is the highest academic honor that the University of Connecticut bestows on undergraduate students.

Honors Scholar Program. The Honors Scholar Program is designed to provide a nationally competitive academic program for capable students. The two-to-four year program (with a six year option in Pharmacy) enriches the academic experience of students in all majors by offering the challenges of more in-depth study and considerable opportunity for independent projects or research. This is a program for students who are both scholastically capable and educationally ambitious. Participation in the program influences the quality and character of a student's education. The Honors Scholar Program is an educational process, not just a labeling function. The Honors Scholar designation ranks higher than the Distinction designation. Each department is responsible for a program that is meaningful for that discipline. The Stamford Campus offers an interdisciplinary honors program for juniors and seniors.

Admission and Retention: Qualified entering freshmen at Storrs and Stamford who are doing well academically are encouraged to join the Honors Program upon acceptance to the University. Selection is based on ability as measured by Scholastic Aptitude Test scores and high school class rank, and the nature and number of academic high school courses. Other incoming students may apply and will be considered on a space available basis. Students need not begin in the program as freshmen. Undergraduate students who are doing well academically are encouraged to apply for the program, and faculty should also refer qualified students to the program. A student must be identified as an Honors Scholar before the start of the junior year (fifth year for Pharm.D. students in Pharmacy). Exceptions are sometimes made by the Honors staff with consent of the Honors Programs Board of Associate Directors. To remain in good standing, students in the Honors Scholars Program must have a cumulative GPA of at least 3.0 during their first and second semesters and, thereafter, a cumulative GPA of at least 3.2.

Curriculum: Honors Scholar students follow the curriculum requirements of their major, but utilize honors courses and honors projects in their plan of study. Honors courses instructors teach their subject with greater breadth and depth, asking from the student extra preparation as well as self-motivation. Honors students are challenged to demonstrate creative and imaginative analysis of problems and issues, and to write and speak well. Honors students are not, however, graded against higher scholastic standards. Because the caliber of students in Honors courses is higher, the grade distribution in Honors courses is also expected to be higher than the normal grade distribution of non-Honors courses.

Sophomore Honors Certificate. The *Sophomore Honors Certificate* award recognizes superior classroom achievement and participation in Honors activities by freshmen and sophomore students enrolled in the Honors Scholar Program. The *Sophomore Honors Certificate* is awarded after the second year upon completing the Honors credit, activity, and grade point average requirements. The requirements are typically fulfilled when Honors students engage in Honors coursework (usually one or two courses per semester) and get involved in activities that connect them to the Honors community. Honors credits used toward the *Sophomore Honors Certificate* cannot be used toward the requirements for graduation as an Honors Scholar. For a complete listing of the requirements of the *Sophomore Honors Certificate* please visit the Honors Programs web site at <http://www.honors.uconn.edu> or contact the Honors Programs Office at (860) 486-4223.

Junior-Senior Program: Before the junior year (fifth year for Pharm.D. students in Pharmacy) Honors Scholars must be recommended by their departments to pursue further honors work in their majors. During the junior-senior years students are required to complete at least twelve credits of honors work in major 200-level courses, including at least three credits in independent study aimed toward an honors thesis. A copy of the approved Honors thesis must be submitted to the Honors Programs Office with an appropriately signed approval form. Honors credit for course work is generally attained by independent honors projects associated with 200-level courses, honors seminars in the major, graduate level course work, and/or independent research. These are minimum University-wide

requirements. Every Department has the right to add further major requirements. Students who have cumulative GPAs of at least 3.2 at the conclusion of the undergraduate programs and who complete satisfactorily their departments' junior-senior honors requirements will graduate with the designation of Honors Scholar in their major field.

Stamford Campus Junior-Senior Interdisciplinary Program: Stamford offers a version of the Junior-Senior Program emphasizing independent research in the student's major and interdisciplinary honors seminars.

University Scholar Program. Each year the University's Honors Programs selects up to 30 juniors for admission into the University Scholar Program. This prestigious program is for motivated students who wish to pursue nontraditional programs of study of their own creation. Graduation as a University Scholar is the highest academic honor that the University of Connecticut bestows on undergraduate students.

The University Scholar Program provides an opportunity for students to pursue scholarly work, generally not possible through the honors program or general undergraduate plan of study. The scholarly work may draw together several disciplines (increased breadth) or may explore one discipline in great depth. Students accepted into the University Scholar Program begin working on their research or project during the second semester of their junior year (10th semester for Pharm.D. students), by following the plan of study detailed in their application. A committee composed of a major advisor and two additional advisors guides the student through his or her study or project. The scholarly work should culminate with a tangible product, such as a completed research paper, or a work of art. Students earn the title of University Scholar upon successful completion of their University Scholar project, which must be submitted to the Honors Programs office with an appropriately signed approval form, and all of the requirements included in their plan of study. The University waives the General University Fee for every University Scholar candidate for the remainder of his or her undergraduate program. Participation in the University Scholar Program is noted on students' permanent records.

The Director of the Honors Program invites students with outstanding scholastic records, ordinarily in their fifth-semester, to apply for this program. The Honors Board of Associate Directors determines the GPA cutoff for the issuance of invitations. Students should have at least 54 calculable credits at the University of Connecticut and are expected to be enrolled in the University Scholar Program for the last three semesters at the University. Interested students must complete an application form and write an essay that describes (1) a subject matter, topic, or issue that greatly interests him or her, (2) the proposed University Scholar project, including the methods and resources to be used to complete the project, and (3) the set of courses that would enable the student to explore his or her interests in depth. In late-fall, an Honors Program committee selects recipients for the award according to the creativity, clarity, detail, and thoughtfulness of the applicants' proposed research projects and programs of study.

Degree with Distinction Program. The Degree with Distinction is offered at the discretion of Departments wishing to recognize exceptional mastery of a discipline. While the award does not demand the degree of rigor and amount of commitment that are required of University Scholars and Honors Scholars, it does require scholarly work significantly beyond the normal requirements for graduation. Students who graduate as University Scholars or Honors Scholars may not also receive the Degree with Distinction. The designation is entered on the diploma and transcript and is announced at Commencement exercises.

Requirements. A Degree with Distinction candidate must work closely with a faculty sponsor who will help design a program of study appropriate for the student. Every successful candidate must attain upon graduation:

1. a grade point average in major courses of at least 3.5,
2. a cumulative grade point average of at least 3.2.
3. completion of a project, defined by the Department, that demonstrates a high level of competence within the discipline. A copy of the approved Distinction project must be submitted to the Honors Programs Office with an appropriately signed approval form. Possible Distinction projects include extensive literature-review essays, artistic compositions, and/or original laboratory research. Students must have their project proposals approved by their faculty sponsor and the Department's Honors Advisor, and must submit an application before the fourth week of the next-to-last semester.

These are minimum University-wide requirements. Every Department has the right to add further Distinction requirements, such as a comprehensive examination. The definition of major courses is left to the Department, but ordinarily includes 200-level and above courses.

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*

Suman Singha, Ph.D., *Associate Dean, College of Agriculture and Natural Resources*

Patricia Jepson, M.A., *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.

The College maintains livestock, greenhouses, forested lands, gardens, orchards, and other related operations to supplement and enhance instruction, research, and service programs. The Northeastern Research Center for Wildlife Diseases, the Center for Environmental Health, the Water Resources Center, and the Food Marketing Policy Center are also integral parts of the College of Agriculture and Natural Resources.

The following departments offer undergraduate instruction in the College: Agricultural and Resource Economics, 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. See Admission to the University and New England Regional Student Program.

Scholarships. Over \$150,000 in scholarships and awards are available to students in the College of Agriculture and Natural Resources.

Faculty Advisors. Faculty 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.

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 200-level requirement for the major; (4) met all the requirements of the University of Connecticut and the College of Agriculture and Natural Resources.

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.

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*. Students must select approved

courses to meet requirements.

36 Credit 200-Level Requirement for All Majors

Students in all majors of the College of Agriculture and Natural Resources must successfully complete at least 36 credits of **200-level courses** in or relating to their major. Courses for this 36 credit group may be taken from specific major requirements (as listed below for some majors), or may be selected according to a student's individual educational and career goals. This group of courses must:

1. be numbered 200 or above
2. be approved by the student's advisor and department head
3. be taken at the University of Connecticut¹
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 or internship
8. not be taken on Pass/Fail

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, professional service, education, communications, product development, international development, environmental protection, and community resource development. Students interested in agricultural education should refer to the School of Education section of this *Catalog*. 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.

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

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.

Agronomy

This major offers two areas of concentration. Turfgrass Science includes the management of lawns, golf courses, athletic fields, roadsides, erosion control sites, 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)

Agronomy majors must pass the following courses:

- BIOL 110
- CHEM 122 or 127Q
- PLSC 213 or MCB 259
- PLSC 250

In addition, agronomy majors must earn a minimum of 9 credits from courses in Biology², Chemistry, Computer Science, Geology and Geophysics, Mathematics³, Physics, or Statistics⁴.

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. Minors in Dairy Management and in Food Science are also available. (For detailed information, please refer to: www.canr.uconn.edu/ansci)

¹ Transfer students should refer to the "Transfer Students" statement included in this section.

² Students may not receive more than 12 credits for courses in Biology at the 100's level.

³ Math 101 cannot be used to meet this requirement.

⁴ See Statistics section for credit restrictions.

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 120, 216, 217, 219, 295, PVS 200, BIOL 107, CHEM 122 or 127Q

Group B: ANSC 235, 254, 269, 273, 275

Group C: ANSC 222 or ANSC 222W, 224, 226, 229, 253 or 253W. Either MCB 203, 204 or 229 can fulfill one of the Group C requirements.

The Department of Animal Science offers a minor in Dairy Management and in Food Science. These are described in the "Minors" section of this *Catalog*.

Environmental Science

The Environmental Science major emphasizes physical and biological sciences and also includes selected areas of 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.

Environmental Science majors must pass the following core requirements:

A. 100's Level Course Work (49-52 credits)

BIOL 107

BIOL 108 or 110

CHEM 127, 128

ECON 112 or ARE 150

GEOL 102

MARN 170

MATH 112, 113, 114 or 115, 116

PHYS 121, 122, 123 or 131, 132

STAT 100 or 110 or 220

B. 200's Level Course Work (30-31 credits)

Environmental Policy and Law

Select one course from:

ARE 234(W) - Environmental and Resource Policy

NRME 240 - Environmental Law

Environmental Economics

ARE 235 - Environmental and Resource Economics

Atmospheric Science

Select one course from:

NRME 241 - Meteorology

NRME 271 - Environmental Meteorology

Terrestrial Systems

Select one course from:

GEOL 251 - Earth Surface Processes

PLSC 250 - Soils

Hydrosphere Dynamics

Select one course from:

EEB 247 - Limnology

GEOL 234 - Introduction to Ground Water Hydrology

MARN 220Q - Environmental Reaction and Transport

MARN 270 - Descriptive Physical Oceanography

NRME 211 - Watershed Hydrology

Ecological Interactions

EEB 244(W) - General Ecology

Human Impact

GEOG 236 - Human Modifications of Natural Environments

Environmental Health

ANSC 226 - Environmental Health

Chemical and Microbial Reactions

Select one of the following two-course options:

1. CHEM 243 and 244

2. CHEM 141 (Organic Chemistry) and MCB 229 (Fundamentals of Microbiology) or MCB 203 (Introduction to Biochemistry)

3. CHEM 141 (Organic Chemistry) and GEOL 235 (Chemical Hydrogeology).

In addition to these core 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: all consist of 4 or 5 courses in a specialized field, including a field course or an internship experience.

Resource Economics (Agricultural and Resource Economics) - Students must pass the following courses: ECON 218(Q), ARE 257, ARE 297. Additionally, students must pass at least two of the following: ARE 238, 255(W), 285, 215C

Environmental Health (Animal Science) - Students must pass courses in the categories listed:

Molecular and Cellular Biology: Choose any two: MCB 200, 211, 215, 229

Animal Science: Students must pass the following: ANSC 221, 224, 225

Other Departments: choose one of the following: NUSC 236, PVS 200, PVS 297, PHAR 241, PHAR 281, PNB 250(W)

Natural Resources (Natural Resources Management and Engineering) - Students must pass five courses from the following group: NRME 204, 205, 210, 214, 217, 237, 239W, 242, 260P, 287

Soil Science (Plant Science) - Students must pass the following courses: PLSC 205, 250, 259C

In addition, students must select two courses from the following: NRME 260P, PLSC 253(W), 258, 372, 375, 377, 378

Environmental Sciences also offers the following concentrations through the College of Liberal Arts and Sciences. For complete descriptions of their requirements, refer to the Environmental Science description in the *College of Liberal Arts and Sciences* section of this *Catalog*:

Environmental Chemistry (Chemistry)

Environmental Biology (Ecology and Evolutionary Biology)

Environmental Geography (Geography)

Environmental Geoscience (Geology)

Marine Science (Marine Science)

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 110, PLSC 250, PLSC 213 or MCB 259, CHEM 122 or 127Q, PLSC 238

One of the following:

ARE 150, ARE 215C, ECON 102, ECON 112, ACCT 131

One of the following:

PLSC 260, 261, 231, EEB 272, NRME 214

Two of the following:

PLSC 203, 204, 257, or EEB 288 or equivalent

Two of the following:

PLSC 212, 225, 227, 240, 240W, 244, 245, 263, 264, 289, or 292

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 110

CHEM 122 or 127Q

PLSC 213 or MCB 259

PLSC 241, 241C, 250, 255, 256, 260, 261, 262, 265, 266, 267, 268, 271, 275, 276, 277, 280, 281, 290W, 293

One approved 200 level course outside Department of Plant Science

Accreditation and space restrictions necessitate that the number of students in the Landscape Architecture program be limited. All students admitted into the Landscape Architecture program will be evaluated at the end of their third semester (or middle of their sophomore year). Students will be allowed to continue in the program based upon their cumulative GPA, successful completion of recommended courses during their first and second semester, and grades earned in the introductory Landscape Architecture courses offered during the third semester (PLSC 255: Landscape Design Drawing, and PLSC 275; Landscape Design). Students who do not meet these requirements may want to consider other majors including Horticulture or the turf option in Agronomy. (For detailed information, please refer to www.canr.uconn.edu/plsci)

A minor in Landscape Design is described in the “Minors” section.

Natural Resources

This major, offered by the Department of Natural Resources Management and Engineering is concerned with the application of scientific principles and modern technology to the understanding and management of natural resources and the systems of which they are a part. Students can pursue a general interdisciplinary set of courses, or concentrate in a specific discipline. Areas of emphasis may include fisheries, wildlife, forestry, air quality, water resources, geographical information science, remote sensing and other aspects of natural resources management and environmental science. (For detailed information, please refer to: www.canr.uconn.edu/nrme)

Natural Resources majors must pass the following courses:

NRME 100, 239W, 242, 252, 256, 295

PLSC 250

EEB 244 or 244W

MATH 113 or 115

One course in Chemistry (except CHEM 101)

One course in Statistics

One course in Physics or Geology

Students must also earn an additional 12 credits in NRME courses, numbered 200 or above.

Nutritional Sciences

Nutritional Sciences majors may select options in Dietetics, Nutritional Biochemistry (pre-professional, pre-medical, etc.), Nutrition for Exercise and Sport, Food Science, or Fundamentals of Nutrition. Nutritional Science majors preparing to become registered dietitians follow the Didactic Program in Dietetics as approved by the American Dietetic Association (ADA). The Didactic Program at the University of Connecticut is currently granted accreditation by the Commission on Accreditation for Dietetic Education of the American Dietetic Association, 216 W. Jackson Blvd., Chicago, IL 60606-6695, (312) 899-5400. Nutritional Sciences graduates also pursue employment in community nutrition, sports and fitness, cooperative extension, food science, and other related areas of nutrition and health. (For detailed information, please refer to: www.canr.uconn.edu/nusci)

Nutritional Sciences majors must successfully pass the following courses:

NUSC 165

NUSC 200

CHEM 127 and 128, or CHEM 122

CHEM 141, or 243 and 244

PNB 264 and 265, or BIOL 107, 108 and PNB 250

MCB 203 or 204 or 229

In addition to the courses listed above, a minimum of 8 credits, numbered 200 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 8-credit requirement. Specific course recommendations are listed in the *Programs Available* brochure in the department.

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 297

One course in Microbiology: MCB 229

One course in Biochemistry: MCB 203 or MCB 204

One course in Genetics: MCB 200, MCB 213, or ANSC 217

One course in Nutrition, Immunology, or Cell Biology: ANSC 216, NUSC 165, MCB 210, MCB 211, or MLS 208W

Three of the following courses: PVS 200, 202, 235, 248, 252, 256, 296

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/)

A minor in Agribusiness Management is described in the “Minors” section.

Individualized Major

The Individualized Major program allows students to create a major that is not otherwise offered at the University of Connecticut. Students pursuing an Individualized Major must meet all university-level and college-level requirements for graduation and complete at least 36 credits of approved 200 level courses. Requirements for declaring and completing an Individualized Major are listed below:

- Students must be in good academic standing with a minimum GPA of 2.0 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 from 200 level 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 2.0
 - 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

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. Once an approved declaration has been submitted to the Degree Auditor, the student must complete the requirements for both majors in order to graduate. Withdrawal of the Double Major Declaration requires the approval of the Associate Dean. 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 200-level course work *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 200 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.

The College of Agriculture and Natural Resources offers minors in Agribusiness Management, Aquaculture, Dairy Management, Food Science, Landscape Design, Nutrition for Exercise and Sport, and Sport Nutrition. All of these are described in the "Minors" section of this *Catalog*.

Pre-Veterinary Medicine Programs. Prerequisites for entry into a professional curriculum in veterinary medicine may be obtained by majoring in Animal Science or Pathobiology. The Animal Science major is most appropriate for students interested in biotechnology, physiology, nutrition, genetics, behavior, or production and management. Pathobiology is appropriate for students interested in biomedical science, medical biotechnology, ecology of diseases, anatomy, microbiology, or diseases of wildlife.

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 100-level course requirements in a specific major. Transfer students may apply a maximum of six credits of 200-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 200-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 require approval of the Vice Provost for Undergraduate Education and Instruction.

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 Allied Health

Joseph W. Smey, Ed.D., P.T., *Dean, School of Allied Health*
Ellen Darrow, B.A., *Director, Academic Advisory Center*

Major Programs of Study

Cytotechnology
Diagnostic Genetic Sciences
Dietetics
Individualized Major
Medical Technology
Physical Therapy: Integrated BS/MS

Health

In addition to pre-entrance University requirements, students admitted to the School of Allied Health 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 programs are required to have Hepatitis B Immunization. In compliance with the OSHA Bloodborne Pathogen Standard the School of Allied Health will provide annual mandatory educational sessions for all students. Students who fail to provide written documentation that they have met the above stated health and OSHA requirements will *not* be allowed in the clinical setting.

CPR

All students in the School of Allied Health must have a current certificate in cardiopulmonary resuscitation. CPR certification must be kept current until graduation.

Clinical Experiences

Each of the curricula of the School require education experiences in clinical settings. Assignment to clinical placements is contingent upon completion of the appropriate prerequisite course work and the judgement of the faculty of the preparedness of the student for safe practice.

Fees and Expenses

Students can expect fees to approximate those of other University students. However, the professional courses have added expenses for texts, uniforms and clinical travel. Students are responsible for their own transportation to the clinical agencies. 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 all students in the School of Allied Health carry comprehensive health insurance, either privately or through the University.

All students in the professional phase of their curriculum 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.

Academic Requirements

The School of Allied Health requires a cumulative grade point average of not less than 2.2 in order to gain admission to the junior year program course sequence. It should be noted that admission to programs in the School of Allied Health is competitive. Thereafter students will be dismissed if there is a semester in which they earn a grade point average below 2.2; their cumulative grade point average drops below 2.2; or their *major* grade point average drops below 2.2 at any time. A "C" or better in all courses in the School of Allied Health, is required for graduation. No student may take a course in the School of Allied Health for which another course in the School is a prerequisite unless that student has earned a grade of "C" or better in that prerequisite course.

The definitions of grade point averages for all School of Allied Health majors

are listed under Supplementary Scholastic Standards in the "Academic Regulations" section of this *Catalog*.

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 at least 120 credits, (2) earned at least a 2.2 cumulative grade point average, (3) earned at least a 2.2 major grade point average, (4) met all requirements of the School of Allied Health.

The requirements which must be met are stated in detail in the plan of study current at the time of the student's entry into the junior year program or the time of the student's admission or readmission to the School, whichever is later.

Exemptions and Substitution

Students who desire to be excused from any of the requirements, or to substitute other courses for those prescribed, should consult the director of the program in which the student is enrolled. Such exemptions or substitutions must be approved by the Director of the Academic Advisory Center.

Admission

Freshmen are not admitted directly into the School of Allied Health. Freshmen students enter the University in the College of Liberal Arts and Sciences and identify themselves as preallied health majors. Preallied health students will be advised through the Academic Center for Entering Students (ACES). Although freshmen are not admitted directly into the professional program, the School of Allied Health has a **Guaranteed Admission Offer**. This offer provides freshmen with direct admission in the junior year to the major of their choice if the student fulfills the criteria described under each program 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 School of Allied Health.

In order to qualify for **Guaranteed Admission** to the Cytotechnology, Diagnostic Genetic Sciences, Dietetics, or Medical Technology programs a student must: (1) have entered the University as a freshman; (2) apply to the program 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) earn an *Overall Grade Point Average* of a minimum of a 3.0; and (5) meet all Admission Requirements and file a School of Allied Health Application by the February 1st deadline. Students meeting **all** of these criteria are guaranteed admission to the program.

In order to qualify for **Guaranteed Admission** to the Physical Therapy Program a student must: (1) have entered the University as a freshman; (2) apply to the program 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) earn a *Science Grade Point Average* of a 3.2 or better - the *Science Grade Point Average* consists of the following courses: CHEM 127Q-128Q, PSYC 132 and 135, STAT 100V or 110V, PNB 264-265, and PHYS 121Q-122Q (5) earn an *Overall Grade Point Average* of a minimum of a 3.2; and (6) meet all Admission Requirements and file a School of Allied Health Application by the February 1st deadline. Students meeting **all** of these criteria are guaranteed admission to the program.

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 program will be reviewed on a space available basis once matriculated University of Connecticut students have been reviewed and offers of admission have been confirmed.

The professional majors in the School of Allied Health are junior/senior programs. 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 program 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**. However, physical therapy students must begin their course work **during the summer** following admission.

University General Education Requirements

The University General Education requirements are listed in detail in the *Academic Regulations* section of this *Catalog*. The course requirements listed below in **each specific program** are those of the School of Allied Health and as indicated in each group satisfy the University's General Education requirements.

Cytotechnology Program

Cytotechnology is a laboratory specialty in the field of cytology. Cytotechnologists aide in the early detection of cancer by examining specimens from various body sites to distinguish normal, abnormal, and cancer cells.

The Cytotechnology Program is offered in conjunction with the UConn Health Center which holds accreditation through the Commission on Accreditation of Allied Health Education Programs (CAAHEP) and the United States Department of Education (DOE). Graduates are eligible to take the certification examination administered by the American Society of Clinical Pathologists (ASCP) immediately upon graduation.

Curricula in Cytotechnology

University General Education Requirements

Group 2. Expository Writing

- A. AH 241W - Research for the Health Professional
- B. MLS 208(W) - Immunology for the Medical Laboratory Sciences

Group 3. Mathematics

- C. Required Q courses:
 - 1. MATH 109Q - Algebra & Trigonometry
 - 2. STAT 110V - Elementary Concepts of Statistics
- D. Required C course: STAT 110V - Elementary Concepts of Statistics

Group 8. Science and Technology

- A. CHEM 122 - Chemical Principles and Applications
- B. BIOL 107 - Principles of Biology

Major Requirements

Related Science Courses

- A. CHEM 141 - 142 - Organic Chemistry
- B. Biology Option: BIOL 103 - The Biology of Human Health & Disease *or* a course in Anatomy and Physiology *or* BIOL 108 - Principles of Biology *or* a Biology course pre-approved by the Cytotechnology Program Director
- C. PVS 296 - Histologic Structure & Function
- D. PVS 297 - Principles of Pathobiology

Professional Courses

- A. **Allied Health**
 - 220 - Cancer and Your Health
 - 241W - Research for the Health Professional
 - 243 - Health Care Issues for the Health Professional
 - 244 - Management for the Health Professional
- B. **Medical Laboratory Sciences**
 - 200 - Basic Laboratory Techniques in Medical Laboratory Sciences
 - 206 - Anatomy & Physiology for the Medical Laboratory Sciences
 - 208(W) - Immunology for the Medical Laboratory Sciences
- C. **Cytotechnology**
 - 222 - Diagnostic Cytology
 - 243 - Cytology and the Female Genital Tract
 - 244 - Cytology of the Respiratory Tract
 - 245 - Cytologic Techniques
 - 246 - Cytology of the Alimentary Tract
 - 247 - Cytology of the Miscellaneous Fluids
 - 248 - Cytology of Aspiration Biology
 - 249 - Senior Seminar in Cytotechnology
 - 250 - Clinical Practicum

Diagnostic Genetic Sciences Program

Diagnostic Genetic Sciences encompass two diagnostic fields: Medical 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 malformation. Molecular diagnostic technologists evaluate and investigate DNA and RNA with regards to disease, identity, cancer and forensics.

The Diagnostic Genetic Sciences Program is approved by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS). Graduates are eligible to take the certification examination administered by the National Credentialing Agency for Laboratory Personnel (NCA) immediately upon graduation.

Curricula in Diagnostic Genetic Sciences

University General Education Requirements

Group 2. Expository Writing

- A. AH 241W - Research for the Health Professional
- B. MLS 208(W) - Immunology for the Medical Laboratory Sciences

Group 3. Mathematics

- A. Required Q courses:
 - 1. MATH 109Q - Algebra & Trigonometry *or* Passing Score on Calculus Readiness Test
 - 2. STAT 110V - Elementary Concepts of Statistics
- B. Required C course: STAT 110V - Elementary Concepts of Statistics

Group 8. Science and Technology

- A. CHEM 122 - Chemical Principles and Applications *or* Chemistry 127Q-128Q - General Chemistry
- B. BIOL 107 - Principles of Biology

Major Requirements

Related Science Courses

- A. CHEM 141 - 142 - Organic Chemistry *or* 243 & 244 - Organic Chemistry
- B. Biology Option: BIOL 103 - The Biology of Human Health & Disease *or* a course in Anatomy and Physiology *or* BIOL 108 - Principles of Biology *or* a Biology course pre-approved by the Diagnostic Genetic Sciences Program Director
- C. MCB 200 - Human Genetics
- D. MCB 203 - Introduction to Biochemistry
- E. MCB 210 - Cell Biology
- F. MCB 229 - Fundamentals of Microbiology

Professional Courses

- A. **Allied Health**
 - 241W - Research for the Health Professional
 - 243 - Health Care Issues for the Health Professional
 - 244 - Management for the Health Professional
- B. **Medical Laboratory Sciences**
 - 200 - Basic Laboratory Techniques in Medical Laboratory Sciences
 - 208(W) - Immunology for the Medical Laboratory Sciences
- C. **Diagnostic Genetic Sciences**
 - 222 - Medical Cytogenetics
 - 223 - Laboratory in Cytogenetics
 - 224 - Cancer Cytogenetics
 - 225 - Microscopy and Chromosome Imaging
 - 234 - Diagnostic Molecular Technologies
 - 235 - Laboratory in Molecular Diagnostics
 - 246 - Contemporary Issues in Human Genetics
 - 280 - Bone Marrow Cytogenetics
 - 281 - Peripheral Blood Cytogenetics
 - 284 - Variable Topics in Cytogenetics
 - 285 - Research in Cytogenetics
 - 286 - Prenatal Cytogenetics
 - 287 - Practicum in Microscopy and Imaging
 - 288 - Practicum in Staining and FISH

Dietetics Program

The Coordinated Program (CP) in Dietetics combines theory in the classroom with supervised practice in clinical, community, and food service sites off campus to prepare students to sit for the National Registered Dietitian Examination (RD). Dietitians assess nutritional needs, plan individualized dietary plans, provide counseling and evaluate nutritional care for individuals and groups.

The Dietetics Program is currently granted accreditation by the Commission on Accreditation/Approval for Dietetics Education of the American Dietetic Association. Students are eligible to take the national registration examination administered by the Commission on Dietetic Registration of the American Dietetic Association immediately upon graduation.

Curricula in Dietetics

University General Education Requirements

Group 2. Expository Writing

- A. AH 241W - Research for the Health Professional
- B. DIET 210S - Community Nutrition

Group 3. Mathematics

- A. Required Q courses:
 1. CHEM 127Q-128Q - General Chemistry
 2. STAT 110V - Elementary Concepts of Statistics
- B. Required C course: STAT 110V - Elementary Concepts of Statistics

Group 7. Social Science and Comparative Analysis

- A. SOCI 107 - Introduction to Sociology *or* SOCI 115 - Contemporary Social Problems *or* PSYC 135 - General Psychology II (Enhanced)

Group 8. Science and Technology

- A. CHEM 127Q-128Q - General Chemistry
- B. NUSC 165 - Fundamentals of Nutrition

Major Requirements

Related Science Courses

- A. MCB 203 - Introduction to Biochemistry
- B. MCB 229 - Fundamentals of Microbiology
- C. PNB 264 - 265 - Human Anatomy & Physiology
- D. CHEM 141 - 142 - Organic Chemistry
- E. NUSC 200 - Nutrition and Human Development
- F. NUSC 212 - Principles of Food Science
- G. NUSC 233 - Food Composition & Preparation
- H. NUSC 235 - Food Composition & Preparation Lab

Professional Courses

A. Allied Health

- 241W - Research for the Health Professional
- 242 - Counseling & Teaching for the Health Professional
- 244 - Management for the Health Professional

B. Dietetics

- 204 - Food Service Systems
- 208 - Introduction to Nutritional Care I
- 209 - Introduction to Nutritional Care II
- 210S - Community Nutrition
- 235 - Applied Dietetics
- 238 - Advanced Nutrition for the Clinical Practitioner
- 244 - Practicum in Food Service Management
- 247 - Seminar in Dietetics
- 248 - Applied Clinical Dietetics
- 250 - Dietetic Practice

Individualized Major Program

The Individualized Major is a unique opportunity to create a major that is not currently offered at the University of Connecticut. Requirements for declaring and completing an Individualized Major in the School of Allied Health are listed below:

To declare an Individualized Major, students must be in good academic standing and have a cumulative grade point average of not less than a 2.2. Thereafter, students admitted to the Individualized Major in the School of Allied Health must maintain the following standards of scholastic achievement to continue in the School. (See School of Allied Health Academic Requirements.) Students who fail to maintain the minimum grade point averages or minimum course standard in any one of the following areas are subject to dismissal from the School of Allied Health:

1. Students must maintain a minimum semester grade point average of a 2.2.
2. Students must maintain a minimum cumulative grade point average of a 2.2.
3. Students must maintain a minimum Individualized Major Grade Point average of a 2.2. The Individualized Major Grade Point Average includes the 36 credits of 200 level course work identified on the final plan of study.

Students must submit a proposed statement of purpose and identify three faculty members who are willing to serve as an advisory committee.

Students should submit proposals after they have earned at least 30 credits,

but prior to their final 30 credits of study.

An Individualized Major has a minimum of 36 credits from 200 level courses which must:

- be from two or more departments
- include at least 18 credits in courses offered by the School of Allied Health. A "C" or better in all courses in the School of Allied Health is required for graduation (See School of Allied Health Academic Requirements).
- include no more than 6 credits of Independent Study and Internship
- be approved by the student's Advisory Committee
- be earned at the University of Connecticut, exceptions require the Director of the Academic Advisory Center's permission
- not be taken on Pass/Fail

A 2.2 grade point average for all calculable junior and senior course work is required for graduation (see School of Allied Health *Academic Requirements*).

For further information and application forms, contact the Director of Individualized Studies, Family Studies Building, Room 302 or phone (860) 486-3631.

Medical Technology Program

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 Program is offered in conjunction with Hartford Hospital which holds accreditation through the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS). 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) immediately upon graduation.

Curricula in Medical Technology

University General Education Requirements

Group 2. Expository Writing

- A. AH 241W - Research for the Health Professional
- B. MLS 208(W) - Immunology for the Medical Laboratory Sciences

Group 3. Mathematics

- A. Required Q courses:
 1. MATH 109Q - Algebra & Trigonometry
 2. CHEM 127Q-128Q - General Chemistry
 3. STAT 110V - Elementary Concepts of Statistics
- B. Required C course: STAT 110V - Elementary Concepts of Statistics

Group 8. Science and Technology

- A. CHEM 122 - Chemical Principles and Applications *or* CHEM 127Q-128Q - General Chemistry
- B. BIOL 107 - Principles of Biology

Major Requirements

Related Science Courses

- A. CHEM 141 - 142 - Organic Chemistry *or* 243, 244, 245 - Organic Chemistry
- B. Biology Option: BIOL 103 - The Biology of Human Health & Disease *or* a course in Anatomy and Physiology *or* BIOL 108 - Principles of Biology *or* a Biology course pre-approved by the Medical Technology Program Director
- C. MCB 203 - Introduction to Biochemistry
- D. Related Science Requirement - MCB - Human Genetics *or* PHYS 101Q - Elements of Physics *or* other 200 level Biology *or* Chemistry course *or* 100 level Physics course pre-approved by the Medical Technology Program Director

Professional Courses

A. Allied Health

- 241W - Research for the Health Professional
- 243 - Health Care Issues for the Health Professional
- 244 - Management for the Health Professional

B. Medical Laboratory Sciences

- 200 - Basic Laboratory Techniques in Medical Laboratory Sciences
- 206 - Anatomy & Physiology for the Medical Laboratory

Sciences

208(W) - Immunology for the Medical Laboratory Sciences

C. Medical Technology

- 213 - Clinical Immunology and Virology
- 250 - Clinical Chemistry and Instrumentation
- 251 - Clinical Chemistry Laboratory
- 252 - Infectious Disease Process II
- 260 - Theory of Phlebotomy
- 261 - Phlebotomy Laboratory
- 264 - Hematology
- 266 - Clinical Microbiology
- 267 - Clinical Microbiology Laboratory
- 269 - Clinical Immunology Laboratory
- 270 - Transfusion Services
- 272 - Urinalysis
- 273 - Urinalysis Laboratory
- 274 - Hematology Laboratory
- 275 - Transfusion Services Laboratory
- 280 - Seminar in Medical Technology

Physical Therapy Program

Physical therapists restore function and prevent disability following disease, injury or loss of a body part. The Physical Therapy Program is an integrated bachelor's master's (BS/MSPT) program. The student receives a B.S. in Allied Health with a major in pre-physical therapy at midpoint of the professional program. The student is not eligible to take the licensure examination as a physical therapist until completion of the M.S. portion of the degree (consult the *Graduate Catalog* for the M.S. component of the program).

The program in Physical Therapy is accredited by the American Physical Therapy Association. Graduates of the Master's in Physical Therapy are eligible to take the physical therapy licensure examination and meet the requirements of each state licensing agency.

Curricula in Physical Therapy

University General Education Requirements

Group 2. Expository Writing

- A. PT 280W - Research for Physical Therapists
- B. PT 308W - Integrative Seminar II

Group 3. Mathematics

- C. Required Q courses:
 1. CHEM 127Q-128Q - General Chemistry
 2. STAT 110V - Elementary Concepts of Statistics
 3. PHYS 121Q-122Q - General Physics
- D. Required C course: STAT 110V - Elementary Concepts of Statistics

Group 7. Social Scientific and Comparative Analysis

- A. PSYC 135 - General Psychology II (Enhanced)

Group 8. Science and Technology

- A. CHEM 127Q-128Q - General Chemistry
- B. PSYC 132 - General Psychology I

Major Requirements

Related Science Courses

- A. PNB 264 - 265 Human Anatomy and Physiology

Professional Courses

A. Allied Health

- 242 - Counseling and Teaching for the Health Professional
- 243 - Health Care Issues for the Health Professional

B. Physical Therapy

- 210 - Fundamentals of Assessment
- 212 - Fundamentals of Treatment: Acute Care
- 213 - Human Anatomy
- 215 - Human Anatomy Laboratory
- 217 - Human Physiology
- 220 - Tissue Dysfunction
- 221 - Pharmacology for Physical therapy
- 222 - Musculoskeletal Dysfunction
- 240 - Clinical Kinesiology
- 260 - Functional Neurology and Movement
- 280W - Research for Physical Therapists
- 307 - Integrative Seminar I
- 308W - Integrative Seminar II
- 314 - Principles of Rehabilitation
- 316 - Acute Care Practicum

Postbaccalaureate Certificate Programs

The Dietetic Internship is a certificate program administered by the School of Allied Health Dietetics Program 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/Approval 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 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 Track Certificate Program is open to individuals with baccalaureate degrees in the medical laboratory sciences or the biological or natural sciences and who meet the course prerequisites for admission to the clinical practicum component. The Diagnostic Genetic Sciences Track Certificate Program prepares students for the Certification Examination in Cytogenetics offered by the National Credentialing Agency for Laboratory Personnel (NCA). Upon successful completion of the Certificate Program, students are immediately eligible to sit for this exam. This examination is sanctioned by the Association of Genetic Technologists (AGT).

The Molecular Diagnostic Genetics Track Certificate Program is open to individuals with baccalaureate degrees in cytogenetics, medical technology, or the biological or natural sciences, and who meet specified course prerequisites and academic standards. Upon completion, students receive a certificate from the School of Allied Health and are eligible to sit for the certification examination in molecular genetics offered by the National Credentialing Agency for Laboratory Personnel (NCA). This examination is sanctioned by the Association of Genetic Technologists (AGT).

The Cytotechnology Certificate Program is open to individuals who have earned a baccalaureate degree and who have completed the chemistry, biological science, and math prerequisites prior to admission to the clinical practical component of the program. The Cytotechnology Certificate Program prepares students for the National Certification Examination in Cytotechnology given by the American Society of Clinical Pathologists. Upon successful completion of the Certificate Program, students are immediately eligible to sit for this examination leading to certification.

School of Business

C.F. Sirmans, Ph.D., *Interim Dean, School of Business*
 Jeffrey L. Rummel, Ph.D., *Associate Dean, School of Business*
 Janice E. Clark, M.A., *Assistant Dean for Undergraduate Programs*
 Judy Nilson, M.B.A., *Assistant Dean for Administration*

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.

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 which 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, 100 level requirements, particularly those courses which are prerequisites for the Common Body of Knowledge/Entry Level Business courses. 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. Note: Students not in the School of Business are not eligible to take more than 27 credits of coursework offered by the School of Business.

Scholastic Standing Requirements. Students admitted to the School of Business must earn a 2.4 grade point average by the end of the semester in which they earn a minimum of 24 calculable credits of graded coursework at the University of Connecticut and a 2.55 by the end of the following fulltime equivalent semester to be guaranteed continuation in the School. Students must also earn a minimum of a 2.7 grade point average in all freshman-sophomore courses in order to be guaranteed continuation to the junior year in the School of Business. Normally the 2.7 grade point average review will take place at the end of a student's fourth semester/when a student has completed 60 credits. Students who have not maintained an average of 15 credits per semester may be reviewed after earning 54 credits, just prior to when they are eligible to take 200 level courses. Additionally, students must show substantial progress toward meeting the freshman-sophomore course requirements, especially those courses that are requisites for the 200 level business courses. All course grades, including those of repeated courses, are considered in the above grade point average calculations.

Students must maintain a minimum of 2.0 for their semester grade point average, a 2.0 for their cumulative grade point average, and a 2.0 grade point average in all credits in School of Business courses for which they have been registered, including all grades for repeated courses. Students who fail to maintain the minimum grade point average in any of these areas are subject to dismissal from the School of Business.

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 200-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. 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.

Stamford Campus and Tri-campus Programs. Students at the Stamford and at Tri-campus (Waterbury, Hartford and Torrington) can complete all of the requirements of the major in Business and Technology at those campuses. Students who wish to complete other 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 200-level courses offered in 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 may also be used to fulfill University General Education requirements (indicated by *).

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

Accounting

ACCT 131

Foreign Language

All students must have (1) passed the third year level course in high school in a single foreign language, ancient or modern, the requirement is met if the student has passed the third year level course *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 110* *or* 111*, *or* 105* *and* 109* *or* 250*

Quantitative Analysis

MATH 105Q* *and* 106Q*
or MATH 115Q* *and* 116Q*
or MATH 112Q* *and* 113Q* *and* 114Q*
or MATH 120Q* *and* 121Q*
or MATH 115Q* *and* 105Q*
or MATH 112Q* *and* 113Q* *and* 105Q*
or MATH 112Q* *and* 105Q* *and* 106Q*
 STAT 100V* *or* 110V*

Culture and Modern Society

HIST 101*
 ANTH 100* *or* GEOG 160*

Philosophical or Ethical Analysis

PHIL 101* *or* 102* *or* 103* *or* 104* *or* 105* *or* 106* *or* SCI 240*

Social Scientific and Comparative Analysis/Practice

ECON 102 *or* 111* *and* 112*
 COMM 100* *or* 105 (COMM 105 is **required** for Accounting majors.)

Non-Laboratory Science

PSYC 132*

Additional Requirements

Business students must also meet the University General Education requirements of *two "W" courses, Group 4 Literature and Arts, and Group 8 Laboratory Science*. These requirements are not met by any of the Business requirements listed above.

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.

Required Courses and Sample Sequence

Freshman Year First Semester

MATH 105 (or appropriate course from one of the alternate mathematics sequences), ENGL 110 or 111, PSYC 132, PHIL 101 or 102 or 103 or 104 or 105 or 106 or SCI 240, Elective

Freshman Year Second Semester

MATH 106 (or appropriate course from one of the alternate mathematics sequences), Group 4 (Arts), HIST 101, GEOG 160 or ANTH 100, Elective (may be ECON 101, if planning to take ECON 102)

Sophomore Year Third Semester

ECON 111 or 102, ACCT 131, Group 4 (Literature), Group 8 (Laboratory Science in Chemistry or Biology or Geology or Physics), Elective

Sophomore Year Fourth Semester

ECON 112 (or elective, if taken ECON 102), STAT 100V or 110V, "W" Writing Course (1 of 2), COMM 100 or 105 (105 required for Accounting majors), Elective or ACCT 200

Junior-Senior, 200 Level Requirements

No School of Business students should enroll in any 200-level, business courses, with the exception of Accounting 200, until they have passed the freshman-sophomore, 100 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 200 - Principles of Managerial Accounting (to be taken no later than fifth semester)

BLAW 271 - Business Law *or* BLAW 275 - Business, Law and Society (BLAW 275 is **required** for Accounting majors.)

FNCE 201 - Financial Management

MGMT 201 - Introduction to Management and Organization

MKTG 201 - Introduction to Marketing Management

OPIM 203 - Business Information Systems

OPIM 204 - Operations Management

Capstone Requirement. All students are required to complete a capstone course sequence. Business & Technology majors must take MGMT 292, Strategic Analysis. All other majors must take MGMT 290, Strategy, Policy and Planning. All majors except Accounting and Business and Technology must take MGMT 272, Career Development in Business.

Mobile Computing Initiative. Students in the School of Business at the Storrs campus are required to participate in the mobile computing initiative by leasing a notebook computer from the University while they are taking 200-level courses in the school (with the exception of ACCT 200, which is open to sophomores). Students will be required to register for one of the Mobile Computing Lab courses (BADM 291, 292, 295 or 296) each semester in order to register for other courses within the School of Business. 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: www.business.uconn.edu/its

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-cr. plus one 1-cr., ACCT 205, 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 299's) and internship (ACCT 289's) as a requirement for graduation.

A student majoring in accounting must have taken at least two-thirds of the following 200-level accounting course credits at the University of Connecticut or an accounting program accredited by the American Assembly of Collegiate Schools of Business.

ACCT 201 - Intermediate Accounting I

ACCT 202 - Intermediate Accounting II

ACCT 203 - Advanced Accounting

ACCT 205 - Introduction to the Profession

ACCT 221 - Cost Accounting

ACCT 243 - Assurance Services

ACCT 260 - Federal Income Taxes

BLAW 277 - Business Transactions and the Law

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 campus and (Waterbury, Hartford, and Torrington). 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 205 - Data Base Management
 OPIM 206 - Business Application Programming
 OPIM 207 - Internet Technologies and Electronic Commerce
 Plus three 3 credit School of Business electives at the 200 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 203 - Applications in Financial Management

Any two 3 credit courses from the following:
 FNCE 202 - Investment and Security Analysis
 FNCE 204 - Financial Risk Management
 FNCE 205 - Global Financial Management
 FNCE 206 - Financial Services
 FNCE 233 - Real Estate Finance

Any two additional 3 credit courses from the following:

FNCE 202 - Investments and Security Analysis
 FNCE 204 - Financial Risk Management
 FNCE 205 - Global Financial Management
 FNCE 206 - Financial Services
 FNCE 217 - Economics for Global Business Decisions
 FNCE 221 - Risk Management and Insurance
 FNCE 223 - Health Insurance
 FNCE 224 - Social Insurance
 FNCE 225 - Life Insurance and Retirement Security
 FNCE 228 - Risk Management: Property and Liability Exposures
 FNCE 230 - Real Estate Principles
 FNCE 232 - Real Estate Investments
 FNCE 233 - Real Estate Finance
 FNCE 234 - GIS Applications and the Use of the Internet in Real Estate Markets
 FNCE 298 - Special Topics
 HSMG 280 - Introduction to Health Care Management
 HSMG 281 - Health Care Analysis
 HSMG 282 - Health Care Information Technology
 HSMG 283 - Advanced Topics in Health Care Management

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 some 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 221 - Risk Management and Insurance
 FNCE 223 - Health Insurance
 HSMG 280 - Introduction to Health Care Management
 HSMG 281 - Health Care Analysis
 HSMG 282 - Health Care Information Technology
 HSMG 283 - Advanced Topics in Health Care Management
 HSMG 290 - Internship in Health Care Management

Internships in Health Care Management. Students usually schedule their HSMG 290 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

Students in this major gain an in-depth understanding of the problems and challenges that face today's managers and leaders. All Management majors are required to take:

MGMT 225 (International Business)
 MGMT 291 (Small Business Consulting)

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

Entrepreneurship Concentration - requires at least nine credits from the following:

MGMT 234 - Management of Small Businesses
 and six credits - 200 level from the following:
 MGMT 235 - Entrepreneurship and Venture Management
 MGMT 298 - Special Topics
 Management or School of Business 200-level Elective

International Business Concentration - requires at least nine credits from the following:

MGMT 245 - Managerial Behavior in Cross Cultural Settings
 BLAW 280 - International Business Law
 MKTG 270 - Global Marketing Strategy
 MGMT 293 - Foreign Study - 6 credits maximum
 FNCE 205 - Global Financial Management
 FNCE 217 - Economics for Global Business Decisions
 FNCE 293 - Foreign Study - 6 credits maximum
 MKTG 293 - Foreign Study - 6 credits maximum

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

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 203 and OPIM 204, required courses are:

OPIM 211 - Systems Analysis and Design
 OPIM 220 - Business Software Development
 OPIM 221 - Business Data Base Systems
 OPIM 222 - Network Design and Applications

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

OPIM 212 - Advanced Information Technology
 OPIM 223 - Advanced Business Application Development
 OPIM 298 - Special Topics

Management Information Systems students must complete six credits in one of the following Applications Areas: 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.

Students considering a Marketing major are advised to complete PSYC 133 or PSYC 135 or SOCI 107 as part of their freshman or sophomore course work, and are strongly encouraged to take BLAW 275 to fulfill the junior - senior, 200 level BLAW requirement.

MKTG 208 - Consumer Behavior or 209 - Industrial Buyer Behavior
 MKTG 280 - Marketing Research
 MKTG 282 - Marketing Planning and Strategy or MKTG 270 - Global Marketing Strategy
 and two additional three-credit Marketing or School of Business or Economics electives (200-level). A maximum of three (3) credits of Marketing 289 or 299 can be counted toward this requirement.

Or Marketing majors may elect the Professional Selling Concentration requiring:
 MKTG 208 - Consumer Behavior or 209 - Industrial Buyer Behavior
 MKTG 280 - Marketing Research
 MKTG 252 - Professional Selling
 MKTG 253 - Sales Force Automation
 MKTG 254 - National/Global Account and Sales Management

No Marketing major may count more than nineteen Marketing credits beyond MKTG 201 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 230 - Real Estate Principles

Any two from the following:
 FNCE 232 - Real Estate Investments
 FNCE 233 - Real Estate Finance
 FNCE 234 - GIS Applications and Use of the Internet in Real Estate Markets
 BLAW 274 - Real Estate Law

Any two from the following:
 FNCE 232 - Real Estate Investments
 FNCE 233 - Real Estate Finance
 FNCE 234 - GIS Applications and Use of the Internet in Real Estate Markets
 BLAW 274 - Real Estate Law
 FNCE 202 - Investments and Security Analysis
 FNCE 203 - Applications in Financial Management
 FNCE 204 - Financial Risk Management
 FNCE 205 - Global Financial Management
 FNCE 206 - Financial Services
 FNCE 217 - Economics for Global Business Decisions
 FNCE 221 - Risk Management and Insurance
 ECON 259 - Urban and Regional Economics
 MKTG 280 - Marketing Research

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 221 - Risk Management and Insurance

FNCE 223 - Health Insurance

or

FNCE 224 - Social Insurance

FNCE 225 - Life Insurance and Retirement Security

FNCE 228 - Risk Management: Property and Liability Exposures

One from the following:

FNCE 202 - Investment and Security Analysis (formerly FNCE 208)

FNCE 206 - Financial Services

FNCE 223 - Health Insurance

or

FNCE 224 - Social Insurance

FNCE 230 - Real Estate Principles

FNCE 298 - Special Topics

and one additional three-credit Finance or School of Business or Economics elective (200-level)

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 110* or ENGL 111*, or ENGL 105* and ENGL 109*

Quantitative Analysis

MATH 115Q and MATH 116Q or MATH 112Q, 113Q, and 114Q - MATH 210 and 211**
 STAT 110V*

Culture and Modern Society

HIST 101*
 ANTH 100* or GEOG 160*

Philosophical or Ethical Analysis

PHIL 104*

Social Scientific and Comparative Analysis/Practice

ECON 102*

Laboratory Science

CHEM 127* or 129Q*
 PHYS 151Q* and 152Q*

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

ACCT 131, 200; BLAW 271, CE 211**, 212, and 287; CSE 123**;
 ECE 220; ENGR 100**, FNCE 201; ME 221, 222, 227, 233, and 260W;
 MEM 151, 210, 211, 215W, 221, 225, and 231; MGMT 201, and 290;
 MKTG 201; MMAT 201;
 OPIM 252; Technical Electives courses (6 credits)

The Technical Electives must be 200-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 123 will not be required to take OPIM 203C and will satisfy the requirements for courses that will have OPIM 203C as a requisite.

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 296 - Manufacturing Internship, 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 and Stamford. Details of the programs may be obtained from the M.B.A. Director, School of Business, 368 Fairfield Road, Unit 2041, University of Connecticut, Storrs, CT 06269-2041.

Master of Science in Accounting Program

The M.S. in Accounting is a 30-credit program. Five areas of specialization include: Financial Reporting and Assurance Services, Information Systems, Tax, Healthcare, and Financial Services. The M.S. Program is offered both on a full-time and a part-time basis. Details of the program may be obtained from the M.S. in Accounting Director, School of Business, 368 Fairfield Road, Unit 2041A, University of Connecticut, Storrs, CT 06269-2041.

Ph.D. Program in Business Administration

With areas of concentration in Accounting, Finance, Management and Marketing, 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, 368 Fairfield Road., Unit 2041, University of Connecticut, Storrs, CT 06269-2041.

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 (CHCIS) 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.

The Small Business Institute

The Small Business Institute provides free management consulting on all types of business problems for a growing number of small businesses and start-up ventures throughout Connecticut. During this past year, management consulting reports were provided for 70 clients.

Consulting teams are composed of MBAs enrolled in either the Small Business Management and Entrepreneurship course, the Business Policy, Strategy and Planning course, or the Small Business Consulting (Independent Study) course. In some cases, the graduate students are supported in their assignments by undergraduate students. Clients may be recommended for consulting by the United States Small Business Administration, students, alumni or small business people may contact the Director of the Institute directly.

Thomas J. and Bette Wolff Family Program in Entrepreneurship

The Wolff Program sponsors a series of luncheons between highly successful entrepreneurs and honors students interested in becoming entrepreneurs. The primary objectives of the series are to provide a forum for discussing the role of free enterprise in our American economy and to expose budding entrepreneurs to successful business role models.

This program also sponsors an annual lecture series which invites top entrepreneurs from the nation to speak before our students and alumni.

The support for this program is due to the generosity of one of our most distinguished alums, Mr. Thomas J. Wolff. The department is indeed proud to have such support.

Institute of Writing

The Institute of Writing was created in 1988 to encourage excellence in professional communication. As part of the School of Business, its major responsibility is to teach both undergraduate and graduate students how to write, speak, think, and listen more effectively. In addition, the Institute sponsors a yearly prize for the best written legal brief in Connecticut, and holds seminars on legal and technical writing. It also conducts workshops for faculty on grant proposals. Outreach programs will expand in the future.

College of Continuing Studies

Krista K. Rodin, Ph.D., *Dean*

Jeetendra R. Joshee, Ed.D., *Assistant Dean*

Kenneth Fuchsman, Ed.D., *Director of Bachelor of General Studies Program*

Bachelor of General Studies

- with individualized, interdisciplinary focus, or
- with pre-identified degree focus

Admission Requirements

The BGS program is a junior/senior level program of the University. Individuals seeking admission must have completed either an associate's degree or a minimum of 60 semester credit hours from a regionally accredited college or university. Applicants must also complete a special application form and be interviewed by a program counselor. Once admitted, BGS students must maintain a grade point average of 2.0 or better and must register each semester for courses or for continuous registration.

Academic Requirements

All BGS students must complete a program of study consisting of at least 120 semester credits (included in this are the 60 credits awarded upon admission) which includes:

A. At least 30 credits of course work taken at any campus of the University of Connecticut; and,

B. At least 30 credits in junior-senior level courses (numbered in the 200 series at the University of Connecticut or approved as the equivalent level for transfer from other institutions); and

C. The Bachelor of General Studies Summary Project, a three credit course which may be applied to requirement A and B directly above. Additionally, BGS students must fulfill the University's general education requirements in effect during the year of admission. General education requirements may be fulfilled with course credits transferred into UConn as well as with courses taken while in the program. A BGS student may petition for a waiver of Group 1 (Foreign Language) requirement and of the one semester laboratory science portion of the Group 8 (Science and Technology) requirement. Ordinarily a BGS student is expected to complete degree requirements within eight years unless an extension of time to complete the program is given.

College of Continuing Studies Departments

Continuing Studies

- Bachelor of General Studies
- Non-Degree Study

Special Sessions and International Studies

- University Summer Sessions
- Winter Intersession
- International Culture Study Programs
- Weekend College
- Special Credit Extension Program

Professional Studies

- Healthcare
- Insurance and Employee Benefits Education
- Real Estate
- Paralegal Studies
- University Conference Services
- Non-profit Management
- Pharmacy Technician
- Information Technology Training

Labor Education Center

- Institutes, seminars, and workshops on labor/management issues
- Occupational and Environmental Safety and Health Programs
- Graduate Program in Humanitarian Services Administration
- Graduate Program in Human Resources Management
- Consulting

Workforce Development Institute

- Corporate Learning Center

Community School of the Arts

- Arts Education for all ages and ability levels

English Language Institute

- ESL

Distance Education Office

- Online course and program development across all disciplines

College of Continuing Studies Website

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

School of Engineering

Amir Faghri, Ph.D., *Dean, School of Engineering*
 M. E. Wood, M.S., *Assistant Dean for Undergraduate Education*
 David Jordan, Ph.D., *Director of Undergraduate Advising*

Degrees Offered and Accreditation

The School of Engineering offers four-year programs leading to

Bachelor of Science in Engineering (B.S.E.) degrees (134-credits) in

Biomedical Engineering
 Chemical Engineering*
 Civil Engineering*
 Computer Science and Engineering*
 Computer Engineering
 Electrical Engineering*
 Engineering Physics
 Environmental Engineering
 Mechanical Engineering*
 Metallurgy & Materials Engineering

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)

The BSE programs shown above that are asterisked (*), are accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (EAC/ABET). The BSE programs in Environmental Engineering, Computer Engineering, and Metallurgy & Materials Engineering, and the BS program in Management & Engineering for Manufacturing will be submitted for EAC/ABET accreditation at the earliest opportunity. The BSE in Computer Science & Engineering and the BS in Computer Science are also accredited by the Computer Science Accreditation Board (CSAB).

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. degree in Engineering 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 need the approval of the Director of Advising to change majors.

The School of Engineering also offers Minors in Bioinformatics, in Biomedical Engineering, in Environmental Engineering, in Information Technology, and in Metallurgy and Materials Engineering. Please refer to the "Minors" section of this publication for their descriptions.

Admission Requirements. See Admission to the University. All students admitted to the School of Engineering are required to take a placement examination in mathematics and a calculus readiness examination prior to registration for their first semester. Students who make unsatisfactory grades in these examinations may be required to take additional preparatory 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. All students, to be admitted to their junior year in their selected major in the School of Engineering, must have a cumulative grade point average of at least 2.0 in all courses in mathematics, physics, chemistry, and engineering applicable toward the degree. For Management & Engineering for Manufacturing majors, the cumulative grade point average requirement also includes Management and Engineering for Manufacturing courses.

Scholarships. More than \$650,000 in scholarships and awards is available annually to students in the School of Engineering.

Faculty Advisors. Faculty advisors are assigned to students entering the School of Engineering according to a student's major. Advisors assist students in their course selections, counsel them in meeting their educational and career goals, and advise them in non-academic issues.

School Academic Requirements.

Students in the School of Engineering must complete the following requirements:

Foreign Language

All students must (1) have passed the third year level in high school in a single foreign language or (2) complete one year (two semesters) of a single foreign language at the college level.

Expository Writing

ENGL 110 or ENGL 111

Culture and Modern Society

HIST 100 or HIST 101

Philosophical or Ethical Analysis

PHIL 104

Additionally, all majors are required to complete:

- University General Education requirements (see *Academic Requirements*)
- A *Plan of Study* form submitted prior to entering the junior year
- MATH 115Q and 116Q (or MATH 112Q, 113Q, and 114Q), ENGR 100 and CSE 123C
- The University writing (W) course requirement must be met through required major-specific W course work. Most programs have two W courses specified in the curriculum although in some curricula, an equivalent number of Partial Writing (P) courses are required.
- All majors, except BS in Computer Science majors, are required to complete
 - CHEM 127Q (or CHEM 129Q)
 - PHYS 151Q and 152Q
- All majors, except BS in Computer Science and BS in Management & Engineering for Manufacturing majors, are required to complete CHEM 128Q (or 130Q).
- All majors, except BS in Computer Science and BS in Management & Engineering for Manufacturing majors, are required to complete at least *two* courses in one of the departments listed in the General Education Groups 4 through 7. See the "Academic Regulations" section of this *Catalog*. At least *one* of these courses must be at the 200 level. Examples of course selections that meet this requirement are:

ANTH106 (Group 7) & ANTH 226 (Group 5)
 ENGL 210 (Group 4) & ENGL 218 (Group 5)
 PHIL 104 (Group 6) & PHIL 263 (Group 5)
 HIST 101 (Group 5) & HIST 281 (Group 5)

Credit Restrictions. The following courses may not be counted for credit toward graduation in the School of Engineering: MATH courses numbered 112 and below; MATH 118; PHYS 101 and 103; CSE 101; STAT 100; and courses labeled "independent study" or "variable topics" (e.g. course numbered 298 or 299) 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 of chemistry (CHEM courses 127Q through 138Q) and only eight credits of physics (PHYS courses 121Q through 152Q) 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. Full details, normal course sequences, and accreditation requirements can be found in the respective *Guide to Course Selection* for each major.

Bachelor of Science in Engineering in Biomedical Engineering

Biomedical Engineering majors are required to complete the following:

CE 211
 BME 210, 221, 251, 252, 261W, 271W, 290, 291
 CHEM 243
 ECE 201
 ENGR 166
 MATH 210Q, 211Q
 MMAT 201 or 243
 PNB 264
 STAT 220Q
 Professional Requirements (15 credits)

Elective Courses (5 credits)

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

Bachelor of Science in Engineering in Chemical Engineering

Chemical Engineering majors are required to complete the following:

- CE 211
- CHEG 203, 211, 212, 223, 224, 237W, 239W, 243, 247, and 251
- CHEG Electives (6 credits minimum)
- CHEM 240, 243, 244, 256, 263Q, and 264Q*
- ENGR 166
- MATH 210Q and 211Q
- Professional Requirements (12 credits)
- Elective courses (5 credits)

*Students may select CHEM 232Q, MCB 203, MCB 204 or MCB 229 as a replacement for CHEM 264Q.

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.

Bachelor of Science in Engineering in Civil Engineering

Civil Engineering majors are required to complete the following:

- CE 201, 211, 212, 222P or 262P, 234 or 260, 236, 240P, 254, 263, 271, 280W, 287, 291, and 297
- ECE 220 and ME 233
- ENGR 166 (section offered by the CE Department recommended)
- MATH 210Q and 211Q
- Professional Requirements courses (18 credits)
- Elective courses (9 credits)
- CE 291 must be taken twice before CE 280W.

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

- Construction Management Engineering* - CE 202
- Environmental/Sanitary Engineering* - CE 260, 279 (CE 260 may be used only to fill the professional requirements by students who have taken CE 234)
- Geotechnical Engineering* - CE 241, 242
- Hydraulic/Water Resources Engineering* - CE 265, 267
- Structural Engineering* - CE 238, 239
- Surveying Geodetic* - CE 276
- Transportation Engineering* - CE 255

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 237, 268, 266, CE 222P or 262P (if both taken), CE 234 or 260 (if both taken).

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

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:

- CE 211
- CSE 124C, 207, 208W, 230, 243, 254, 258
- ECE 201, 202, 204, 209W, 215, 242, 249, 252, 290, 291
- MATH 210Q, 211Q, and 227Q
- STAT 224Q
- Professional Requirements courses (9 credits)
- Design Laboratory courses (6 credits including ECE 266 or CSE 268)

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

Bachelor of Science in Computer Science

Computer Science majors are required to complete the following:

- CSE 124C, 201, 230, 237, 254, 258, 259, and 293
- MATH 227Q, and either MATH 210Q or 211Q
- Either STAT 220Q or STAT 230Q
- One two-semester laboratory course sequence from either chemistry (CHEM 127Q - 128Q, 129Q - 130Q, or 137Q - 138Q) or physics (PHYS 131Q - 132Q, 141Q - 142Q, or 151Q - 152Q)
- One additional science course (from BIOL 107Q, 108Q, or 110Q; CHEM 127Q, or 128Q; GEOL 102; PHYS 131Q, 132Q, 141Q, 142Q, 151Q, or 152Q) but not in the same department as the two-semester sequence.
- Either CSE 233 or CSE 244
- Three courses from CSE 228, 255, 257, 275, 282
- One course from CSE 262, 265, 268, and 269
- Two other CSE 200-level courses (6 credits)
- A minimum of three 3-credit courses at the 200-level in a single related area forming a cohesive body of knowledge outside of Computer Science

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

Bachelor of Science in Engineering in Computer Science and Engineering

Computer Science & Engineering majors are required to complete the following:

- CE 211
- CSE 124C, 207, 208W, 221, 228, 230, 237, 243, 244, 254, 258, and 259
- Two CSE design laboratory courses
- MATH 210Q, 211Q, and 227Q
- One of MATH 231, STAT 220Q, 224Q, or 230Q
- ECE 201, 202, and 209W
- Professional Requirements courses (9 credits)
- Elective courses (9 credits)

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

Bachelor of Science in Engineering in Electrical Engineering

Electrical Engineering majors are required to complete the following:

- CE 211
- CSE 207, and 208W
- ECE 201, 202, 204, 205, 209W, 232, 240, 241, 245, 261, and 262W
- CSE/ECE 290 and 291
- ENGR 166 or CSE 124C
- MATH 210Q and 211Q
- STAT 224Q
- Professional Requirements courses (12 credits)
- Design Laboratory courses (6 credits)
- Elective courses (7-8 credits)

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

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, Mechanical or Metallurgy and Materials 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:

- PHYS 230Q, 242Q, 255Q, 257Q, 258Z, 261Q, 285Z
- ENGR 295 (4 credits)
- MATH 210Q, 211Q, and 272Q
- Electrical Engineering* - ECE 201, 202, 204, 209W, 228, 229, 232, 241, 245, and 261; CSE 207 and 208W; MATH 227Q; PHYS 271Q; STAT 224, Elective courses (2 credits).

Mechanical Engineering - ME 220, 227, 233, 234, 242, 250 and 253; CE 211, 287; STAT 224; ME Elective Courses (6 credits); PHYS Elective courses (3 credits); Elective Courses (6 credits).

Metallurgy and Materials Engineering - MMAT 243, 244, 255, 256, 265, 266, 267, 283 and 286W; CHEG 256; PHYS 273Q and 281Q; MMAT Elective Courses (6 credits); Elective Courses (3 credits).

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

Bachelor of Science in Engineering in Environmental Engineering

Environmental Engineering majors are required to complete the following:

CE 211 and 263 (or ENVE 263)

ANSC 226

CHEG 211, 212, 223, 224, and 285 (or ENVE 285)

EEB 244W

ENGR 166

ENVE 110, 201 (or CE 201), 260 (or CHEG 281), 262, 265 or 267, 270, 279, 290W, 291W, and 296

MATH 210Q and 211Q

MCB 229

Professional Requirements courses (9 credits)

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

ARE 234, and 235

EEB 238, and 247

MCB 203, 235, and 240

CHEG 247, 251, 280, and 283

CHEM 141, 232Q, 263Q - 264Q, 270W

CE 265, 268

GEOG 205, 206, 215, 237, and 286

GEOL 206, 234C, and 245

OPIM 210

MARN 244, and 280W

ME 239

NRME 204, 210, 236Q, 237, 239, 240, 260P, and 263

PHAR 150

SOCI 259W

PLSC 259C

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

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 131 and 200

ANTH 100 or GEOG 160

BLAW 271

CE 211, 212, and 287

ECON 102

ECE 220

FNCE 201

HIST 101

MATH 210Q and 211Q

ME 221, 222, 227, 233, and 260W

MEM 151, 210, 211, 215W, 221, 225, and 231

MGMT 201, and 290

MKTG 201

MMAT 201

OPIM 252

STAT 110V

Technical Electives courses (6 credits)

The Technical Electives must be 200-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*. 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 296 – Manufacturing Internship, with instructor and advisor approval.

Bachelor of Science in Engineering in Mechanical Engineering

Mechanical Engineering majors are required to complete the following:

CE 211, 212, and 287

ECE 220

ENGR 166

MATH 210Q and 211Q

ME 205, 220, 227, 233, 234, 242, 250, 253, 255, 260W, 262, 272P, and 273P

MMAT 201, and 202

ME Requirement (6 credits)

Professional Requirements (6 credits)

Electives (6 credits)

Details on the ME and Professional Requirements are specified in the *Mechanical Engineering Guide to Course Selection*.

Bachelor of Science in Engineering in Metallurgy and Materials Engineering

Metallurgy and Material Engineering majors are required to complete the following:

ENGR 166

MATH 210Q and 211Q

CE 211 and 287

MMAT 234, 236/W, 243, 244, 255, 256, 265, 266, 267, 276, 277, 284, 285, 286, 287, and 288

ME 233 or CHEM 263Q

ECE 220

CHEG 256

Recommended Professional Elective courses - 9 credits from:

BME 271; ECE 246; ME 217 and 228; and MMAT 207, 219, 229, 234, 238, and 267

Technical Elective courses - 6 credits from:

BIOL 107; CHEM 243, 244, and 264Q; MCB 203; ME 218, 253, and 255; MATH 214Q, 215Q, 227Q, and 231Q; PHYS 216Q and 262Q; STAT 220Q, 221Q, and 224Q

Elective courses - 2 credits

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

School of Engineering Website

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

School of Family Studies

Charles M. Super, Ph.D., *Dean, School of Family Studies*
 Nancy W. Sheehan, Ph.D., *Associate Dean, School of Family Studies*
 Mary Alice Neubeck, M.A., *Director of Undergraduate Studies*

The School of Family Studies focuses on human development within the context of families and the broader social environment. Courses focus on contemporary issues and research concerning individual development and family processes. Curriculum in the Human Development and Family Studies Program emphasizes the following areas: Early Childhood Development and Education, Childhood and Adolescence, Family Relations and Counseling, Family Social Policy and Planning, and Adult Development and Aging.

Admission Requirements. See Admission to the University.

Bachelor's Degree Requirements

On the recommendation of the faculty of the school and by vote of the Board of Trustees, students who meet the specified requirements receive the degree of Bachelor of Science. Those requirements include: (1) earned a total of 120 credits, (2) a student earned at least a 2.0 grade point average for all calculable course work, (3) met the General Education Requirements, and major and related requirements.

University 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 bachelor's degree program. These are listed in the "Academic Regulations" section of this *Catalog*.

College Requirements

Students planning a major in Human Development and Family Studies must complete the following requirements. Students should note that these courses may also fulfill University General Education requirements.

Social Scientific and Comparative Analysis

HDFS 190 - Individual and Family Development
 PSYC 135 (or 133) - General Psychology II
 SOCI 107 - Introduction to Sociology

Science and Technology

PSYC 132 - General Psychology I

Human Development and Family Studies Major

The major in Human Development and Family Studies requires 48 credits in courses at the 200 level including 36 HDFS credits and 12 credits in courses related to but outside the major. No more than three credits are allowed for fieldwork, internship and peer counseling courses. 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:

Course, Title, Credits

HDFS 201. Diversity Issues in Human Development and Family Studies, 3
 HDFS 202. Human Development: Infancy through Adolescence, 3
 HDFS 204. Human Development: Adulthood and Aging, 3
 HDFS 205. Understanding Research Methods in Human Development and Family Studies *or*
 HDFS 290. Research Methods in Human Development and Family Studies, 3
 HDFS 273. Family Interaction Processes, 3

This major must include the completion of one of the following courses:

HDFS 264. Legal Aspects of the Family, 3
 HDFS 274. Public Policy and the Family, 3
 HDFS 276. Planning and Managing Human Service Programs, 3

HDFS 281. Comparative Family Policy, 3
 HDFS 285. Child Welfare, Law and Social Policy, 3

This major also must include at least 18 credits from the following courses. These courses may include courses listed above which were not taken to meet that requirement (HDFS 264, 274, 276, 281, 285). No more than 3 credits from the following group of courses may be used toward completion of these 18 credits: HDFS 221, 224, 228, 288, 292, 299.

HDFS 218. Observational Child Study, 3
 HDFS 220. Introduction to Programs for Young Children, 3
 HDFS 221. Programs for Young Children: Introductory Laboratory, 1
 HDFS 222. Integrated Curriculum in Early Childhood Education I, 3
 HDFS 223. Integrated Curriculum in Early Childhood Education II, 3
 HDFS 224. Child Development Laboratory: Practicum I, 3
 HDFS 225. Analysis of Programs for Young Children, 3
 HDFS 227. Supervised Practicum in Early Childhood Programs, 9
 HDFS 228. Advanced Practicum in Early Childhood Programs, 6
 HDFS 230. Current Topics in Early Childhood Education, 3
 HDFS 231. Infancy, 3
 HDFS 234. Social and Personality Development During Childhood, 3
 HDFS 240. The Family-School Partnership, 3
 HDFS 245. Parent-Child Relations in Cross-Cultural Perspective, 3
 HDFS 248. Aging in American Society, 3
 HDFS 250. Gender and Aging, 3
 HDFS 252. Death, Dying, and Bereavement, 3
 HDFS 259. Men and Masculinity: A Social Psychological Perspective, 3
 HDFS 260. Woman: A Developmental Perspective, 3
 HDFS 264. Legal Aspects of Family Life, 3
 HDFS 266. Introduction to Counseling, 3
 HDFS 267. Latino Health and Health Care, 3
 HDFS 268. Latinos: Sexuality and Gender, 3
 HDFS 269. Family Violence, 3
 HDFS 270. Low Income Families, 3
 HDFS 271. Black American Family Patterns, 3
 HDFS 272. Family and Work, 3
 HDFS 274. Public Policy and the Family, 3
 HDFS 275. Family Pathology, 3
 HDFS 276. Planning and Managing Human Services Programs, 3
 HDFS 277. Issues in Human Sexuality, 3
 HDFS 278. Family in Society, 3
 HDFS 279. History of the Family, 3
 HDFS 280. Material Culture in American Family Life, 3
 HDFS 281. Comparative Family Policy, 3
 HDFS 283. Family Resource Management, 3
 HDFS 284. Adolescence: Youth and Society, 3
 HDFS 285. Child Welfare, Law and Social Policy, 3
 HDFS 287. Parenthood, 3
 HDFS 288. Supervised Field Experience, Arr.
 HDFS 292. Research Practicum in Human Dev. and Family Studies, Arr.
 HDFS 295. Senior Seminar in Research Methods, 3
 HDFS 298. Selected Topics in Human Dev. and Family Studies, Arr.
 HDFS 299. Independent Study for Undergraduates, Arr.

Individualized Major

Students who are not on scholastic probation and have a total GPA of 2.5 may apply for an individualized major program. The major consists of 36 credits, all numbered 200 or above, from HDFS and at least one other department. No more than 3 credits of internship or fieldwork from any school or college may be used towards the 36 credits. A minimum of 18 credits must be in HDFS. The student must follow the General Education Requirements of HDFS. Students should submit proposals after they have earned at least 30 credits, but prior to beginning their final 30 credits of study. The student must maintain an overall GPA of 2.5 and graduate with both a total and major GPA of 2.5.

For further information and application forms, contact the Director of the Individualized Major Program, Family Studies Building, Room 320 (860) 486-3631.

A minor in Gerontology is administered under the auspices of the Center on Aging and Human Development in the School of Family Studies. Please refer to its description in the "Minors" section of this *Catalog*.

School of Family Studies Website

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

School of Fine Arts

David G. Woods, Ph.D., *Dean, School of Fine Arts*
 Ted Yungclas, B.S., *Assistant Dean, School of Fine Arts*

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 which must be satisfied as part of every bachelor's degree program. These requirements appear in the "Academic Regulations" section of this *Catalog*.

Selected art and art history, dramatic art and music courses may be used to satisfy the "W," "C," and "Q" course requirements and the Group 4 (Arts) requirement.

Supplementary Scholastic Standard. Fine Arts students 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 associate dean of the school.

Bachelor's Degree Requirements

Upon the recommendation of the faculty, the various bachelor's degrees are awarded by vote of the Board of Trustees to students who have met the following requirements:

1. Earned at least 120 credits applicable toward the degree;
2. earned at least a 2.0 grade point average for all calculable course work;
3. met all the requirements listed above for the specific degree taken.

Exemptions and Substitutions

Students who desire to be excused from any of the requirements or courses should consult the pertinent department head and the associate dean of the school.

Art and Art History

Degrees offered

Bachelor of Fine Arts
 Bachelor of Arts in Art History

Art

BFA 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 130, 152

Foundation Courses: Studio Concepts: ART 111

Criticism and Interpretation: ART 113

Basic Studios*: Painting (ART 164), Photography (ART 166), Printmaking (ART 160), and Sculpture (ART 163),

Art History: Twelve credits in Art History, one 100 level offering to be taken in the first two years of study.

Senior Project: ART 297

*Note: All basic studios should be completed no later than the completion of the fifth term. Studio Art credit minimum requirement is 66 credits.

Areas of Concentration

All concentrations consist of a minimum of 18 credits of 200 level courses, with requirements for the various areas as specified below.

Communication Design - ART 165, 260, 261C, 264, 267, 269, 274

Illustration - ART 153, 204, 239, 240, 255, 261C, 271, 272 (repeated once), 274

Painting - ART 153, 235, 236, 237, 238 and six additional credits in the 200-level courses in the painting area to be determined by student interest and faculty advisement.

Photography - ART 256, 262 (may be repeated once), 263 (may be repeated once), 265, 266 (may be repeated once); ARTH 267, 268.

Printmaking - ART 153, 204, 221, 222, 226 (may be repeated up to 18 credits).

Sculpture - ART 153, 216, 217, 219, 220 plus 6 additional credits in any of the 200-level courses in the three-dimensional area to be determined by student interest and faculty advisement.

Individualized Studies: - A program of at least 36 credits (including ART 297) on the 200-level, drawn from two or more areas, designed under faculty advisement.

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 299. 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 work placement in art for credit, either a Studio Internship (ART 295) or Co-operative Education in Art (ART 296).

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 100-level courses in the following: ARTH 137, 138, 140, 141, and 191, and eight 200-level courses in the history of art with at least one 200-level course from each of the following areas:

A. Ancient: ARTH 243, 246, 280*

B. Medieval: ARTH 257, 258, 259, 262, 280*

C. Renaissance-Baroque: ARTH 250, 251, 273, 278*

D. Modern-Contemporary: ARTH 209, 252, 253, 254, 267, 268, 275*, 276*, 279*, 281, 282, 291, 292

E. Non-Western: ARTH 256, 275*, 276*, 277, 278*, 279*, 285, 286, 287, 288, 289

In addition, art history majors must take two studio art courses on any level for which they meet the prerequisite. Four related 200-level courses must be taken outside the department.

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 - 2 minute contemporary dramatic monologue

Prospective Design/Technical major - interview

Prospective Puppetry Arts majors - audition and interview

Prospective Theatre Studies majors - interview

Requirements - BFA

All students must complete the following core courses: DRAM 107 (three semesters, except Acting majors) 108, 130, 131, 143 (except Design/Technical majors), 163, and any two from 230, 231, 235, or 282.

In addition, completion of the following courses:

Acting major:

DRAM 120, 144, 149, 150, 153, 220, 222, 239, 240, 241, 243, 244, 249, 268, 269, 276, and 277. Three credits of DRAM 159, one each in set running, costume running, and lighting/sound running, and three credits of DRAM 259 chosen from acting, assistant stage managing, dance or management.

Design/Technical major:

DRAM 105, 106, 109, 118, 200, 207C, 211, 213, 215, 299 (12 credits), and any three additional courses from 201, 203, 208, 212, 214, 247, 248.

Puppetry major:

DRAM 120, 144, 200, 207C, 211, 213, 214, 247-248, 278, 279. Four DRAM 259 credits to be selected from the following areas: acting, construction, costuming, lighting, painting, properties, puppetry performance, running crew.

Requirements - B.A. - Theatre Studies

Completion of the following courses: DRAM 107 (6 credits), 108, 130, 131, 143, 163, and any two from 230, 231, 235, or 282.

Completion of 18 additional credits in DRAM at the 200 level.

Completion of 12 credits at the 200 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. These 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: curriculum with a concentration in music.

Bachelor of Arts in Music with an emphasis in Music History.

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

1. Completion of the following courses: MUSI 101, 122, 145, 146, 245, 246, 284, 285, 286 and one additional 200 level music history course.
2. Convocation (MUSI 101), Private Lesson (MUSI 122 or 222), and Ensemble (MUSI 110, 111, or 112) is required each semester. B.M. Theory students need 7 semesters of private lessons; B.A. and B.M. keyboard students need 4 semesters of ensemble.
3. Four performances representing the student's primary instrument. (See specific guidelines under additional requirements.)
4. Completion of piano proficiency equivalent to MUSI 123 Class Piano Level 4.
5. Students with a keyboard emphasis must complete 4 semesters of MUSI 124 (B.M. and B.S. students must complete 4 semesters of MUSI 124 before promotion to 200 level applied study).

Additional Requirements – BA

1. 15 credits in related area, with a minimum of 9 credits in one department. (Courses may be used to fulfill general education requirements).
2. 9 credits outside Music Department in addition to general education requirements and related area.
3. Minimum of 52 credits of music courses, of which 20 must be at the 200's level.
4. Four performances in recital or convocation, as a soloist, chamber musician, or accompanist.

Music History Emphasis

- a. Music History courses: MUSI 291, and three courses chosen from MUSI 210W, 211W, 213W, 214W, 215W, 271, 272 and 274: one of these three courses must be 271, 272 or 274, and one must be on a pre-1700 topic.
- b. Music Theory courses: Two courses from MUSI 257, 277, 258W, 279Q.
- c. Foreign language: Option A—Two semesters of German, if another language was taken to fulfill the group requirement. Note: Students will take 100 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 200 level courses in German for 3 credits.

Jazz Emphasis

- a. MUSI 138, 238, 239, 240
- b. For the last four semesters of this degree program, Jazz Ensemble (MUSI 115) 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 122). 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 – BM

1. Completion of MUSI 257 and 258.
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 222 (4 semesters), MUSI 229, 232, 233 or 234, 297.
- b. Two of the four following courses: MUSI 251, 275, 277 or 279.
- c. Four semesters of 113, Small Ensemble.
- d. A half recital during the junior year as a prerequisite for MUSI 297. Promotion to MUSI 222 is a prerequisite for the half recital.
- e. A total of 81 credits in music.

Performance emphasis: Vocal

- a. MUSI 119 (4 credits), 126, 127, 128, 129, 222 (4 semesters), 232, 233, 281, 297, two courses from MUSI 225, 226, 227, or 228; 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 297. Promotion to MUSI 222 is a prerequisite for the half recital.
- c. A total of 88 credits in music.

Theory emphasis

- a. MUSI 232, 251, 275, 277, 279Q, and one or two courses (minimum of 2 credits) from 138-238, 217, 239 or 292.
- b. MUSI 299 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 125 (5 credits).
2. Completion of the requirements of the Neag School of Education, including EDCI 258, 266, and 277.
3. A minimum of 36 200's level credits in music consisting of the following courses: MUSI 222, 232, 233 or 234, 245, 246, 257, 273.
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*
 Ronald Growney, Ph.D., Associate Dean, *College of Liberal Arts and Sciences*
 Veronica Makowsky, 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 and the Vice Chancellor, 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 total of 120 credits.
2. earn at least 45 credits numbered 200 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

Students may meet this requirement by completing the courses described in 1, 2, or 3 below. 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 200 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 fulfilling all the major requirements of any two departments or programs within the College. Candidates shall choose one of the two departments or programs as their primary major. They shall register with that department or program and receive one degree appropriate to that department or program. (For two different degrees, see Additional Degree information under Academic Regulations section of this *Catalog*.)

3. Individualized major. Students with a grade point average of 2.0 or higher may apply for an individualized major. The 36 concentration credits numbered 200 or above may come from two or more departments in the University. At least 18 of the credits shall come from departments of this College. Students must earn a grade point average of 2.5 or better in the 36 concentration credits. The student may include no more than 6 credits of independent study nor more than 12 credits of field work.

Students may submit proposals after completing three semesters of work (45 credits). The latest they may submit proposals is prior to beginning their final 30 credits of study. Internship, field work, research, or study abroad are recommended as part of the proposed plan of study. The proposed field of concentration must show coherence of subject matter or principle and have academic merit. For further information and application forms, contact the Individualized Major Program Director at (860) 486-3631.

Plan of Study

Students shall file with the department of their major, after approval by their major academic advisor, a tentative plan of study on a form provided by the advisor. Students must file the tentative plan of study by the beginning of advance registration in their fifth semester.

Students shall file a final plan of study with the Registrar by the end of the fourth week of the semester in which they expect to graduate. The advisor and the department head shall approve the final plan of study.

Students completing a double major must file a plan of study for each major.

Bachelor of Arts (BA) & Bachelor of Science (BS)

Students may earn a Bachelor of Arts in most majors. Bachelor of Science candidates must major in Biology, Chemistry, Geology and Geophysics, Individualized, Mathematics, Physics, Psychology or Statistics.

The following areas are required of all students in the College of Liberal Arts and Sciences. These courses also fulfill University General Education requirements, if they are not taken pass/fail.

Foreign Language (Group 1)

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 (Group 2)

ENGL 105 and 109 or either ENGL 110 or 111

Three "W" courses, two required at the 200 level. No student who has not passed the writing component may pass the course.

Mathematics (Group 3)

Passing score on Q-course readiness test or MATH 101.

Three Q-courses and one C-course.

If not a high pass, one Q-course must be in mathematics or statistics.

Literature and the Arts (Group 4)

Literature one course from: (* Indicates foreign language prerequisite)

CAMS 103, 211*, 221*, 244

ENGL 112, 113, 127, 205, 206, 210, 212, 216, 219, 230

FREN 261*, 262*, 270W

GERM 240W, 252*, 253*, 254*, 255*

ILCS 101, 243*, 244*

PORT 140

RUSS 231, 232

SPAN 187, 281*, 282*

(Plus any course listed in the *College of Liberal Arts and Sciences Student Workbook*, available online at: <http://www.services.clas.uconn.edu>).

Arts one course from:

ART 135

ARTH 137, 138, 141, 191, 285, ARTH 256/ANTH 252

DRAM 101, 110

FREN 171

GERM 171, 281

MUSI 191, 193, 194

WS 104

Culture and Modern Society (Group 5)

HIST 100 or 101

Western Culture one course from: (* Indicates foreign language prerequisite)

CAMS 101, 102, 243

ECON 201, 203

FREN 169, 210*, 211*

GEOG/URBN 130

GERM 169, 251

HEB/JUDS 103

HIST 121, 206

INTD 294

ILCS 238*

JOUR 102

POLS 121

RUSS 241

SPAN 200*

Non-Western/Latin American Culture one course from: (* Indicates foreign language prerequisite)

ANTH 100, 222, 223, 225, 226, 227, 230, 238

ECON 204, 204W

ENGL 120, 218

GEOG 160
 HIST 106, 108, 205, 222, 223, 281, 282, 285, 288
 LAMS 190
 PHIL 263, 264
 POLS 143, 228, 229, 239, 279, POLS 203/WS 203
 SOCI 226, 227
 SPAN 201*
 WS 124

Philosophical/Ethical Analysis (Group 6) one course from:

LING 101
 PHIL 101, 102, 103, 104, 105, 106
 POLS 106
 SCI 240

Social Scientific and Comparative Analysis (Group 7)

Bachelor of Arts (BA) three courses from:

Bachelor of Science (BS) one course from:

ARE 110, 150
 ANTH 106, 220
 COMM 100
 ECON 101, 102, 111, 112
 GEOG 104, 200
 LING 102
 POLS 132, 173
 PSYC 133/135
 SOCI 107, 115, 125
 WS 103

Bachelor of Arts Only (Group 8)

Laboratory Science one course from:

BIOL 107, 108, 110, BIOL 102 or 103 or PVS 103
 CHEM 122, 127Q, 128Q, 129Q, 130Q, 137Q, 138Q
 GEOL 102
 PHYS 101Q or 107Q, 104Q, 121Q, 122Q, 131Q, 132Q, 141Q, 142Q, 151Q,
 152Q, 155Q

An additional course from **Laboratory Science** or one of the following **Science** courses:

CHEM 101
 GEOG 205
 GEOL 101, 111
 MARN 170
 PHYS 103Q
 PSYC 132
 SCI 110

Bachelor of Science Only (BS)

Science (Group 8)

All of the following:

One of the Chemistry sequences: 127Q, 128Q; or 129Q, 130Q; or 137Q, 138Q
 One of the Mathematics sequences: 112Q, 113Q, 114Q; or 115Q, 116Q; or 120Q,
 121Q and one of the following: MATH 210Q, 211Q, 220Q, 221Q, BIOL 107,
 BIOL 108
 One of the Physics sequences: 121Q, 122Q, 123Q; or 131Q, 132Q; or 141Q,
 142Q; or 151Q, 152Q

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 – stressing 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 majors must take the following courses: a 100 level Anthropology course, as well as, ANTH 214, 220, 233, and 244. Students must take at least one course in an ethnographic area (ANTH 221, 222, 223, 225, 226, 227W, 228, 229, 230, 238, 241, 242W, 270).

In addition, majors must take at least three 200-level anthropology courses two of which are not ethnographic area courses. We strongly recommend that majors take ANTH 212 and a course in methodology. These two courses should be taken during the student's senior year, if possible. Students may choose from a wide variety of related courses in other departments.

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

Please refer to the School of Fine Arts for the description of the major in Art History.

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 (numbered in the 100's) are shared by the three departments and are listed under General Biology (BIOL). Courses above the 100's level 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 100's 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 107 and 108, but majors interested primarily in botany may wish to take BIOL 110 in addition or may substitute BIOL 110 for BIOL 108. Students wishing to complete this major must take at least 24 credits of 200's level courses from Biology: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, Independent Study (course #299 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 200, MCB 210, or MCB 213

B. EEB 244/244W or EEB 245/245W.

C. PNB 250, MCB 259, or PNB 274-275. (Note: PNB 274-275 must be taken in sequence to be counted towards the Biology major.)

A minor in Biological Sciences is described in the "Minors" section.

Biotechnology Concentration: Students interested in a career in biotechnology are encouraged to follow a program emphasizing biochemistry, microbiology and molecular genetics and leading to a B.S. degree in Biology with concentration in Biotechnology. It will be difficult to complete the Biotechnology curriculum unless the following courses have been completed by the end of the second semester: English 105, 109, Mathematics 115, 116 (or MATH 112, 113, 114), Chemistry 127-128, Biology 107 and either Biology 108 or 110. The major in Molecular and Cell Biology (see below) is also appropriate preparation for further study in biotechnology.

Biophysics Major

This B.S. program emphasizes the physical and chemical foundations of molecular biology. Prerequisite courses are Chemistry 127, 128, Mathematics 115, 116 (or MATH 112, 113, 114), 210, 211, and Physics 131, 132 or equivalent. For the major, the following courses should be taken: Chemistry 243, 244 (or 248, 249), 245, 263, 264, (265 optional), Biology: MCB 204, 208, 209. One or more of the following are recommended for breadth of background; Biology: MCB 210, 212, 213, 226, 229, Chemistry 232, Computer Science 110, 130. Students are encouraged to contact biophysics faculty in the sophomore year or early in the junior year about participating in research programs, as Biology: MCB 292 or 299.

Ecology and Evolutionary Biology Major

Students majoring in Ecology and Evolutionary Biology may opt for either a Bachelor of Arts degree or Bachelor of Science degree. Both BA and BS degree candidates must complete the following courses in addition to the general CLAS requirements for these degrees:

Biol. 107, and Biol. 108 or 110 (8 cr. total)

Chem. 127 and 128 (8 cr. total)

Requirements for the EEB Major (BS or BA)

I. Both of the following core courses:

EEB 244 or 244W General Ecology (4 cr.)

EEB 245 or 245W Evolutionary Biology (3-4 cr.)

II. At least one of the following animal diversity courses:

- EEB 200 Biology of Fishes (4 cr.)
- EEB 214 Biology of the Vertebrates (3 cr.)
- EEB 252 Field Entomology (var. credits)
- EEB 254 Mammalogy (4 cr.)
- EEB 265 Herpetology (4 cr.)
- EEB 273 Comparative Vertebrate Anatomy (4 cr.)
- EEB 275 Invertebrate Zoology (4 cr.)
- EEB 281 & 287 Ornithology & Ornithology Lab (4 cr.)
- EEB 283 Introduction to Animal Parasitology
- EEB 286 General Entomology (4 cr.)

III. At least one of the following plant diversity courses:

- EEB 203 Developmental Plant Morphology (4 cr.)
- EEB 204 Aquatic Plant Biology (4 cr.)
- EEB 227 Biology of Plants (3 cr.)
- EEB 240 Biology of Bryophytes and Lichens (4 cr.)
- EEB 271 Systematic Botany (4 cr.)
- EEB 272 The Summer Flora (3 cr.)
- EEB 280 Evolution of Green Plants (4 cr.)
- EEB 290 Biology of the Algae (4 cr.)

IV. A course in physiology - EEB 296 Physiological Ecology of Animals (students who take PNB 250 as a related course are not required to take EEB 296).

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 200-level or above, which may include courses in I - IV above.

VIII. Related Course Requirements: At least 12 credits of 200 level science courses outside EEB, which must include either MCB 200 (Human Genetics) or 213 (Concepts of Genetic Analysis). One semester of organic chemistry is recommended.

A minor in Ecology and Evolutionary Biology is described in the "Minors" section.

Molecular and Cell Biology Major

This B.S. program is suitable for students with interests in biology at the cellular and subcellular level, including the areas of biochemistry, cell biology, developmental biology, molecular genetics, and microbiology, and their applications in biotechnology and medical science. Many opportunities for independent research projects in these areas are open for undergraduates.

The following 100's level courses are required: BIOL 107; CHEM 127, 128; MATH 115, 116 or 112, 113, 114; and PHYS 131, 132 or 121, 122, 123. Courses required for the major: at least 24 credits in MCB courses at the 200-level or above, including:

Group 1: At least 3 of the following core courses

- MCB 200 Human Genetics (Note: MCB 213 Concepts of Genetic Analysis, may be substituted for MCB 200)
- MCB 204 Biochemistry
- MCB 210 Cell Biology
- MCB 229 Fundamentals of Microbiology

Group 2: Chemistry 243 and 244: Organic Chemistry

Group 3: Laboratory requirement: At least 3 laboratory courses chosen from the following list:

- MCB 203 Introduction to Biochemistry
- MCB 204 Biochemistry
- MCB 213 Concepts of Genetic Analysis
- MCB 214 Experiments in DNA identification
- MCB 215 Experiments in Molecular Genetics
- MCB 226 Advanced Biochemistry Laboratory
- MCB 229 Fundamentals of Microbiology
- MCB 233 Pathogenic Microbiology
- MCB 235 Applied Microbiology
- MCB 240W Bacterial Diversity and Ecology
- MCB 299 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 250, MCB 259, and EEB 244 or 245. Majors must complete at least 24 credits in MCB courses at the 200 level or above.

Where appropriate, a course may fulfill more than one requirement; e.g., MCB 204 and 229 count towards the Group 1 requirement as well as the Group 3 Laboratory requirement. BIOL 295 may be used to count toward the 24 credits of required MCB courses.

A minor in Molecular and Cell Biology is described in the "Minors" section of this *Catalog*.

Physiology and Neurobiology Major

Physiology and Neurobiology Major

This major, which leads to a Bachelor of Science, 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 100's level courses are required:

- BIOL 107, 108; CHEM 127-128; MATH 115-116 or 112-113-114;
- PHYS 131-132 or 121-122-123 or 141-142-143

PNB majors must take no fewer than 24 credits in PNB courses numbered 200 and above. This must include all of the following core courses: PNB 274-275, 251, 262. The remaining credits needed to fulfill this requirement should be selected from the available PNB courses, including PNB 225, 250, 260, 263W, 292W, 298, 299. (At most 3 credits from among PNB 292W, 298 and 299 may count towards the 24 credit requirement.)

PNB majors must also take all of the following courses, which count as the related group:

- CHEM 243, 244; MCB 203 or 204 and either MCB 200 or 213.

In addition, students are urged to take:

- CHEM 245; EEB 244 or 244W or 245 or 245W; MCB 210.

There is a minor in Physiology and Neurobiology. Additionally, 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*.

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 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 137 and 138 in their first year. Other prospective majors should take 127-128.

Chemistry majors must complete the following mathematics and physics sequences:

- MATH 115 and 116 (or MATH 112, 113, and 114)
- MATH 210 (or 220)
- MATH 211 (or 221)
- PHYS 131-132 (or PHYS 121-122, and 123)

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 200 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 243, 244, 245, (Organic), 263, 264, 265 (Physical), 210, 214, 215 (Inorganic) and 232, 234 (Analytical).

Bachelor of Arts

At least 28 credits of Chemistry courses numbered 200 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 215 and 234.

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.

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. Advanced courses from at least four different departments are required. 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 39 200-level credits, no more than 21 of which may be taken in any one department. There are several 100-level courses that are required preparation for the 200-level requirements. These courses should be taken during the first four semesters and may fulfill general education requirements.

Core Courses (12 credits)

Four courses from four departments:

ANTH 244, CSE 282, LING 202, PHIL 241, PHIL 250, PSYC 256

Research Courses (6 credits)

Statistics (one of the following):

PSYC 202Q, STAT 201Q, STAT 220Q (Calculus level)

Research Methods (one of the following):

LING 215, PSYC 210W, PSYC 211W, PSYC 215W, PSYC 232W, PSYC 267

Formal Systems Courses (3 credits)

CSE 254, CSE 257, CSE 259, MATH 211Q, MATH 215Q, MATH 216Q, MATH 227Q, MATH 231Q, MATH 237Q, MATH 279Q, PHIL 211Q, PHIL 214Q

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 232, CSE 298, LING 205Q, LING 206Q, LING 208W, PHIL 210, PHIL 212W, PSYC 220, PSYC 221, PSYC 236, PSYC 239, PSYC 254, PSYC 257, PSYC 260, PSYC 291

Electives (6 credits)

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

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 Associate Professor Jay Rueckl, Chair, Cognitive Science Steering Committee, 121 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.

Communication Disorders. The undergraduate concentration is a pre-professional 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.

Students who elect the concentration in Communication Disorders must take: CDIS 201, 202, 242, 247, 248, 249, and 250.

In addition, students must take at least two (2) of the following courses: CDIS 244, 251 and 253.

The Master's degree programs in Speech, Language and Hearing are accredited by the Council on Academic Accreditation of the American Speech-Language Hearing Association. The Speech and Hearing Clinic is accredited by the American Speech-Language Hearing Association's Professional Services Board.

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

COMM 100 The Process of Communication
COMM 105 Principles of Public Speaking
COMM 200Q Research Methods in Communication

In addition, students must take at least two (2) of the following Core courses:
COMM 210 Persuasion
COMM 220 Interpersonal Communication
COMM 230 Effects of Mass Media

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:

1. 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.
2. Cumulative GPA of at least 2.8.
3. Successful completion of COMM 100.

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

We recommend that students interested in the Communication concentration complete COMM 105 and COMM 130 before junior year, if possible.

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.

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

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 200 level courses, including two intermediate theory courses (ECON 218 or 218Q and ECON 219 or 219Q), plus at least nine credits in either quantitative skills courses (ECON 212V-217) or applied theory courses which have an intermediate theory course as a prerequisite, and have a calculus course recommended (ECON 237-289). ECON 300 level courses may count as part of the nine required credits in the ECON 212V-217 and ECON 237-289 series. Economics majors are also required to take twelve credits in 200 level courses in fields related to economics or a

minor related to economics, plus STAT 100V or 110V and one of the following: MATH 106Q, 113Q, 115Q, 118Q, or 120Q. MATH 115Q and STAT 110V are preferred.

The intermediate theory courses are open to sophomores and should be taken early in the student's major program. Recommended courses for economics majors include ECON 212 and ENGL 249. Qualified students may substitute some 300 level courses for 200 level courses with the consent of instructor and the student's faculty advisor. The department has special requirements for economic majors in the University Honors and Degree with Distinction Programs, and for majors who qualify for the department's Economics Scholars and Quantitative Certificate Program.

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.

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

English

To satisfy the English major, the student must present for the degree ten 200-level three-credit courses in this department. Courses elected in satisfaction of one of the following requirements will also satisfy one or more others, when course content warrants.

Five courses (Group A) must be 200-level English courses whose organizing principle is the study of literary works within a specific historical period: 205, 206, 220, 221, 222, 223, 226, 270, 271.

Four courses (Group B) must be 200-level English courses whose organizing principle is the sharply focused study of a literary genre, theme, movement, topic, school, or author: 200, 204, 210, 211, 212, 216, 217, 218, 219, 227, 230, 231, 232, 233, 234, 236, 237, 238, 239, 240, 242, 244, 264, 266, 267, 268, 272, 274, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 293, 295, 298, 299.

One course must be in Shakespeare.

At least three courses must focus upon literature written before 1800: 204, 205, 220, 221, 222, 230, 231, 232, 242, 244, 270. Others, such as 217, 219, 240, 264, 266, 267, 268, 279, 280, 281, 282, 283, 284, 291, 293, 295, 298, 299 may occasionally apply as approved by the advisor.

One course must focus upon literature that expresses the formation of diverse cultural identities: 218, 227, 233, 234, 272, 274, 276, 277, 278, 285, 286, 287, 288, 289, 290. Others, such as 217, 264, 267, 268, 283, 284, 291, 293, 295, 298, 299 may occasionally apply as approved by the advisor.

Any 200-level English course will count as the tenth course to fulfill the major.

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 University sponsors an academic program at The City University in London. Students take university-level courses in the history of London, British art history, British history, English literature and other subjects in the humanities.

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.

Environmental Science majors must pass the following core requirements:

A. 100's Level Course Work (49-52 credits)

BIOL 107
BIOL 108 or 110
CHEM 127, 128
ECON 112 or ARE 150
GEOL 102
MARN 170
MATH 112, 113, 114 or 115, 116
PHYS 121, 122, 123 or 131, 132
STAT 100 or 110 or 220

B. 200's Level Course Work (30-31 credits)

Environmental Policy and Law

Select one course from:

ARE 234(W) - Environmental and Resource Policy
NRME 240 - Environmental Law

Environmental Economics

ARE 235 - Environmental and Resource Economics

Atmospheric Science

Select one course from:

NRME 241 - Meteorology
NRME 271 - Environmental Meteorology

Terrestrial Systems

Select one course from:

GEOL 251 - Earth Surface Processes
PLSC 250 - Soils

Hydrosphere Dynamics

Select one course from:

EEB 247 - Limnology
GEOL 234 - Introduction to Ground Water Hydrology
MARN 220Q - Environmental Reaction and Transport
MARN 270 - Descriptive Physical Oceanography
NRME 211 - Watershed Hydrology

Ecological Interactions

EEB 244(W) - General Ecology

Human Impact

GEOG 236 - Human Modifications of Natural Environments

Environmental Health

ANSC 226 - Environmental Health

Chemical and Microbial Reactions

Select one of the following two-course options:

- CHEM 243, 244 (Organic Chemistry)
- CHEM 141 (Organic Chemistry) and MCB 229 (Fundamentals of Microbiology) or MCB 203 (Introduction to Biochemistry)
- CHEM 141 (Organic Chemistry) and GEOL 235 (Chemical Hydrogeology).

In addition to these core 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: all consist of 4 or 5 courses in a specialized field, including a field course or an internship experience.

Environmental Chemistry (Chemistry) - Students must pass the following courses: CHEM 232Q, 245, 263Q, 264Q, 370

Environmental Biology (Ecology and Evolutionary Biology) - All students must take EEB 293S. In addition, they must select at least one course from each of the following groups.

Group I -- Ecological Systems and Processes

EEB 238, 245, 294, 296, 310, PLSC 250

Group II -- Plant Ecology and Systematics

EEB 227, 256, 268, 271, 272, 277, 280

Group III -- Vertebrate Ecology and Systematics

EEB 200, 214, 281, 454, 465

Group IV -- Invertebrate Ecology and Systematics
EEB 243(W), 252, 275, 288

Environmental Geography (Geography) - Students must pass the following: GEOG 232, 285W, 286W. In addition, students must pass one of the following courses: 240C, 246C

Environmental Geoscience (Geology) - Students must pass the following: GEOL 212, 252, 253

Marine Science (Marine Science) - Students are required to complete four courses from the following list, but with no more than two courses from a single group.

Group A: 294, 236, 380, 331, 332

Group B: 280W, 371, 325

Group C: 275W

Group D: 270*, 372, 376

*Students may not use MARN 270 to satisfy both a hydrospheric dynamics requirement and a related area in marine sciences. Students choosing a concentration in marine science should satisfy their hydrospheric dynamics requirement with another course from that group.

Environmental Science also offers the following concentrations through the College of Agriculture and Natural Resources. For complete requirements, refer to the Environmental Science description in the "College of Agriculture and Natural Resources" section of this *Catalog*.

Resource Economics (Resource Economics)

Environmental Health (Animal Science)

Natural Resources (Natural Resources Management and Engineering)

Soil Science (Plant Science)

Geography

Geography is a field of study that investigates the surface of the earth as the scene of human activity. Because our living environment has its origins in physical processes and human activities, geographers use both natural and social science concepts.

Geography students are prepared to enter a wide range of careers in business, planning, government, and teaching. In private sector firms, geographers select locations for capital investment, determine market or service areas, assess the impact on the environment of proposed changes in land use, and develop effective strategies for planning. At all levels of government geographers work in teams with other disciplinary experts. Many geographers work for Federal mapping agencies, the Bureau of the Census, the Department of State, the U.S. Geological Survey, or other agencies. The undergraduate program also provides students with the background to pursue graduate degrees in geography or related fields such as urban and regional planning. At the University of Connecticut, graduate study in regional analysis and geographic information systems leads to the M.A. and Ph.D. degrees.

Requirements for the Major. The geography major requires 24 credits in 200-level geography courses and 12 credits of related course work in other departments. Majors complete a basic core of courses (Geography 200 or 204, Geography 205, and Geography 242Q) and select 15 additional geography credits, including at least one "W" course numbered 280 or higher in consultation with their departmental advisor.

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 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 cleanup of environmental contaminants in soil 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 Department of Geology and Geophysics offers students an opportunity to explore these ideas in all of our courses and programs of study. The curriculum is designed to meet the needs of a variety of students from those who wish to broaden their educational backgrounds with a science elective, to those who

wish to pursue a technical or professional career in the earth sciences. The Department strives to give students both an appreciation of the natural world and the analytical skills required to investigate geologic and environmental problems.

The Department of Geology and Geophysics offers curricula leading to (1) the Bachelor of Arts Degree, (2) the Bachelor of Science Degree with options in Geology and in Geophysics, (3) a minor in Geology and Geophysics and (4) fulfillment of the Environmental Geoscience Concentration within the Environmental Science B.S. Degree program. Each of these programs provides instruction in fundamental geological principles and methods, differing from one another only in the breadth and depth of study. Those students interested in careers in interdisciplinary environmental fields such as geobiology, hydrogeology, engineering geology, and near surface geophysics can follow either the Bachelor of Arts or Bachelor of Science programs and select appropriate additional course work in consultation with their advisor. It is recommended that students with an interest in study in the geosciences meet with an advisor in Geology and Geophysics as early as possible.

Bachelor of Arts Degree The Bachelor of Arts degree program is designed for the student with a broad interest in the geosciences but who wishes to pursue a career in environmental law, resource economics, geobiology, or oceanography, or who plans to teach earth science at the secondary school level. Students intending to obtain a Bachelor of Arts degree must take at least 24 credits in geology and geophysics courses numbered 200 or above and 12 credits of related courses numbered 200 or above in other departments. While the B.A. student may select from any of our 200-level courses, completion of the Geology Core, comprising GEOL 212, 250, 251, 252, and 253 ensures broad training in the field.

Bachelor of Science Degree The Bachelor of Science degree is designed to provide a solid foundation for a professional career or graduate study in the geosciences. Students may complete either the Geology Option or the Geophysics option.

Geology Option: (1) GEOL 102, 212, 250, 251, 252, 253, (2) Four courses selected from: GEOL 214Z, 215V, 217, 219, 220, 223, 227, 229, 234, 235, 240, 271, 274Q, 276Q, 277Z, 278Z, (3) 12 credits in courses numbered 200 or above in the related fields of mathematics, science, engineering, or natural resources management and engineering, and (4) Additional courses numbered 200 or above in Geology and Geophysics or related fields to bring the total to 48 credits.

Geophysics Option: (1) GEOL 102, (2) Three courses selected from GEOL 250, 251, 252, 253, (3) Three courses selected GEOL 274Q, 276Q, 277Z, 278Z, (4) Two courses selected from: GEOL 212, 214Z, 215V, 217, 219, 220, 223, 227, 229, 234, 235, 240, 271, (5) MATH 210 or 220, and MATH 211 or 221 or 227, (6) Two courses selected from PHYS 209, 242, 246, 255, 256, 257, (7) Additional courses numbered 200 or above in Geology and Geophysics or related fields to bring the total to 48 credits. Courses not used to satisfy requirement (2) or (3) may be used to meet requirement (4). Course listed under (5) and (6) may also count towards 12 credits in a related field.

Environmental Geoscience Concentration The department is associated with the Environmental Science degree program, and its faculty serve as advisors to students who elect the Environmental Geoscience concentration.

Bachelor of Science Degree with Double Major in Environmental Science and in Geology and Geophysics. Students who use the Environmental Geoscience concentration meet the requirements for the Bachelor of Science degree with a major in Environmental Science, can also meet the requirements for a second major in Geology and Geophysics, Geology Option, by completing additional coursework selected in consultation with a faculty advisor in Geology and Geophysics.

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 zymurgy. Specialization in history is especially valuable as pre-professional training for law, government, diplomacy, and journalism and for library, archival, and museum administration.

Honors students who plan to major in history will normally take HIST 203.

Requirements for the Major in History: Undergraduate majors are required to take at least 27 credits in 200-level courses, 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 211 in the semester following their declaration as majors, and all majors except Honors students must take HIST 297W in their senior year. With the consent of the undergraduate major's advisor, 300-level courses may be used to fulfill the distribution requirement.

Group A - Ancient, Medieval, and Early Modern

200, 203, 212, 213, 214, 216, 217, 218, 219, 220, 250, 251, 255, 257, 261, 267, 270, 271, 272, 273, 274, 292, 293, 295, 296, 297, 298, 299

Group B - Modern Europe

200, 203, 206, 209, 225, 228, 229, 252, 253, 254, 256, 258, 259, 262, 264, 265, 269, 270, 279, 291, 292, 293, 295, 296, 297, 298, 299

Group C - United States

200, 206, 207, 210, 215, 227, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 246, 247, 248, 249, 253, 260, 268, 270, 278, 284, 292, 293, 294, 295, 296, 297, 298, 299

Group D - Africa, Asia, Latin America, and Middle East

200, 204, 205, 221, 222, 223, 224, 226, 253, 270, 275, 276, 277, 280, 281, 282, 283, 285, 286, 287, 288, 289, 290, 292, 293, 295, 296, 297, 298, 299

With the approval of the department head, HIST 292W, HIST 295W, HIST 298, and HIST 299 may be related to the chronological or geographical categories and be counted for credit in that category.

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

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 JOUR 200W, 201W, 202, 220 and 230W. JOUR 102 is a prerequisite for JOUR 202.

Latin American Language and Area 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 221 (Anthropological Perspectives on Latin America Today), 222 (Peoples of South America), or 227 (Contemporary Mexico), or 229 (Caribbean Cultures).

History: One course selected from 281 (Latin America in the Colonial Period), 282 (Latin America in the National Period), or 283 (Hispanic World in the Ages of Reason and Revolution).

Humanities: One course in Latin American literature or art:

SPAN 295 (Spanish-American Literature: the Formative Years), 296 (Great Works of Spanish-American Literature), 297 (Spanish-American Fiction); PORT 236 (Modern Brazilian Literature), 242 (Studies in Brazilian Literature I), 243 (Studies in Brazilian Literature II); ARTH 277 (Art of Mesoamerica), 278 (Colonial Mexican Art), or 279 (Modern American Art).

Political Science: 235 (Latin American Politics)

Latin American Studies: LAMS 290 (Latin American Studies Research Seminar).

Language Requirement

Successful completion of two Spanish 278, 279, 290, or 291 or two of the following: Portuguese 221, 236, 242, 243.

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.

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 200 level from each department is required.

For the **Linguistics and Philosophy** joint major, specifically required courses are Linguistics 206 (Syntax and Semantics) and Philosophy 241 (Language: Meaning and Truth).

For the **Linguistics and Psychology** joint major, specifically required linguistics courses are: LING 202 and 215C, and at least two out of the other 200 level linguistics courses; and specifically required psychology courses are: PSYC 202Q and 221, and at least two out of PSYC 210W, 215W, 220, 236, 254, and 256. All students in the Linguistics/Psychology Major are strongly encouraged to take LING/PSYC 305 in their senior year. A minimum of four courses (12 credits) at the 200 level from each department is required.

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 28 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, in addition to the General Education requirements of the College.

I. 100's Level: BIOL 107, 108; CHEM 127Q-128Q; MATH 115Q, 116Q; PHYS 131Q, 132Q; MARN 170

Coastal Studies requires a course in data analysis and interpretation. This requirement may be fulfilled with STAT 110V or another course approved by the Department.

Students are encouraged to fulfill some of their General Education requirements with the following choices:

For Group 6: SCI 240 or for Group 5a: HIST 206

For Group 7: ECON 112 or ARE 150

Note: Some Marine Sciences courses may only be offered at the Avery Point campus. Please check the Directory of Courses in this *Catalog*.

II. Coastal Studies B.S. Major Requirements

The following courses constitute the major requirements: MARN 210, 211, 212C, 220Q, 255W, 256, 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 230, 270;

Group 2: MARN 236, 282, 294, 241, 242;

Group 3: MARN 236, 282, 275W, 280W, 325.

Note, however, that only one of MARN 236 and 282 may be counted as an elective. It can satisfy either the Group 2 or 3 requirement, but not both.

III. Coastal Studies B.S. Related Area

In consultation with their faculty advisor, students choose Related Area courses appropriate to their interests, one from each of four subject areas: Environmental Policy, Economic Development, Law and Regulation, and Coastal Issues. The department maintains a list of courses acceptable for each subject area.

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 allows interested students to take additional social science courses. Coastal Studies majors must pass the following courses, in addition to the General Education requirements of the College.

I. 100's Level: BIOL 107, 108; CHEM 127Q-128Q or CHEM 122 and GEOL 102; MATH 109Q, 118Q; PHYS 121Q, 122Q; MARN 170

Coastal Studies requires a course in data analysis and interpretation. This requirement may be fulfilled with STAT 110V or another approved course.

Students are encouraged to fulfill some of their General Education requirements with the following choices:

For Group 6: SCI 240 or for Group 5a: HIST 206

For Group 7: ECON 112 or ARE 150

II. Coastal Studies B.A. Major Requirements

The following courses constitute the major requirements: MARN 210, 211, 212C, 255W, 256, and 3 electives. The electives are: MARN 220Q, 230, 236 or 282, 241, 242, 270, 275W, 280W, 294, 325

III. Coastal Studies B.A. Related Area

In consultation with their faculty advisor, students choose Related Area courses appropriate to their interests, one from each of four subject areas, plus two additional courses from any of the following areas: Environmental Policy, Economic Development, Law and Regulation, Coastal Issues. The department maintains a list of courses acceptable for each subject area.

Concentration in Marine Sciences

The department is associated with the Environmental Sciences Program, and faculty serve as advisors to students pursuing a concentration in Marine Sciences. Students are required to complete four courses from the following list, but with no more than two courses from a single group.

Group A: 294, 236, 380, 331, 332

Group B: 280W, 371, 325

Group C: 275W

Group D: 270, 372, 376

Both a minor in Marine Biology and a minor in Oceanography are described in the "Minors" section.

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 242W, 247, and 248 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.

Bachelor of Science in Mathematics: The requirements for the B.S. in Mathematics are MATH 220 and 221 (or 210, 211 and 227), 213, 215, 216, 273-274, and at least 9 additional credits from any of the following courses: MATH 204, 217, 223, 224, 231, 235, 237, 250, 252, 255, 258, 272, 277, 278, 281, 282, 286, and approved sections of 297 and 298. In addition, at least 12 credits at the 200 level in approved related areas are required.

Bachelor of Arts in Mathematics: The requirements for the B.A. in Mathematics are 27 credits of 200-level course work in Mathematics and 12 credits of course work in approved related areas. The required courses are MATH 210 and 211 (or 220 and 221), 213, 215, 216, and 273. The remaining credits may come from any 200-level Mathematics courses, except Mathematics 242W, 247 and 248.

Bachelor of Science in Applied Mathematical Sciences: The requirements for the B.S. in Applied Mathematical Sciences are MATH 220 (or 210 and 211), 213, 227, 272, 273, 281, and 282, and two courses to be selected from MATH 204, 221, 231, 237, 252, 255, 274, 277, 278, and approved sections of 297 and 298, and at least 3 additional credits from MATH 215, 216, 217, 223, 224, 231, 235, 250, 258, 286, and approved sections of 297 and 298. In addition, at least 12 credits at the 200 level 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 200's level course work in Mathematics and at least 12 credits in approved related areas. The required courses for the degree are MATH 210 or 220, 211 or 221, 215 or 227, 272, 281, and 282. The remainder of the 27 credits of Mathematics must be chosen from MATH 204, 213 or 214, 231, 237, 252, 255, 273, 277 and 278.

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 200's level in Mathematics and Statistics (in addition to MATH 210 or 220), with at least 12 credits in each department. The required courses for the Mathematics-Statistics major are MATH 215 or 227, 211 or 221, and Statistics 230 and 231.

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 200 level in Mathematics, Statistics, Business, and related areas (in addition to MATH 210 or 220). The required courses are MATH 227 or 215, 231, 232 (or STAT 235), 285, 286, 287-288, Statistics 230-231, and Finance 221 or 225. Students should include ECON 111 and 112, a Computer Science course, and ACCT 131 and 200 in their program of study as early as possible. Admittance to this program is available only to students who meet at least one of the following requirements:

- a total grade point average of 2.75 or higher;
- a total grade point average of 3.0 or higher in Mathematics;
- a passing score on one or more Actuarial examinations;
- acceptance by the Mathematics Department's Actuarial Science Committee.

To remain in the Actuarial Science Major, students are 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, Portuguese, 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 200's 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 207, 208, 211, 212, 213, 214, 215, 221, 224, 225, 226, 227, 230, 231, 232, 293*, 295*, 298*, 299*.

* May count toward major with advisor consent.

- B. At least one writing course on Classical literature in English: CAMS 241W, 242W.

- C. At least two other courses dealing with the ancient world CAMS 243, 244, 251, 252, 253, 254, 255, 256, 257, 293*, 295*, 298*, 299* (These may be cross-listed under Art History, History, Judaic Studies, and Philosophy). JUDS/HEB 201 and INTD 294 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:

CAMS 243, 244, 251, 252, 253, 254, 255, 256, 257, 293*, 295*, 298*, 299* (These may have cross-listings under Art History, History, Judaic Studies, and Philosophy.) JUDS/HEB 201 and INTD 294 may also be included.

(*May count toward major only with consent of advisor.)

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 200-level French courses and 12 credits in 200-level “related courses” from departments other than French. All majors must complete the following courses: FREN 211, 261, 262, 268, 269 and either 257 or 258. 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 215, 216 or 222
FREN 217
FREN 224 or 280
FREN 218 or 281

French majors pursuing the French Cultural and Literary Studies track must complete 12 credits, distributed as follows:

FREN 210, 223 or 224
FREN 220, 221 or 222
FREN 218, 230, 231, 232, 233, 234, 235, 280, or 281
FREN 272

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 293 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.

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 literature the following courses are required: 1) 233, 234; 2) three from among the following literature courses: 252, 253, 254, 255, 293 (on a literary topic), 296 (on a literary topic), and 298 (on a literary topic); 3) two from 200, 231, 232, 243, 244, 271, 281, 285, 293 (on a non-literary topic), 296 (on a non-literary topic) and 298 (on a non-literary topic); and 4) one of the following courses taught in English: 251 or 280W. (Only one course taught in English is allowable toward the literature major.)

For the concentration in German studies the following courses are required: 1) 233, 234, 251; 2) four from 200, 231, 232, 243, 244, 271, 280W, 281, 285, 293 (on a non-literary topic) and 296 (on a non-literary topic) and 298 (on a non-literary topic); 3) one of the following literature courses: 252, 253, 254, 255, 293, (on a literary topic), 296 (on a literary topic) and 298 (on a literary topic). (Only two courses taught in English are allowable toward the German studies major.)

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 220, 221, and 222 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 237, 238, 239, 240, 243, 244, 250, 251-252, 253, 254, 261, 262. No more than 15 credits earned in Florence may count toward the major.

Concentration in Italian Cultural Studies

Students must complete a minimum of eight courses (the equivalent of 24 credits) from the following:

- A. Three 200 level Italian courses, with the exception of 239 and 240
B. Two courses from the following: HIST 267, 269, 271, 297
C. Three courses to be chosen from the following: ARTH 251, 272, 273, or MUSI 292, 213; or ENGL 278W

Students must demonstrate proficiency in Italian at a level equivalent to ILCS 147.

Study Abroad in Italy. Students participating in the *Florence Study Program* may earn up to 30 credits during the academic year they spend in Florence; participants register at the University of Florence where they may take courses in any discipline. The program also offers courses designed exclusively for its participants and taught by Italian professors. No more than 15 credits taken in Florence may count toward a major in Italian at this University.

A minor in Italian Cultural Studies and a minor in Italian Literary Studies are described in the “Minors” section.

Portuguese

A minor in Portuguese is offered. Please refer to the “Minors” section of this publication.

Spanish

The Major Group. Spanish courses comprise two main groups: A. Literature. B. Language and Culture.

- A. At least 4 courses must be taken from the literature group: 202, 207, 208, 209, 220, 223, 224, 225, 226, 281, 282, 292, 294, 295, 296, 297.
- B. At least 2 courses must be taken from the language-culture group: 200, 201, 204, 205, 206, 208, 210, 270, 279, 290, 291; 293 (Foreign Study) may be counted in either group depending on course content.

Study Abroad in Spain and Latin America. Courses taken abroad in the programs operated by UConn in Granada, Spain or Puebla, Mexico will count toward the Spanish major as follows:

A maximum of 4 courses, or 12 credits taken abroad may be counted toward the major.

Programs are also available in Argentina, Chile, and the Dominican Republic for advanced Spanish language students.

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

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 100’s level, and 12 or more credits in related fields. Within the 24 credits in philosophy, students must pass PHIL 221 and 222, and at least two of the following four courses: PHIL 210, 211, 212, and 215.

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

The Philosophy Department also offers, with the Linguistics Department, a joint major in Philosophy and Linguistics. Students choosing this concentration must earn 12 credits or more at the 200’s level from each of the two Departments. Within the total of 24 credits, students must pass both Philosophy 241 and Linguistics 206.

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 140Q, 141Q, and 142Q. 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 high school teaching career.

Bachelor of Science, General Option:

A total of 48 credits from 200-level 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 230Q, 242Q, 255Q, 257Q, 258Z, 261Q, and 271Q, and at least three credits of an advanced laboratory (PHYS 256Q, 259Z, or 285Z). It is strongly recommended that students going on to graduate school in physics take PHYS 262Q. All students are strongly encouraged to participate in an undergraduate research project. An experimental research project (PHYS 299) may count towards the advanced laboratory requirement. No more than two credits from PHYS 291, and no more than six credits from PHYS 299 may be counted towards this degree option. The general option for the Bachelor of Science degree requires a minimum of 12 credits from 200-level related courses in mathematics, other sciences, or engineering.

Bachelor of Science, Applied Option:

A total of 48 credits from 200-level courses in physics, other sciences, mathematics, or engineering are required. Among these, 30 credits must be physics courses. The 30 credits must include PHYS 209Q, 210Q, 230Q, 258Z, and 271Q, plus a minimum of nine credits from the following eight courses: PHYS 256Q, 259Z, 273Q, 274Q, 275Q, 281Q, 285Z, and 325, with at least three of the nine credits being from an advanced laboratory (PHYS 256Q, 259Z, or 285Z). 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 242Q and 255Q together may replace PHYS 209Q.) All students are strongly encouraged to participate in an undergraduate research project. An experimental research project (PHYS 299) may count towards the advanced laboratory requirement. The applied option for the Bachelor of Science degree requires a minimum of 12 credits from 200-level 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 200-level courses in physics, other sciences, mathematics, or engineering. No more than two credits from PHYS 291, and no more than six credits from PHYS 299, may be counted towards this degree option.

Bachelor of Arts:

A total of 36 credits from 200-level courses in physics, other sciences, mathematics, or engineering are required. Among these, 24 credits must be physics courses. These 24 credits must include PHYS 209Q, 210Q, 230Q, and 258Z, along with 12 credits of elective physics courses. (PHYS 242Q and 255Q together may replace PHYS 209Q.) No more than two credits from PHYS 291, and no more than six credits from PHYS 299, may be counted towards this degree. The Bachelor of Arts degree requires a minimum of 12 credits from 200-level related courses in mathematics, other sciences, or engineering.

Bachelor of Science in Engineering Physics:

Offered jointly by the School of Engineering and the Department Physics in the College of Liberal Arts and Sciences, Engineering Physics majors can concentrate in either (1) Electrical, (2) Mechanical or (3) Metallurgy and Materials 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.

The major requires 134 credits of course work. The preferred introductory sequence for a major in Engineering Physics, common to all three concentrations, consists of CHEM 127Q and 128Q, MATH 115Q and 116Q, PHYS 151Q and 152Q, CSE 123C, and ENGR 100.

Engineering Physics majors are required to complete the following:

PHYS 230Q, 242Q, 255Q, 257Q, 258Z, 261Q, 285Z
ENGR 295 (4 credits)
MATH 210Q, 211Q, 272Q

A. Electrical Engineering - ECE 201, 202, 204, 209W, 228, 229, 232, 241, 245, and 261; CSE 207 and 208W; MATH 227Q; PHYS 271Q; STAT 224; Elective courses (2 credits).

B. Mechanical Engineering - ME 220, 227, 233, 234, 242, 250 and 253; CE 211, 287; STAT 224; ME Elective Courses (6 credits); PHYS Elective Courses (3 credits); Elective Courses (6 credits).

C. Metallurgy and Materials Engineering - MMAT 243, 244, 255, 256, 265, 266, 267, 283 and 286W; CHEG 256; PHYS 273Q, 281Q; MMAT Elective Courses (6 credits); Elective courses (3 credits).

The options for the electives courses are specified in the *Engineering Physics Guide to Course Selection*.

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

Political Science

Political Science serves students whose primary interest is in some phase of public affairs (law, politics, government service), international relations (foreign service), in gaining a better understanding of the entire field of governmental organization and functions.

Students majoring in Political Science must take introductory 100-level courses in three of the following four subdivisions: Theory and Methodology (106), Comparative Politics (121 or 143), International Relations (132), and American Politics (173). These courses should be taken during the student’s first two years of study.

All majors in political science must distribute their major courses in at least four of the following five subdivisions.

- I. Theory and Methodology: 201, 202, 204, 206W, 207, 291
- II. Comparative Politics: 203W, 228, 229, 230, 231, 235, 236, 237, 239, 233, 233W, 244, or 244W
- III. International Relations: 211, 212, 215, 216, 217, 218, 219, 220, 221, 222, 224, 225, 226, 227, 279
- IV. American Politics: 241, 242, 246, 248, 263, 270, 274, 275
- V. Public Policy and Law: 251, 252, 253, 255, 260, 264, 276, 278

POLS 296 and 298 may not be counted toward this distribution except with consent of advisor.

No more than 6 credits of independent study (POLS 299) or field work (POLS 297), or a combination of the two, may be counted toward the 24 credit requirement for the major, except by permission of the Department Head.

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. In addition, all majors should try to include some course work involving experiments in their programs. 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 the junior year. Suggested courses include BIOL 100, 102, or 107; ANTH 106 or 220; and SOCI 107. If at all possible, majors should take STAT 110 (or 100) by their third semester.

The following core curriculum is required, twenty four 200 level credits including:

Group I. Foundation. Both courses: PSYC 202Q and 291.

Group II. Social and applied science perspectives. Two courses chosen so that two of the following four areas are represented: (a) Developmental Psychology 236; (b) Social Psychology 240; (c) Personality 243 or Abnormal Psychology 245; (d) Industrial/Organizational Psychology 268.

Group III. Natural science perspective. Two courses chosen so that two of the following five areas are represented: (a) Learning 220; (b) Cognitive Psychology 256; (c) Psychology of Language 221; (d) Animal Behavior 253 or Physiological Psychology 257; (e) Sensation-Perception 254.

Students who wish to receive a Bachelor of Science degree with a major in Psychology must do the following: (1) satisfy the general Bachelor of Science requirements, and (2) satisfy a modified version of the major requirements for Psychology. In the modified version, the major requirements are expanded such that (i) three courses must be taken from Group III of the core curriculum, and (ii) two laboratory courses must be taken. A course that is designated as a "laboratory" by its title is considered a laboratory course.

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.

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 organization, 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. Three courses are required of all majors: SOCI 205, 230, 270, and at least one course from each of the following groups:

- A) Organizations and Institutions (SOCI 247, 250, 260, 265, 269, 274, 280, or 288)
- B) Inequality, Diversity, and Change (SOCI 221, 222, 226, 227, 235, 236, 240, 242, 243, 249, 252, 258, 268, 282, or 290)

The remaining 9 credits of 200-level sociology courses, with the guidance of a faculty advisor, may be chosen either freely, including from among the courses listed in Groups A and B above, or one of five areas of sub-concentration: Social Science Background for Careers in Social Services (social work, health care, teaching, counseling); Background for Careers in Business, Management, Advertising, and Personnel; Background for Careers in Law and Public Policy; Background for Careers in Urban Affairs and Community Development.

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 200 level in statistics, including STAT 230 and 231. MATH 215 or 227 and CSE 110 or 130 are strongly recommended. Since STAT 230 has MATH 210 or 220 as a prerequisite, students should begin the calculus sequence as soon as possible.

The mathematics-statistics major requires a total of 36 credits at the 200-level in mathematics and statistics (in addition to MATH 210 or 220), with at least 12 credits in each department. The required courses in the mathematics-statistics concentration are MATH 215 or 227, and 211 or 221, and STAT 230 and 231.

Students without mathematical background who wish some skill in statistical methodology should take STAT 110 followed by 201. Students interested in the statistical analysis of business and economic data should take STAT 100 followed by 201. Students with the appropriate calculus prerequisite should take STAT 220 rather than STAT 110 or 100 and 201. STAT 242 and 243 are appropriate continuations for each of these three introductory sequences. Students interested in statistics as a mathematical discipline should complete STAT 230-231.

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

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.

The major has three parts. First, students receive a broad education in the study of cities and suburbs, neighborhoods and communities, through courses in Anthropology, Economics, Geography, History, Political Science and Sociology. Second, students acquire a solid foundation in analytical techniques such as statistics, urban and regional analysis, and geographic information systems. Third, students apply these skills in pre-professional courses, capstone projects, and internships.

The requirements of the major constitute a total of 24 credit hours and are listed below. Students also have the option of specifying an area of concentration. These meet the requirements of the major through a more tightly defined set of courses. The concentrations are in Urban and Regional Planning, Public Policy and Administration, Social and Human Services, and Urban Culture.

Requirements of the major.

1. URBN 230
2. One of the following: HIST 241, POLS 263, SOCI 280
3. Either, ECON 259 or GEOG 274
4. One of the following: HDFS 276, POLS 260, or SOCI 285
5. One of the following: ECON 212V, GEOG 242Q, GEOG 246C, HIST 211, POLS 291V, SOCI 205, SOCI 207Q, STAT 201Q
6. Two additional courses selected from groups 2-5 or from the following list: ANTH 248, ARTH 282, ECON 253, GEOG 233, GEOG 239, GEOG 280W, HIST 246, INTD 211, POLS 276, SOCI 283, SOCI 281, SOCI 282, URBN 295

7. One of the following: INTD 210, URBN 232, or a section of URBN 299 that has been designated a “thesis” project by the Director of Urban and Community Studies.

One option for Urban and Community Studies students is to enroll in the 15 credit Urban Semester program.

Students interested in pursuing a program in Urban and Community Studies are advised to complete 100-level courses in the social sciences which are prerequisites to the courses in Urban and Community Studies. These include, but are not limited to, URBN 130, ECON 112, POLS 173, SOCI 107, SOCI 115, and STAT 100V/110V. They should also plan on enrolling in URBN 230, which is open to sophomores, as soon as possible.

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 international 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 take the following Core Courses:

- One 100 level WS Introductory Course
- WS 265 - Women's Studies Research Methodology
- PHIL 218 - Feminist Theory or WS 250 - Feminisms
- WS 261/262 - Women's Studies Internship Program
- WS 289W - Senior Seminar in Women's Studies.

Supporting Courses

Students are required to take five Supporting Courses. In addition, majors must complete at least 15 credits of 200 level courses that should be selected with the guidance of their faculty advisor. 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.

Related Courses

Students must take an additional 12 credits at the 200 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.

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 Robert W. Stephens 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 two years, students take a one-credit Air Force ROTC class each semester; we recommend the following sequence: AIRF 113, AIRF 114, AIRF 123 and AIRF 124. 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 allocation and successfully complete a four-week field training camp. Students who don't complete the entire GMC enroll the same way, but attend field training for five and one-half weeks. If still interested in an Air Force commission, they sign a contract obligating them to the Air Force.

In the POC, students take a three-credit AFROTC class every semester and attend Leadership Laboratory (other students may take the academic classes without obligation to the Air Force); also, they must maintain full-time student status. Students in the POC receive a nontaxable stipend of \$200 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 221/221W, 239, 274, 277, 287/287W, 288, 294, 298. 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; the Asian Medicinal Garden; 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. Students who hope to enter a law school should seek to establish an undergraduate record of broad intellectual accomplishment. No specific undergraduate courses or programs of study are required. The Law School Admission Test, the student's scholastic record, and recommendations are the basic considerations used by law schools in determining admissions. The Pre-law Advisory Committee may be consulted for advice and students who apply to law schools for admission should register with the secretary of the committee and I.R. Davis (Chairman).

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 program.

Students should plan to take courses in general and organic chemistry (one year of each), physics (one year), biochemistry, genetics, and physiology prior to taking admissions tests (e.g. MCAT or DAT). Students are strongly advised to take admission tests in April of their junior years and 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 Center during the fall of 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 at or by phone (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. Army ROTC furnishes uniforms, textbooks, and other related equipment at no expense to the student. The program consists of the basic and the advanced course. 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. 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, six-week summer camp after the sophomore year instead of the basic course, thereby requiring participation in the last two years of AFROTC. The advanced course covers the junior and senior years and includes four three credit courses that meet for one three hour period per week, plus a leadership lab.

Advanced course students attend a five-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 \$200 per month. The *Catalog* reflects the normal four year track to commissioning.

Scholarships are available to qualified students. Criteria considered include academic performance, major, leadership experience and potential, and physical fitness as evaluated through a board scholarship interview. The minimum qualifying GPA is 2.5.

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 Robert Bee or Kevin McBride, or write to Native American Studies at Unit 2158.

Peace Studies. Peace Studies is dedicated to the academic investigation of issues relating to war and peace, conflict and conflict resolution, social and economic justice, and global security. Students may major in Peace Studies through the Individualized Major program of the College of Liberal Arts and Sciences. Interdepartmental courses in Peace Studies as well as established courses in the departments of the University, may be combined in various ways in order to constitute a major.

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 295, 298, 241

Please note that PRLS 295 and 298 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.

Neag School of Education

Richard L. Schwab, Ph.D., *Dean, Neag School of Education*
 Timothy G. Reagan, Ph.D., *Associate Dean, Neag School of Education*
 Steven J. Smith, Ph.D., *Assistant Dean, Neag School of Education*

Integrated Bachelor's/Master's Teacher Education Program

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 to serve as a teacher, 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 University's general education requirements are listed in the *Academic Regulations* section of this *Catalog*. Teacher education programs additionally require a course in United States history to satisfy Connecticut's certification requirements.

The Integrated Bachelor's/Master's Teacher Education Program includes the following certification areas:

Elementary Education (ELMNTRY_BS) - Grades one through six
 Secondary Education - Grades seven through twelve
 English (ENGLISH2_BS)
 Foreign Languages - French (FRENCH2_BS), German (GERMAN2_BS),
 or Spanish (SPANSH2_BS)
 History and Social Studies - (HISTRY2_BS)
 Mathematics (MATH2_BS)
 Sciences - Biological Sciences (BIOL2_BS), Chemistry (CHEM2_BS),
 Physics (PHYS2_BS), Earth Sciences (GEOL2_BS), or General
 Science (GENRLSC_BS)

All grade levels program - Pre-kindergarten through grade twelve
 Agricultural Education (EDUAGR_BS)
 Comprehensive Special Education (SP_ED_BS) - Grades K-12

Please note that the requirements listed below are currently effective. Education requirements, however, are subject to change in accordance with the changes mandated by the state of Connecticut. Students must be prepared to fulfill the requirements that are set at the beginning of the fall semester at their time of admission.

The most recent program guidelines and sample semester sequence for each program is available on the Neag School of Education website at <http://www.education.uconn.edu>.

Elementary Education

Students in Elementary Education are prepared to teach in grades one through six. Students complete general education requirements, a 39 credit subject area major that includes a single subject plus a second concentration and appropriate courses in professional education. Requirements include: HDFS 190 or PSYC 236; EPSY 207, 208, 240, 250, 251, 252, 253; EDCI 201, 220, 221, 222, 223, 224, 231, 233, 276; EGEN 294, 295, 296, 297; and the Master of Arts in Education program.

English Education

English education majors are prepared to teach secondary students 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, and appropriate courses in professional education. Requirements include: EPSY 207, 208, 240, 250, 251, 252, 253; EDCI 201, 231, 233, 266, 272, 273, 277; EGEN 294, 295, 296, 297; and the Master of Arts in Education program.

Foreign Language Education

Majors in foreign language education are prepared to teach French, German, or Spanish in elementary, middle, junior high, and high schools. Students complete general education requirements; a 36 credit subject major in grammar, literature, culture, and civilization relevant to their foreign language; and appropriate courses in professional education. Requirements include: EPSY 207, 208, 240, 250, 251, 252, 253; EDCI 201, 231, 233, 260, 273, 277; EGEN 294, 295, 296, 297; and the Master of Arts in Education program.

History and Social Studies Education

The history and social studies program offers preparation leading to certification at grades 7-12. Graduates are prepared to teach history, civics, sociology, economics, geography, anthropology along with a wide range of area studies and "issues" courses ordinarily associated with social studies. Students complete general education requirements, a 36 credit subject area major, and appropriate courses in professional education. Requirements include: EPSY 207, 208, 240, 250, 251, 252, 253; EDCI 201, 231, 233, 266, 273, 277; EGEN 294, 295, 296, 297; 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 algebra, geometry, calculus, and trigonometry, as well as general mathematics. Students complete general education requirements, a 36 credit subject area major, and appropriate courses in professional education. Requirements include: EPSY 207, 208, 240, 250, 251, 252, 253; EDCI 201, 231, 233, 266, 273, 277; EGEN 294, 295, 296, 297; 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, and appropriate courses in professional education. Requirements include: EPSY 207, 208, 240, 250, 251, 252, 253; EDCI 201, 231, 233, 266, 273, 277; EGEN 294, 295, 296, 297; 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. 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, and appropriate courses in professional education. Requirements include: EPSY 207, 208, 240, 250, 251, 252, 253; EDCI 201, 231, 233, 266, 277; EGEN 294, 295, 296, 297; and the Master of Arts in Education program. Connecticut certification regulations significantly impact agricultural education as an area of teacher certification. Prospective students should be aware that these regulations could result in modification or elimination of the agricultural education component of the Integrated Bachelor's/Master's Teacher Preparation Program.

Comprehensive Special Education (Grades K-12)

The Comprehensive Special Education Program prepares prospective teachers of students with disabilities in grades kindergarten through twelve. Students complete general education requirements, a 39-credit subject area major that includes a single subject plus a second concentration and appropriate courses in professional education. Requirements include: HDFS 190 or PSYC 236; EPSY 207, 208, 210, 212, 213, 240, 250, 251, 252, 253, 277; EDCI 201, 221, 231, 233; EGEN 294, 295, 296, 297; and the Master of Arts in Education program.

Music Education (EDMUSIC BS)

Prospective music educators initially enroll in the School of Fine Arts and complete the general education requirements of that school. The undergraduate program undertaken in the Neag School of Education enables majors to teach music from pre-kindergarten through grade twelve and direct bands, orchestras, and choruses. Students complete general education requirements, a 36 credit subject area major, and appropriate undergraduate courses in professional education. Requirements include: EPSY 207, 208, 250, 251, 252, 253; EDCI 201, 231, 232, 233, 258, 266, 277; EGEN 294, 295, 296, 297.

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, sport application, and leisure theory.

The Department has well-equipped laboratories in Exercise Physiology, Exercise Biochemistry, Sport Biomechanics, and the Social Sciences of Sport and Leisure. In the Therapeutic Recreation area, a Motor Development Clinic provides practical experience with persons who are physically or mentally disabled.

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 (ATHLTRN_BS)

Athletic Training (ATBS)

Exercise Science (EXRSCI_BS)

Exercise Science (ESBS)

Strength and Conditioning (SCBS)

Social Science of Sport (KSOCSCL_BS)

Coaching and Administration (CABS)

Sport Marketing (SPM)

Therapeutic Recreational Services (TRSV)

The most recent program guidelines and sample semester sequence for each program is available on the Neag School of Education website at <http://www.education.uconn.edu>.

Athletic Training

The Athletic Training concentration prepares students to become certified athletic trainers by the NATABOC and work with interscholastic, intercollegiate, and professional sport teams; and sport medicine centers which specialize in sport injuries and rehabilitation. The Sports Medicine program, within the Division of Athletics, along with neighboring high schools, sports medicine clinics, and universities, provide excellent clinical rotations for students specializing in this field. The Students complete course work in general education, cognate areas, and kinesiology. Requirements include: BIOL 107; CHEM 122 or 127; COMM 105; NUSC 165, 250; PHYS 101Q or 121Q; PNB 264-265; PSYC 132; STAT 100V or 110V; EKIN 160, 161, 162, 163, 164, 234, 239, 248, 249, 250, 251, 252, 253W, 254, 255, 257, 258, 260, 263, 272, 290, 292; HSMG 280.

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 131; BIOL 103; ECON 111,112; ENGL 110 or 111; HIST 100 or 101; NUSC 165, 200; PSYC 132, 133 or 135; STAT 100V or 110V; EKIN 160, 201, 202, 206, 207, 210, 236, 262, 263, 264, 268, 281, 284, 286, 289W, 290.

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 107, 108; CHEM 127Q, 128Q, 141 or 243; MATH 112Q or 115Q; PHYS 121Q, 122Q; MCB 203 or 204; PNB 250, 264-265; NUSC 165; PSYC 132; STAT 100V or 110V; EKIN 160, 230 or 286, 236, 248, 258, 272, 299, Cognate Electives.

Sport Marketing

The Sport Marketing 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 131; MGMT 198; COMM 105, 130; ECON 111, 112; MKTG 201, 208, 225; MATH 105Q, 106Q; PSYC 132, 133; STAT 100V or 110V; EKIN 160, 230, 236, 262, 281, 282, 284, 286, 290, 299, 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 coursework in general education, cognate areas, and kinesiology. Requirements include: ACCT 131, BIOL 103; CHEM 122, ECON 111; NUSC 165, 200, 250, PHYS 101Q; PSYC 132, 133 or 135, 236, 240 or 245; PNB 264-265; STAT 100V or 110V; EKIN 160, 163 or 164, 202, 206, 207, 248, 258, 265, 262, 263, 268, 272, 284, 286, 290.

Therapeutic Recreational Services

The Therapeutic Recreational Services concentration prepares specialists for program, supervisory, and administrative responsibilities in therapeutic recreational service, primarily for rehabilitative purposes. The populations include the mentally retarded, physically disabled, and neurologically impaired. More recently, the areas of pediatrics, psychiatry, and geriatrics have received increased programmatic emphasis. Students complete course work in general education, cognate areas, and kinesiology. Requirements include: CHEM 122; EPSY 206, 392; HDFS 266; PHYS 101Q; PNB 264-265; PSYC 132, 133, 236, 240, 245; SOCI 248; STAT 100V or 110V; EKIN 160, 201, 203, 204, 205, 228, 262, 273, 280, 282, 283, 284, 285, 289, 290.

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 Entering Students (ACES) during their freshman and sophomore years declaring a pre-education major. Students who intend to teach declare a PRTE major. Students who intend to pursue a kinesiology program declare a PRKI major.

Students should seek the most recent information at the earliest opportunity. Admission applications, 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>; or the Academic Center for Entering Students (ACES) located on the first floor of Goodyear Hall; or the Neag School of Education, C. B. Gentry Building, Room 225. Students are invited to meetings each semester to discuss School of Education programs. They are encouraged to meet with a faculty advisor with any questions they may have after reviewing available literature.

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 Entering Students (ACES).

Students satisfy program requirements in effect during the semester for which they are admitted to the Neag School of Education or at any subsequent time.

During the student teaching semester, students will observe the vacation/holiday schedules of the local school rather than the University schedule. University residence halls close during University vacation periods. Alternate housing arrangements are the student teacher's responsibility.

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 of a university other than the University of Connecticut.

The maximum enrollment in each program is determined by the Dean in consultation with the head of the department offering the program. 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 February 1, to be considered for admission for the following fall semester. Application material for spring admission may be submitted by October 1 only for any program in Kinesiology in which the annual enrollment limit was not met the previous fall. The Athletic Training program annually admits for the spring semester of the sophomore year. Athletic Training applicants are advised to submit a completed *Application for Admission* and all supporting materials after completion of their second semester, and before October 1, to be considered for admission for the following spring semester. Application forms for admission to the Neag School of Education are available on the Neag School of Education website at: <http://www.education.uconn.edu>, or from the Academic Center for Entering Students (ACES) located on the first floor of Goodyear Hall, or the Neag School of Education, Gentry Building Room 225, or may be requested in writing from: Neag School of Education, Admission Office, Room 225, Unit 2064C, 249 Glenbrook Road, Storrs, CT 06269-2064.

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.

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.

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 (CONCEPT), 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) or the Test of English as a Foreign Language (TOEFL); or scores on The American College Testing Assessment (ACT) of at least 22 on the English subtest and at least 19 on the Mathematics subtest.

The most up-to-date information on these tests can be reviewed at <http://www.ets.org>

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. Successful applicants to teacher education programs generally have completed sufficient credits to be eligible for consideration, have applied by the annual deadline of February 1, 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 required personal recommendations confirming 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 April 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.

Successful applicants to those programs in Kinesiology 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 averages.

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, including evidence of satisfactory growth in attacking the problems of the professions; (4) earned at least 12 credits in courses offered in the Neag School of Education.

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.

All other graduates of the Neag School of Education receive the Bachelor of Science degree.

Accreditation

The Neag School of Education is a member of the American Association of Colleges for Teacher Education and 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.

National and Connecticut 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, through selective admissions procedures, advising, and the Integrated Bachelor's/Master's Teacher Education Program, prepares students to meet certification requirements and is responsible for supplying the State Department of Education with an institutional recommendation for all students from this institution seeking certification. The certifying official will recommend to the Connecticut State Department of Education 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/admissions/teacherprep/progdata/index.htm>

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 program requirements in effect at the time of their admission to the Neag School of Education or at any subsequent time. Students should maintain regular contact with their academic advisor to ensure compliance with the most recent requirements.

School of Nursing

Laura Cox Dzurec, Ph.D., *Dean*

The undergraduate program provides an opportunity to combine a general education with professional preparation in nursing. The program is accredited by the National League for Nursing Accrediting Commission and approved by the Connecticut State Board of Examiners for Nursing and by the Commission on Collegiate Nursing Education.

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. The National League for Nursing serves as a resource for information regarding baccalaureate nursing education. They can be contacted at the National League for Nursing, 350 Hudson Street, New York, NY 10014.

Health of Students. In addition to pre-entrance University requirements, students admitted to the School of Nursing must present evidence of the following prior to clinical experiences: 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.

Students who fail to provide written documentation that they have met the above stated health requirements will *not* be allowed in the clinical areas.

Faculty reserve the right to recommend a student's withdrawal from the program for reasons of health.

Insurance. It is mandatory that all students carry comprehensive health insurance and Student Malpractice Liability Insurance when they are involved in practice in clinical areas.

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 cover the cost of books, uniforms, and the professional equipment required before beginning the clinical experiences.

CPR. 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 kept current until graduation.

Licensure. Under the provisions of N 19a-14(a) of the Connecticut General Statutes, as amended by Public Act 86-365, the Department of Public Health and Addiction Services of the State of Connecticut may deny licensure to applicants who have been convicted of a felony or are addicted to drugs or alcohol. Copies of this law are available in the School of Nursing Academic Advisory Center. 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.

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.

Course Title, Credits

BIOL 107 - Principles of Biology, 4
 CHEM 122 - Chemical Principles and Applications, 4
 HDFS 190 - Individual and Family Development, 3
 MATH 102Q - Problem Solving or Math 103Q - Elementary Discrete Mathematics, 3
 MCB 200 - Human Genetics, 3
 PHIL 101, 102, 103, 104, 105, or 106, 3
 PNB 264 and 265 - Human Physiology and Anatomy, 8
 PSYC 132 - General Psychology I, 3
 SOCI 107 - Introduction to Sociology, 3
 STAT 100V - Intro. to Statistics I *or* STAT 110V - Elementary Concepts of Statistics, 4

III. Additional Requirement

High school physics. (If not present on admission, PHYS 101Q must be successfully completed, with a grade of C or better.)

IV. Program Requirements: Traditional Students

Traditional nursing students must complete the following nursing courses (79 credits):

Course Title, Credits

NURS 110 - Introduction to Health, 3
 NURS 111 - Humanizing Health Care: Nursing's Past, Present and Future, 3
 NURS 112 - Health Care Delivery System, 3

NURS 204 - Clinical Science I, 3
 NURS 207 - Clinical Science II, 3
 NURS 212 - Clinical Science for Sub-Acute and Chronically Ill Adults, 3
 NURS 213W - Nursing Research, 3
 NURS 218 - Nursing Science for Adults with Sub-Acute and Chronic Health Issues, 3
 NURS 219 - Practicum with Sub-Acute and Chronically Ill Adults, 6
 NURS 221 - Health Assessment Through the Lifespan, 3
 NURS 225 - Theoretical Foundations of Nursing III: Ethics, 3
 NURS 232 - Clinical and Nursing Science: Nursing Care of the Childbearing Family, 4
 NURS 235 - Theoretical Foundations of Nursing IV: Esthetics, 3
 NURS 239 - Practicum with Childbearing Families, 3
 NURS 250 - Nursing Leadership in the 21st Century, 3
 NURS 252 - Clinical and Nursing Science for Nursing Care of Childrearing Families, 4
 NURS 259 - Practicum with Childrearing Families, 3
 NURS 262 - Clinical Science for Psychiatric and Mental Health Nursing, 2
 NURS 263 - Nursing Science for Psychiatric and Mental Health Nursing, 2
 NURS 269 - Practicum for Psychiatric and Mental Health Nursing, 3
 NURS 270 - Public Health Nursing, 3
 NURS 272 - Clinical Science for Adults with Acute Illness, 2
 NURS 273 - Nursing Science for Acutely Ill Adults, 2
 NURS 279 - Practicum with Acutely Ill Adults, 3
 NURS 289 - Capstone Practicum, 6

V. Program Requirements: Registered Nurses

Registered nurses who graduated from an approved Connecticut associate degree or diploma program in nursing after June, 1986, who enroll in the School of Nursing within 10 years of completing the registered nurse program, 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. Those who do not meet the articulation criteria may earn up to 30 advanced placement credits in nursing through a portfolio review or upon successful completion of the following examinations: Regents College baccalaureate level examinations: Adult Health, Maternal-Child Health, Psychiatric-Mental Health; NLN Achievement examinations: Pharmacology in Clinical Nursing, Diet Therapy and Applied Nutrition. Other standardized examinations will be evaluated on an individual basis.

Registered nurses must complete the following nursing courses:

NURS 110 - Introduction to Health, 3
 NURS 111 - Humanizing Health Care: Nursing's Past, Present and Future, 3
 NURS 112 - Health Care Delivery System, 3
 NURS 213W - Nursing Research, 3
 NURS 225 - Theoretical Foundations of Nursing III: Ethics, 3
 NURS 235 - Theoretical Foundations of Nursing IV: Esthetics, 3
 NURS 250 - Nursing Leadership in the 21st Century, 3
 NURS 270 - Public Health Nursing, 3
 NURS 289 - Capstone Practicum in Community Health, 3
 NURS 350 - Nursing Science, 3
 NURS 352 - Policy Aspects of Advanced Nursing Practice, 3
 NURS 354 - Needs Assessment and Planning, 3
 NURS 358 - Statistical Methods in Nursing, 3
 NURS 370 - Health Care Financing, 3
 Electives - 15 credits

Scholastic Standing Requirement. In the following courses: BIOL 107, CHEM 122, MCB 200, PNB 264, PNB 265, MATH 102, 103, or 107, STAT 110V or 100V, NURS 110, 111, 112, 204, 207, 221 a student in the School of Nursing must have a grade of C or better. In order to progress in the 200-level nursing courses, students must complete all prerequisite courses with a grade of C or better. In order to progress, a cumulative GPA of 2.5 is required prior to enrollment in NURS 221, 212, 218, or 219. Students lacking a 2.5 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 School of Nursing for which another course in the School of Nursing is a prerequisite unless the student has earned a grade of C (2.0) or better in the prerequisite course. No nursing course may be repeated more than once (for a total of two times). Students may be dismissed if there is more than one semester in which they earn a semester grade point average below 2.0 in required nursing courses. A cumulative grade point average of 2.0 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 133 degree credits, (2) earned at least a 2.0 grade point average for all calculable course work, (3) met all the requirements of the School of Nursing. (See Scholastic Standing Requirement.)

School of Nursing Website <http://www.nursing.uconn.edu/>

School of Pharmacy

Robert L. McCarthy, Ph.D., *Interim Dean, School of Pharmacy*
Kenneth A. Speranza, Sr., 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 (BS Pharmacy Studies), followed by two additional years leading to a Doctor of Pharmacy (Pharm.D.). This professional BS/Pharm.D. program is a **full-time**, four-year professional program (132 credits professional program plus 64 credits pre-pharmacy for a total of 196 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 of approximately \$5560 per year (2002-2003 dollars) for in-state students and proportional increases for New England Regional and out-of-state students.

Accreditation. The University of Connecticut's Doctor of Pharmacy program has been granted full accreditation by The American Council of Pharmaceutical Education (ACPE), 311 West Superior Street, Suite 512, Chicago, IL 60610, 312/664-3575, 800/533-3606; FAX, 312/664-4652.

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. To effectuate this policy, first priority in admission to the school is given to qualified applicants who are residents of Connecticut and to qualified applicants from the other New England states with the exception of Rhode Island. Regional students receive a significant tuition saving 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 and science courses must be completed by May for entry into the professional program in the following fall semester. Students must have 24 of the 30 general education course credits completed, including sociology, economics and public speaking, before admission into the fall semester. Students who have not fulfilled the University General Education requirements (Groups IVa, IVb, V and VI) before they enter the professional program will have to complete those courses by May of the second professional year. Students entering the University after fall 1995 will complete their first two years in one of the schools or colleges of the University of Connecticut or in some other institution. 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 Entering Students (ACES).

Those students who meet all the following criteria will be automatically admitted: 1) completion of all freshmen-sophomore course requirements at the University of Connecticut; 2) earned a minimum of 2.7 grade point average (GPA) in all required math and science classes; 3) earned a minimum grade of 2.7 in ENGL 110 or 111 or a grade of 2.7 in ENGL 250; 4) have no grade less than 2.0 in any of the above classes.

All other students will be considered on a competitive basis depending on seats available. To be competitive, students should have a total GPA and a science GPA of 2.5 or better. All required prerequisite science courses should have been passed with a grade of 2.0 or better.

The application deadline is **February 1** for fall admission. Applications will begin to be reviewed in January and the review process continued on a space available basis. Highly qualified students may be considered for early admission. School of Pharmacy applications are available through the Division of Health and Human Development.

Communication Skills. It is essential that Pharmacy students have good 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 final applicant pool may be interviewed.

A Test of Spoken English (TSE) is required of all international applicants and U.S. citizens or permanent residents for whom English has not been the primary language. A minimum score of 50 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 semester grade point average of 2.0 or above in 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.)
- 2) A cumulative grade point average of 2.0 or above in all required Pharmacy courses is required to enroll in clinical clerkships/rotations.
- 3) A cumulative grade point average of 2.0 or above in all Pharmacy/University courses 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 206) and in *Pharmacy Practice Laboratory* (PHRM 212) 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 Degree with Distinction Program, 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 clerkship or externship 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 Coordinator of Professional Experience Program, School of Pharmacy, Room 255. 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

Health Insurance Form) to the Coordinator of Professional Experience Program 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 clerkship, externship, or any of the other practica 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 Pharm.D. (B.S., B.S.P.) Upon recommendation of the faculty, the degree of Doctor of Pharmacy (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 a total of 196 (126) credits; (2) completed all requirements for the professional years and the Professional Program; (3) completed at least 30 credits of general education 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 200 level course work; and (6) earned a 2.0 grade point average for all calculable required Pharmacy courses.

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 listed are those of the School of Pharmacy and also satisfy the University requirements.*

Group 1. Foreign Languages

This requirement is met if the student enters the University with three years of a single language in high school, or the equivalent. With anything less, a student must complete two semesters of a single language at the University.

Group 2. Expository Writing

Either ENGL 110 or 111 is required, and must be followed by two W courses. Students passing ENGL 250 will be exempt from the ENGL 110 or 111 requirement.

Group 3. Mathematics

All students must complete MATH 115Q, an additional Q course, and one C course. Required Pharmacy courses will satisfy the Q and C requirements. (Note: MATH 101 or a passing grade on the Q-Course Readiness Test is a prerequisite to all Q courses.) In order to take MATH 115 students must pass either the Calculus Readiness Test, or a pre-calculus course. Students who fail the Calculus Readiness Test must take MATH 112 and 113.

Group 4. Literature and the Arts

All students must take two courses, one emphasizing major works of literature, and the other major achievements in art or music.

Group 5. Culture and Modern Society

All students must take HIST 100 or 101, and a course emphasizing non-Western culture.

Group 6. Philosophical or Ethical Analysis

All students must take one course in philosophical or ethical analysis.

Group 7. Social Scientific and Comparative Analysis

All students must take ECON 111 and one 100's level sociology course.

Group 8. Science and Technology

Required pre-Pharmacy courses will satisfy this group requirement.

II. Required Courses and Recommended sequences for the Pre-professional Years

First College Year - First Semester

Course Title, Credits

CHEM 127 - General Chemistry, 4

BIOL 107 - Principles of Biology, 4

ENGL 110 - Academic Writing or ENGL 111 Writing through Literature*, 4

MATH 115 - Calculus I, 4

First College Year - Second Semester

Course Title, Credits

CHEM 128 - General Chemistry, 4

HIST 100 or 101*, 3

PHYS 121 - General Physics, 4

General Education Requirement*, 3

Elective Credits***, 2

Second College Year - First Semester

Course Title, Credits

CHEM 243 - Organic Chemistry, 3

ECON 111* - Principles of Economics, 3

MCB 229 - Fundamentals of Microbiology, 4

COMM 105* - Principles of Public Speaking, 3

General Education Requirement*, 3

Second College Year - Second Semester

Course Title, Credits

CHEM 244 - Organic Chemistry, 3

SOCI 107** - Introduction to Sociology, 3

MCB 203 - Biochemistry, 4

General Education Requirements*, 6

Total pre-professional credits, 64

I. The Professional Program

Students will be admitted to the Pharmacy Studies degree program after completion of the two-year pre-Pharmacy program (64 credits).

First Professional Year - 29 Credits

Fall Semester

Course Title, Credits

201 - Pharmaceutical Care

202 - Health Care Organization, 1

203 - Social Behavioral Aspects of Pharmacy, 2

205 - Principles of Pharmacoeconomics, 2

219 - General Principles and Organ System Overview, 3

233 - Bio-Organic Chemistry I, 3

Electives, 3***

Total credits - 14

* These courses need not be taken in the semester indicated but must be completed during the first two years.

** Any 100 level sociology course. This course need not be taken in the semester indicated but must be completed during the first two years.

*** 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.

Spring Semester**Course Title, Credits**

201 - Pharmaceutical Care, 1
 206 - Interpersonal Skills Development, 2
 220 - Nervous System, 5
 234 - Bio-Organic Chemistry II, 3
 235 - Bio-Organic Lab, 1
 PVS 297 - Pathobiology, 3

Total credits - 15**Second Professional Year - 33 Credits, Fall Semester****Course Title, Credits**

207 - Pharmaceutical Care
 221 - Cardiovascular/Renal/Respiratory, 4
 242 - Solution & Solid Dosage Forms, 4
 244 - Dosage Forms Prep Lab I, 1
 245C - Pharmacokinetics, 3
 253 - Therapeutics I, 3

Total credits - 15**Spring Semester****Course Title, Credits**

207 - Pharmaceutical Care, 1
 208 - Pharmacy Law and Ethics, 3
 222 - Endocrine / GI Systems, 3
 246 - Dispersed Systems, 3
 247 - Dosage Forms Prep Lab II, 1
 254 - Therapeutics II, 4
 Electives***, 3

Total credits - 18**Total credits for Bachelor of Science in Pharmacy Studies: 126****Doctor of Pharmacy - 70 Credits**

Students will be admitted to the Pharm.D. degree program after earning the BS in Pharmacy Studies at the School of Pharmacy, University of Connecticut.

Third Professional Year - 34 Credits**Fall Semester****Course Title, Credits**

200 - Evaluation Skills, 3
 209 - Pharmaceutical Care
 223 - Pharmacology Discussion / Lab, 1
 224 - Chemotherapy, 2
 225 - Toxicology, 2
 255 - Therapeutics III, 3
 257 - Clinical Pharmacokinetics, 1
 Electives, 3+

Total credits - 15**Spring Semester****Course Title, Credits**

209 - Pharmaceutical Care, 1
 210 - Non-Prescription Medication, 3
 211 - Introduction to Clinical Practice, 2
 212 - Pharmacy Practice Laboratory, 3
 226 - Immunology, 3
 256 - Therapeutics IV, 4
 Electives, 3+

Total credits - 19**Fourth Professional Year**

Students must have completed the BS in Pharmacy Studies and the first year of the Pharm. D. program

36 Credits

Rotating Professional Experiences (1 month = 4 credits) Required (one month each) 16 credits

Direct patient contact indicated by *

Course Title, Credits

262 - Professional Experience in Community Pharmacy *, 4
 263 - Professional Experience in Institutional Pharmacy I, 4
 264 - Professional Experience in Ambulatory Care Pharmacy *, 4
 265 - Professional Experience in General Medicine *, 4
 (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 *

266 - Professional Experience in Cardiology *, 4
 267 - Professional Experience in Infectious Disease *, 4
 268 - Professional Experience in Oncology *, 4
 269 - Professional Experience in Psychiatry *, 4
 270 - Professional Experience in Pediatrics *, 4
 271 - Professional Experience in Geriatrics *, 4
 272 - Professional Experience in Community Practice II *, 4
 273 - Professional Experience in Critical Care *, 4
 274 - Professional Experience in Dermatology, 4
 275 - Professional Experience in Drug Control, 4
 276 - Professional Experience in Emergency Medicine, 4
 277 - Professional Experience in Home Health Care, 4
 278 - Professional Experience in Institutional Pharmacy II, 4
 279 - Professional Experience in Industry, 4
 280 - Professional Experience in Managed Care, 4
 281 - Professional Experience in Nuclear Pharmacy, 4
 282 - Professional Experience in Nutrition, 4
 283 - Professional Experience in Obstetrics/Gynecology, 4
 284 - Professional Experience in a Skilled Care Nursing Facility, 4
 285 - Professional Experience in Surgery, 4
 286 - Professional Experience in General Medicine II *, 4
 287 - Professional Experience in Ambulatory Care *, 4
 288 - Professional Experience in Pharmacist-Directed Anticoagulation Service *, 4
 289 - Professional Experience in Gastroenterology *, 4
 290 - Professional Experience in Hospice Care *, 4
 291 - Professional Experience in Sub-acute Care and Chronic Disease and Rehabilitate Medicine *, 4
 298 - Special Topics in Clinical Rotations, 4
 299 - Experiential Research Rotations, 4
 PHAR 298 - Special Topics in Pharmacy, 4
 PHAR 299 - Research Experience (GPA 2.8), 4

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.

*** 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 125 credits.

+ 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

Suman Singha, Ph.D., *Associate Dean, College of Agriculture and Natural Resources and Director, Ratcliffe Hicks School of Agriculture*

Patricia J. Jepson, M.A., *Academic Advisory Center Director*

The Ratcliffe Hicks School of Agriculture confers Associate of Applied Science Degrees in Animal Science and Horticulture. 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.

The School provides an excellent opportunity for students with a variety of educational backgrounds and experiences to further their education in the areas of horticulture and animal science. 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.

RHSA 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. Many RHSA graduates continue their education and pursue baccalaureate or higher degrees.

Admission Requirements. Admission is open to qualified graduates of approved secondary schools. See the Admission section of this *Catalog* for required courses and units. 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 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 Horticulture 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 RHSA courses as non-degree students through the Office of Extended and Continuing Education 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 \$1,000 toward educational expenses in their first semester. Based on academic performance, scholarships may be renewed for three additional semesters. Continuing students with outstanding academic performance may also be considered for Heritage Scholarships.

Incoming students are reviewed for Heritage Scholarships prior to entering the program. Selection is based on academic and career-related accomplishments, and potential for continued success. Applications and additional information are available from the Ratcliffe Hicks School of Agriculture, 1376 Storrs Road, Unit 4090, Storrs, CT 06269-4090.

Many other scholarships in Agriculture and Natural Resources are available to Ratcliffe Hicks students, for more information please see: <http://www.canr.uconn.edu/rh>

Associate Degree Curricula

Majors. RHSA students major in Horticulture or Animal Science. Horticulture majors in RHSA may concentrate in turfgrass management, floriculture or nursery management and landscaping. Graduates pursue careers in floriculture, landscape and grounds maintenance, greenhouse and garden center operations, nursery management, interiorscaping, park and land management or botanical gardening.

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.

Registration. Ratcliffe Hicks students are restricted primarily to RHSA courses, numbered 1-99. The following 100-level courses have been pre-approved for all RHSA students:

ENGL 104 (ENGL 110 if verbal SAT requirement is met)

POLS 173

BIOL 102

One of the following for the Literature/Arts Requirement: DRAM 101, DRAM 110, FREN 171, GERM 171, MUSI 191, or WS 104

No more than 13 credits of 100-level course work (Including courses listed above) may be used toward the AAS degree. RHSA students **must** have approval of advisor and director to register for 100-level courses not listed above. RHSA students may **not** register for 200-level courses or skill code courses (W, Q, C) unless approved by the director. RHSA students who have earned at least 24 credits and are not on scholastic probation may place one course, for no more than four credits, on Pass/Fail. Courses placed on Pass/Fail do not satisfy the General Education Requirements or any other graduation requirements. Inappropriate registration may result in administrative changes to a student's schedule or credit restrictions toward graduation requirements.

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 been 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 1-99.

Plan of Study. Students should work closely with their advisors to select appropriate courses. Each student should prepare a tentative plan of study, outlining all courses, with an academic advisor as early as possible.

A final plan of study, approved by the major advisor and the RHSA 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.

General Education Requirements for Both Majors

Mathematics and Computers

SAAG 090 Applied Mathematics¹ or other approved mathematics course

SAAG 001 Introduction to Computer Use

Humanities and Social Science

POLS 173 Introduction to American Political Processes

ENGL 104 Basic Writing²

SARE 050 Principles of Agricultural & Resource Economics

One course in either literature or arts or other humanities as approved by the Advisor and Director

Natural Science

Two of the following courses:

SAAS 004 Anatomy & Physiology of Domestic Animals³

SAPL 003 Introduction to Plant Science⁴

SAPL 022 Introduction to Soil Science

BIOL 102 Foundations of Biology

Major Requirements

Animal Science Core

SAAS 004 Anatomy and Physiology of Domestic Animals³

SAAS 005 Anatomy and Physiology of Domestic Animals

SAAS 006 Nutrition and Feeding of Livestock

SAAS 007 Animal Breeding and Genetics

SAAS 020 Introduction to Animal Science

SAPB 015 Health and Disease Management of Animals and Poultry

¹ The RHSA math placement exam is required to determine proficiency in mathematics.

² Substitutions may be considered based on SAT scores or placement exams.

³ SAAS 004 may be used in meeting both the general education requirements and the Animal Science core requirements.

⁴ SAPL 003 may be used in meeting both the general education requirements and the Horticultural core requirements.

Horticulture Core

Horticulture majors may select options in Nursery/Landscaping, Floriculture or Turfgrass Management.

Nursery/Landscaping or Floriculture

SAPL 003	Introduction to Plant Science ⁴
SAPL 022	Introduction to Soil Science
SAPL 025	Greenhouse Operations
SAPL 041	Plant Pest Control
SAPL 042	Integrated Pest Management
SAPL 062	Plant Propagation

Turfgrass Management

SAPL 003	Introduction to Plant Science ⁴
SAPL 022	Introduction to Soil Science
SAPL 024	Turfgrass Management
SAPL 041	Plant Pest Control
SAPL 042	Integrated Pest Management
SAPL 068	Landscape Plant Maintenance

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 001 - 099 and must be approved by the student's advisor.

Internship, Independent Study Courses, and Special Topics. Students may apply no more than six credits of these courses toward the minimum graduation requirement of 64 earned credits.

⁴ SAPL 003 may be used in meeting both the general education requirements and the Horticulture core requirements.

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 associate degree program, students may petition 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 a recommendation to the Transfer Admissions Office. Admission decisions will be based primarily on courses completed in the School and earned grade point average (minimum 2.5). 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 90, 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. A maximum of 3 credits toward the minor may be transfer credits of courses equivalent to University of Connecticut courses. 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 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 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:

ANTH 225, HIST 223, POLS 239, SOCI 226

One course is required from among the following courses in the Humanities:

CLCS 201 Comparative Literature: African Literature, ENGL 218 Literature and Culture of the Third World: African Literature, French 218

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 255, ANTH 223, ANTH 264, ARTH 285, ECON 247, GEOG 258, HIST 222, POLS 244

Language Requirement

Intermediate proficiency in an approved language other than English is required for the degree. 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 under the auspices of the Center for Contemporary African Studies. Courses of study are supervised by committees of participating faculty. Students should contact the Director, Center for Contemporary African Studies, Office of International Affairs.

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 two groups:

Group 1. Three of the following courses (9 credits):

ARE 215C 3 credits
ARE 275 3 credits
ARE 217 3 credits
ARE 225 3 credits

Group 2. Three of the following courses (9 credits):

ARE 221 3 credits
ARE 260 3 credits
ARE 285 3 credits
ARE 257 3 credits
PLSC 244 3 credits
ANSC 238 3 credits
ANSC 277S 3 credits

Note: ARE 150 may be required for some 200 level ARE courses. Other courses listed may have additional prerequisites as well.

The minor is offered by the department of Agricultural and Resource Economics.

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 270, ENGL 271, or ARTH 254
and either HIST 231 or HIST 232

They must then choose a *track*, a series of related, 200-level 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 Robert Tilton, Director, 486-2058.

Anthropology

The requirements for this minor are at least 15 credits in Anthropology courses that include (1) two courses chosen from ANTH 214, 220, 233, and 244, and (2) three additional 200-level courses, with the exception that not more than three credits of 290 - 299 series courses 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 208, EEB 200, PNB 235, one 2-credit internship (as approved by advisor), and two courses from the following: NRME 235P, ARE 215C, PVS 256, ANSC 253, NUSC 212, EEB 294/MARN 294

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. David Schroeder at David.Schroeder@uconn.edu or Dr. Eric Schultz at Eric.Schultz@UConn.edu.

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 200-level credits in Art History drawn from at least three of the following categories:

- A. Ancient: ARTH 243, 246, 280*
- B. Medieval: ARTH 257, 258, 259, 262, 280*
- C. Renaissance-Baroque: ARTH 250, 251, 273, 278*
- D. Modern-Contemporary: ARTH 209, 252, 253, 254, 267, 268, 275*, 276*, 279*, 281, 282, 291, 292
- E. Non-Western: ARTH 256, 275*, 276*, 277, 278*, 279*, 285, 286, 287, 288, 289

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.

The minor is offered by the Art and Art History Department.

Bioinformatics

Bioinformatics is a new field of science that results from the application of information sciences to biology. Its goals are to facilitate data storage and retrieval, and the extraction of useful information from biological data.

Students wishing a minor in Bioinformatics must take at least 15 credits of the following courses, including at least one course from each of the following four groups. A single course cannot fulfill more than one group requirement. Credits used to satisfy minimum requirements for the student's major may not also be used towards the 15 credits for the Bioinformatics minor, although such courses may be used to satisfy one of the group requirements, where appropriate.

Group A: Bio-Computing / Computer Science

MCB 221, MCB 232, MCB/EEB 372, EEB 348, EEB 462, CSE 207, CSE 230, CSE 255, CSE 259

Group B: Data Banks / Statistics

STAT 201Q, STAT 220, STAT 230 and 231 (Note: both courses must be taken to satisfy this group requirement), CSE 255

Group C: Protein Structure / Biochemistry

MCB 203, MCB 204, MCB 209, MCB 221, MCB 311

Group D: Genetics

MCB 200, MCB 201, MCB 212, MCB 213, MCB 217, EEB 348

The minor is offered jointly by the School of Engineering and the College of Liberal Arts and Sciences. For the Bioinformatics minor, contact Dr. Dong-Guk Shin at shin@engr.uconn.edu.

Biological Sciences

Students wishing to complete this minor must take at least 15 credits of 200 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:

- MCB 200, MCB 203, MCB 204, MCB 210, MCB 213, or MCB 229.
- EEB 244/244W or EEB 245/245W.
- PNB 250, MCB 259, PNB 264-265, or PNB 274-275. PNB 264-265 or 274-275 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:

- CHEM 243, PNB 264, and EE 272
- One of CHEG 273, CE 297, CSE 245, ME 250, ECE 271, MMAT 236, or CHEG 256
- One of MCB 204, 229, 232C, or PNB 265

The minor is offered jointly by the School of Engineering and the College of Liberal Arts and Sciences. For the Biomedical Engineering minor, contact Dr. John Enderle at jenderle@engr.uconn.edu.

Business

In order to receive a minor in Business, a student must complete five 200-level courses (15 credit hours) offered by the School of Business. Credits from internships cannot be used to satisfy the five course requirement.

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 200-level Chemistry courses. The following courses are required:

- CHEM 243, 244, and 245 9 credits
- CHEM 232 4 credits

Further, students must take one course from the following list:

- CHEM 210 2 credits
- CHEM 263 4 credits
- CHEM 280 3 credits
- CHEM 242W 3 credits
- CHEM 234Q 4 credits

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 241W, 242W; INTD 294

B. At least one course dealing with the ancient world:

CAMS 243, 244, 251, 252, 253, 254, 255, 256, 257, 293*, 295*, 298*, 299* (These may be cross-listed under Art History, History, Judaic Studies, and Philosophy.) JUDS /HEB 201 and INTD 294 may also be included.

C. Optional: Courses involving reading in Greek and/or Latin:

CAMS 207, 208, 211, 212, 213, 214, 215, 221, 224, 225, 226, 227, 230, 231, 232, 293*, 298*, 299*

(*May count toward minor only with consent of advisor).

The minor is offered by the Modern and Classical Languages Department.

Communication

Students wishing to complete this minor must take at least 15 200-level credits in COMM courses. Selected courses must include:

- COMM 200Q or an equivalent course in research methods
- At least two from COMM 210, 220, and 230
- At least one from COMM 205, 211, 215, 225W, 226, 232, 241, 242W, 243, 245, 250, 251W, 255, 260, 262, 264, 270W, 271, 272, 273W, and, with COMM advisor's permission, 297 and 298
- Not more than one from COMM 280, 282, 288, 290, 291

The minor is offered by the Communications 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:

- Three required courses (Nine credits):
POLS 255, SOCI 216, PSYC 245
- One Course (Three credits) from the following:
HDFS 288 Supervised Field Work*, INTD 210 Urban Field Studies, POLS 297 Supervised Field Work*, SOCI 296 Field Experience*, SOCI 340 Seminar in Criminal Justice (for seniors with at least a 2.6 cumulative GPA), or PSYC 294 Field Experience
* 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.

- Two courses (Six credits) from the following: HDFS 201, 264, 266, 276, 284; PHIL 226; POLS 251, 252, 260, 274; 299 (on a criminal justice topic); PSYC 202Q, 240, 243, 256; SOCI 217, 218, 218W, 219, 243, 244, 285, 299 (on a criminal justice topic), 340 (for seniors with at least a 2.6 cumulative GPA); and WS 263.

The minor is offered by the College of Liberal Arts and Sciences. Interested students who are political science majors should contact Richard Cole at Richard.Cole@UConn.edu. Psychology majors should contact Brett Steinberg at Brett.Steinberg@UConn.edu or Diane Quinn at Diane.Quinn@UConn.edu. Family studies' majors should contact Steven Wisensale at Steven.Wisensale@UConn.edu. Sociology majors and all other students should contact James Defronzo at James.Defronzo@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. The requirements for this minor are: ANSC 275, ANSC 277S, ANSC 278, PVS 202, ARE 215C, ARE 217

The minor is offered by the Animal Science Department.

Ecology and Evolutionary Biology

Students wishing to complete this minor must take at least 15 credits of 200's level (or higher) EEB courses, which must include both 244 (or 244W) and 245 (or 245W).

The minor is offered by the Ecology and Evolutionary Biology Department.

Economics

Students wishing to minor in Economics must complete:

ECON 218 and 219

At least one course numbered 212V-217, or 237-289

Any two other 200-level courses in the department

The minor is offered by the Economics Department.

English

Students wishing to complete this minor must take at least 15 credits of 200's level English courses, including:

1. At least one of ENGL 205 (or English Honors 206 or 253) and ENGL 206 (or English Honors 255 or 256);

2. At least one of ENGL 270 (or English Honors 251) and 271 (or Honors 252); and

3. Any three other 200-level English courses, with the following exceptions: 201, 209W, 220-226, 250, 293, and 297.

The minor is offered by the English Department.

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 260, 263, 279

ENVE/CHEG 285

6 elective credits from an approved list of 200-level 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. Nelly Abboud at abboudn@uconnvm.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 244 or GEOL 250

3 credits from ANTH 236Q, ARE 234, ENGL 239, GEOG 236, NRME 240 or PHIL 216

Electives. (Additional 9 credits, no more than 6 from one department) - ANSC 225, 226; ANTH 261, 293, 282; ARE 234; EEB/GEOL 205, EEB 244; ENGL 239; GEOG 232, 236, 237, 285W, 286; HIST 206; NRME 240; PHIL 216; POLS 212; SCI 240. In addition, ANTH 236Q, EEB 244, GEOL 250 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 School 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.

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 200 level distributed across the following categories:

1. One required course: HIST 229

2. Three courses distributed across three of the following four disciplines: ECON 201 or 201W; GEOG 254; HIST 228 or 228W; HIST 258 or 258W; HIST 259 or 259W; POLS 231 or 231W; POLS 240 or 240W

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 200's level 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.

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 224 NUSC 212

ANSC 253W NUSC 233

Additional courses from the following to meet the 18 credit total requirement:

ANSC/NUSC 160 ARE 150

NUSC 165 ANSC 298

NUSC 166 NUSC 235

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 200 level 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 293 from Paris.

A. Language (French grammar, written language and oral skills)

Grammar and composition: FREN 268 or 269

Conversation and Phonetics: FREN 250, 251, or 257

B: French and Francophone Culture (any 2 courses from the list)

FREN 210, 211, 224, 218, 281, 215, 216, 217

C: French Literary Studies (any two courses from the list)

FREN 261, 262, 223, 220, 221, 222; One course from the list: 230, 231, 232, 233, 234, 235, 280; 272

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 246C and GEOG 248C
2. One of the following: GEOG 240C, GEOG 245V
3. One of the following: ECON 216V, GEOG 242Q, MATH 204Q, MATH 255Q, STAT 201Q

Geography majors may not select GEOG 242Q, 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 200 or 204, GEOG 205, and an additional 9 credits of 200-level 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 250, 3 Credits
- GEOL 251, 3 Credits
- GEOL 252, 3 Credits
- GEOL 253, 4 Credits

An additional 200-level 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 274Q, 3 Credits
- GEOL 276Q, 3 Credits
- GEOL 277Z, 3 Credits
- GEOL 278Z, 3 Credits

An additional 200-level 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 Geology and Geophysics Department.

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 200 level distributed across the following categories:

1. Language skill courses: students must choose 2 of the following courses: GERM 231, 233, 234, 243, 244
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 252, 253, 254, 255, 281, 285, 293, 296, 298 (if taught in German)

3. Courses in English: students must choose one of the following:

GERM 251, 280W

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 204, 248, 250
2. One course (three credits) from the following:
HDFS 252, 274, 276, AH 203
3. Six credits in HDFS 288: 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 in the School of Family Studies. Faculty in the School of Family Studies and other academic programs serve as advisors. Students should contact the Director, Center on Aging and Human Development, School of Family Studies.

History

Students must pass five courses (15 credits) from at least two Distribution Groups (A-D). One of the five courses must be from the basic courses listed below. At least one of the additional four courses must be in a Distribution Group other than that of the basic course.

Basic Courses

Distribution Group A: 214, 214W, 216, 216W, 220, 271, 272

Distribution Group B: 228, 228W, 229, 229W

Distribution Group C: 231, 231W, 232, 232W, 210, 210W, 215, 215W

Distribution Group D: 204, 205, 222, 223, 281, 282, 287, 288

Four additional courses must be taken from the *Optional List* that follows. One of these optional courses must be in a distribution group other than the distribution group within which the basic course is taken.

Optional List of Courses

Group A - Ancient, Medieval, and Early Modern: 203, 212, 213, 214, 216, 217, 218, 219, 220, 250, 251, 255, 257, 261, 267, 270, 271, 272, 273, 274, 292, 293, 295, 296, 297W, 298, 299, any graduate level History course.

Group B - Modern Europe: 203, 206 (SCI 206), 207, 209 (HDFS 279), 225, 228, 229, 253, 254, 256, 258, 259, 262, 264, 269, 270, 279, 291, 292, 293, 295W, 296, 297W, 298, 299, any graduate level History course.

Group C - United States: 206, 207, 210, 215, 227, 231, 232, 233, 234, 235, 237, 238, 239, 240, 241, 242, 243, 244, 246, 247, 248, 249, 253, 260, 268, 270, 278, 284, 292, 293, 294, 295, 296, 297W, 298, 299, any graduate level History course.

Group D - Africa, Asia, Latin America, and Middle East: 204, 205, 221, 222, 223, 224, 226, 253, 270, 275, 276, 277, 280, 281, 282, 283, 285, 286, 287, 288, 289, 290, 292, 293, 295, 296, 297W, 298, 299, any graduate level History course.

Note: HIST 211 and 297W may also be taken as part of the minor.

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 200 level 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:

POLS 205, POLS 258, HIST 226, HIST 253

Group B. Electives:

Asian American Studies Institute: 215, 221, 221W, 222, 268

Anthropology: 226, 228, 231

Economics: 202, 207, 247

History: 215, 224, 237, 238, 268, 298 when offered as: The Holocaust and World War II

Philosophy: 215, 218, 245

Political Science: 225, 244, 257

Puerto Rican and Latino Studies: 221

Sociology: 221, 221W, 222, 235, 236, 243, 249, 258, 268, 269

Women's Studies: 263

Group C. Internship

INTD 245 Human Rights Internship and Portfolio

The minor is offered by the College of Liberal Arts and Sciences. For more information, contact the Sociology Department.

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 211 and CSE 254
2. Two courses from the following (six credits)
CSE 201, 221, 228, 230, 237, 244, 245, 255, 257, 258, 259, 275, and 282
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, Elizabeth Mahan, U-1161.

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 255W, 256W, 260W

B. Two courses in History: HIST 267, 269, 271, 297W

C. One course in Art History: 251W, 272, 273W

D. One additional 200 level course in Italian Cultural Studies or History.

Students must demonstrate proficiency in Italian at a level equivalent to ILCS 147.

The minor is offered by the Modern and Classical Languages Department.

Italian Literary Studies

This minor requires the completion of 18 credits in 200 level courses. All of the courses listed below require ILCS 145, 146, 147, 148, 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 239 or 240

B. Both of the following: ILCS 243 and 244

C. Two courses from the following: ILCS 250, 251-252, 253, 254, 261, 262

D. One course from the following: ILCS 237, 238

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 103 is a prerequisite. At least one year of biblical or modern Hebrew is strongly recommended. A total of 15 credits from the following 200-level courses is required:

A minimum of six credits in Foundational Courses (Group A): JUDS 201, JUDS 203, JUDS/SOCI 242, CAMS 256, INTD 294.

A maximum of nine credits in Topical Courses (Group B): HEB 277, HEB 279, HEB 293, HEB 299, JUDS 202, JUDS 397, CAMS 244, CAMS 253/HIST 213, HIST 205, HIST 290, HIST 298.

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: PLSC 202, 255, 275

And three of the following courses: PLSC 231, 247, 260, 261, 277, 290W

The minor is offered by the Plant Science Department.

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 200-level 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 221, ANTH 229, HIST 281, HIST 282, HIST 283W, POLS 235, SPAN 205

Students minoring in Latin American Studies must also take LAMS 290, 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 200-level 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.

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 200-level credits with a grade C or higher.

A. Core courses:

One required course: PRLS 210 Contemporary Issues in Latino Studies (3 credits)

Two courses selected from PRLS course offerings (6 credits):

PRLS 220	PRLS 221	PRLS 241	PRLS 250
PRLS 251	PRLS 260	PRLS 264	PRLS 270

PRLS 295-01 PRLS 295-02

One or two of the following research or internship courses (3-6 credits):

PRLS 211 PRLS 212 PRLS 299 PRLS 294W

B. Related Elective courses (if needed):

200-courses from a related discipline such as Anthropology, Communication Sciences, Economics, History, Political Science, Sociology, Spanish, or Women's Studies:

ANTH 229, ECON 257, ENGL 278, HIST 282, HIST 285, HDFS 270, POLS 235, POLS 263, SOCI 240, SOCI 243, SOCI 249, SOCI 268, SPAN 294, WS 203, WS 267

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 200-level course work. Required courses are:

A. Core areas of theoretical Linguistics

LING 202, LING 205Q, and LING 206Q

In addition, students must take at least one course from Group B.

B. Linguistics extensions: Any other 200's-level Linguistics course.

Finally, students must take a second course from the group in B, or one course from Group C:

C. Linguistics in related fields

ANTH 244, CDIS 202, PHIL 211Q, PHIL 241, PSYC 221, or SOCI 212.

The minor is offered by the Linguistics Department.

Marine Biology

This minor requires at least 15 credits of 200's course work in marine biology and related courses. Required courses (Group A) are:

A. Core courses: MARN 260, MARN 294/EEB 294

In addition, students must take at least three of the following courses from Group B:

B. Electives: MARN 236, MARN 331, MARN 332, EEB 200, EEB 275

The minor is offered by the Marine Science Department.

Mathematics

The requirements for this minor are MATH 210 (or 220), 211 (or 221), 227 (or 215), and at least 6 credits from any of the following courses: MATH 204, 216, 223, 231, 235, 250, 252, 258, 273, 281, 286 or certain sections of 297, 298, and 299 approved by the department head.

The minor is offered by the Mathematics Department.

Metallurgy and Materials 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*

MMAT 201 (or 243), 244 (or 203), and 202 (or 284)

9 credits selected from MMAT 200-level courses (but not more than 3 credits of independent study MMAT 299)

The minor is offered by the Metallurgy and Materials Engineering Department. For this minor, contact Dr. John Morral at j.morral@uconn.edu.

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 200's level that satisfy the following criteria.

1. The basic required course is HIST 205.
2. In addition, students must complete five courses, spread across at least four fields, from the following list: ANTH 238, CLCS 201, CLCS 203, CLCS 214,

ECON 204(W), FREN 218, HEB 201 (also offered as JUDS 201), HEB 279, HIST 204, HIST 290, HIST 212W (also offered as ANTH 257W), HIST 213 (also offered as CAMS 253), HIST 218 (also offered as HEB 218, CAMS 256, and JUDS 218), INTD 294, POLS 224, POLS 226, and 200-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 College of Liberal Arts and Sciences and supervised by a committee of affiliated faculty. For information, contact Metin Cosgel, Director of the Minor (860) 486-4662 or Cosgel@UConn.Edu

Molecular and Cell Biology

Students wishing to complete this minor must take at least 15 credits of 200's level MCB courses, including at least one course from each of the following three groups:

A. MCB 200, 201, 213, or 217

B. MCB 204 or 203

C. MCB 210 or 229

The minor is offered by the Molecular and Cell Biology Department.

Native American Studies

Students must complete a total of nine hours in three courses: ANTH 226 Native Peoples of North America, ENGL 272 Native American Literature, and HIST 237 The Indian in American History. 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 200 level courses that are structured in the following manner. Required lecture courses: All students must take both PSYC 257 Physiological Psychology and PNB 251 Biology of the Brain. Lab requirement: Students must take at least one of the following: PSYC 267/267W Laboratory in Physiological Psychology, PSYC 263W Laboratory in Animal Behavior and Learning, or PNB 263W Investigations in Neurobiology. Additional courses, up to at least 15 credits: PSYC 220, 253, 254, 259, 263; PNB 262. 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 neuroscience advisors in psychology or physiology and neurobiology. Up to 3 credits of independent study (PNB 299, PSYC 297) 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 264 and PNB 265 with a grade of B or better.

Students in this minor must pass:

EKIN 248, EKIN 258, NUSC 250, NUSC 241

And two of the following courses for an additional 6 credits:

EKIN 238, EKIN 259, EKIN 263, EKIN 299, NUSC 281 or NUSC 299

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

Students desiring this minor must take at least 15 credits of 200's level courses including fulfilling the Core requirements. Required courses (Group A) are:

A. MARN 260; MARN 270, MARN 275W, MARN 280W

In addition, students must take at least one course from Group B:

B. MARN 220Q, MARN 230, MARN 235V, MARN 236, MARN 294/EEB 294.

The minor is offered by the Marine Sciences Department.

Philosophy

A student must take at least 15 credits of philosophy, at the 200's level or higher, including one course from at least three of the following categories:

Category I: History of Philosophy: PHIL 221, 222, 261

Category II: Metaphysics and Epistemology: PHIL 210, 212, 250

Category III: Logic and Philosophy of Language: PHIL 211, 241

Category IV: Value Theory: PHIL 215, 217, 218

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, nuclear and particle physics, solid state physics, and atomic and molecular physics. The minor requires a minimum of fifteen credits of 200 level course work.

Course Requirements

A total of fifteen credits consisting of

a. Three required courses (nine credits):
PHYS 209Q, PHYS 210Q, PHYS 230Q

and

b. Two or more elective courses (six credits) from any of the PHYS 200's courses with no more than two credits from PHYS 291 and no more than three credits from PHYS 299.

The minor is offered by the Physics Department.

Physiology and Neurobiology

Students desiring this minor must take at least 15 credits of 200's level PNB courses including fulfilling the Core requirements of either Group A or Group B, below:

Group A. PNB 274 - 275 (8 credits)

Group B. PNB 250 (3 credits), PNB 251 (3 credits), PNB 263W (3 credits), PNB 262 (2 credits)

The minor is offered by the Physiology and Neurobiology Department.

Political Science

Students must complete one introductory 100-level course selected from among POLS 106; 121 or 132; 143; or 173. At least one additional 100-level course is recommended. Students must complete at least 15 credits of course work at the 200's level (or higher, with consent of instructor and minor advisor). POLS 297 and 299 may not be counted toward the minor. Courses must be selected from at least three of the five disciplinary subdivisions.

1. Theory and Methodology: 201, 202, 204, 206W, 207, 291
2. Comparative Politics: 203W, 228, 229, 230, 231, 235, 236, 237, 239, 233, 233W, 244, or 244W
3. International Relations: 211, 212, 215, 216, 217, 218, 219, 220, 221, 222, 224, 225, 226, 227, 279
4. American Politics: 241, 242, 246, 248, 263, 270, 274, 275
5. Public Policy and Law: 251, 252, 253, 255, 256, 260, 264, 276, 278

The minor is offered by the Political Science Department.

Portuguese

This minor allows the students who come to college without a background in Portuguese to pursue an interest in the language, literature, and culture of the Portuguese-speaking world in an organized course of study. Eighteen credits are required. Students electing the minor must complete:

A. PORT 220, 221, 251

B. One of the following courses: PORT 234, 270

C. One of the following courses: PORT 237, 240, 241

D. One of the following courses: PORT 236, 242, 243

The minor is offered by the Modern and Classical Languages Department.

Psychology

The requirements for this minor are at least 16 credits of 200 level Psychology courses that include

1. PSYC 202Q (4 credits)

2. **one** course (3 credits) representing the Social and Applied Science Perspectives: PSYC 236, PSYC 240, PSYC 243, PSYC 245, PSYC 268, or PSYC 281

3. **one** course (3 credits) representing the Natural Science Perspective (PSYC 220, PSYC 221, PSYC 253, PSYC 254, PSYC 256 or PSYC 257, **and**

4. an **additional two elective courses** (6 credits) of any 200-level Psychology courses not used to meet the above requirements, with the exception that no more than three credits of PSYC 297 may be counted toward the minor. Other than PSYC 202Q, the courses comprising the minor should be selected in consultation with the student's major advisor to comprise a coherent program relevant to the student's academic and/or career interests and objectives.

The minor is offered by the Psychology Department.

Religion

Fifteen credits at the 200 level 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 234/234W, ANTH 269, INTD 294, PHIL 231, SOCI 253

Group B. Topical Courses:

ANTH 273/WS 273, ANTH 274/WS 270, ARTH 243/CAMS 251, ARTH 246/CAMS 252, ARTH 257, ARTH 258, ARTH 259, ARTH 280, CAMS (Latin) 213, CAMS (Greek) 215, CAMS 243/HIST 217, CAMS 244, CAMS 256/HEB 218/HIST 218/JUDS 218, ENGL 217 (when offered as *Literature & Religion*), ENGL 291 (when offered as *Literature & Mysticism*), HDFS 252, HEB 201/JUDS 201, HEB 202/JUDS 202, HEB 295, HIST 213/CAMS 253, HIST 257, INTD 299, JUDS 242/SOCI 242, PHIL 261, 263

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.Linnekin@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 200 level distributed across the following categories:

1. One required course: HIST 252

2. Three courses distributed across three of the following four disciplines: ECON 244, GEOG 254, HIST 251, HIST 254W, POLS 222, POLS 230W, POLS 237 or 237W

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 107 and 5 different 200 level Sociology courses (totaling 15 credits), including either SOCI 205 or 270.

The minor is offered by the Sociology Department.

Spanish

This minor is intended for a student who wishes to pursue further the study of the literature, language, and culture of the Spanish-speaking peoples in an organized course of study. The minor requires passing 18 credits at the 200's level as follows:

- A. One course in composition 278, 280, or 291;
- B. Two survey literature courses: 281, 282, 295, or 296;
- C. Two courses from the following: 202, 207, 208, 209, 223, 224, 225, 297, or 292; and
- D. One culture course from the following: 200, 201, 204, 205, 206, or 290

At most, six credits from a Study Abroad Program may count towards the minor.

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 165 is a prerequisite for courses listed below.

Required courses (7 credits to be completed by all students)
NUSC 250, 241, and 200

Elective courses (choose 2 of the following for a total of 6 credits.)*
NUSC 236, 267, 281, 299, or EKIN 299

*Students can elect to take 3 credits of either NUSC 299 or NUSC 281. 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 200-level. Students must choose one of two options:

Track I. STAT 201, 230, 231, 242, plus one course from the *Optional List* below.

Track II. STAT 201, 220, 242, plus two courses from the *Optional List* below.

Optional List: STAT 235, 243, 252, 253, 261, 271, 272, and 280.

Students who have passed MATH 114, 116, or 121 and also MATH 210 or 220 are strongly advised to take Track I. Students who have passed only MATH 114, 116, or 121 should take Track II.

The minor is offered by the Statistics Department.

Theatre Production

Requirements. For students seeking this minor:

1. Completion of DRAM 107 (one section) and 108
2. Completion of 12 credits of 200-level course work from the following: DRAM 200, 201, 203, 205, 206, 207C, 208, 209, 211, 212, 213, 214, 215, 218C, 257, 258, *299

*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 130 and 131
2. Completion of 12 credits of 200-level course work from the following: DRAM 230, 231, 235, 272, 282, 285

The minor is offered by the Dramatic Arts Department.

Urban and Community Studies

Students interested in pursuing a minor in Urban and Community Studies should think in terms of completing appropriate 100-level courses in the various social sciences as preparation for advanced courses in their program in Urban and Community Studies. These should include URBN 130 (also cross-listed as GEOG 130) and might well include some of the following courses: ECON 112, POLS 173, SOCI 107 and STAT 100V or 110V.

Requirements. 15 credit hours of courses selected from:

- a. required course: URBN 230
- b. two courses from different departments from among the following: ECON 259; GEOG 233; HIST 241; POLS 260, 263; SOCI 280, 285; URBN 248
- c. two additional courses selected from among the following:
 - (1) any additional course listed in b above
 - (2) any of the following courses: ECON 253; GEOG 274, 280W; HIST 246; INTD 211 (taken as part of the Urban Semester Program); POLS 274, 276; SOCI 283, 281, 284; URBN 295

The minor is offered by the Urban and Community Studies Program.

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 100 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

Through its Regional Campuses the University can provide Connecticut's citizens with diversified educational programs – both credit and noncredit – in five different locations around the State. These programs represent a continuing effort to extend the University's resources to all parts of the State.

All five Regional campuses – at Avery Point, Hartford, Stamford, Torrington and Waterbury – extend easier access to baccalaureate study on a local basis. Here students may begin freshman - sophomore study in most baccalaureate programs, in all of the University's schools and colleges. The regional campuses each offer a limited number of four-year degree programs developed in accordance with the educational needs of the communities they serve. In addition, many students will anticipate moving to Storrs for work toward the Bachelor's Degree, after two years at the local campus; in some programs they will relocate earlier, to accommodate specialized curricular needs.

University standards for admission and student achievement are uniform for all campuses. Similarly, although the variety of course offerings is somewhat more limited at the local campuses, courses offered there are identical to those offered at the main campus, and occupy the same place in the University's curriculum as those offered at Storrs. Compressed videoconferencing, high bandwidth networks and other mechanisms link these campuses with the main campus. The Hartford, Torrington, and Waterbury campuses are administratively organized into a Tri-Campus partnership by which the three campuses share resources in order to enhance the offerings to students at the three sites.

All five regional campuses offer evening courses, intended particularly to serve students who are employed and wish to continue college study on a part-time basis. In addition, each campus serves as a local center where the College of Continuing Studies offers a wide range of non-credit programs, courses, and certificates. Graduate programs in Business Administration, for example, are offered in Hartford and Stamford. The Bachelor of General Studies Degree program administered by Continuing Studies provides a means by which selected adult students may use local campus facilities to pursue undergraduate study at the junior and senior level in individualized curricula at all of the regional campuses.

The University is committed to offering at such locations courses and other programs that meet the educational needs of citizens in nearby communities. Comments and inquiries should be addressed to the Director of the local campus, who can provide more specific information on current local University programs.

Avery Point Campus

Joseph Comprone, Ph.D., *Associate Vice Chancellor and Director*

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 a broad range of day and evening courses in an environment enhanced by the ever-present sights and sounds and smells - the very feel - of the ocean.

At UConn Avery Point, students may select from extensive academic program offerings in the Colleges of Liberal Arts and Sciences and Agriculture and Natural Resources; the Schools of Engineering, and Fine Arts; and the professional Schools of Education, Business, Allied Health, Pharmacy and Nursing. Avery Point students enrolled in any of these programs can look forward to a smooth transition to Storrs as early as the end of the sophomore year.

In addition to offering courses required for fulfilling all of the University's general education requirements, UConn Avery Point offers a wide range of 200-level and above courses, including those of the multi-disciplinary coastal studies and, once approved, the newly developed Maritime Studies program, both of which are offered primarily at Avery Point.

The campus also offers a significant number of courses in the evening. This scheduling accommodates the needs of working students and students 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.

Academic resource facilities include Avery Point's 28,500-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' Learning Resources Center is an active and popular hub for supplemental instruction programs, tutorial help, and assistance with special projects including writing, math, the sciences, study skills and computer literacy.

The Coastal Studies classes and laboratories are held 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, a

new high-tech classroom, the UConn Co-op bookstore, and other classrooms, laboratories, and seminar rooms. The campus gymnasium offers an all-purpose basketball/volleyball/tennis court, six-lane swimming pool, and fitness training facilities in support of fitness and selected athletic programs for women and men.

Campus venues for social functions and cultural activities include the newly renovated Avery Point Student Center, the 375-seat Avery Point theatre, and the Alexey von Schlippe Gallery of Art located in the campus' landmark Branford House mansion.

Stamford Campus

Jacquelyn Joseph-Silverstein, Ph.D., *Associate Vice Chancellor*

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 campus boasts the latest in state-of-the-art technology, increased classroom space and the most modern science laboratory equipment. Additionally, the distance learning classrooms link UConn Stamford to Storrs and the other regional campuses for extended instructional activities.

Located in the center of downtown Stamford, students may complete majors in Economics, English, History, Political Science, Psychology, Sociology, Business and Technology, and a Bachelor of General Studies degree. Students may also pursue an Individualized Major. A junior - senior level 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 GE Capital *edgelab* is a 10,000 square foot multimillion dollar information technology learning facility. A model partnership between UConn's School of Business, CITI, and GE Capital created the *edgelab*. It provides student interns with the opportunity to work closely with UConn faculty and GE executives on real world e-business projects.

As a regional University center, Stamford attracts and accommodates a highly pluralistic student body, drawn from a variety of ethnic, social, and economic backgrounds. Besides the traditional college-age student, a special effort is made to meet the widely diverse needs of the non-traditional students who commute from the surrounding communities. Courses are offered both days and evenings.

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; faculty are also encouraged to participate in a constructive exchange of ideas with those outside the University.

Tri-Campus

Edna L. McBreen, Ph.D., *Associate Vice Chancellor*

William J. Pizzuto, Ph.D., *Executive Director*

With the goal of offering both traditional and non-traditional commuter students easier access to a University of Connecticut education, the Tri-Campus concept was conceived in the late 1990s. Today the Greater Hartford, Torrington and Waterbury Campuses have joined in a vibrant "Tri-Campus" partnership.

While retaining their own individual and unique characteristics, the three regional campuses are now working together as a team, sharing faculty, facilities and resources. Through this exciting Tri-Campus partnership, the University is now able to offer commuter students the opportunity to complete four year degree programs without having to travel to the Storrs Campus to complete junior and senior level courses.

Presently the Tri-Campus offers Four Year Degree programs in Business & Technology and Urban & Community Studies as well as the previous wide and diverse range of Liberal Arts and Sciences courses. Students are now able to combine courses offered at any one of the three campuses for credit toward a degree in their chosen field.

Encouraged by student interest and receptive to students' needs, the Tri-Campus is progressing toward the establishment of additional Four Year Degree programs in American Studies, Family Studies, Psychology and Individualized Majors.

Embracing the University's Land Grant Mission and in tune with community needs, the Tri-Campus is working with area State Legislators, the University of Connecticut Health Center and concerned citizens to establish Care Giver Training for those working with Autistic clients.

Through collaborative efforts with the University's 25 year old BGS program, which provides evening and weekend courses for students at the Junior-Senior level; the Cooperative Extension Service and the region's Community Colleges, the Tri-Campus team approach

has opened virtually all University doors to area commuter students.
Visit the Tri-Campus Web site at www.tri-campus.uconn.edu for more information.

Hartford Campus

David W. Williams, Ph.D., *Director*

Originally organized in 1946 the University of Connecticut's Hartford Campus moved in 1970 to its present location in West Hartford where it is known as the Greater Hartford Campus. As its name indicates, the Greater Hartford Campus is intended to serve a broad section of the greater Hartford area populace and, as do all University regional campuses, offers students 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 facilities include a state of the art Information Technology Center which features a high-tech computer lab and classroom and 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.

Many faculty members of the Greater Hartford Campus are recognized world wide as leaders in education and research. Students benefit from the opportunity to interact with these faculty members in an intimate classroom environment.

As a Tri-Campus partner, the Greater Hartford Campus not only offers a wide range of Liberal Arts and Sciences courses to its 1100 undergraduate students, but also a Bachelors of Science Degree in Business & Technology, a Bachelor of Arts in Urban and Community Studies, and a Bachelor of General Studies Degree. The College of Continuing Studies provides a number of certificate program options. An MBA program and a Masters of Teacher Certification for College Graduates are also offered. The University's School of Social Work graduate programs (MSW and Ph.D) are offered on the Greater Hartford Campus as well. Additional multidisciplinary programs at the bachelor and masters levels are currently being developed to enhance the Tri-Campus.

In addition to offering its students the University of Connecticut's broad range of contemporary educational opportunities, the Greater Hartford Campus also reaches out to its community through a wide variety of special artistic and cultural programs.

Torrington Campus

Adraine R. Lyon, M.A., *Director*

In the Fall of 1957 the University of Connecticut began offering late afternoon classes at Torrington High School. The popular program grew rapidly and as a result of a generous bequest from John Brooker Thompson, the Torrington Campus was established as a University of Connecticut Regional Campus in 1965.

The 100 acre Torrington Campus is located on a hilltop in a quiet, rural setting at the outskirts of the City of Torrington. In addition to classrooms, The M. Adela Eads Classroom Building hosts a 17,000 volume library electronically linked with all University libraries, an art studio, computer rooms, a University Co-Op Bookstore, a large auditorium and a cafeteria/lounge to accommodate the needs of commuter students. There is safe and ample parking for all students.

The quality of instruction and accessibility of faculty are special features of the Torrington Campus. Classes are uniquely small with a general ratio of 1 instructor to 20 students ... providing each student with opportunity for personal guidance and encouragement.

In addition to academics, the students are offered a wide variety of social events sponsored by the Associated Student Government and a free membership at the Torrington YMCA.

The Torrington Campus has traditionally provided students with the opportunity to pursue the first two years towards a degree in the University of Connecticut's approximately 100 majors, a Four Year Bachelor's Degree in General Studies and an Individualized Major program in which students can design his/her own degree. Now, as a Tri-Campus partner, the Torrington Campus is also able to offer a Four Year Degree in Business and Technology and Urban and Community Studies.

The Torrington Campus continues its long-standing and active involvement/outreach in the neighboring community. It is home to the Litchfield County Writers Project that houses a collection of 500 plus published works of Litchfield County authors. Local authors visit classrooms regularly. Poetry Readings are hosted by the Associated Student Government. The Warner Theater Center for the Arts holds its Summer Program on the Torrington Campus each year. The Torrington Campus coordinates a tutoring program for Torrington public schools. This year the Torrington Campus will proudly host the first University of Connecticut training for caregivers of Autistic clients.

In 2001, a Cooperative Extension Service building was added to the Torrington Campus. A master Gardening Program, 4-H Programs and a variety of other offerings serving the agricultural community are available.

The University of Connecticut's Torrington Campus offers contemporary education and hands on community involvement in a personal and rural community setting.

Waterbury Campus

Francis G. Brennan, *Director*

The University of Connecticut at Waterbury originally established in 1942 as an Extension Center to address the educational needs of students in the surrounding areas, has grown steadily to meet the continued and varying demands of area students and has long been a fully recognized University Regional Campus currently serving more than 550 students many of whom are freshmen, sophomores and returning adults.

In September of 2003 the Waterbury Campus will move from its current residential location to a new state of the art facility in downtown Waterbury. There it will be the flagship institution of Waterbury's economic/educational urban development initiative along with a new Arts Magnet School for middle and high school students and the completely restored historical Palace Theater.

The new Waterbury Campus buildings include multi-purpose classrooms, science labs, seminar rooms and lecture halls, four high-tech computer labs, a three-floor atrium library linked directly to the University Library, the University's Co-Op Book Store, a fitness center, student recreational facilities, a snack bar, an interior courtyard that will give Waterbury a rare reserve of green and a 270-car parking garage. On street public transportation offers an additional convenience to the campus community.

As a Tri-Campus partner the Waterbury Campus offers a Bachelor of Science Degree in Business and Technology, an MBA program, a Bachelor of Arts in Urban and Community Studies and course work toward the Masters of Social Work. For those students who wish to continue their education in the evening, a large number of courses are offered at all levels, including advanced courses toward the Bachelor of General Studies Degree and new Weekend College program. A selection of junior and senior courses in several majors including Mathematics, English, History, Psychology, Human Development and Family Studies are available year round during the day and evening as this University of Connecticut regional urban campus continues to respond to the diverse needs of its diverse community.

The new Waterbury Campus has been designed to facilitate not only highest quality contemporary learning opportunities but also maximum community outreach.

Regional Campus Information on the Web

Information about all regional campuses is located at:

<http://www.uconn.edu/camp.html>

Specific information can be found at the following sites:

Avery Point

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

Hartford

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

Stamford

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

Torrington

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

Waterbury

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

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.

Courses to be offered through the Office of Credit Programs, College of Continuing Studies, are included in brochures issued each semester and summer session.

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 01-99 are courses in the Ratcliffe Hicks School of Agriculture; baccalaureate students may not register for these courses. Courses numbered 100-199 are primarily for freshmen and sophomores; courses numbered 200-299 for juniors and seniors. Courses numbered 300-399 are for graduate students and appear in the *Graduate School Catalog*. University regulations allow undergraduates to take courses at the 300'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.

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 earlier number.

Skill Codes. In compliance with the General Education Requirements, skill code designations (W, Q, C and combinations thereof) have been added to courses where applicable. Students may find a comprehensive explanation of these skill codes under "Course Information" of the Academic Regulations section of this *Catalog*. Note: The same 3-digit numerics are not repeatable, ie 107, 107W.

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.

Accounting (ACCT)

Head of Department: Professor Richard F. Kochanek
Department Office: Room 417, School of Business

For major requirements, see the School of Business section of this *Catalog*.

Courses in this department, with the exception of ACCT 131 and 200, 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: 131, 200, 205.

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 299's) and internships (ACCT 289's) as a requirement for graduation.

131. Principles of Financial Accounting

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.

200. Principles of Managerial Accounting

Either semester. Three credits. Prerequisite: ACCT 131; open to sophomores or higher. Not open to students who have passed or are taking BADM 210.

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.

201. Intermediate Accounting I

Either semester. Three credits. Prerequisite: ACCT 200 and ECON 112.

An in-depth study of financial accounting, giving particular emphasis to balance sheet valuations and their relationship to income determination.

202. Intermediate Accounting II

Either semester. Three credits. Prerequisite: ACCT 201 and OPIM 203.

A continuation of Accounting 201.

203. Advanced Accounting

(Also offered as ACCT 303.) Either semester. Three credits. Prerequisite: ACCT 202.

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.

203P. Advanced Accounting

(Also offered as ACCT 303.) Prerequisite: ACCT 202; ENGL 105 or 110 or 111 or 250. This course and one additional P course from the Accounting Department constitute one W requirement.

205. Introduction to a Profession

First semester. One credit. Prerequisite: ACCT 131. 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.

221. Cost Accounting

Either semester. Three credits. Prerequisite: ACCT 200 and OPIM 203 (may be taken concurrently).

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.

222. Cost Analysis

Either semester. Three credits. Prerequisite: ACCT 221.

An advanced study of the generation and use of accounting data, and the application of quantitative methods of analysis in management accounting.

243. Assurance Services

(Also offered as ACCT 304.) Either semester. Three credits. Prerequisite: ACCT 202.

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.

243P. Assurance Services

(Also offered as ACCT 304.) Prerequisite: ACCT 202; ENGL 105 or 110 or 111 or 250. This course and one additional P course from the Accounting Department constitute one W requirement.

260. Federal Income Taxes

Either semester. Three credits. Prerequisite: ACCT 131.

A study of the underlying concepts of federal income taxation. Emphasis to be placed upon the impact of taxes on business decisions.

264. Advanced Federal Taxes and Tax Research

Second semester. Three credits. Prerequisite: ACCT 260.

An in-depth analysis of the tax aspects of corporations, partnerships, and S corporations, including their organization, operations (including international aspects), and liquidation. The course includes an examination of tax research methodology and techniques, using both printed and electronic materials, and discussions of cases requiring tax planning.

289. Field Study Internship

Either or both semesters. Six credits. Hours by arrangement. Prerequisite: courses in Principles of Managerial Accounting, Cost Accounting and Intermediate Accounting, as well as 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. 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.

293. Foreign Study

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.

Special topics taken in a foreign study program.

296W. Senior Thesis in Accounting

Either semester. Three credits. Hours by arrangement. Prerequisite: ENGL 105 or 110 or 111 or 250. Open only to Accounting Department Honors Students with consent of instructor and Department Head.

298. Special Topics

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.

299. Independent Study

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 a student and an instructor.

**Agricultural and Resource
Economics (ARE)**

(Formerly Agricultural Economics and Rural Sociology)

Head of Department: Professor Emilio Pagoulatos
Department Office: Room 318, W.B. Young Building

For major requirements, see the College of Agriculture and Natural Resources section of this *Catalog*.

110. Population, Food, and the Environment

Either semester. Three credits.

The role of agriculture in the growth and development of societies throughout the world. Economic and sociological problems of food and fiber needs and production in the developing and the advanced societies.

150. Principles of Agricultural and Resource Economics

Either semester. Three credits. Taught concurrently with SARE 050.

An introduction to agricultural economics, the role of agriculture in today's United States economic system, and relationships that regulate the entire economic environment.

215C. Business Management

First semester. Three credits. *L. Lee*

Analysis of marketing, management, and financial decision-making tools in agribusiness, including computer applications.

217. Business Finance in Food and Resource Industries

Second semester. Three credits. Recommended preparation: One of the following: ARE 150, ECON 112, ECON 102 or ARE 215C. *L. Lee*

Analysis of financial statements, credit, risk, and investment decision-making.

221. Business Strategies and Policy in Food Industries

Second semester. Three credits. Recommended preparation: ARE 150, or ECON 112, or ECON 102. *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.

222. Food Trends and the Changing Consumer

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.

225. Marketing and Futures Trading

Second semester. Three credits. Recommended preparation: ARE 150, or ECON 112, or ECON 102. *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.

234. Environmental and Resource Policy

Either semester. Three credits. *Altobello*

Economic and policy aspects of natural resource use and environmental quality issues. Designed for students with diverse departmental affiliations.

234W. Environmental and Resource Policy

Prerequisite: ENGL 105 or 110 or 111 or 250.

235. Environmental and Resource Economics

Second semester. Three credits. Recommended preparation: ARE 150, or ECON 112, or ECON 102.

Natural resource use and environmental quality analysis using economic theory. Reviews of empirical research and relevant policy issues.

238. Valuing the Environment

Second semester. Three credits. Prerequisite: ARE 150 or ECON 112. *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.

255. The Role of Agriculture in Economic Development

First semester. Three credits. Recommended preparation: ARE 150, or ECON 112, or ECON 102. Credit may not be received for both ARE 305 and 255.

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.

255W. The Role of Agriculture in Economic Development

Prerequisite: ENGL 105 or 110 or 111 or 250. Recommended preparation: ARE 150, or ECON 112, or ECON 102.

257. Benefit Cost Analysis and Resource Management

Second semester. Three credits. Prerequisite: ARE 150 or ECON 112. Credit may not be received for both ARE 307 and 257.

Theoretical foundations and applications of benefit-cost analysis in project appraisal and in evaluation of public policies regarding resource management and environmental protection.

260. Food Policy

First semester. Three credits. Recommended preparation: ARE 150, or ECON 112, or ECON 102. *Lopez*

Analysis of food and agricultural policies in the United States and abroad. Designed for students with diverse departmental affiliations.

260W. Food Policy

Prerequisite: ENGL 105 or 110 or 111 or 250. Recommended preparation: ARE 150, or ECON 112, or ECON 102.

275. Agribusiness Management and Entrepreneurship

First semester. Three credits. Recommended preparation: ARE 150, or ECON 112, or ECON 102. *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.

280. Economic Organization of Agriculture

First semester. Three credits. Recommended preparation: ARE 150, or ECON 112, or ECON 102.

Economic organization of competitive industries using agriculture as an example of one such industry. The problems growing out of the competitive structure of agriculture, and the economic concepts, principles and research results applicable to these problems.

285. International Commodity Trade

First semester. Three credits. Recommended Preparation: ARE 150, or ECON 112, or ECON 102. *Pagoulatos*

The basic principles of international commodity trade and market institutions. Applications to current problems of international commodity trade and policy.

290V. Quantitative Methods for Agriculture

Second semester. Three credits. MATH 101 or passed Q Readiness Test or passed a Q course. Open only with consent of instructor. *T. Lee*

Data collection, compilation, charts, frequency distribution, simple descriptive statistics, index numbers, economic time series analysis and simple correlations.

295. Seminar

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.

296. Agribusiness Internship

Either semester or summer. One to six credits (repeatable for a total of six credits). Prerequisite: Open to Junior - Senior Resource Economics majors with Independent Study Authorization.

This course is designed to provide 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.

297. Resource Economics Internship

Either semester or summer. One to six credits (repeatable for a total of six credits). 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.

This course is designed to provide 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.

298. Special Topics

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.

299. Independent Study

Either or both semesters. Credit and hours by arrangement. Prerequisite: Open to students with Independent Study Authorization.

This course is designed primarily for Resource Economics majors.

Agriculture and Natural Resources (AGNR)

193. Foreign Study

Either or both semesters. Credits and topics must be approved by department head or dean of the College of Agriculture and Natural Resources.

Courses taken in agriculture, natural resources, and related areas as part of approved Study Abroad programs. May be repeated for credit with change of topic.

210. Extension Organization and Policy

First semester. Two credits. One 2-hour lecture period.

A course designed to acquaint the student with the history, objectives, policy, administrative procedures, organization and methods used by the Cooperative Extension Service. Special consideration will be given to the inter-relationship with other adult education programs.

215. Cooperative Extension Communications

Second semester. Three credits.

Communication theory, methods, and skills relevant to the educational functions of the Cooperative Extension Service. Acquaint students with relationships among Extension objectives, clients and the communication media.

293. Agriculture and Natural Resources Internship

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. This course may be repeated for credit with the total credits earned not to exceed six.

This course is 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.

294. Foreign Study

Either or both semesters. Credits and topics must be approved by department head or dean of the College of Agriculture and Natural Resources.

Courses taken in agriculture, natural resources, and related areas as part of approved Study Abroad programs. May be repeated for credit with change of topic.

298. Special Topics

Either semester. Credits and hours by arrangement. Open only with consent of instructor. May be repeated for credit with a change of topic.

299. Independent Study

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.

This course is designed primarily for Resource Economics majors.

Air Force Studies (AIRF)

Head of Department: Colonel Ken DiPrimo

Department Office: 28 North Eagleville Road

For departmental description, see the College of Liberal Arts and Sciences section of this *Catalog*.

113. Air Force Studies I

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.

114. Air Force Studies I

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.

123. Air Force Studies II

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.

124. Air Force Studies II

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.

201. Aviation Ground School

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.

235-236. Air Force Studies III

Both semesters. Three credits each semester. One class period, and a 2-hour leadership seminar. Prerequisite: AIRF 114 and 124, or six weeks field training. Open only with consent of instructor. May not be taken concurrently with AIRF 245-246.

Management fundamentals, motivational processes, leadership, group dynamics, organizational power, managerial strategy. Development of communication skills.

235W-236W. Air Force Studies III

Prerequisite: AIRF 114 and 124, or six weeks field training; ENGL 105 or 110 or 111 or 250. Open only with consent of instructor. May not be taken concurrently with AIRF 245-246.

245-246. Air Force Studies IV

Both semesters. Three credits each semester. One class period, and a 2-hour leadership seminar. Prerequisite: AIRF 235-236. Open only with consent of instructor. May not be taken concurrently with AIRF 235-236.

American civil-military relations, defense policy formulation, role of the professional officer, military justice system, Air Force Commands.

245W-246W. Air Force Studies IV

Prerequisite: AIRF 235-236; ENGL 105 or 110 or 111 or 250. Open only with consent of instructor. May not be taken concurrently with AIRF 235-236.

Allied Health (AH)

Head of Department: Professor Thomas Miller

Department Office: Room 323, Koons Hall

For major requirements see the College of School of Allied Health section of this *Catalog*.

For course descriptions of Allied Health, 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)
Physical Therapy (PT)

100. Introduction to Allied Health Professions

Semester and hours by arrangement. One credit. Open only with consent of instructor.

Overview of health professions, team approach to health care delivery.

101. Health and Wellness

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.

102. Peer Health Education

First semester. Three credits.

This course fosters skills that will prepare the student to function effectively as a peer health educator. Content includes leadership and communication skills, and a working knowledge of health-related topics such as stress management, body image, body art, sexuality, and other contemporary issues.

115. Introduction to the Health Professions

Semester and hours by arrangement. Three credits.

Introduction to the Allied Health professional curriculum through special topics.

195. Special Topics Lecture

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.

200. Drugs and Society

Either semester. One credit. Two class periods for seven weeks. Priority given to Allied Health and Education students.

Overview of drugs in America, co-dependence, the role of the counselor, psychological and physiological addiction, cocaine, heroin, marijuana, psychoactives, over-the-counter drugs, prescription drugs, AIDS.

202. Clinical Biomechanics

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.

203. Aging: Implications for Health Professionals

Either semester. Three credits. Three hours of lecture.

Age-related physiological changes and pathologies, psychological function in health behaviors and care, role change and transition, health care issues, therapeutic relationships.

204. Conversational Spanish for the Health Professional

Either semester. Three credits. Three hours of lecture. Open to Allied Health students and students in other health-related fields (i.e. nursing, nutritional sciences, pharmacy); others with consent of instructor.

Basic conversational skills, medical terminology, patient/client interviewing skills, cultural factors affecting health care delivery.

214. Medicinal Plants of Asian Origin and Culture
(Also offered as AASI 214.) First semester. Three credits.

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.

215. Critical Health Issues of Asian Americans
(Also offered as AASI 215.) First semester. Three credits. *Palaniswamy*

Examination of critical health issues affecting Asian American sub populations. Topics to include gender specific health problems; cultural issues; and health care issues.

216. Asian Medical Systems
(Also offered as AASI 216.) Second semester. Three credits. *Palaniswamy*

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.

220. Cancer and Your Health
(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.

This course introduces cancer risk education, causes, early detection, prevention, and public education.

237. Women's Health and Health Care
Either semester. Three credits.

Exploration of topics in women's health from a holistic interdisciplinary perspective. Consumer and provider focused.

241. Research for the Health Professional
Either semester. Three credits. Three hours of lecture. Prerequisite: A course in statistics; open only to Allied Health majors, others with consent of instructor.

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.

241W. Research for the Health Professional
Prerequisite: A course in statistics; ENGL 105 or 110 or 111 or 250. Open only to Allied Health majors; others with consent of instructor.**242. Counseling and Teaching for the Health Professional**

Either semester. Three credits. Three hours of lecture. Open only to Allied Health and Nutritional Science students; others with consent of instructor.

Learning theory and counseling strategies; role of health professional as teacher and counselor; communicating with special groups, individuals and groups.

243. Health Care Issues for the Health Professional

Either semester. Three credits. Three hours of lecture. Open only to Allied Health students; others with consent of instructor.

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.

244. Management for the Health Professional
Either semester. Three credits. Three hours of lecture. Open only to Allied Health and Nutritional Science students; others with consent of instructor.

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.

280. Safety and Health Management
First semester, alternate years. Three credits. Three hours of lecture.

This course encompasses the principles of managing occupational safety and health programs from development, implementation through evaluation.

281. Industrial Hygiene
First semester, alternate years. Three credits. Three hours of lecture.

This course introduces the principles of industrial hygiene with emphasis on protecting workers' health through evaluation and intervention within the workplace.

282. Accident Prevention Techniques
Second semester, alternate years. Three credits. Three hours of lecture.

This course provides the student with the fundamental skills needed to prevent occupational injuries and illnesses in the workplace.

283. Occupational Safety and Health Regulations
First semester, alternate years. Three credits. Three hours of lecture.

This course provides a comprehensive overview of the occupational safety and health regulatory process and standards.

284. Ergonomics
First semester, alternate years. Three credits. Three hours of lecture.

This course is concerned with the achievement of an optimal relationship between humans and their work.

298. Special Topics
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.

299. Independent Study for Undergraduates
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.

American Sign Language (ASLN)

Head of Department: Professor David K. Herzberger
Department Office: Room 228, J.H. Arjona Building

101-102. Elementary Levels I and II**103-104. Intermediate Levels I and II**

101 and 103 are offered in the first semester, and 102 and 104 in the second. Please refer to the Critical Languages course descriptions in this publication. Consult the Program Director in Arjona 128 or at Ed.Benson@UConn.edu for more information.

Animal Science (ANSC)

Head of Department: Professor Cameron Faustman
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).

120. Introduction to Animal Science
First semester. Three credits. Two class periods and one 2-hour discussion or laboratory period. Taught concurrently with SAAS 020. *Darre*

The biological, physical, and social factors that influence animal production and utilization.

125. Behavior and Training of Domestic Animals
Second semester. Three credits. Two class periods and one 2-hour laboratory. Taught concurrently with SAAS 025. *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.

127. Introduction to Companion Animals
Second semester. Three credits. Taught concurrently with SAAS 027.

Basic concepts of the nutrition, physiology, health and management of companion animals.

160. The Science of Food
(Also offered as NUSC 160.) Second 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.

195. Special Topics Lecture
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.**216. Principles of Nutrition and Feeding of Animals**

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*

This course 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 requirement, 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.

217. Animal Breeding and Genetics
First semester. Three credits. Two class periods and one 2-hour discussion/laboratory period. Prerequisite: BIOL 107. Recommended preparation: BIOL 108. *Rasmussen*

The principles of genetic, chemistry of nucleic acids, replication, transcription, translation and regulation of genes, population and quantitative genetics, and modern molecular genetic approaches to animal breeding.

219. Reproductive Physiology

Second semester. Three credits. Two class periods and one 3-hour laboratory or discussion period. *Riesen*

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.

221. Environment, Genetics and Cancer

Second semester, alternate years (even numbered). Three credits. Prerequisites: BIOL 107; CHEM 141 or 243. Concurrent enrollment in at least one of the following courses is strongly recommended: MCB 203 or 204, MCB 200 or 213; or MCB 210. *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.

222. Growth Biology and Metabolism of Domestic Livestock

Second semester. Three credits. Two class periods and one 2-hour discussion period. Recommended preparation: PVS 200. *Zinn*

Course will focus 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.

222W. Growth Biology and Metabolism of Domestic Livestock

Prerequisite: ENGL 105 or 110 or 111 or 250. Recommended preparation: PVS 200.

224. Food Microbiology and Safety

Second semester. Three credits. Prerequisite: BIOL 107. 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.

225. Environmental Health Field Experience

First semester. One credit. One class period. *Silbart*

Field trips and discussion periods will focus on waste management and disposal. Topics will include water purification and sewage treatment, municipal and industrial waste incineration, a superfund site and pharmaceutical waste management. Some field trips will be scheduled by arrangement.

226. Environmental Health

First semester. Three credits. Prerequisite: BIOL 102 or equivalent; CHEM 122 or equivalent. *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.

227. Food Microbiology Laboratory

Second semester. Even numbered years. One credit. One three-hour laboratory session. Recommended preparation: MCB 229. *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.

229. Animal Embryology and Biotechnology

First semester. Three credits. Recommended preparation: ANSC 219 or MCB 219. *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, and field trips to biotechnology companies will be included.

231. Developing the Driving Horse

First semester. Two credits. One 1-hour lecture and two 1-hour laboratories. Prerequisite: Junior or senior standing. Consent only. *Callahan*

Techniques related to training the driving horse will be described. Prior working experience with horses is recommended.

234. Pleasure Horse Appreciation and Use

Either semester. One credit. One 1-hour lecture and one 1-hour laboratory. Not open to students who have passed ANSC 236. *Callahan*

Open to all University students interested in pleasure horses. The principles of horse management and horsemanship.

235. Horse Science

First semester. Three credits. Two class periods and one 2-hour laboratory or discussion period. Open to sophomores or higher. *Dinger*

This course will be of particular value to animal science majors and includes horse types and breeds and their nutrition, breeding, evaluation, behavior, care and management with attention given to detailed studies of the problems and practices of horse production and use.

236. Light Horse Training and Management

Second semester. Two credits. Three 1-hour laboratory and one 1-hour discussion period. Prerequisite: ANSC 235. Open only with consent of instructor. *Callahan*

The theory, fundamentals and practice of breaking, training, fitting, showing, and the use of horses for riding. Primarily for Animal Science majors.

237. Methods of Equitation Instruction

Second semester. Two credits. One class period and one 2-hour laboratory or discussion period. Taught concurrently with SAAS 037. Consent of instructor required. Intermediate II or above riding experience required. *Callahan*

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.

238. Horse Breeding Farm Management

Second semester. Three credits. One class period and two 2-hour laboratory or discussion periods. Recommended preparation: ANSC 235. *Dinger*

This course is 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.

253. Animal Food Products

First semester. Three credits. Two class periods and one 3-hour laboratory. *Faustman*

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. Field trips will be required.

253W. Animal Food Products

Four credits. Prerequisite: ENGL 105 or 110 or 111 or 250.

254. Principles of Poultry Science

Second semester of odd numbered years. 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.

269. Laboratory Animal Science

Second semester. Three credits. Two class periods and one 2-hour laboratory or discussion period. Prerequisite: BIOL 107 and 108 or equivalent. Open to sophomores or higher. *Milvae*

The course is concerned with the 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.

273. Livestock Management

First semester. Four credits. Three class periods and one 2-hour laboratory period. *Hoagland*

The production and management of beef cattle, sheep, and swine. Laboratories involve theory and practice in livestock management, skills, and techniques.

275. Dairy Cattle Management

First semester of even numbered years. Three credits. Two class periods and one 2-hour laboratory period. Taught concurrently with SAAS 076. *Kazmer*

Management of dairy cattle including milking procedures, sanitation, reproduction, selection, and record keeping.

277S. Dairy Herd Management (W, C)

Second semester of odd numbered years. Three credits. Two class periods and one 2-hour discussion period. Taught concurrently with SAAS 077. Prerequisite: ANSC 275; ENGL 105 or 110 or 111 or 250. *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.

278. Dairy Management Decision-making

Both semesters. One credit. One 2-hour discussion period. 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.

281. Horse Selection and Evaluation

Second semester. Two credits. One 4-hour laboratory or discussion period. Taught concurrently with SAAS 081. 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.

283. Livestock and Carcass Evaluation

Second semester. Two credits. Two 2-hour laboratory periods. Taught concurrently with SAAS 083. 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.

284. Dairy Cattle Evaluation

Second semester. Two credits. Two 2-hour laboratory or discussion periods. *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.

288. Advanced Animal and Product Evaluation

First semester. Two credits. One 4-hour laboratory or discussion period. Taught concurrently with SAAS 088. Not open for credit to graduate students. May be repeated once for credit. 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. 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.

295. Seminar

Second semester. One credit. One 2-hour discussion period. Open only to juniors and seniors. *Zinn*

A discussion of current employment opportunities in animal agriculture. In addition, students will prepare resumes and present oral talks.

296. Professional Internship

Either semester. Credits and hours by arrangement. Open only to juniors and seniors with consent of instructor. *Andrew, Darre*

298. Special Topics

Either semester. Credits and hours by arrangement. Open only with consent of instructor. May be repeated for credit with a change of topic. Contact Department Main Office for list of current topics and instructors.

299. Independent Study

Either or both semesters. Credits and hours by arrangement of instructor. May be repeated for credit.

Anthropology (ANTH)

Head of Department: Professor Penn Handwerker
Department Office: Room 437, Beach Hall

For major requirements, see the College of Liberal Arts and Sciences section of this *Catalog*.

100. Other People's Worlds

Either semester. Three credits.

A survey of the development, contributions, and

contemporary social problems of selected non-Euroamerican peoples and cultures.

106. Introduction to Anthropology

Either semester. Three credits. Two class periods and one 1-hour discussion. Students should ordinarily take this course in the fall semester.

This course is concerned with 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.

193. Foreign Study

Either or both semesters. 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.

195. Special Topics Lecture

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.

212W. The Development of Anthropological Theory

Either semester. Three credits. Prerequisite: ANTH 220; ENGL 105 or 110 or 111 or 250. Recommended for seniors.

Historical and contemporary theories in social and cultural anthropology.

214. Introduction to Archaeological Methods

First semester. Three credits. Open to sophomores or higher. *McBride*

The concepts, methods and practice of anthropological archaeology.

215. Migration

Second semester, alternate years. Three credits. Recommended preparation: ANTH 100 or ANTH 106. *Martinez*

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.

217. Old World Prehistory

First semester. Three credits. *McBrearty*

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.

218. New World Prehistory

Second 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.

220. Social Anthropology

Either semester. Three credits. Open to sophomores or higher.

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.

220W. Social Anthropology

Prerequisite: ENGL 105 or 110 or 111 or 250. Open to sophomores or higher.

221. Contemporary Latin America

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.

222. Peoples and Cultures of South America

Either semester. Three credits. *Boster*

The history, ecology, and culture of the native peoples of South America.

223. Pre-Colonial Africa

First semester. Three credits.

A survey of African society and history prior to and including the Atlantic slave trade.

225. Contemporary Africa

Second semester. Three credits.

Africa since its partition in 1884. Urbanization, social stratification, racial and ethnic conflict.

226. Peoples and Cultures of North America

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.

227W. Contemporary Mexico

Either semester. Three credits. Prerequisite: ENGL 105 or 110 or 111 or 250.

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.

228. Australian Aborigines

Either semester. Three credits. Recommended preparation: ANTH 220. *Dussart*

An introduction to the study and understanding of Aboriginal ways of life and thought. Social relations, modes of thought and belief that are particularly Aboriginal and which show continuity with the past. Notions of identity and the relationship of various indigenous communities to the non-Aboriginal population of Australia.

229. Caribbean Cultures

Either semester. Three credits.

Peoples and cultures of the Caribbean region.

230. Peoples of the Pacific Islands

Either semester. Three credits. *Linnekin*

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.

231. Anthropological Perspectives on Women

(Also offered as WS 231.) First semester. Three credits. Open to sophomores or higher. *Dussart*

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.

232. Cognitive Anthropology

Either semester. Three credits. Recommended preparation: ANTH 244. *Boster*

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.

233. Human Evolution

Second semester. Three credits. Open to sophomores or higher. *McBrearty*

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.

234. Culture and Religion

Either semester. Three credits. Prerequisite: ANTH 106 or instructor consent.

Religion as a social institution, with emphasis on the social and psychological functions of religious beliefs and practices. Materials are drawn from a wide range of historical and contemporary societies.

234W. Culture and Religion

Prerequisite: ANTH 106 or instructor consent; ENGL 105 or 110 or 111 or 250.

235. Economic Anthropology

Either semester. Three credits.

An introduction to the comparative study of economic life in contrasting pre-industrial, tribal and peasant economies.

236Q. Human Behavioral Ecology

Either semester. Three credits. Prerequisite: MATH 101 or passed Q Readiness Test or passed a Q course. *Sosis*

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.

237. Psychological Anthropology

Either semester. Three credits.

Cross-cultural overview of critical issues regarding the relationship between individual personality and sociocultural systems, and mental health and illness.

238. Peoples and Cultures of the Middle East

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.

239. Cultural Dynamics

First semester. Three credits. *Handwerker*

Interrelations among cultural, social and psychological factors influencing the process of cultural growth and change.

241. Latin American Minorities in the United States

(Also offered as PRLS 241). First 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.

242W. African-American Culture

Either semester. Three credits. Prerequisite: ENGL 105 or 110 or 111 or 250.

Sociological and anthropological analysis of the development and persistence of Afro-American culture.

243W. The American in Foreign Cultures

Second semester. Three credits. Prerequisite: SOCI 107 (required for sociology majors) or ANTH 106; ENGL 105 or 110 or 111 or 250. Not open for credit to students who have passed SOCI 225.

The nature of the foreign situation encountered by past and present overseas Americans and their responses to it.

244. Culture, Language, and Thought

Either semester. Three credits. *Boster*

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.

245. Parent-Child Relations in Cross-Cultural Perspective

(Also offered as HDFS 245.) Offered every third semester. Three credits.

Theory and research on major dimensions of parenting in the U.S.A. and cross-culturally: parental warmth, control and punishment.

246W. Illness and Curing

Either semester. Three credits. One 3-hour class period. Prerequisite: ENGL 105 or 110 or 111 or 250. *Erickson*

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.

247. Culture, Power, and Social Relations

Either semester. Three credits. *Handwerker*

Comparative and historical analysis of the sources and consequences of power in human populations.

249. Field Research in Social Settings

Either semester. Three credits. Prerequisite: ANTH 100 or 106.

Methods and techniques of field research in social settings, including observational procedures, interviewing, and the construction and use of questionnaires.

252. Native American Arts

(Also offered as ARTH 256.) Either semester. Three credits. One 3-hour class period. Not open for credit to students who have passed ARTH 256. *Valentino*

A topical survey of the arts of Native American culture in the United States and Canada.

253W. North American Pre-History

Either semester. Three credits. Prerequisite: ENGL 105 or 110 or 111 or 250. *McBride*

Prehistoric cultures of North America from the earliest traces to European contact, with emphasis on the region east of the Mississippi.

254. Archaeology of Eastern North America

Second semester. Three credits. Prerequisite: ANTH 253 or instructor consent. *McBride*

Prehistoric cultures of the eastern United States and Canada from their earliest appearances to the arrival of the Europeans. Laboratory and field work projects.

257W. Near Eastern Pre-History

(Also offered as HIST 212W.) Either semester. Three credits. Prerequisite: ENGL 105 or 110 or 111 or 250. Not open for credit to students who have passed HIST 212W. *Munro*

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.

258. Archaeology of Eastern Asia

First semester, alternate years. Three credits. *Dewar*

The development of cultures in China, Japan and Southeast Asia from their earliest beginnings until the historical period.

259W. Primitive Technology

Second semester. Three credits. Prerequisite: ENGL 105 or 110 or 111 or 250.

Technology of pre-industrial and non-industrial societies from the first evidence of tool-making to the present, emphasizing materials, processes, and products of simple crafts.

261. Medical Ecology

Either semester. Three credits. One 3-hour class period. Recommended preparation: ANTH 277. *Erickson*

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.

262. Laboratory Techniques in Archaeology

Second semester. Three credits. Prerequisite: ANTH 214. *McBride*

The analysis, interpretation, and presentation of various kinds of archaeological artifacts, floral and faunal remains and sedimentary contexts from excavated sites.

263. Ethnohistory of Native New England

Either semester. Three credits. *McBride*

Combines archaeological and ethnohistorical data to reconstruct lifeways of the Native Americans of southern New England from the prehistoric period to the present.

264. African Prehistory

Either semester, alternate years. Three credits. *McBrearty*

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.

265. Paleoanthropology

Either semester, alternate years. Three credits. Recommended preparation: ANTH 214, 217, or 233. *McBrearty*

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.

266. Human Osteology

Either semester. Three credits. Recommended preparation: ANTH 233. *McBrearty*

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.

267. Lithic Technology

Either semester. Three credits. *McBrearty*

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.

268. Cultural Research

Either semester. Variable (one to three) credits. *Boster, Handwerker, Linnekin*

The theoretical foundations and basic methods used to collect and analyze cultural data.

269. World Religions

Either semester. Three credits. *Linnekin*

A survey of religious belief systems, both polytheistic and monotheistic, from around the world.

270. Contemporary Native Americans

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.

273. Women in the Bible

(Also offered as WS 273.) Either semester. Three credits. Prerequisite: INTD 294. *Linnekin*

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.

274. Women and Religion

(Also offered as WS 270.) Either semester. Three credits. *Linnekin*

The theological standing and ritual activities of women in a cross-cultural sample of the world's religions. Overview of selected topics and current issues relevant to the study of women and religion, such as comparative gender ideologies, feminist hermeneutics, feminist theology, and fundamentalism.

275. Race, Ethnicity, and Nationalism

Either semester. Three credits. *Linnekin*

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.

276. Human Reproductive Ecology

Either semester. Three credits. *Sosis*

The influence of ecology on the evolution of the human life course, with emphasis on men's and women's reproductive decisions.

277. Medical Anthropology

First semester. Three credits. *Erickson*

An introduction to the theory, method, and content of medical anthropology.

278. The Indian Ocean in Prehistory

Either semester. Three credits. *Dewar*

The prehistory of the islands and shorelines of the Indian Ocean: Madagascar, the East African Coast, the Arabian Peninsula, South and Southeast Asia, and Australia.

279. Quantitative Methods for Archaeologists

Either semester. Three credits. *Dewar*

Quantitative methods appropriate to the analysis of artifacts data, radiocarbon dating, and the spatial distribution of sites.

281. Sex and Gender

Either semester. Three credits.

Cross-cultural and interdisciplinary analysis of biological sex, gender, sex roles, and sexuality.

282. People and the Conservation of Nature

Either semester. Three credits. *Dewar*

Local communities and their environments, resource use, land tenure and conservation of healthy landscapes.

285. Anthropological Perspectives on Art

Second 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.

293. Foreign Study

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.

295. Variable Topics

Either semester. Three credits. With a change in topic, may be repeated for credit. Prerequisites, required preparation, and recommended preparation vary.

296. Directed Field Research in Anthropology

Either semester. Course may be repeated, but credits may not exceed 12 by graduation. Hours by arrangement. Prerequisite: ANTH 249 or instructor consent.

The investigation of a sociocultural and/or archaeological problem in some domestic or foreign field location.

297. Field Work in Archaeology

Summer session. Variable credits. Open only with consent of instructor. *McBride*

Training in the techniques of archaeological site excavation; mapping; recording; field conservation, and preliminary analysis of materials.

298. Special Topics

Either semester. Credits and hours by arrangement. Open only with consent of instructor. With a change of content, may be repeated for credit.

299. Independent Study

Either semester. Credits and hours by arrangement. Open only with consent of instructor. With a change in content, may be repeated for credit.

Arabic (ARAB)

Head of Department: Professor David K. Herzberger
Department Office: Room 228, J.H. Arjona Building

101-102. Elementary Levels I and II**103-104. Intermediate Levels I and II**

101 and 103 are offered in the first semester, and 102 and 104 in the second. Please refer to the Critical Languages course descriptions in this publication. Consult the Program Director in Arjona 128 or at Ed.Benson@UConn.edu for more information.

Art (ART)

Head of Department: Professor Judith Thorpe
Department Office: Room 100, Art Building

135. Art Appreciation

Either semester. Three credits. Not open to Art majors.

Introduction to the visual arts, past and present. The visual language of artists, historical and cultural significance of works of art.

Studio Courses**111. Foundation: Studio Concepts**

Either semester. Three credits. Two 3-hour studio periods.

Introduction to key concepts and practice in art making.

113. Foundation: Criticism and Interpretation

First semester. Three credits. One 3-hour class period. Not open to students who have taken ART 232.

An introduction to various current critical approaches to the producers, contexts, audiences, and histories of contemporary visual culture.

130. Drawing I

Either semester. Three credits. Two 3-hour or three 2-hour studio periods.

Fundamental principles of drawing based on observation.

152. Drawing II

Either semester. Three credits. Two 3-hour or three 2-hour studio periods. Prerequisite: ART 130.

Observational drawing; emphasis on spatial organization and structure.

153. Life Drawing I

Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 152.

Introduction to figure drawing.

160. Basic Studio, Printmaking

Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 111 and 130.

Introduction to practice and principles of printmaking, including intaglio, relief and lithographic processes.

163. Basic Studio, Sculpture

Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 111 and 130.

Introduction to principles and techniques of sculpture.

164. Basic Studio, Painting

Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 111 and 130.

Introduction to the principles and techniques of painting media.

165. Design Process

Either semester. Three credits. Two 3-hour periods. Prerequisite: ART 111 and 130.

Introduction to content, meaning, form, and structure in communication design, emphasizing conceptual analysis and approaches to visualization.

166. Basic Studio, Photography

Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 111 and 130.

Introduction to techniques and aesthetics of photography, with emphasis on the camera.

193. Foreign Study

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.

195. Architectural Graphics I

First semester. Three credits. Two 3-hour class periods.

Architectural graphics. Basic two- and three-dimensional delineation: axonometric, isometric and perspective drawing.

196. Special Topics Seminar

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.

204. Life Drawing II

Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 153; open to sophomores or higher.

Drawing from the figure.

211. Pottery and the Vessel

Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 163; open to sophomores or higher. 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.

212. Sculpture: Clay

Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 163; open to sophomores or higher. 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.

216. Sculpture: Wood

Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 163; open to sophomores or

higher. 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.

217. Sculpture: Metals

Either semester. Two 3-hour studio periods. Prerequisite: ART 163; open to sophomores or higher. 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.

219. Sculpture: Moldmaking/Casting

Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 163; open to sophomores or higher. 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.

220. Sculpture Seminar

Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 163 and 9 credits in any area of concentration.

For the advanced undergraduate in any area of concentration. Exploration of 3-dimensional issues in a studio seminar format.

221. Intaglio Printmaking

Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 160; open to sophomores or higher.

Investigation of black-and-white and color intaglio techniques.

222. Lithography

Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 160; open to sophomores or higher.

Investigation of lithographic techniques.

224. Intaglio II

Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 221; open to sophomores or higher.

Continuation of ART 221 with emphasis on color printing.

225. Lithography II

Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 222; open to sophomores or higher.

Continuation of ART 222 with emphasis on color printing.

226. Printmaking Workshop

Either semester. Variable credit. Two 3-hour studio periods. Prerequisite: ART 221 or 222; open to sophomores or higher. 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.

228. Architectural Graphics II

Second semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 195; open to sophomores or higher.

Development of presentation skills and techniques. Graphic analysis of architectural forms using various drawing media and models.

235. Intermediate Painting I

Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 164; open to sophomores or higher.

236. Intermediate Painting II

Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 235; open to sophomores or

higher.

Conceptually-oriented painting projects.

237. Advanced Painting I

Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 236.

Individually determined painting projects.

238. Advanced Painting II

Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 237. May be repeated once with change in course content.

Continuation of ART 237.

239. Aqua Media I

Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 152; open to sophomores or higher.

Introduction to the materials and methods of painting in aqua media.

240. Aqua Media II

Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 239; open to sophomores or higher.

Continuing study in aqua media.

241. Figure Painting

Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 153, ART 164.

Investigations in figurative/narrative painting.

255. Advanced Figure Drawing

Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 204. May be repeated once.

Advanced studies in figure drawing.

256. Digital Imaging

Either semester. Three credits. Prerequisite: ART 166 and 261C.

Introduction to the use of the computer to digitize and manipulate photographic imagery.

257. Advanced Drawing

Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 204 and consent of instructor. May be repeated with a change in course content to a maximum of 9 credits.

Advanced studies in drawing. Course content varies with instructor.

260. Communication Design I

Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 165, portfolio review and consent of instructor; open to sophomores or higher.

Fundamentals of communication design.

261C. Introduction to Digital Media

Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 111 and ART 130; open to sophomores or higher.

Introduction to digital media.

262. Alternative Processes (Photography)

Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 265; open to sophomores or higher. May be repeated once with a change of content. *Craig*

Photographic printmaking systems outside conventional silver imaging processes.

263. Color Photography

Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 166. May be repeated once with a change of content; open to sophomores or higher.

The processes and aesthetics of color photography.

264. Communication Design II

Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 260.

Creative, appropriate and effective communication design through the use of type and image.

265. Intermediate Photography

Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 166; open to sophomores or higher.

Principles and techniques of black-and-white photography in fine-art applications, with emphasis on darkroom work.

266. Advanced Photography

Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 265. May be repeated once with a change of content.

Advanced problems in the use of photography as an art medium.

267. Communication Design III

Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 260. Prerequisite or corequisite: 264.

Exploration of form, content, and function using various communication design methodologies.

269. Communication Design IV

Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 267.

Exploration of communication design as a social, political, and cultural activity.

270. Design Center

Either semester. Three credits. May be repeated to a maximum of six credits. Two 3-hour studio periods. Prerequisites: ART 267, portfolio review, and consent of instructor.

Introduction to professional design practice.

271. Illustration

Either semester. Three credits. Two 3-hour or three 2-hour studio periods. Prerequisite: ART 153 and 164; open to sophomores or higher.

Introduction to principles of illustration, media, and techniques.

272. Topics in Illustration

Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 204 and 271. 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.

274. Communication Design Survey

Either semester. Three credits. Two 1½-hour class periods. Open to sophomores or higher.

A survey of the role and history of communication design.

276. Typography

Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 165 and ART 261C. Open to sophomores or higher.

Introduction to typographic design.

277. Publication Design

First semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 264.

Introduction to publication design.

278. Digital Multimedia

Second semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 264.

Introduction to time-based communication design.

279. Art Outside the Mainstream

Either semester. Three credits. One 3-hour seminar period.

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.

280. Percussion Instrument Design and Fabrication

Second semester. Three credits. Two 3-hour studio periods.

Design and fabrication of traditional and traditionally inspired percussion instruments including: Tocajon, Udu Drum, Slit Drum, Mbira, Barimbow, Rhythm Bells.

281. Introduction to Video Art

Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 166.

Introduction to techniques and aesthetics of video art.

283. Investigation of Special Topics

Either semester. Credits and hours by arrangement. Prerequisite: Consent of instructor. May be repeated for credit with a change in course content.

Special topics. Field trips may be required.

290. Materials and Techniques of Painting

Either semester. Three credits. Two 3-hour studio periods. Prerequisite: Consent of instructor.

Media and techniques of traditional and experimental painting.

293. Foreign Study

Either or both semesters. Credits and hours by arrangement. Consent of department head required. May be repeated with a change in course content.

Special topics taken in a foreign study program.

295. Studio Internship

Either semester. Three credits. 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).

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 267, 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 266 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.

296. Cooperative Education in Art

Either semester. Three credits. Hours by arrangement. Prerequisite: Junior - Senior standing. 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.

297. Senior Project

Both semesters. Three credits. Hours by arrangement. Limited to advanced B.F.A. students seventh semester or higher. 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.

299. Independent Study

Either semester. Maximum of up to 6 credits. May be repeated for a total of 6 credits. Limited to advanced 5th semester or higher standing and a GPA 3.0, with no outstanding incompletes for any other 299. Exceptions only by the approval of the department head.

For advanced students to develop a special project in advanced studio art.

Art History (ARTH)

Head of Department: Professor Judith Thorpe

Department Office: Room 100, Art Building

(Art History courses formerly offered as ART are now offered as ARTH under the same course numbers.)

136. Introduction to Art History I – Discussion

First semester. One credit. One class period. If elected, must be taken concurrently with ARTH 137.

Discussion section for ARTH 137.

137. Introduction to Art History I

First semester. Three credits.

Survey of art and architecture from prehistoric times through the fourteenth century.

138. Introduction to Art History II

Second semester. Three credits.

Survey of art and architecture from the fifteenth century to the present day.

139. Introduction to Art History II – Discussion

Second semester. One credit. One class period. If elected, must be taken concurrently with ARTH 138.

Discussion section for ARTH 138.

140. Introduction to Asian Art

Either semester. Three credits.

Survey of art and its social context in China, India and Japan from prehistoric times to the present.

141. Introduction to Latin American Art

Either semester. Three credits.

A thematic survey of Latin American art from 200 B.C. to the present.

191. Introduction to Architecture

(Formerly offered as ART 191.) Either semester. Three credits.

An introduction to the history of architecture considered in its social, technological and urban context.

193. Foreign Study

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.

209. History of the Print

Either semester. Three credits.

Survey of printmaking in Europe and America from the Renaissance to the present.

210. Museums and the Interpretation of Culture

Either semester. Three credits.

The history and philosophy of museums.

211. Art History's Feminisms

Either semester. Three credits.

Feminist approaches to the theory and practice of art history.

220. Asian American Art and Visual Culture

Either semester. Three credits.

Topics in contemporary Asian American art and visual culture, 1960's to present.

243. Greek Art

(Also offered as CAMS 251.) Either semester, alternate years. Three credits.

Greek art and architecture from the ninth century B.C. to the first-century A.D.

243W. Greek Art

Prerequisite: ENGL 105 or 110 or 111 or 250. Open to art history and art majors; others with consent of instructor.

246. Roman Art

(Also offered as CAMS 252.) Either semester, alternate years. Three credits.

History of Roman art and architecture.

246W. Roman Art

Prerequisite: ENGL 105 or 110 or 111 or 250; open to art history and art majors, others with consent of instructor.

250. Art of the Northern Renaissance

Either semester, alternate years. Three credits.

Painting, sculpture, graphic arts of the Lowlands and Germany, 1400-1600.

250W. Art of the Northern Renaissance

Prerequisite: ENGL 105 or 110 or 111 or 250; open to art history and art majors, others with consent of instructor.

251. Baroque Art

Either semester. Three credits.

Art and architecture of the seventeenth and early eighteenth centuries with emphasis on Italy, Netherlands, France and Spain.

251W. Baroque Art

Prerequisite: ENGL 105 or 110 or 111 or 250; open to art history and art majors, others with consent of instructor.

252. Nineteenth Century European Art

Either semester. Three credits.

European art from Neo-Classicism to Realism.

252W. Nineteenth Century European Art

Prerequisite: ENGL 105 or 110 or 111 or 250; open to art history and art majors, others with consent of instructor.

253. American Architecture

Either semester. Three credits.

American architecture from the colonial era to the present. Field trips may be required.

254. Nineteenth Century American Art

Either semester. Three credits.

Topics in American Art, 1770-1900.

254W. Nineteenth Century American Art

Prerequisite: ENGL 105 or 110 or 111 or 250; open to art history and art majors, others with consent of instructor.

256. Native American Arts

(Also offered as ANTH 252.) Either semester. Three credits.

A topical survey of the arts of Native American cultures in the United States and Canada.

257. Early Medieval Art

Either semester, alternate years. Three credits.

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.

257W. Early Medieval Art

Prerequisite: ENGL 105 or 110 or 111 or 250; open to art history and art majors, others with consent of instructor.

258. Romanesque Art

Either semester, alternate years. Three credits.

Topics in medieval painting, architecture and sculpture through the twelfth century.

258W. Romanesque Art

Prerequisite: ENGL 105 or 110 or 111 or 250; open to art history and art majors, others with consent of instructor.

259. Gothic Art

Either semester. Three credits.

Gothic art and architecture, with emphasis on the court styles of England and France.

259W. Gothic Art

Prerequisite: ENGL 105 or 110 or 111 or 250; open to art history and art majors, others with consent of instructor.

262. The Early Illustrated Book

Either semester. Three credits.

The early history of the illustrated book, from antiquity through the introduction of printing.

262W. The Early Illustrated Book

Prerequisite: ENGL 105 or 110 or 111 or 250. Open to art history and art majors, others with consent of instructor.

267. History of Photography I

Either semester. Three credits.

Topics in the history of photography from 1839 to World War I.

268. History of Photography II

Either semester. Three credits.

Topics in the history of photography from World War I to the present.

268W. History of Photography II

Prerequisite: ENGL 105 or 110 or 111 or 250; open to art history and art majors, others with consent of instructor.

272. The Artist and Society

Either semester. Three credits.

An investigation of the artist's professional function throughout history in different Western societies.

273. Art of the Italian Renaissance

Either semester. Three credits.

Italian art and architecture 1400-1600.

273W. Art of the Italian Renaissance

Prerequisite: ENGL 105 or 110 or 111 or 250; open to art history and art majors, others with consent of instructor.

275. Mexican and Chicano Art, 19th Century - Present

Either semester. Three credits.

Topics in Mexican and Chicano art from Mexican Independence to the present.

275W. Mexican and Chicano Art, 19th Century - Present

Prerequisite: ENGL 105 or 110 or 111 or 250; open to art history and art majors, others with consent of instructor.

276. Caribbean Art, 19th and 20th Centuries

Either semester. Three credits.

A survey of art and visual production in the Caribbean from the 1804 Haitian Revolution to the present.

276W. Caribbean Art, 19th and 20th Centuries

Prerequisite: ENGL 105 or 110 or 111 or 250; open to art history and art majors, others with consent of instructor.

277. Art of Mesoamerica

Either semester, alternate years. Three credits.

A survey of art from Mexico and Central America 2000 BS-CE 1500. Cultures covered include Olmec, Zapotec, Maya, Toltec, and Aztec.

277W. Art of Mesoamerica

Prerequisite: ENGL 105 or 110 or 111 or 250; open to art history and art majors, others with consent of instructor.

278. Colonial Mexican Art

Either semester, alternate years. Three credits.

278W. Colonial Mexican Art

Prerequisite: ENGL 105 or 110 or 111 or 250; open to art history and art majors, others with consent of instructor.

279. Modern Latin American Art

Either semester. Three credits.

A thematic survey of Latin American art from the nineteenth century to present.

279W. Modern Latin American Art

Prerequisite: ENGL 105 or 110 or 111 or 250; open to art history and art majors, others with consent of instructor.

280. Early Christian and Byzantine Art

Either semester. Three credits.

Christian art and architecture of the late Roman empire and the Byzantine East up to the seventh century.

280W. Early Christian and Byzantine Art

Prerequisite: ENGL 105 or 110 or 111 or 250; open to art history and art majors, others with consent of instructor.

281. Modern Art

Either semester. Three credits.

Topics in the art of the first half of the twentieth century.

281W. Modern Art

Prerequisite: ENGL 105 or 110 or 111 or 250; open to art history and art majors, others with consent of instructor.

282. Architecture of the Twentieth Century

Either semester. Three credits.

283. Investigation of Special Topics

Either semester. Credits and hours by arrangement. May be repeated for credit with a change in course content.

Special topics.

285. African Art

Either semester. Three credits.

A survey of African art from antiquity to present.

285W. African Art

Prerequisite: ENGL 105 or 110 or 111 or 250; open to art history and art majors, others with consent of instructor.

286. The Art of China

Either semester. Three credits.

Survey of major art forms in China c. 2500 B.C. to the twentieth century.

286W. The Art of China

Prerequisite: ENGL 105 or 110 or 111 or 250; open to art history and art majors, others with consent of instructor.

287. The Art of Japan

Either semester. Three credits.

A survey of major art forms in Japan, prehistoric to the present.

287W. The Art of Japan

Prerequisite: ENGL 105 or 110 or 111 or 250; open to art history and art majors, others with consent of instructor.

288. Far Eastern Painting

Either semester, alternate years. Three credits. Recommended preparation: ARTH 286 or 287.

Major trends in painting in China from the Han Dynasty to the present; in Japan from the Nara Period to the present.

289. Buddhist Art in the Orient

Either semester, alternate years. Three credits.

Buddhist sculpture, painting, and architecture in India, China and Japan.

290. Ethnicities, Sexualities, Modernisms

(Also offered as WS 290.) Either semester. Three credits.

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.

291. Contemporary Art

Either semester. Three credits.

Topics in the art of the second half of the twentieth century.

291W. Contemporary Art

Prerequisite: ENGL 105 or 110 or 111 or 250; open to art history and art majors, others with consent of instructor.

292. Impressionism and Post-Impressionism

Either semester. Three credits.

Topics in French Painting, 1860-1900.

292W. Impressionism and Post-Impressionism

Prerequisite: ENGL 105 or 110 or 111 or 250; open to art history and art majors, others with consent of instructor.

293. Foreign Study

Either or both semesters. Credits and hours by arrangement. Consent of Department Head required.

Special topics taken in a foreign study program.

294. Field Studies Internship in Art History

Both semesters. Variable credit to a maximum of 12 credits. May be repeated for credit. Prerequisite: Junior standing, two 100-level Art History courses, two 200-level Art History courses and consent of instructor.

Supervised practical experience in museum and museum related work.

Section one: *Wadsworth Athenaeum Internship*. Participation in Museum Studies Seminars, staff meetings and completion of individual project at the Athenaeum. Application must be approved by Wadsworth Athenaeum Education Department; deadlines are in April for first semester and November for second semester.

296. Cooperative Education in Art

Either semester. Three credits. Hours by arrangement. Prerequisite: Junior - Senior standing. 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.

297. Art Historical Methods

Either semester. Three credits. Prerequisite: Two 200-level courses in Art History.

An introduction to the methods of Art Historical analysis.

299. Independent Study

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. 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

201. Introduction to Asian American Studies

Second semester. Three credits. *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.

214. Medicinal Plants of Asian Origin and Culture (Also offered as AH 214.) First semester. Three credits.

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.

215. Critical Health Issues of Asian Americans (Also offered as AH 215.) First semester. Three credits. *Palaniswamy*

Examination of critical health issues affecting Asian American sub populations. Topics to include gender specific health problems; cultural issues; and health care issues.

216. Asian Medical Systems (Also offered as AH 216.) Second semester. Three credits. *Palaniswamy*

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.

221. Sociological Perspectives on Asian American Women (Also offered as SOCI 221.) Either semester. Three credits. *Purkayastha*

An overview of social structures and inter-group relations focusing on the experience of Asian American women.

221W. Sociological Perspectives on Asian American Women (Also offered as SOCI 221W.) Prerequisite: ENGL 105 or 110 or 111 or 250.

222. Asian Indian Women: Activism and Social Change in India and the United States (Also offered as SOCI 222.) First semester. Three credits. Prerequisites: SOCI 107, 115 or 125.

How gender, class and ethnicity/race structure everyday lives of Asian Indian women in both India and the United States.

239. Geography of Asian American Experience (Also offered as GEOG 239.) First semester. Three credits. *Li*

Geographical perspective on issues facing Asian American communities: immigration, community formation, economic structure, race relations, and political participation. The changing dynamics of American ethnicity and study of the ethnoburb. Diversity among Asian Americans, and comparison with other ethnic groups.

268. Japanese Americans and World War II (Also offered as HIST 268.) First semester. Three credits. *Buckley*

The events leading to martial law and executive order 9066, the wartime experience of Japanese Americans, and national consequences.

274. Asian American Literature (Also offered as ENGL 274.) Either semester. Three credits. Prerequisite: ENGL 109, or either 110 or 111. Open to sophomores or higher. *Chow*

Literature, theatre, film about Asian American communities and culture in the United States from the mid-nineteenth century to the present.

277. Modern India (Also offered as HIST 277.) Second semester. Three credits. *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.

287. East Asia to the Mid-Nineteenth Century (Also offered as HIST 287.) First semester. Three credits. *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.

287W. East Asia to the Mid-Nineteenth Century (Also offered as HIST 287W.) Prerequisite: ENGL 105 or 110 or 111 or 250.

288. East Asia Since the Mid-Nineteenth Century (Also offered as HIST 288.) Second semester. Three credits. *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.

288W. East Asia Since the Mid-Nineteenth Century (Also offered as HIST 288W.) Prerequisite: ENGL 105 or 110 or 111 or 250.

294. Asian American Experience Since 1850 (Also offered as HIST 294.) Either semester. Three credits. *Wang*

Survey of Asian Americans in the United States since 1850. Responses by Asian Americans to both opportunities and discrimination.

298. Special Topics in Asian American Studies Either semester. Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary.

Biology (BIOL)

Students with inquiries about an undergraduate major should go to Torrey Life Sciences Building, Room 165.

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)

102. Foundations of Biology 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 100's level.

A laboratory course designed for non-science majors; surveys major biological principles with emphasis on their importance to humans and modern society.

103. The Biology of Human Health and Disease (Also offered as PVS 103.) First semester. Four credits. Three lecture periods and one 2-hour laboratory. This course may not be combined with BIOL 102 to satisfy the General Education Group VIII Requirement. Not open for credit to students who have passed PVS 103. *Smolin, Terry*

A laboratory course which introduces the concepts of biology and their application to the

individual, society and humankind by focusing on health and disease issues.

107, 108. Principles of Biology 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 100's level. A course in high school level chemistry or concurrent enrollment in CHEM 127 are recommended for students enrolling in 107.

A course 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 107); ecology, evolution, genetics, and plant biology, (BIOL 108). Laboratory exercises in BIOL 107 include dissection of preserved animals.

110. Introduction to Botany 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 100'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.

195. Special Topics Lecture 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.

196. Topics in Modern Biology Either semester. One credit. One class period. Current enrollment in BIOL 107 or 108 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 100's level.

Readings, lectures, seminars, films and field trips exploring current developments in biology and their social and scientific implications.

199. Introduction to Biological Research 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 107 or 108 and consent of instructor. Internship in Biology research.

295. Introduction to Undergraduate Research (Formerly offered as MCB 295.) Either or both semesters. One credit. Open to sophomores or higher. Recommended preparation: BIOL 107 and 108, 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: 260 Glenbrook Road

210. Introduction to Biomedical Engineering (Also offered as ECE 272.) First semester. Three credits. Prerequisite: BIOL 107. Corequisite: PHYS 151Q and MATH 210Q. Open to sophomores or higher. *Fox*

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.

221. Introduction to Biochemical Engineering
(Also offered as CHEG 273 and as ENVE 283.) Second semester. Three credits. Recommended preparation: CHEG 251.

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.

223. Fermentation and Separation Technologies Laboratory

Second semester. Three credits. One class and two 3-hour laboratories. Prerequisite: BME 221.

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.

251. Biosystem Analysis

Second semester. Three credits. Prerequisite: BME 210. This course and ECE 202 may not be both taken for credit.

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.

252. Biomedical Engineering Measurements

First semester. Four credits. Prerequisite: BME 210 or ECE 272.

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.

253. Physiological Control Systems

Semester by arrangement. Three credits. Prerequisite: BME 251 or ECE 232.

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.

255. Bioinstrumentation

Either semester. Three credits. Prerequisite: ECE 201 or ECE 220.

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.

261W. Biomechanics

Second semester. Four credits. Prerequisite: BME 210; ENGL 105 or 110 or 111 or 250.

A lecture and laboratory course that covers

mechanics of bone and soft tissue. 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, gears, pins, clutches, joints, rivets, screws and other joining elements and their structural interactions. Material selections for the biomedical design.

271. Biomaterials

Second semester. Four credits. Prerequisite: MMAT 201 or 243 and BME 210.

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.

272. Advanced Biomaterials

Semester by arrangement. Hours by arrangement. Three credits. Prerequisite: BME 210 and BME 271.

The strategies and fundamental bioengineering design criteria behind the development of cell-based tissue substitutes, artificial skin, muscle, tendons, bone, and extracorporeal systems that use either synthetic materials or hybrid (biological-synthetic) systems. Topics include biocompatibility, biological grafts, gene-therapy-transfer, and bioreactors.

290. Biomedical Engineering Design I

Both semesters. Three credits. Prerequisite: This course is taken by seniors in the semester before BME 291.

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 291 is carried out. Written progress reports, a proposal, an interim project report, a final report, and oral presentations are required.

291. Biomedical Engineering Design II

Both semesters. Three credits. Prerequisite: BME 290.

Design of a device, circuit system, process, or algorithm. Team solution to an engineering design problem as formulated in BME 290, from first concepts through evaluation and documentation. Written progress reports, a final report, and oral presentation are required.

295. Special Topics in Biomedical Engineering

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.

299. Independent Study

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)

198. Contemporary Issues in the World of Business

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.

210. Principles of Managerial Accounting

Either semester. Three credits. Prerequisite: ACCT 131. Not open to students who have passed or are taking ACCT 200. Will not substitute for ACCT 200 for students who enter 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.

220. Business Law

Either semester. Three credits. Not open to students who have passed or are taking BLAW 271. Will not substitute for BLAW 271 for students who enter the School of Business.

A study of the interaction between the business community and the legal environment through a systematic analysis, including cases, of the procedural and substantive rules of law with special emphasis placed on the jurisprudence governing contracts, torts, and property. Business ethics are also considered.

230. Financial Management

Either semester. Three credits. Prerequisite: ACCT 200 or BADM 210, which may be taken concurrently; ECON 111 and 112 or 102; MATH 105; STAT 100 or 110. Not open to students who have passed or are taking FNCE 201. Will not substitute for FNCE 201 for students who enter 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.

240. Managerial and Interpersonal Behavior

Either semester. Three credits. Not open to students who have passed or are taking MGMT 201. Will not substitute for MGMT 201 for students who enter 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.

250. Introduction to Marketing Management

Either semester. Three credits. Prerequisites: ACCT 131, ECON 111 and 112 or ECON 102; MATH 105; STAT 100 or 110. Not open to students who have passed or are taking MKTG 201. Will not substitute for MKTG 201 for students who enter 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.

260. Business Information Systems

Either semester. Three credits. Not open to students who have passed or are taking OPIM 203C. Will not substitute for OPIM 203C for students who enter 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.

291. Mobile Computing Lab I

Either semester. Zero credits. Open only to students admitted to the School of Business.

Registering for this course enters the student into the Mobile Computing Initiative 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. The student will be expected to attend an orientation session at the beginning of the semester.

292. Mobile Computing Lab II

Either semester. Zero credits. Prerequisite: BADM 291. May be repeated.

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 291.

295. Mobile Computing Lab III

Either semester. Zero credits. 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.

296. Mobile Computing Lab IV

Either semester. Zero credits. Prerequisite: BADM 295. May be repeated.

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 295.

Business Law (BLAW)

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 class: 280.

271. Business Law

Either semester. Three credits. Not open to students who have passed or are taking BADM 220.

A study of the interaction between the business community and the legal environment through a systematic analysis, including cases, of the procedural and substantive rules of law with special emphasis placed on the jurisprudence governing contracts, torts, and property. Business ethics are also considered.

272. Business Law

Alternate semesters. Three credits. Prerequisite: BLAW 271.

The course acquaints the student with the fundamental legal principles surrounding the law of sales and negotiable instruments.

273. Business Law

Alternate semesters. Three credits. Prerequisite: BLAW 271 or BADM 220.

This course covers the basic legal principles of agencies, partnerships, and corporations. Partnerships and corporations are examined from both legal and functional view points.

274. Real Estate Law

Alternate semesters. Three credits. Prerequisite: BLAW 271 or 275 or BADM 220.

This course is designed to examine the legal aspects of land sale transactions. A study is made of typical documentation used in such transactions; the role of the real estate broker; the rights, liabilities and remedies of the buyer and seller arising out of their contract; sources and alternative forms of financing; basic tax devices; and development alternatives.

275. Business, Law and Society

Either semester. Three credits.

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. Philosophies of American business enterprise, as well as business ethics and morality, are examined and compared with the demands the law makes upon conduct of business people. Business and governmental relationships are explored, with special attention focused on governmental regulation of business by statutory and decision law.

277. Business Transactions and the Law

Either semester. Three credits. Prerequisite: BLAW 275. Not open to students who have passed BLAW 271.

This course provides an overview of how key business transactions and the law are related. Specific topics included are contracts, sales, and negotiable instruments. Also covered are aspects of agency, partnerships, corporations, limited partnership, limited liability companies, secured transactions, and bankruptcy. This course is primarily designed for accounting majors.

280. International Business Law

Alternate semesters. Three credits.

This course is designed to acquaint the student with international business law and with the legal aspects of international business transactions. In examining the legal considerations involved in doing business internationally, this course explores the law surrounding international dispute resolution, the international sale of goods, the European Community, The General Agreement on Tariffs and Trade, the regulation of imports and exports, and a variety of other topics relevant to the legal relationship between business and the international community.

289. Field Study Internship

Either or both semesters. One to six 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).

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.

293. Foreign Study

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.

298. Special Topics

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 law as announced in advance for each semester.

299. Independent Study

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.

Chemical Engineering (CHEG)

Head of Department: Professor Joseph J. Helble
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.

203. Introduction to Chemical Engineering

First semester. Three credits. Recommended preparation: CHEM 128, MATH 114 or MATH 116, ENGR 150 or CSE 110 or CSE 123C. Open to sophomores or higher.

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.

211-212. Chemical Engineering Thermodynamics

Both semesters. Three credits each semester. Three class periods and one discussion period. Recommended preparation: MATH 210 and 211, CHEM 128, and CHEG 203 (or consent of Chemical Engineering Department Head). CHEG 211 and ME 233 may not both be taken for credit. CHEG 211 is open to sophomores or higher. Consent of instructor and department head.

First semester: 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.

Second semester: properties of ideal and non-ideal mixtures; ideal and non-ideal phase equilibria; design of equilibrium flash separators; phase equilibria using equations of state; chemical equilibria; optimum condition for feasible reaction equilibria.

223-224. Transfer Operations

Both semesters. Three credits each semester. Three class periods and one discussion period. Recommended preparation: MATH 210 and 211, CHEM 128, and CHEG 203.

First semester: 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.

Second semester: 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.

225. Advanced Transfer Operations

Second semester. Three credits. Recommended preparation: CHEG 224.

An advanced study of transport phenomena, rate processes, and problems of a more complex nature.

237W. Chemical Engineering Laboratory

First semester. Three credits. Two 1-hour discussion periods. Two 3-hour laboratories. Prerequisite: ENGL 105 or 110 or 111 or 250. Recommended preparation: CHEG 212 and 224.

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.

239W. Chemical Engineering Laboratory

Second semester. Three credits. Two 1-hour discussion periods. Two 3-hour laboratories. Prerequisite: ENGL 105 or 110 or 111 or 250. Recommended preparation: CHEG 237W, 251 and 247.

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.

241. Process Design and Economics

First semester. Three credits. Recommended preparation: CHEG 212, 224, and 251. May not be substituted for CHEG 243.

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.

243. Process Design and Economics

Second semester. Four credits. Recommended preparation: CHEG 212, CHEG 224, and CHEG 251. Not open for credit to students who have passed CHEG 242.

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.

245. Chemical Engineering Analysis

First semester. Three credits. Recommended preparation: CHEG 203 and MATH 210 and 211.

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.

247. Introduction to Process Dynamics and Control

First semester. Three credits. Recommended preparation: CHEG 212 and 224 and MATH 210 and 211.

Chemical process modeling, dynamics, and analysis; measurement and control of process variables; design, and computer simulation of simple processes and control systems.

251. Process Kinetics

Second semester. Recommended preparation: CHEG 212.

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.

256. Polymeric Materials

Either semester. Three credits. Recommended preparation: CHEM 244. Not open for credit to students who have passed CHEM 280.

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.

261. Introduction to Nuclear Engineering

First semester. Three credits. Recommended preparation: CHEG 211 and 223.

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.

262. Engineering Entrepreneurship

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.

273. Introduction to Biochemical Engineering

(Formerly offered as CHEG 283.) (Also offered as BME 221 and as ENVE 283.) Second semester. Three credits. Recommended preparation: CHEG 251.

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.

274. Bioremediation

Either semester. Three credits. Recommended preparation: CHEG 251 and 273.

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.

275. Fermentation and Separation Laboratory

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.

280. Introduction to Environmental Rate Processes

(Also offered as ENVE 280.) First semester. Three credits. Recommended preparation: CHEM 128.

Application of thermodynamics, chemical kinetics and transfer operations to environmental problems; water pollution control. Open only to students not majoring in chemical engineering.

281. Introduction to Water Pollution

(Also offered as ENVE 281.) Second semester. Three credits. Recommended preparation: CHEG 224.

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.

285. Introduction to Air Pollution

(Also offered as ENVE 285.) Second semester. Three credits. Recommended preparation: CHEG 211 or ME 233 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.

286. Energy Process Technology

(Formerly offered as CHEG 270.) Second semester. Three credits. Recommended preparation: CHEG 211 or ME 233 or 238.

Present and potential sources of energy; production and processing of fossil fuels; characteristics of energy utilization systems; design and analysis of power generation systems; design of building heating and cooling systems; solar energy technology.

295. Special Topics in Chemical Engineering

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.

299. Introduction to Research

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.

Chemistry (CHEM)

Head of Department: Professor Gary Epling
Department Office: Room 151, Charles E. Waring
Chemistry Building

For major requirements, see the College of Liberal Arts and Sciences section of this *Catalog*.

101. Chemistry for an Informed Electorate

Either semester. Three credits. Three class periods. Not open to students who have passed CHEM 122, 127, 129, 137, or 153. *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.

122. Chemical Principles and Applications

Second 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 127 or 129 or 137 or 153.

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. With high grade, may serve as a prerequisite for CHEM 128 or 138 or 154.

127Q-128Q. General Chemistry

Either semester. Four credits. Three class periods and one 3-hour laboratory period. Students who have passed CHEM 122 will receive only 2 credits for CHEM 127 but 4 credits will be used for calculating the GPA. Very high standing in CHEM 122 may substitute for CHEM 127 with the consent of the instructor. CHEM 127 is not open for credit to students who have passed CHEM 129 or 137 or 153; CHEM 128 is not open to students who have passed CHEM 130 or 138 or 154. Prerequisite for CHEM 127Q: MATH 101 or passed Q Readiness Test or passed a Q course.

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.

129Q-130Q. Honors General Chemistry

(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 112 or 115; 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 127Q-128Q is listed as a prerequisite. Not open for credit to students who have passed CHEM 137Q-138Q, or 153Q-154Q. Prerequisite for CHEM 129Q: MATH 101 or passed Q Readiness Test or passed a Q course.

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.

137Q-138Q. Enhanced General Chemistry

(Formerly offered as Chemistry 153Q and 154Q.) Both semesters. Four credits each semester. Three class periods and one 3-hour laboratory period. Prerequisite: One year of high school chemistry and a high pass on the Q Test. Prerequisite or corequisite: MATH 112 or 115; or consent of instructor. Primarily for majors in chemistry and related disciplines. This course can be used as an alternate wherever CHEM 127Q-128Q is listed as a prerequisite. Not open for credit to students who have passed CHEM 129Q-130Q or 153Q-154Q. Prerequisite for CHEM 137Q: MATH 101 or passed Q Readiness Test or passed a Q course.

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.

141. Organic Chemistry

First semester. Three credits. Prerequisite: CHEM 122 or 127 or 129 or 137 or 153. Not open for credit to students who have passed CHEM 243.

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.

142. Organic Chemistry Laboratory

First semester. One credit. One 4-hour laboratory period including discussion. Prerequisite or corequisite:

CHEM 141. Not open to students who have passed CHEM 243.

155. Introduction to Chemical Research

Either semester. Credits, not to exceed 3 and hours by arrangement; three laboratory hours for each credit. Prerequisite: CHEM 127 or 129 or 137 or 151 or 153 and consent of instructor.

Internship in research laboratories.

195. The Science of Chemistry

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.

210. Descriptive Inorganic Chemistry

First semester. Two credits. Two class periods. Prerequisite: CHEM 128 or 130 or 138 or 154. Not open for credit to students who have passed CHEM 151.

Introduction to bonding, structure, spectroscopy, physical properties, and reactivity of inorganic compounds.

214. Intermediate Inorganic Chemistry

Second semester. Three credits. Prerequisite: CHEM 151 or 210. Recommended preparation: CHEM 264.

A systematic presentation of bonding, structure, properties, and reactions of inorganic compounds.

215. Inorganic Chemistry Laboratory

Second semester. Three credits. One class period and two 3-hour laboratory periods. Prerequisite or corequisite: CHEM 214.

The preparation, isolation, purification, and characterization of inorganic compounds; special techniques and instrumentation may be required.

216. Selected Topics in Inorganic Chemistry

Second semester. Three credits. Prerequisite: CHEM 214.

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.

232Q. Quantitative Analytical Chemistry

Second semester. Four credits. Two class periods and two 3-hour laboratory periods. Prerequisite: CHEM 128 or 130 or 138 or 154. (Two credits for students who have passed CHEM 152 or 230.) Recommended preparation: CHEM 263. Open to sophomores or higher.

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.

234Q. Instrumental Analysis I

First semester. Four credits. Two class periods and two 3-hour laboratory periods. Prerequisite: CHEM 232 (or CHEM 152 or 230). Recommended preparation: CHEM 264.

Instrumental analytical techniques including molecular spectroscopy, atomic spectroscopy, electrochemistry, separations, and introductory electronics. This course is an extension of the instrumental portion of CHEM 232.

235. Instrumental Analysis II

Second semester. Four credits. Three class periods and one 3-hour laboratory period. Prerequisite: CHEM 234.

Analytical aspects of electron, X-ray, vibrational, and other spectroscopic methods. Analysis of surfaces.

Advanced topics in data analysis and modern analytical methodology.

240. Organic Chemistry Laboratory

Either semester. One credit. One 4-hour laboratory period. Not open for credit to students who have passed CHEM 245. Prerequisite: CHEM 243. This course is open only to Chemical Engineering or Bio-medical Engineering majors or by consent of instructor. Open to sophomores or higher.

Introduction to techniques, manipulations, calculations and spectroscopy.

242W. Advanced Organic Chemistry Laboratory

Either semester. Three credits. One class period and two 3-hour laboratory periods. Prerequisite: CHEM 245; ENGL 105 or 110 or 111 or 250.

Advanced techniques and fundamentals of organic synthesis and identification.

243. Organic Chemistry

Either semester. Three credits. (Two credits for students who have passed CHEM 141.) Prerequisite: CHEM 128 or 130 or 138 or 152 or 154. Open to sophomores or higher.

Structure and reactions of the simpler classes of the compounds of carbon.

244. Organic Chemistry

Either semester. Three credits. Prerequisite: CHEM 243. Open to sophomores or higher.

A continuation of CHEM 243.

245. Organic Chemistry Laboratory

Either semester. Three credits. (Students who have passed CHEM 240 will receive only 2 credits for CHEM 245. Students who have passed CHEM 142 will receive only 2 credits for CHEM 245, but 3 credits will be used for calculating QPR scores.) Two 3-hour laboratory periods and one 1-hour discussion period. Prerequisite or corequisite: CHEM 244. Open to sophomores or higher.

251Q. Introduction to Quantum Chemistry

First semester. Three credits. Prerequisite: CHEM 264.

An introduction to quantum theory and its applications to atomic and molecular structure and spectroscopy.

256. Physical Chemistry Laboratory

First semester. One credit. One 3-hour laboratory period. Prerequisite or corequisite: CHEM 263. Not open for credit to students who have passed CHEM 265. 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.

263Q-264Q. Physical Chemistry

Both semesters. Four credits each semester. Prerequisite: CHEM 128 or 130 or 138 or 152 or 154; PHYS 123, or 132, or 142, or 152; MATH 210 or 220 for CHEM 263; and MATH 211 or 221 for CHEM 264.

A study of gases, liquids, solids, solutions, and thermodynamics in CHEM 263 and kinetics, atomic and molecular theory and spectroscopy in CHEM 264.

265S. Physical Chemistry Laboratory (W,C)

Either semester. Two credits. Two 3-hour laboratory periods. Prerequisite: CHEM 264, may be taken concurrently; ENGL 105 or 110 or 111 or 250.

270W. Technical Communications

First or second semester. Three credits. Prerequisite: CHEM 243; ENGL 105 or 110 or 111 or 250.

This course will cover 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.

280. Polymeric Materials

Second semester. Three credits. Prerequisite: CHEM 244. Not open for credit to students who have passed CHEG 256.

Structure, properties and chemistry of high polymers. Methods of production and applications.

291. Variable Topics

Either semester. Three credits. With a change in topic, may be repeated for credit. Prerequisites, required preparation, and recommended preparation vary.

295. Undergraduate Seminar

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.

296. Undergraduate Research

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.

297W. Thesis for Undergraduate Chemistry Majors

Either semester. Three credits. Hours by arrangement. Prerequisite: A minimum of three credits in CHEM 296 or 299; ENGL 105 or 110 or 111 or 250. Open only with consent of instructor.

A formal thesis is required, based on original investigation carried on by the student.

298. Special Topics

Either semester. Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary.

299. Independent Study

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.

Chinese (CHIN)

Head of Department: Professor David K. Herzberger
Department Office: Room 228, J.H. Arjona Building

101-102. Elementary Levels I and II**103-104. Intermediate Levels I and II**

101 and 103 are offered in the first semester, and 102 and 104 in the second. Please refer to the Critical Languages course descriptions in this publication. Consult the Program Director in Arjona 128 or at Ed.Benson@UConn.edu for more information.

Civil & Environmental Engineering (CE)

Head of Department: Professor Erling Smith
Associate Head of Department: Associate Professor Ramesh Malla
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 under that heading, immediately following the Civil Engineering courses. Also see courses listed under Engineering.

201. Decision Analysis in Civil and Environmental Engineering

(Also offered as ENVE 201.) First semester. Three credits. Prerequisite: MATH 114 or 116. May not be taken for credit if the student has taken CE 251, 281, or ENVE 251. *Anagnostou, Ivan*

Time value of money. Evaluation of alternative projects. Fundamentals of probability theory and statistics. Critical path method for project scheduling. Optimization using linear mathematical models.

202. Operations Research in Civil and Environmental Engineering

Second semester. Three credits. Prerequisite: CE 201. 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.

222. Civil Engineering Materials

Second semester. Three credits. Two lectures. One 3-hour laboratory. Prerequisite or corequisite: CE 287. *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.

222P. Civil Engineering Materials

Prerequisite: CE 287, which may be taken concurrently; ENGL 105 or 110 or 111 or 250. Must be taken with another P course in Civil Engineering to equal one W course.

230. Mechanics of Materials and Structures Laboratory

Two credits. One hour lecture and one 2-hour Laboratory. Prerequisite: CE 222; and prerequisite or corequisite: CE 234 and CE 236. *Smith, Davis*

Laboratory experiments to complement, reinforce and develop concepts learned in Mechanics of Materials, Basic Structural Analysis and Basic Structural Design. Topics include tension, torsion, flexure and buckling. Written reports.

234. Basic Structural Analysis

Second semester. Three credits. Prerequisite: CE 287. *Accorsi, DeWolf, Epstein, Frantz, Leonard, Malla*

Analysis of statistically determinate structures; influence lines; deflection of trusses, beams, and frames; introduction to indeterminate analysis using consistent deformation and moment distribution; computer programming.

236. Basic Structural Design

Second semester. Four credits. Three class periods and one 3-hour Laboratory. Prerequisite: CE 287. *DeWolf, Epstein, Frantz, Malla, Smith*

Loads; design of principal components – beams, columns and simple connections – of steel and reinforced concrete structures. Design projects.

237. Advanced Structural Analysis

First semester. Three credits. Prerequisite: CE 234. *DeWolf, Epstein, Leonard, Malla*

Approximate analysis techniques, analysis of indeterminate elastic structures using classical and matrix methods of analysis. Computer programming

238. Reinforced Concrete Structures Design

First semester. Three credits. Prerequisite: CE 234 and 236. *DeWolf, Epstein, Frantz*

Design for flexure, shear, torsion, and axial loads;

two-way slabs; serviceability considerations. Applications to buildings.

239. Steel Structures Design

Second semester. Three credits. Prerequisite: CE 234 and 236. *DeWolf, Frantz*

Beam columns, composite members, plate girders, connections; introduction to plastic design. Applications to buildings. Written reports.

239P. Steel Structures Design

Prerequisite: CE 234 and 236; ENGL 105 or 110 or 111 or 250. Must be taken with another P course in Civil Engineering to equal one W course.

240. Soil Mechanics and Foundations

First semester. Four credits. Three class periods and one 3-hour laboratory period. Prerequisite or corequisite: CE 287 and CE 297. *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.

240P. Soil Mechanics and Foundations

Prerequisite: CE 287 and CE 297, may be taken concurrently; ENGL 105 or 110 or 111 or 250. Must be taken with another P course in Civil Engineering to equal one W course.

241. Foundation Design

First semester. Three credits. Prerequisite: CE 240. *Demars*

Application of soil properties to design of foundations, retaining structures, excavation drainage, shallow footings, deep foundations, specifications, subsurface exploration.

242. Soils Engineering

Second semester. Three credits. Prerequisite: CE 240.

Earth structures, slope stability, consolidation and settlement of soil, vertical drains, surcharging, pressures on buried pipes, and tunnels, numerical solutions.

242P. Soils Engineering

Prerequisite: CE 240; ENGL 105 or 110 or 111 or 250. Must be taken with another P course in Civil Engineering to equal one W course.

251. Probability and Statistics in Civil Engineering

(Also offered as ENVE 251.) First semester. Three credits. Open to sophomores or higher. Recommended preparation: MATH 113Q or 115Q/115V. This course and CE 201 or ENVE 201 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.

254. Transportation Engineering

Second semester. Three credits. Prerequisite: CE 271. Recommended preparation: CE 212. Open to sophomores or higher. *Aultman-Hall, Garrick, Ivan*

Design of transportation facilities. Traffic flow and capacity analysis. Travel demand analysis.

255. Case Studies in Transportation Engineering

(Also offered as CE 302.) First semester. Three credits. Prerequisite: CE 254. *Ivan, Garrick*

Analysis of transportation case studies in road design, metropolitan planning and corridor study. Application of transportation engineering and planning skills. Oral and written group reports, group discussions, individual written papers.

256. Civil Engineering Systems Analysis and Design

Second semester. Three credits. Recommended preparation: CE 251. This course and CE 202 may not both

be taken for credit. *Davis, Ivan*

Optimization, decision and risk analysis, and simulation in design of civil engineering systems. Network analysis and project scheduling.

256P. Civil Engineering Systems Analysis and Design

Prerequisite: ENGL 105 or 110 or 111 or 250. Recommended preparation: CE 251. Must be taken with another P course in Civil Engineering to equal one W course.

260. Water Quality Engineering

(Also offered as ENVE 260.) Second semester. Three credits. Prerequisite: CE 263 and (CE 297 or CHEG 223). *Abboud, Smets*

Physical, chemical, and biological principles for the treatment of aqueous phase contaminants; reactor dynamics and kinetics. Design projects.

262. Environmental Engineering Laboratory

(Formerly offered as CE 264.) (Also offered as ENVE 262.) Second semester. Three credits. Two class periods and one 3-hour laboratory period. Prerequisite: CE 263; and prerequisite or corequisite: CE 297 or CHEG 223. *Abboud, Holmen, Smets*

Aqueous analytical chemical techniques, absorption, coagulation/flocculation, fluidization, gas stripping, biokinetics, interpretation of analytical results, bench-scale design projects, written and oral reports.

262P. Environmental Engineering Laboratory

(Also offered as ENVE 262P.) Prerequisite: CE 263; CE 297 or CHEG 223, which may be taken concurrently; ENGL 105 or 110 or 111 or 250. Must be taken with another P course in Civil Engineering to equal one W course.

263. Environmental Engineering Fundamentals

(Also offered as ENVE 263.) First semester. Three credits. Prerequisite: CHEM 128 or 130. Open to sophomores or higher. *Hoag, MacKay, Smets*

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.

265. Hydraulic Engineering

(Also offered as ENVE 265.) Second semester. Three credits. Prerequisite: CE 297 or (CHEG 223 and CHEG 224). *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.

266. Hydraulic Engineering Laboratory

(Also offered as ENVE 266.) Second semester. Two credits. One class period. One 2-hour Laboratory. Prerequisite CE 297.

Tests of the flow of water in pipes and open channels. Theory and calibration of flow measurement devices. Study of velocity profiles. Generation of pump performance curves. Physical hydraulic modeling and similitude.

267. Engineering Hydrology

(Also offered as ENVE 267.) First semester. Three credits. Prerequisite: CE 297 or (CHEG 223 and CHEG 224). *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.

267P. Engineering Hydrology

Prerequisite: CE 297 or (CHEG 223 and CHEG 224); ENGL 105 or 110 or 111 or 250. Must be taken with another P course in Civil Engineering to equal one W course.

268. Limnology

(Also offered as EEB 247 and ENVE 268.) First semester. Three credits. Prerequisite: (MATH 109 or 112 or 115) and (CHEM 122, 127, or 129 or 137). Recommended preparation: BIOL 107 or an introductory biology course.

Physical, chemical, and biotic interrelationships of freshwater habitats.

269. Selected Environmental Problems

Second semester. Three credits. Open to sophomores or higher.

Ecological effects of pollution and despoilment. Organized and rational study of specific environmental problems, including social, economic, political and legislative aspects.

271. Geomatics and Spatial Measurement

First semester. Four credits. Three lecture periods and one 3-hour laboratory. Recommended preparation: MATH 109 or 112 or 115. Open to sophomores or higher.

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.

275. Route Surveying

Second semester. Three credits. Two class periods. One 3-hour Laboratory. Prerequisite: CE 271.

Reconnaissance and route selection, simple, compound and reverse horizontal curves, spirals, vertical curves, earthwork, cross-sectioning, slope staking, and observations for the meridian.

276. Computer Aided Site Design

Second semester. Three credits. One 3-hour class period. Prerequisite: CE 271; and prerequisite or corequisite: CE 254.

Grading and earthwork, runoff and drainage structures for highway design and site development using computer software.

279. Environmental Modeling

(Also offered as ENVE 279.) Second semester. Three credits. Prerequisite: CE 263 and (CHEG 223 or CE 297).

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.

280W. Civil Engineering Projects

Either semester. Three credits. Two 3-hour laboratory periods. Prerequisite: Departmental consent required; ENGL 105 or 110 or 111 or 250. 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.

281. Engineering Economics

Second semester. One credit. Given as two 1-hour class periods weekly during first half of semester only. Prerequisite: Senior standing. This course and CE 201 or ENVE 201 may not both be taken for credit. *Leonard, Smith*

Costs of Civil Engineering projects; components of cost estimating; comparison of alternate designs; cost/benefit analysis; useful life and depreciation; basic methods of project financing.

291. Civil and Environmental Engineering Professional Issues Seminar

Either semester. No credits. One 1-hour period. Open to sophomores or higher. 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.

294. Special Topics in Civil Engineering

Semester, credits, and hours by arrangement or 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 299.

299. Independent Study for Undergraduates

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.

Applied Mechanics

211. Applied Mechanics I

Either semester. Three credits. Not open to students who have passed CE 213 or 214. Prerequisite: ENGR 150 or CSE 110 or CSE 123C; and prerequisite or corequisite: MATH 210 or MATH 220. Open to sophomores or higher. *Accorsi, Demars, DeWolf, Frantz, Leonard, Malla, Smith, Uthgennant*

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. Computer applications.

212. Applied Mechanics II

Either semester. Three credits. Not open to students who have passed CE 215. Prerequisite: CE 211 and (MATH 210 or MATH 220). This course and CE 213 may not both be taken for credit. Open to sophomores or higher. *Epstein, Malla, Uthgennant*

Fundamentals of dynamics using vector methods. Rectilinear and curvilinear motion, translation, rotation, plane motion; work, energy and power; impulse and momentum. Computer applications.

287. Mechanics of Materials

Either semester. Three credits. Prerequisite: CE 211 or CE 214. Open to sophomores or higher. *Accorsi, Davis, DeWolf, Epstein, Malla, Smith, Uthgennant*

Simple and combined stress, torsion, flexure and deflection of beams, continuous and restrained beams, combined axial and bending loads, columns. Computer applications.

289. Intermediate Mechanics of Materials

Second semester. Three credits. Prerequisite: CE 287. This course and ME 229 may not both be taken for

credit.

Stresses and strains, curved beams, torsion of non-circular sections, flat plates, strain-energy, deflections. Impact and energy loads, repeated stress, mechanical properties of materials and theories of failure, influence of stress concentration.

297. Fluid Mechanics

Either semester. Three credits. Prerequisite or corequisite: CE 212 or CE 215; and prerequisite: (MATH 210 or MATH 220) and MATH 211. This course and ME 250 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.

Classics and Ancient Mediterranean Studies (CAMS)

Head of Department: Professor David K. Herzberger
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.

(Taught in English)

101. Greek Civilization

(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.

102. Roman Civilization

(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.

103. Classical Mythology

(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 re-interpretation of classical myth in modern art forms.

104. The Greek and Latin Elements in English

(Formerly offered as CLAS 104.) Either semester. Three credits. A knowledge of Greek or Latin is not required.

The historical relationship of English to Greek and Latin in vocabulary and structure. Greek and Latin prefixes, suffixes and bases, learned and applied to the analysis of unfamiliar words. Introduction to the specialized vocabularies of various academic areas.

105. Greek and Latin in Bioscientific Terminology

(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.

241W. Greek and Roman Epic

(Formerly offered as CLAS 241W.) Either semester, alternate years. Three credits. Prerequisite: ENGL 105 or 110 or 111 or 250. Recommended preparation: CAMS 101 or 102 or 103. 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.

242W. Greek and Roman Drama

(Formerly offered as CLAS 242W.) Either semester, alternate years. Three credits. Prerequisite: ENGL 105 or 110 or 111 or 250. Recommended preparation: CAMS 101 or 102 or 103. 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.

243. World of Late Antiquity

(Also offered as HIST 217.) (Formerly offered as CLAS 243.) Either semester. Three credits.

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.

244. Ancient Fictions

(Formerly offered as CLAS 244.) Either semester. Three credits. A knowledge of Greek and Latin is not required. *Johnson*

This course will examine 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.

250. The Early Church and Christian Thought

(Also offered as HIST 257.) Either semester. Three credits. Recommended preparation: HIST 216 or CAMS 255. *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.

251. Greek Art

(Also offered as ARTH 243.) (Formerly offered as CLAS 251.) Either semester, alternate years. Three credits.

Greek art and architecture from the ninth century B.C. to the first-century A.D.

252. Roman Art

(Also offered as ARTH 246.) (Formerly offered as CLAS 252.) Either semester, alternate years. Three credits.

History of Roman art and architecture.

253. Ancient Near East

(Also offered as HIST 213.) (Formerly offered as CLAS 253.) Either semester. Three credits. *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 and cultural achievements of ancient near-Eastern peoples.

254. Ancient Greece

(Also offered as HIST 214.) (Formerly offered as CLAS 254.) Either semester. Three credits.

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.

255. Ancient Rome

(Also offered as HIST 216.) (Formerly offered as CLAS 255.) Either semester. Three credits.

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.

256. Palestine under the Greeks and Romans

(Formerly offered as CLAS 256.) (Also offered as HEB 218, HIST 218, and JUDS 218.) Either semester. Three credits. Recommended preparation: HIST 213 or 214 or 216 or INTD 294 or HEB 202. *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.

257. Ancient Philosophy

(Also offered as PHIL 221.) Either semester. Three credits. Prerequisite: At least one of PHIL 101, 102, 103, 104, 105, 106. Open to sophomores or higher.

Greek philosophy from its origin in the Pre-Socratics through its influence on early Christianity. Readings from the works of Plato and Aristotle.

Greek

171-172. Elementary Greek I and II

(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.

An 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.

207. Greek Philosophical Writings

(Formerly offered as CLAS 207.) Either semester, alternate years. Three credits. Prerequisite: CAMS 172. Selections from Plato and Aristotle.

208. Homer

(Formerly offered as CLAS 208.) Either semester, alternate years. Three credits. Prerequisite: CAMS 172. Selections from the *Iliad* or *Odyssey*.

211. Greek Drama

(Formerly offered as CLAS 211.) Either semester, alternate years. Three credits. Prerequisite: CAMS 172. Selected plays of Aeschylus, Sophocles, Euripides, and Aristophanes.

212. Greek Historical Writings

(Formerly offered as CLAS 212.) Either semester, alternate years. Three credits. Prerequisite: CAMS 172. Selections from Herodotus and Thucydides.

214. Greek Lyric Poetry

(Formerly offered as CLAS 214.) Either semester, alternate years. Three credits. Prerequisite: CAMS 172. Selections from the early Greek lyric, elegiac, and iambic poets, including but not limited to Archilochus, Minnervus, Solon, Sappho, Alcaeus, Anacreon, Xenophanes, Theognis, and Simonides.

215. The Greek New Testament

(Formerly offered as CLAS 215.) Either semester, alternate years. Three credits. Prerequisite: CAMS 172. Selected readings, ordinarily including Acts of the Apostles and at least one Pauline letter.

Latin

121-122. Elementary Latin I and II

(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.

123-124. Intermediate Latin I and II (Formerly offered as CLAS 123-124.) Both semesters. Three credits each semester. Prerequisite: CAMS 122 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.

213. Ovid and Mythology (Formerly offered as CLAS 213.) Either semester, alternate years. Three credits. Prerequisite: CAMS 124, or three or more years of Latin in high school.

Selections from Ovid, mainly from the *Metamorphoses*, and a study of the myths of Greece and Rome.

221. Survey of Classical Latin Literature (Formerly offered as CLAS 221.) Either semester, alternate years. Three credits. Prerequisite: CAMS 124, or three or more years of Latin in high school.

Extensive reading of a relatively wide range of authors of representative classical Latin prose and poetry.

224. Vergil and the Roman Epic (Formerly offered as CLAS 224.) Either semester, alternate years. Three credits. Prerequisite: CAMS 124, or three or more years of Latin in high school.

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.

225. Latin Drama (Formerly offered as CLAS 225.) Either semester, alternate years. Three credits. Prerequisite: CAMS 124, or three or more years of Latin in high school.

Selected plays of Plautus, Terence, and Seneca, with lectures on Roman theatre and the development of drama.

226. Latin Lyric Poetry (Formerly offered as CLAS 226.) Either semester, alternate years. Three credits. Prerequisite: CAMS 124, or three or more years of Latin in high school.

Selections from the lyrics of Horace and Catullus, with lectures on metrical patterns and the influence of Greek lyrics.

227. Latin Historical Prose (Formerly offered as CLAS 227.) Either semester, alternate years. Three credits. Prerequisite: CAMS 124, or three or more years of Latin in high school.

Selections from Sallust, Livy, and Tacitus.

230. Latin Philosophical Prose and Poetry (Formerly offered as CLAS 230.) Either semester, alternate years. Three credits. Prerequisite: CAMS 124, or three or more years of Latin in high school.

Selections from Lucretius, Cicero, and Seneca.

231. Latin Elegiac Poetry (Formerly offered as CLAS 231.) Either semester, alternate years. Three credits. Prerequisite: CAMS 124, or three or more years of Latin in high school.

Selections from Tibullus, Propertius, and Ovid's *Amores*.

232. Medieval Latin (Formerly offered as CLAS 232.) Either semester, alternate years. Three credits. Prerequisite: CAMS 124, or three or more years of Latin in high school.

Reading of texts from a number of periods and in a variety of styles, with consideration of morphological, syntactical, and semantic developments.

193. Foreign Study (Formerly offered as CLAS 193.) Either or both semesters. Credits and hours by arrangement. May be repeated for credit. Consent of Department Head re-

quired, normally before the student's departure. Special topics taken in a foreign study program.

293. Foreign Study (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.

295. Variable Topics (Formerly offered as CLAS 295.) Either semester. Three credits. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary.

298. Special Topics (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.

299. Independent Study (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.

Communication (COMM)

Head of Department: Professor Harvey R. Gilbert
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*.

100. The Process of Communication (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.

105. Principles of Public Speaking (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.

130. Mass Communication Systems (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.

200Q. Research Methods in Communication (Formerly offered as COMS 231Q.) Either semester. Three credits. Prerequisite: COMM 100 or COMS 102 or instructor consent; MATH 101 or passed Q Readiness Test or passed a Q course.

The scientific approach as it specifically applies to communication.

205. Introduction to Research Literature in Communication (Formerly offered as COMS 230.) First semester. Three credits. Prerequisite: COMM 200Q or COMS 231Q, COMM 210 or COMS 210, COMM 220 or COMS 205, and COMM 230 or COMS 235.

A survey of research in major sub-areas of communication.

210. Persuasion (Formerly offered as COMS 210.) Either semester. Three credits. Three class periods or two class periods with one discussion period. Prerequisite: COMM 100 or COMS 102 or instructor consent. *Hamilton*
Introduction to theories of attitude formation, change and reinforcement. Research is used to evaluate past and present models of persuasion.

211. Advanced Persuasion and Communication (Formerly offered as COMS 219.) Either semester. Three credits. Prerequisite: COMM 210 or COMS 210. Recommended preparation: COMM 200Q or COMS 231Q and COMM 230 or COMS 235 or instructor consent.

Advanced consideration and criticism of selected modern persuasion theories and research in communications.

212. Visual Communications (Formerly offered as COMS 240.) Second semester. Three credits. Prerequisite: COMM 100 or COMS 102, 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.

215. Communication Campaigns and Applied Research (Formerly offered as COMS 218.) Second semester. Three credits. Prerequisite: COMM 200Q or COMS 231Q, or STAT 100V or 110V. Recommended preparation: COMM 130 or COMS 135, COMM 230 or COMS 235, and COMM 210 or COMS 210. *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.

220. Interpersonal Communications (Formerly offered as COMS 205.) Either semester. Three credits. Prerequisite: COMM 100 or COMS 102 or instructor consent. *VanLear*

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.

224. Introduction to Semantics (Formerly offered as COMS 224.) Either semester. Three credits. Prerequisite: COMM 100 or COMS 102 or instructor consent.

The relationship among people, words, and meaning.

225W. Small Group Communication (Formerly offered as COMS 216W.) Either semester. Three credits. Prerequisite: COMM 220 or COMS 205 or instructor consent; ENGL 105 or 110 or 111 or 250. Recommended preparation: COMM 210 or COMS 210. *VanLear*

Approaches, methods, and findings of research in small group communication and development of an ability to engage effectively in small group situations.

226. Organizational Communication (Formerly offered as COMS 217.) Second semester. Three credits. Prerequisite: COMM 220 or COMS 205 and COMM 200Q or COMS 231Q or instructor consent.

Communication in formal organizations; horizontal and vertical communication; effectiveness of different organizational structures and channels; feedback; networks; norms and roles.

230. Effects of Mass Media (Formerly offered as COMS 235.) Either semester. Three credits. Prerequisite: COMM 100 or COMS 102

or instructor consent.

An analysis of the roles of the mass media and of the effects they exert on individuals and society.

232. Media and Special Audiences

(Formerly offered as COMS 260.) (Also offered as PRLS 260.) Either semester. Three credits. Recommended preparation: COMM 100 or COMS 102. *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.

233. Latinas and Media

(Also offered as PRLS 264 and WS 260.) Second semester. Three credits. *Rios*

The role of ethnicity and race in women's lives. Special attention to communication research on ethnic and racial minority women.

234. Children and Mass Media

Either semester. Three credits. Prerequisite: COMM 100 or COMS 102.

Child development and the effects of mass media on young children. Educational television, frightening media, violent television, computer games, the Internet and media policy.

241. Mass Media and Political Process

(Formerly offered as COMS 238.) Either semester. Three credits. Prerequisite: COMM 130 or COMS 135, COMM 210 or COMS 210 and COMM 230 or COMS 235.

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.

242W. Government Communication

(Formerly offered as COMS 222W.) Either semester. Three credits. Prerequisite: COMM 100 or COMS 102; ENGL 105 or 110 or 111 or 250.

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.

243. Protest and Communication

(Formerly offered as COMS 236.) Either semester. Three credits. Prerequisite or corequisite: COMM 230 or COMS 235. 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.

245. Gender and Communication

(Formerly offered as COMS 226.) Either semester. Three credits. Prerequisite: COMM 100 or COMS 102.

Differences in male/female communication, and the role of discourse in the production of those differences. The politics of gender and communication.

250. Nonverbal Communication

(Formerly offered as COMS 207.) First semester. Three credits. Recommended preparation: COMM 200Q or COMS 231Q. *Buck*

Facial expression, body movement, spatial behavior and para-language, with a consideration of applications for information theory.

251W. Advanced Nonverbal Communication

(Formerly offered as COMS 214W.) Second semester. Three credits. Prerequisite: COMM 250 or COMS 207 or instructor consent; ENGL 105 or 110 or 111 or 250. Recommended preparation: COMM 220 or COMS 205. *Buck*

Selected issues and research techniques current in

the literature. Research projects of kinetic proxemic, and/or paralinguistic behaviors involved in communication.

255. Motivation and Emotion

(Formerly offered as COMS 255.) (Also offered as PSYC 255.) Either semester. Three credits. Prerequisite: PSYC 135 or 133. *Buck*

Cognition, brain mechanisms, biofeedback, aggression, sex, competence, social influence, and conformity.

260. Information and Communication

(Formerly offered as COMS 234.) Either semester. Three credits. Prerequisite: COMM 200Q or COMS 231Q or instructor consent.

Approaches to studying communication including cybernetics, general systems theory, information theory, and human information processing.

262. New Communication Technologies

(Formerly offered as COMS 239.) Either semester. Three credits. Prerequisite: COMM 130 or COMS 135. Recommended preparation: COMM 230 or COMS 235.

An overview of new communication technologies. Topics include the uses, evolution, diffusion, operation, and effects of new communication technologies.

264. Design of Human Communication Systems

(Formerly offered as COMS 237.) Either semester. Credits and hours by arrangement. Prerequisite: COMM 130 or COMS 135. Recommended preparation: COMM 230 or COMS 235. 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.

270W. Global Communication

(Formerly offered as COMS 206W.) Either semester. Three credits. Prerequisite: ENGL 105 or 110 or 111 or 250. Recommended preparation: COMM 130 or COMS 135.

International communication patterns; globalization of media industries; new technologies; communication in war and peace; political, economic, social and cultural effects.

271. Communication and Change

(Formerly offered as COMS 208.) First semester. Three credits. Recommended preparation: COMM 230 or COMS 235 and COMM 210 or COMS 210. *Snyder*

The role of communication and communication technologies in social change, diffusion of new ideas, and education. Special application to third world development.

272. Cross-Cultural Communication

(Formerly offered as COMS 209.) Either semester. Three credits. Recommended preparation: COMM 220 or COMS 205.

Communication behavior within and across cultures and subcultures.

273W. Media, State, and Society

(Formerly offered as COMS 213W.) Either semester. Three credits. Prerequisite: COMM 130 or COMS 135 and COMM 230 or COMS 235, which may be taken concurrently; ENGL 105 or 110 or 111 or 250.

Forms of, rationales for, and effects of state involvement in mass media. The development of alternative media. Cultural implications of transnational media influences.

280. Communication Processes in Advertising

(Formerly offered as COMS 220.) Either semester. Three credits. Prerequisite: COMM 130 or COMS 135, COMM 230 or COMS 235 and COMM 210 or COMS 210.

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.

282. Public Relations

(Formerly offered as COMS 215.) Either semester. Three credits. Prerequisite: COMM 130 or COMS 135, COMM 200Q or COMS 231Q, and COMM 230 or COMS 235.

Practical applications of major theories of communication and mass media to public relations practiced by organizations. Based on readings, student research, and case histories.

288. Television Production

(Formerly offered as COMS 233.) Either semester. Three credits. Prerequisite: COMM 100 or COMS 102 and COMM 130 or COMS 135 and consent of instructor.

This course provides the student with hands-on broadcast and industrial video production. The 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.

290. Research Practicum in Communication

(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 200-level Communication courses which must include COMM 200Q or COMS 231Q and consent of instructor. Should be taken during the senior year. May be repeated once for credit.

This course is designed to provide students with an opportunity to participate in a variety of supervised research activities in communication.

291. Internship in Communication

(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 200-level Communication courses and consent of instructor. 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).

This course is designed to provide students with opportunity for supervised field work in a professional communication organization. Student's performance will be evaluated both by the field supervisor and course instructor.

293. Foreign Study

(Formerly offered as COMS 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 foreign study program.

296W. Senior Thesis

(Formerly offered as COMS 296W.) Either semester. Credits and hours by arrangement. Prerequisite: ENGL 105 or 110 or 111 or 250. Open only with consent of instructor.

Preparation of a thesis and its presentation to the department.

297. Variable Topics

(Formerly offered as COMS 297.) Either semester. Three credits. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary.

298. Special Topics

(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.

299. Independent Study

(Formerly offered as COMS 299.) Either or both semesters. Credits and hours by arrangement. 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 Harvey R. Gilbert
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*.

150. Introduction to Communication Disorders (Formerly offered as COMS 150.) First semester. Three credits.

A survey of Audiology and Speech-Language Pathology.

201. Speech Science

(Formerly offered as COMS 201.) First semester. Three credits. Three class periods. *Max*

Acoustic, anatomical, neurological and physiological principles fundamental to the understanding of voice and speech production.

202. Speech and Language Acquisition

(Formerly offered as COMS 202.) Either semester. Three credits. *Grela, Johnson*

How children learn their first language; the effects of language on their thinking and behavior.

204. Methods and Issues in Child Language Research

(Formerly offered as COMS 204.) Second semester. Three credits. Two class periods, and child observations and individual conferences by arrangement. Prerequisite: CDIS 202. Open only with consent of instructor.

Critical discussion of recent research in child language, and supervised individual research projects.

241. Sign Language: Theory and Practice

(Formerly offered as COMS 241.) Second semester. Three credits.

Information about the history, structure and use of sign languages, and instruction in the basics of American Sign Language (ASL) and Signed English.

242. Directed Observations

(Formerly offered as COMS 242.) Both semesters. One credit.

Directed observations of speech-language pathology and audiology diagnostic and treatment procedures. How such procedures change with various etiologies.

244. Introduction to Neurogenic Communication Disorders

(Formerly offered as COMS 244.) First semester. Three credits. Prerequisites: CDIS 201 and 202. *Coelho*

Acquired and developmental neurogenic

communication disorders. Brain mechanisms that underlie speech and language and their disorders.

247. Introduction to Phonetic Principles

(Formerly offered as COMS 247.) Second semester. Three credits. Prerequisite: CDIS 201.

The analysis of speech through the application of phonetic theory.

248. Introduction to Audiology

(Formerly offered as COMS 248.) Second semester. Three credits. Prerequisite: CDIS 250. *Moncrieff*

An introduction to the nature, causation, assessment and management of hearing impairment and the principles and techniques of public school conservation programs.

249. Introduction to Aural Rehabilitation

(Formerly offered as COMS 249.) First semester. Three credits. Prerequisite: CDIS 248. *Cienkowski*

An introduction to the effects of hearing impairment on communication. Communication strategies for adults and children with impaired hearing are discussed.

250. Audition

(Formerly offered as COMS 250.) First semester. Three credits. *Musiek*

The response to acoustic stimuli including methodology and instrumentation.

251. Introduction to Articulation, Voice, and Fluency Disorders

(Formerly offered as COMS 251.) Second semester. Three credits. Prerequisites: CDIS 201, 202, and 247. *Gilbert, Max*

Communication problems resulting from disorders of speech, voice, and fluency. Assessment and management strategies in settings including public schools, hospitals, and rehabilitation centers.

253. Introduction to Language Pathology in Children

(Formerly offered as COMS 253.) First semester. Three credits. Prerequisite: CDIS 202. *Grela*

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.

293. Foreign Study

(Formerly offered as COMS 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 foreign study program.

296W. Senior Thesis

(Formerly offered as COMS 296W.) Either semester. Credits and hours by arrangement. Prerequisite: ENGL 105 or 110 or 111 or 250. Open only with consent of instructor.

Preparation of a thesis and its presentation to the department.

297. Variable Topics

(Formerly offered as COMS 297.) Either semester. Three credits. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary.

298. Special Topics

(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.

299. Independent Study

(Formerly offered as COMS 299.) Either or both semesters. Credits and hours by arrangement. 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.

Comparative Literary and Cultural Studies (CLCS)

Program Chair: Associate Professor Lucy McNecce

Office: Room 242, J.H. Arjona Building

101. Classics of World Literature I

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).

102. Classics of World Literature II

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.

201. Comparative Literature

(Formerly offered as COML 201.) Either semester. Three credits. This course may be repeated for credit with a change of topic.

Lectures and discussion sessions devoted to the study of major literary questions which go beyond national boundaries. (No foreign language required.)

203. Comparative Studies in Cultural History

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.

214. Introduction to World Cinema and Comparative Film Theory

Either semester. Three credits. Open to sophomores. 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.

Computer Science and Engineering (CSE)

Interim Head of Department: Professor Reda Ammar

Department Office: Room 460, United 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.)

101C. Computers in Modern Society

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 123C or CSE 130C. Students who anticipate extensive study or use of computers in their future work should take CSE 110C-111, or CSE 123C-124C, or CSE 130C rather than this course. *Ungar*

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.

110C. Introduction to Numerical Computation

Either semester. Three credits. Two 1-hour class periods and two 1-hour program design periods. Prerequisite: MATH 110Q or MATH 113Q or MATH 115Q, which may be taken concurrently. Not open for credit to students who have passed CSE123C or CSE 130C. Either CSE 110C-111 or CSE 123C-124C or CSE 130C is required of students planning on taking advanced CSE courses. *Demurjian, Ungar*

Introduction to computer organization and the computing process. Design of algorithms for computer solutions of problems, structured programming, and data organization. Analysis of computational errors and their minimization. Methods of solving numerical problems. Logic, design, verification and documentation of programs using current programming languages.

111. Introduction to Non-Numerical Computation

Either semester. Two credits. Two 1-hour class periods and one 1-hour program design period. Prerequisite: CSE 110C. Not open for credit to students who have passed CSE 124C or CSE 130C. Either CSE 110C-111 or CSE 123C-124C or CSE 130C is required of students planning on taking advanced CSE courses. *Ungar*

Design of algorithms for the processing of non-numerical information. Linked lists, trees and other advanced data structures. Practice in the design and realization of complex information processing programs.

123C. Introduction to Computing

Both semesters. Two credits. Two class periods of lecture and one 1-hour of laboratory period per week. Prerequisite: MATH 101 or passed Q Readiness Test or passed a Q course. No previous programming experience required. Not open for credit to students who have passed CSE 110C or CSE 130C. *Ungar*

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.

124C. Computing

Second semester. Four credits. Three class periods of lecture and one 1-hour laboratory per week. Prerequisite: CSE 123C or CSE 110C. Not open for credit to students who have passed CSE 111 or CSE 130C. *Ungar*

Principles of object oriented programming including polymorphism, information hiding, and inheritance. Principles of object oriented design. Recursion. Strings, lists, stacks, queues, trees, priority queues, heaps and graphs including their use and various implementations using automatic and dynamic data allocation, linked representations, and templates. Algorithm and complexity issues involved with these

data types. Sorting and searching algorithms. Introduction to computer history. Programming problems drawn from areas of computer science and engineering.

130C. Fundamentals of Computation

First semester. Four credits. Two 1-hour class periods and two 1-hour program design periods. Prerequisite: MATH 110Q or MATH 113Q or MATH 115Q, which may be taken concurrently. This is a very demanding course and is recommended for students who have had previous programming experience and have a high level of motivation for using computers in future work. Not open for credit to students who have passed CSE 110C or CSE 111 or CSE 123C or CSE 124C. Either CSE 110C-111 or CSE 123C-124C or CSE 130C is required of students planning on taking advanced CSE courses. *Ungar*

Design of algorithms to solve numerical and non-numerical problems. Top-down design techniques and structured programming. Investigation and selection on data organizations for efficient problem solutions. Analysis of computational errors in numerical calculations. Methods for the design, implementation, verification and documentation of programs using current programming languages.

201. Computer Architecture

Either semester. Three credits. Prerequisites: CSE 111 or 124C or 130. Not open to students who have credit for CSE 207 or CSE 241. Open to sophomores or higher.

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.

207. Digital Logic

Either semester. Three credits. Three class periods and one 1-hour discussion period. Prerequisite: CSE 110C or 123C or 130C. Open to sophomores or higher. *Ammar, Lipsky, McCartney*

Representation of digital information. Introduction to the analysis and design of combinational and sequential logic networks using Boolean algebra and register transfer techniques. Structure and operation of digital systems and computers. Introduction to programming at the machine and assembler language level. Design projects.

208W. Logic Design Laboratory

Either semester. Two credits. One 1-hour lecture and one 2-hour laboratory period. Prerequisite: Secondary school physics or PHYS 101, and CSE 207 which may be taken concurrently; ENGL 105 or 110 or 111 or 250. Open to sophomores or higher. *Barker*

Design and evaluation of combinational and sequential logic circuits. Debugging techniques. Use of computer facilities for circuit simulation, CAD and report preparation and presentation.

221. Probabilistic Performance Analysis of Computer Systems

Either semester. Three credits. Prerequisite: CSE 124C and one of STAT 220Q or 230Q or MATH 231Q. *Ammar, Lipsky*

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.

228. Parallel Systems

Either semester. Three credits. Prerequisite: CSE 201 or 243, and CSE 259. *Greenshields*

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.

230. Introduction to Software Engineering

Either semester. Three credits. Three class periods and one problem session. Prerequisite: CSE 254. Open to sophomores or higher. *Demurjian, Peters*

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. Introduction to a modern programming language and the associated design and debugging tools. Homework and laboratory projects that emphasize design and the use/features of a modern programming language.

233. Programming Languages

Either semester. Three credits. Prerequisite: CSE 237. 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.

237. Theory of Computation

Either semester. Three credits. Prerequisite: CSE 254.

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.

240. Intermediate Computer Systems Laboratory

Either semester. Three credits. Two hours lecture and 4 hours laboratory. Prerequisite: CSE 111 or 124C or 130C, and CSE 241 which may be taken concurrently.

Chip level programming of microprocessor type systems. Topics covered include I/O ports, I/O devices and controllers, DMA channels, priority interrupts, networking, multitasking. Design projects.

241. Computer Organization

Either semester. Three credits. Prerequisite: CSE 207, and CSE 208W which may be taken concurrently. *Ammar, Peters*

Fundamentals of computer organization. Instruction sets and addressing modes. The control path and microprogramming. The data path; fast arithmetic. The memory hierarchy, both logical and physical aspects. The input/subsystem; interrupts, DMA, structure and function. SIMD and MIMD parallelism. Modern architectural theories.

243. Introduction to Computer Architecture and Hardware/Software Interface

Either semester. Four credits. Three hours lecture and three hours laboratory. Prerequisite: CSE 207 and CSE 208W. Not open for credit to students who have credit for CSE 241. *Ammar, Greenshields*

An integrated introduction to computer organization and the hardware/software interface as seen at the assembly-language level. Topics included: basic machine organization; instruction sets and addressing modes; CPU design; the control path and microprogramming; FSM design; the data path; integer and floating-point arithmetic; busses; the memory hierarchy; the i/o subsystem; RISC architectures; pipelining; basic performance analysis; fundamentals of networking. Lab activities include (but are not limited to): basic assembly language programming on a CICS and RICS processor; processor benchmarking;

use of cache; polled, interrupt driven and DMA I/O files; optimizing code.

244. Programming Language Translation

Either semester. Three credits. Prerequisite: CSE 230 and 237. *Santos*

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.

245. Computer Networks and Data Communication

Semester by arrangement. Three credits. Prerequisite: CSE 221 which may be taken concurrently. *Ammar, Greenshields, Ting*

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.

252. Digital Systems Design

(Also offered as ECE 252.) Either semester. Three credits. Prerequisite: CSE 207.

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.

254. Introduction to Discrete Systems

Either semester. Three credits. Prerequisite: CSE 111 or 124C or 130C. Not open for credit to students who have passed MATH 214Q. Open to sophomores or higher. *Selfridge*

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.

255. Principles of Data Bases

Either semester. Three credits. Prerequisite: CSE 259. *Shin*

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.

257. Numerical Methods in Scientific Computation

(Also offered as ECE 257.) Either semester. Three credits. Prerequisite: CSE 123C and MATH 210Q and MATH 211Q.

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.

258. Operating Systems

Either semester. Three credits. Prerequisite: Either CSE 201 or 243. *Demurjian, Santos*

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.

259. Algorithms and Complexity

Either semester. Three credits. Three class periods. Prerequisite: CSE 254. *Goldin, McCartney,*

Rajasekaran

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.

261. Digital Hardware Laboratory

(Also offered as ECE 281.) Second semester. Three credits. One 4-hour laboratory period. Prerequisite: ECE 252 or CSE 252.

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.

262. Software Engineering Laboratory

Second semester. Three credits. Four program design periods. Prerequisite: CSE 230. *Demurjian, Peters*

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 230 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.

263. Networking and Distributed Systems Laboratory

Second semester. Three credits. Four hour laboratory. Prerequisite: CSE 228 and 245. *Greenshield*

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.

265. Independent Design Laboratory

Either semester. Three credits. Prerequisite: CSE 230. 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.

267W. Software Laboratory on Large Computers

Semester by arrangement. Three credits. Two class periods and one 2-hour program design period. Prerequisite: CSE 240; ENGL 105 or 110 or 111 or 250.

Investigation of instruction sets, internal data representations, interrupt systems, and the input/output system of a large computer available in the Computer Center. Assembler language, related job control language, supervision conventions, linkage methods, data storage techniques and access methods. Design projects.

268. Microprocessor Laboratory

First semester. Three credits. One lecture and one 3-hour laboratory period. Prerequisite: CSE 201 or 243. *Shvartsman*

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.

269. Computer Science Design Laboratory

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.

275. Principles of Computer Graphics

Semester by arrangement. Three credits. Prerequisite: CSE 111 or 124C or 130C, and either MATH 227Q or 215Q and MATH 210Q. Not open for credit to students who have passed MATH 255. *Peters, Roulier*

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.

278. Social, Ethical and Professional Issues in Computer Science and Engineering

Either semester. Three credits. Prerequisite: CSE 230. *Engel*

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.

280. Digital Design Laboratory

(Also offered as ECE 280.) Second semester. Three credits. Four hours of laboratory. Prerequisite or corequisite: Either CSE/ECE 252.

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.

282. Artificial Intelligence

First semester. Three credits. Prerequisite: CSE 259. *McCartney*

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.

290. Electrical and Computer Engineering Design I

(Also offered as ECE 290.) 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/ECE 291 is carried out. Written progress reports, a proposal, an interim report, a final report, and oral presentations are required.

291. Electrical and Computer Engineering Design II

(Also offered as ECE 291.) Either semester. Three credits. Prerequisite: ECE 290. Hours to be arranged.

Design of a device, circuit, system, process, or algorithm. Team solution to an engineering design problem formulated in CSE/ECE 290, from first concepts through evaluation and documentation. Written progress reports, a final report, and oral presentations are required.

293. Computer Science and Engineering Design Project

Either semester. Three credits. Prerequisite: CSE 258 and either CSE 261 or 262 or 263 or 265 or 268 or 269.

This course is 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.

298. Special Topics in Computer Science and Engineering

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.

299. Independent Study in Computer Science and Engineering

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.

Critical Languages Program (CRLP)

Head of Department: Professor David K. Herzberger
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.

***101. Elementary Level I**

First semester. Four credits. Prerequisite: Not open to students with prior contact with the language.

***102. Elementary Level II**

Second semester. Four credits. Prerequisite: 101 or the equivalent.

***103. Intermediate Level I**

First semester. Four credits. Prerequisite: 102 or the equivalent.

***104. Intermediate Level II**

Second semester. Four credits. Prerequisite: 103 or the equivalent.

Some critical languages, because of area study requirements or other specific circumstances, may be offered under the regular instructional method. The method of instruction for most critical language courses follows the self-study format established by the National Association of Self-Instructional Language Programs (NASILP). This method relies on four hours of student self-instruction per week, using the approved book/tape program; two hours per week of drill sessions led by the Conversation Partner; four or five quizzes per semester; and an oral final examination conducted by the Outside Examiner, a member of the faculty of an Institution of Higher Education which offers the language. In order to be eligible to register for a course offered through the

NASILP method, students must have sophomore standing, a B (3.0) cumulative Grade Point Average, and the support of their academic advisor. Students seeking to register should bring an unofficial transcript and a letter from their advisor to Room 228, J.H. Arjona Building during pre-registration for the following semester.

*** Note:** Please see any of these subject areas listed alphabetically throughout this course directory: American Sign Language, Arabic, Chinese, Hindi, Japanese, Korean, Modern Greek, Polish, and Vietnamese.

193. Foreign Study

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.

293. Foreign Study

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.

295. Variable Topics

Either semester. Three credits. With a change of topic, may be repeated for credit. Prerequisites and recommended preparation vary.

298. Special Topics

Either semester. Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary.

299. Independent Study

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)

Cytotechnology Program Academic Coordinator:
Associate Professor Denis A. Coble
Program Office: Room 306, Koons Hall

For major requirements, see the School of Allied Health section of this *Catalog*.

222. Diagnostic Cytology

Second semester. Three credits. Prerequisite: To enroll in the course, a student must have earned a "C" or better in MLS 200. 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.

243. Cytology of the Female Genital Tract

First semester. Six credits. Prerequisite: To enroll in the course, a student must have earned a "B-" or better in CYTO 222. Open only to Cytotechnology majors.

This course 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.

244. Cytology of the Respiratory Tract

First semester. Four credits. Prerequisite: To enroll in the course, a student must have earned a "B-" or better

in CYTO 243. Open only to Cytotechnology majors.

This course 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.

245. Cytologic Techniques

First semester. Three credits. Open only to Cytotechnology majors.

This course provides the student with both didactic knowledge and technical skills necessary to ensure optimum specimen preparation.

246. Cytology of the Alimentary Tract

Second semester. Three credits. Prerequisite: To enroll in this course, a student must have earned a "B-" or better in CYTO 245. Open only to Cytotechnology majors.

This course 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.

247. Cytology of Miscellaneous Fluids

Second semester. Four credits. Prerequisite: To enroll in the course, a student must have earned a "B-" or better in CYTO 246. 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.

248. Cytology Aspiration Biopsy

Second semester. Three credits. Prerequisite: To enroll in the course, a student must have earned a "B-" or better in CYTO 247. 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.

249. Senior Seminar in Cytotechnology

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.

250. Clinical Practicum

Second semester. Four credits. Prerequisite: To enroll in the course, student must have earned a "B-" or better in CYTO 248 and 249. Open only to Cytotechnology majors.

This course provides the student with clinical experience to complete the integration of didactic and laboratory components of Cytotechnology.

298. Special Topics

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.

299. Independent Study for Undergraduates

Either semester. Credits and hours by arrangement. Open only with consent of instructor. May be repeated for credit.

This course is primarily for students who wish to extend their knowledge in some specialized area in the field of Cytotechnology.

Diagnostic Genetic Sciences (DGS)

Diagnostic Genetic Sciences Program Director:

Martha B. Keagle

Program Office: Room 222, Koons Hall

For major requirements, see the School of Allied Health section of this *Catalog*.

222. Medical Cytogenetics

Both semesters. Four credits. Two 2-hour lectures. Prerequisite: MCB 203 and 200 or 213; 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.

223. Laboratory in Cytogenetics

Both semesters. Three credits. One 3-hour laboratory period and one 2-hour discussion. Four additional laboratory sessions are required during the first half of the semester. Prerequisite: DGS 222 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.

224. Cancer Cytogenetics

Offered Summer I. Variable credits. Prerequisite: DGS 223. 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.

225. Microscopy and Chromosome Imaging

Either semester. One credit. Prerequisite: DGS 223 which may be taken concurrently. Open only to students enrolled in the Diagnostic Genetic Sciences Program; others with consent of instructor. *Brown*

Theory and techniques of brightfield and fluorescence microscopy, photomicroscopy, and computerized imaging for karyotype production.

234. Diagnostic Molecular Technologies

Both semesters. Three credits. Prerequisite: MCB 200 or 213; and MLS 208 or MCB 211 which may be taken concurrently. Open only to students enrolled in the Diagnostic Genetic Sciences Program.

DNA and RNA diagnostic technologies used in clinical settings; clinical applications in prenatal diagnosis; cancer management, transplantation, paternity testing, forensic medicine and microbiology.

235. Laboratory in Molecular Diagnostics

Both semesters. Four credits. Prerequisite: DGS 234 or MLS 217 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.

246. Contemporary Issues in Human Genetics

Both semesters. Three credits. Prerequisite: DGS 223. 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.

260. Blotting Methods

Both semesters. Six credits. Prerequisite: In order to enroll in this course, a student must have earned a "C" or better in DGS 234 and 235. Open only to DGS molecular certificate students.

Practicum experience with blotting technologies stressing complete Southern analysis.

261. Amplification Methods

Both semesters. Six credits. Prerequisite: In order to enroll in this course, a student must have earned a "C" or better in DGS 234 and 235. Open only to DGS molecular certificate students.

Practicum experience in DNA and/or RNA amplification stressing polymerase chain reaction.

273. Research in Molecular Genetics

Both semesters. One credit. Prerequisites: In order to enroll in this course, a student must have earned a "C" or better in AH 241W, DGS 234 and 235. Open only to students enrolled in the Molecular Diagnostic Sciences Certificate Program; others with consent of the instructor.

Design and implementation of a research project in molecular genetics.

275. *In Situ* Hybridization Methods

Both semesters. Two credits. Prerequisites: In order to enroll in this course, a student must have earned a "C" or better in DGS 234 and 235. Open only to DGS molecular certificate students.

Practicum in fluorescence *in situ* hybridization or other *in situ* hybridization techniques.

276. Topics in Molecular Genetics

Both semesters. Two credits. Prerequisite: In order to enroll in this course, a student must have earned a "C" or better in DGS 234 and 235. Open only to students enrolled in the Molecular Diagnostic Sciences Certificate Program; others with consent of the instructor.

Exploration of an individual area of interest in molecular genetics.

277. Mutagenesis

Both semesters. Two credits. Prerequisite: In order to enroll in this course, a student must have earned a "C" or better in DGS 234 and 235. Open only to students enrolled in the Molecular Diagnostic Sciences Certificate Program; others with consent of the instructor.

Practicum experience in mutagenesis, including Ames assays and mammalian mutagenesis assays.

278. DNA Sequencing

Both semesters. Two credits. Prerequisite: In order to enroll in this course, a student must have earned a "C" or better in DGS 234 and 235. Open only to students enrolled in the Molecular Diagnostic Sciences Certificate Program; others with consent of the instructor.

Practicum experience in DNA sequencing.

279. Microbiological Applications of Molecular Diagnostics

Both semesters. Two credits. Prerequisite: In order to enroll in this course, a student must have earned a "C" or better in DGS 234 and 235. Open only to students enrolled in the Molecular Diagnostic Sciences Certificate Program; others with consent of the instructor.

Practicum experience in the application of molecular technologies to microbiology.

280. Bone Marrow Cytogenetics

Both semesters. Two credits. Prerequisite: In order to enroll in the course, the student must have earned a "C" or better in DGS 222, 223 and 224. Open only to Diagnostic Genetic Sciences majors.

Culture, harvest, banding and analysis of leukemic bone marrow samples; chromosomal abnormalities associated with hematologic malignancies.

281. Peripheral Blood Cytogenetics

Both semesters. Four credits. Prerequisite: In order to enroll in this course, the student must have earned a "C" or better in DGS 222 and DGS 223. Open only to Diagnostic Genetic Sciences majors.

Culture, harvest, banding and analysis of peripheral blood samples.

284. Variable Topics in Cytogenetics

Both semesters. One credit. Prerequisite: In order to enroll in this course, the student must have earned a "C" or better in DGS 222 and DGS 223. Open only to Diagnostic Genetic Sciences majors.

In-depth examination of a topic of the students' choosing in the field of human genetics.

285. Research in Cytogenetics

Both semesters. One credit. Prerequisite: In order to enroll in this course, the student must have earned a "C" or better in AH 241W, DGS 222 and 223. Open only to Diagnostic Genetic Sciences majors.

Design and implementation of a research project in clinical cytogenetics.

286. Prenatal Cytogenetics

Both semesters. Four credits. Prerequisite: In order to enroll in this course, the student must have earned a "C" or better in DGS 222 and DGS 223. Open only to Diagnostic Genetic Sciences majors.

Culture, harvest, banding and analysis of amniotic fluids, products of conception, and other fetal samples.

287. Practicum in Microscopy and Imaging

Either semester. One credit. Prerequisite: To enroll in this course, the student must have earned a "C" or better in DGS 222 and 225. Open only to Diagnostic Genetic Sciences majors. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

Brightfield microscopy, fluorescence microscopy and computer imaging. Student will become proficient in karyotyping skills through regular use of a computer imaging system.

288. Practicum in Staining and FISH

Either semester. One credit. Prerequisite: To enroll in this course, the student must have earned a "C" or better in DGS 222. Open only to Diagnostic Genetic Sciences majors. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

Traditional routine and special cytogenetic staining techniques and fluorescence *in situ* hybridization (FISH).

289. DNA Technology in Forensic Science

Either semester. Credits and hours by arrangement. Prerequisite: To enroll in this course, the student must have earned a "C" or better in DGS 260, 261, and 273. Open only to Diagnostic Genetic Sciences molecular diagnostic sciences certificate students. *Brown*

Practicum experience with forensic applications of DNA testing.

290. Honors Research

Either semester. Three credits. Open only to Diagnostic Genetic Sciences Honors students.

Design and implementation of an honors research project.

298. Special Topics

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.

299. Independent Study for Undergraduates

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.

Dietetics (DIET)

Program Director: Robin Abourizk

Dietetics Program Office: Room 314, Koons Hall

For major requirements, see the School of Allied Health 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.

204. Food Service Systems

Second semester. Three credits. Hours by arrangement. Prerequisite: Student must earn a "C" or better in DIET 208. Open only to Dietetics majors; others by consent of Dietetics Program Director.

Concepts, methods and experiences in food service systems. The relationship of nutrition care services and food service units.

208. Introduction to Nutritional Care I

First semester. Four credits. Hours by arrangement. Prerequisite: Open only to Dietetics majors; others by consent of Dietetics Program Director. Supervised practice is required.

Nutritional care for people throughout the lifecycle. Nutrition care processes, nutritional assessment, nutrition care plans.

209. Introduction to Nutritional Care II

Second Semester. Three credits. Hours by arrangement. Prerequisite: Student must earn a "C" or better in DIET 208. Open only to Dietetics majors; others by consent of Dietetics Program Director. Supervised practice is required.

Continuation of DIET 208. Planning, implementation, counseling techniques, and evaluation of client-centered nutritional care.

210. Community Nutrition

Second semester. Three credits. Hours by arrangement. Prerequisite: Student must earn a "C" or better in DIET 208. Open only to Dietetics majors; others by consent of Dietetics Program Director. Supervised practice is required.

Assessment of community structure, agencies and resources. Plan, implement, and evaluate nutritional care and nutritional education in the community setting.

210W. Community Nutrition

Prerequisite: Student must earn a "C" or better in DIET 208; ENGL 105 or 110 or 111 or 250; open only to Dietetics majors, others by consent of Dietetics Program Director.

210S. Community Nutrition (W,C)

Second semester. Four credits. Hours by arrangement. Prerequisite: Student must earn a "C" or better in DIET 208; ENGL 105 or 110 or 111 or 250; open only to Dietetics majors, others by consent of Dietetics Program Director. Clinical experiences and hands-on computer experiences are required.

235. Applied Dietetics

First semester. Eight credits. Hours by arrangement. Prerequisite: Student must earn a "C" or better in DIET 204, 209; and 210 or 210W or 210S. Open only to Dietetics majors; others by consent of the Director of Dietetics. Supervised practice is required.

Advanced planning, implementing, counseling and evaluating nutritional care in health care environments. Introduction to professional issues in dietetics.

238. Advanced Nutrition for the Clinical Practitioner

First semester. Three credits. Hours by arrangement. Prerequisite: Student must earn a "C" or better in DIET 209; and 210 or 210W or 210S. Open only to Dietetics majors; others by consent of Director of Dietetics.

Relationship of nutrients to each other and to body function.

244. Practicum in Foodservice Management

Second semester. Four credits. 160-hour practicum. Prerequisite: Student must earn a "C" or better in DIET 235. Open only to Dietetics majors; others by consent of the Director of Dietetics.

Application and synthesis of performance requirements in the food service system.

247. Seminar in Dietetics

Second semester. Three credits. Hours by arrangement. Prerequisite: Student must earn a "C" or better in DIET 235. Open only to Dietetics majors; others by consent of the Director of Dietetics.

Special problems and issues in dietetics. The management role in patient care, nutrition education, and the integration of nutrition and food service units.

248. Applied Clinical Dietetics

Second semester. Six credits. 256 hour practicum. Prerequisite: Student must earn a "C" or better in DIET 235. Open only to Dietetics majors; others by consent of the Director of Dietetics.

Application and synthesis of performance requirements in clinical dietetics. Practicum.

250. Dietetic Practice

Second semester. Four credits. 160-hour self-planned supervised practice. Prerequisite: Student must earn a "C" or better in DIET 235. 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.

298. Special Topics

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.

299. Independent Study for Undergraduates

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.

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*.

101. Introduction to the Theatre

Either semester. Three credits.

Analysis of the functions of the theatre artists and their contributions to the modern theatre.

105. Drafting for the Theatre

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.

106. Computer Drafting for the Theatre

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.

107. Theatre Production Studio

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 six credits.

Franklin, McCaw

Elements of costume, lighting, management and stagecraft with application to departmental productions.

108. Fundamentals of Theatrical Design

Either semester. Three credits. *Saternow*

Introduction to theories of theatrical design and their application.

109. Drawing and Painting Techniques for the Theatre

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.

110. Introduction to Film

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.

118. Computer Rendering for the Theatre

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.

120. Production of the Speaking Voice

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.

130. History of Drama I

First semester. Three credits. Not open for credit to students who have passed DRAM 180. *McDermott*

Dramatic literature and theatre history from

Classical Greece through the Spanish Golden Age, including an examination of non-western theatre traditions, especially Japanese.

131. History of Drama II

Second semester. Three credits. Recommended preparation: DRAM 130. Not open for credit to students who have passed DRAM 181. *McDermott, Molette*

Dramatic literature and theatre history from the French Renaissance to Contemporary Theatre, including an examination of non-western theatre traditions, especially Chinese.

141. Oral Interpretation

Either semester. Three credits.

An intensive study of background and thought content of literary material and the development of techniques of oral interpretation.

143-144. Introduction to Acting

Both semesters. Three credits each semester. Concurrent enrollment in DRAM 149-150 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.

149. Introduction to Movement for the Actor I

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.

150. Introduction to Movement for the Actor II

Second semester. Three credits. Three 2-hour studio periods. *Sabatine*

Continuation of Dramatic Arts 149. Emphasis on the organization of movement expression using essence theory of emotion, intentions, gestures and physical characterization through movement.

153. Theatre Jazz Dance I

Either semester. Three credits. Three 2-hour studio periods.

Basic techniques, styles, and composition of jazz dance. Emphasis placed on technique.

154. Theatre Jazz Dance II

Either semester. Three credits. Three 2-hour studio periods. Prerequisite: DRAM 153.

Continuation of Dramatic Arts 153.

159. Practicum in Dramatic Arts

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.

163-164. Introduction to Directing

Both semesters. Three credits each semester. Prerequisite: DRAM 143.

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.

180. Masterpieces of the Drama: Aeschylus to Shakespeare

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.

181. Masterpieces of the Drama: Molière to the Present

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.

181W. Masterpieces of the Drama: Molière to the Present

Prerequisite: ENGL 105 or 110 or 111 or 250.

191. Performance Techniques in Ethnic Arts

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.

200. Scene Construction

First semester. Three credits. Recommended preparation: DRAM 107 (Stagecraft). *McCaw*

Basic techniques of constructing two dimensional and three dimensional scenery.

201. Rigging

Second semester. Three credits. Recommended preparation: DRAM 107 (Stagecraft). *McCaw*

Rigging systems and the basic techniques for flying scenery, with an emphasis on rigging safety.

203. Stage Management for the Theatre

Either semester. Three credits.

A study of the roles of the stage manager and assistant stage manager.

205. Scenographic Techniques for the Theatre

Either semester. Three credits. Two 3-hour laboratory periods. Recommended preparation: DRAM 107 (Stagecraft). *McCaw*

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.

206. CAD for the Theatre

Either semester. Two 3-hour laboratory periods. Recommended preparation: DRAM 205. *McCaw*

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.

207C-208. Lighting for the Theatre

Both semesters. Three credits each semester. Two class periods and one 2-hour laboratory period. Recommended preparation: DRAM 107 (Lighting), 108.

Franklin

209 Principles of Design and Rendering

Either semester. Three credits. Two class periods and one 2-hour studio period. Recommended preparation: DRAM 108. *Crow*

Composition and color theory for designers as well as an exploration of graphic techniques in mixed media for expression of design ideas.

211-212. Scene Design

Both semesters. Three credits each semester. Two class periods and one 2-hour laboratory period. Prerequisite: DRAM 108. *Saternow*

213. Costume History

Either semester. Three credits. Two class periods and one 2-hour studio period. *Crow*

A slide survey class covering the origins and development of dress to the present day. Specifically African, Middle Eastern, an Euro-Centric dress, along with the societies and manners which created fashion.

214. Costume Design

Either semester. Three credits. Two class periods and one 2-hour studio period. Recommended preparation: DRAM 108. *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.

215. Sound for the Theatre

Either semester. Three credits.

Art of sound design for the theatre. Organizing and creating sound for production.

218C. Computer Rendering

Either semester. Three credits. Two class periods and one 2-hour studio period. Recommended preparation: DRAM 108. *Crow*

Computer rendering for the theatre in 2-D and 3-D format.

219. Advertising, Publicity, and Promotion in the Dramatic Arts

Either semester. Three credits. Open only with consent of instructor.

An introduction to the basic techniques of advertising copy, news releases, and feature stories.

220. Voice and Diction I

First semester. Three credits. Prerequisite: DRAM 120 and concurrent enrollment in DRAM 268. *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.

222. Voice and Diction II

Prerequisite: DRAM 220 and concurrent enrollment in DRAM 269. *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.

230. Women in Theatre

Either semester. Three credits. Open to sophomores or higher. *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.

230W. Women in Theatre

Prerequisite: ENGL 105 or 110 or 111 or 250. Open to sophomores or higher.

231. African-American Theatre

Either semester. Three credits. Open to sophomores or higher. *Molette*

The significant developments in African American theatre and its antecedents and an examination of selected play scripts that exemplify those developments.

231W. African-American Theatre

Prerequisite: ENGL 105 or 110 or 111 or 250. Open to sophomores or higher.

235. Period Studies in Theatre

Either or both semesters. Three credits. Prerequisite: DRAM 130, 131. 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.

235W. Period Studies in Theatre

Prerequisite: DRAM 130, 131; ENGL 105 or 110 or 111 or 250.

238. Theatre Jazz Dance III

Second semester. Three credits. Three 2-hour studio periods. Prerequisite: DRAM 154 and consent of instructor. 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.

239. Theatre Dance I

First semester. Three credits. Prerequisite: DRAM 149, 150. *Sabatine*

Stage movement and dances from Greek to Renaissance.

240. Theatre Dance II

Second semester. Three credits. Prerequisite: DRAM 239. *Sabatine*

Stage movement and dances from the Renaissance through the Restoration.

241. Oral Interpretation of the Drama

Second semester. Three credits. Recommended preparation: DRAM 141, 143.

242. Stage Make-Up

Either semester. Two credits. One class period and one 2-hour laboratory period. Open only with consent of instructor.

243. Acting Technique I

First semester. Three credits. Three 2-hour studio periods. Open only with consent of instructor. Open to sophomores or higher. *Hill*

Voices of naturalism and realism: the study and practice of techniques utilized in the performance of modern realists.

244. Acting Technique II

Second semester. Three credits. Three 2-hour studio periods. Prerequisite: DRAM 243. Open to sophomores or higher. *McDonald*

A continuation of the study and practice of techniques utilized in the performance of modern realists.

247-248. Puppetry

Both semesters. Three credits each semester. May be repeated for credit with change in course content to a maximum of 12 credits. Open only with consent of instructor. Open to sophomores or higher. *Roccoberton*

First semester: Rod puppetry or Shadow theatre. *Second semester:* Hand puppetry or Mask theatre. Topics to alternate on a two-year rotation.

249. Acting for the Media

Either semester. Credits and hours by arrangement. Open only with consent of instructor.

Study and practice in the principles and techniques of television performance and acting before the camera.

250. Musical Theatre Dance

First semester. Three credits. Three 2-hour studio periods. Recommended preparation: DRAM 154. 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.

251. The American Film

First semester. Three credits. Prerequisite: DRAM 110. 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.

252. World Film

Second semester. Three credits. Prerequisite: DRAM 110. Two class periods and one 2-hour laboratory pe-

riod. May be repeated for credit with a change in course content to a maximum of 6 credits.

A critical analysis of representative world films.

257. Fundamentals of Television I

First semester. Three credits. Two 3-hour laboratory periods. Open only with consent of instructor.

258. Fundamentals of Television II

Second semester. Three credits. Two 3-hour laboratory periods. Prerequisite: DRAM 257.

259. Practicum in Dramatic Arts

Either or both semesters. Credits and hours by arrangement. Open only with consent of instructor. Open to sophomores or higher. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

Practical work in all areas of dramatic arts.

263. The Director in the Theatre

Either. Three credits. Prerequisite: DRAM 130, 131.

An analysis of the role and function of the director in the theatre from historical, aesthetic, and practical points of view.

265. Stage Dialects

Either semester. Two credits. One class period and one 2-hour lab. Recommended preparation: DRAM 220. *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.

268. Acting Technique III

First semester. Three credits. Three 2-hour studio periods. Prerequisite: DRAM 244 and consent of instructor, and concurrent enrollment in DRAM 220 and DRAM 239 required. *McDonald*

Poetic voices of world theatre: Greek, Elizabethan, and others.

269. Acting Technique IV

Second semester. Three credits. Three 2-hour studio periods. Prerequisite: DRAM 268 and consent of instructor, and concurrent enrollment in DRAM 222 and DRAM 240 required. *McDonald*

The study and practice of acting techniques utilized in the performance of Shakespeare's plays.

272. Playwriting

Either or both semesters. Three credits. 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.

274-275. Film Writing

Both semesters. Three credits each semester. Open only with consent of instructor.

Theoretical and practical work in the content and form of the fiction scenario.

276. Acting Technique V

First semester. Three credits. Three 2-hour studio periods. Prerequisite: DRAM 269 and consent of instructor.

The study and practice of acting techniques utilized in a range of comic styles.

277. Acting Technique VI

Second semester. Three credits. Three 2-hour studio periods. Prerequisite: DRAM 276 and consent of instructor.

The study and practice of acting techniques utilized in the performance of modern non-realists.

278. Advanced Puppetry Techniques I

First semester. Three credits. Two 3-hour laboratory periods. 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.

279. Advanced Puppetry Techniques II

Second semester. Three credits. Two 3-hour laboratory periods. 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.

282. Trends in Contemporary Theatre

Either semester. Three credits. Open to sophomores or higher.

A study of the major trends in drama and theatrical production of the western world today.

282W. Trends in Contemporary Theatre

Prerequisite: ENGL 105 or 110 or 111 or 250; open to sophomores or higher.

285. Trends in the Contemporary Puppet Theatre

Either semester. Three credits. 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.

289. Theatre Administration and Organization

Either semester. Three credits.

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.

291. Performance Techniques

Either or both semesters. Credits and hours by arrangement. 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.

293. Foreign Study

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.

Coursework undertaken within approved Study Abroad programs, with a focus on the theatre history, dramatic literature and production in a particular country or region.

295. Environmental Theatre

Either or both semesters. Three credits. Three 2-hour studio periods. 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.

298. Seminar

Either or both semesters. Credits and hours by arrangement. Open only with consent of instructor. May be repeated for credit.

Studies in selected areas of dramatic arts. Topics to be alternated.

299. Independent Study

Either or both semesters. Credits and hours by arrangement. Open only with consent of instructor. May be repeated for credit.

A reading or project course under the direction of an appropriate staff member.

Ecology and Evolutionary Biology (EEB)

Head of Department: Professor Gregory J. Anderson
Department Office: Room 314, Torrey Life Sciences Building

For major requirements, see the College of Liberal Arts and Sciences section of this *Catalog*.

200. Biology of Fishes

Second semester, alternate years. Four credits. Three class periods and one three-hour laboratory period. Prerequisite: BIOL 108. Not open for credit to students who have passed NRME 200, 201 or 202 or MARN 200, 201 or 202. *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.

203. Developmental Plant Morphology

(Also offered as EEB 303.) First semester, alternate years. Four credits. Two class periods and two 2-hour laboratory periods. Prerequisite: BIOL 108 or instructor consent. *Jones*

Analysis of diversity in plant form; principles of plant construction and development.

204. Aquatic Plant Biology

(Also offered as EEB 304.) First semester, alternate years. Four credits. Two lectures and two 3-hour field trip/laboratory periods. Prerequisite: BIOL 108 or 110 or instructor consent. *Les*

Field and laboratory-oriented study of the anatomy, morphology, ecology, physiology, systematics and evolution of vascular aquatic and wetland plants.

205. Current Issues in Environmental Science

(Also offered as GEOL 205.) Second semester, alternate years. Three credits. Open to honors students. Open to non-honors students only with consent of instructor. Prerequisite: 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.

214. Biology of the Vertebrates

First semester. Three credits. Two 1-hour lecture periods, with demonstrations. Prerequisite: Three credits of introductory Biology. Open to sophomores or higher. *Rubega, Schwenk, Wells*

Evolutionary history and diversity of vertebrates with emphasis on classification, fossil history, feeding, locomotion, physiological ecology, reproduction, defense, and social behavior.

227. Biology of Plants

First semester. Three credits. Prerequisites: BIOL 108 or 110 or instructor consent. Open to sophomores or higher. *L. Lewis*

Structure, function, evolution, and ecology of plants. Importance of plants for ecosystems and human life.

238. Limnological Methods

Second semester. Three credits. One class period and two 3-hour field/laboratory periods. Prerequisite: Consent of instructor and CE 268 or EEB 247, either of which may be taken concurrently. This course and CE

207 may not both be taken for credit. *Rich*

Field and laboratory study of physical, chemical, and biotic elements of freshwater habitats. Field trips required.

240. Biology of Bryophytes and Lichens

(Also offered as EEB 340.) Second semester, alternate years. Four credits. Three class periods and one 3-hour laboratory period. Prerequisites: Six credits of 200-level biology or instructor consent. *Goffinet*

Diversity, evolution, ecology, development and taxonomy of the bryophytes (mosses, liverworts and hornworts) and lichen-forming fungi.

243. Insect Classification and Identification

Second semester, alternate years. Four credits. Two 1-hour lecture periods and one 4-hour laboratory. Prerequisite: EEB 286. Not open for credit to students who have passed EEB 253 or instructor consent. *Henry*

Insect classification, evolution, and phylogeny.

243W. Insect Classification and Identification

Second semester, alternate years. Four credits. Two 1-hour lecture periods plus individual tutorial. Prerequisite: EEB 286 and consent of instructor; ENGL 105 or 110 or 111 or 250. *Henry*

Content as in EEB 243; field, museum, and library research; requires major writing assignment.

244. General Ecology

First semester. Four credits. Prerequisite: Six credits of college biology. Three lectures and one 2-hour discussion section. Open to sophomores or higher. *Adams, Cardon, 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.

244W. General Ecology

Four credits. Prerequisite: Six credits of college biology; ENGL 105 or 110 or 111 or 250. Open to sophomores or higher.

Content as in EEB 244; requires major writing assignment.

245. Evolutionary Biology

Second semester. Three credits. Prerequisite: Six credits of college biology and three credits of college chemistry. Open to sophomores or higher. *Caira, Henry, Holsinger, Jockusch, Simon*

Introduction to evolutionary mechanisms, biogeography, and the history of major groups of plants and animals.

245W. Evolutionary Biology

Four credits. Four class periods. Prerequisite: Six credits of college biology and three credits of college chemistry; ENGL 105 or 110 or 111 or 250. Open to sophomores or higher.

Content as in EEB 245; requires major writing assignment.

247. Limnology

(Also offered as CE 268 and ENVE 268.) First semester. Three credits. Prerequisite: (MATH 109 or 112 or 115) and (CHEM 122, 127, or 129 or 137). Recommended preparation: BIOL 107 or an introductory biology course.

Physical, chemical, and biotic interrelationships of freshwater habitats (see also EEB 238).

249. Biology of the Honey Bee

Summer session, alternate years. Three credits. Two class periods and one 2-hour laboratory period. Prerequisite: Three credits of introductory biology. Open to sophomores or higher.

Chemical communication, structure and function in honey bee hives and colonies; practical beekeeping.

252. Field Entomology

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.

254. Mammalogy

(Also offered as EEB 454.) First semester, alternate years. Four credits. Two class periods and one 4-hour laboratory period. Prerequisite: Six credits of 200-level biology courses and consent of instructor. EEB 214 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.

256. Plants and Civilization

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.

265. Herpetology

(Also offered as EEB 465.) Second semester, alternate years. Four credits. Two class periods and one 4-hour laboratory period. Prerequisite: Six credits of 200-level biology and consent of instructor. EEB 214 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.

268. Ecological Plant Geography

Second semester, alternate years. Three credits. Three class periods and one weekend field trip. Prerequisite: EEB 244 and 245 or instructor consent.

Geographical differences in vegetation composition and plant adaptation. A global perspective on effects of climate, soil, local conditions and ecosystem processes.

269. Social Insects

(Also offered as EEB 369.) Second semester, alternate years. Three credits. Prerequisite: Six credits of introductory biology. *Adams*

Behavior, ecology, evolution of social insects: ants, wasps, bees, and termites.

271. Systematic Botany

Second semester, alternate years. Four credits. Two class periods and two 2-hour laboratory periods. Prerequisite: BIOL 108 or 110. *Les*

Classification, identification, economic importance, evolution and nomenclature of flowering plants. Laboratory compares vegetative and reproductive characters of major families.

272. The Summer Flora

Summer session. Three credits. Prerequisite: Three credits of college botany.

Identification of Connecticut's native and exotic plants; lecture, laboratory and field study.

273. Comparative Vertebrate Anatomy

Second semester, alternate years. Four credits. Three class periods and one 3-hour laboratory period. Prerequisite: BIOL 108. Open to sophomores or higher. *Schwenk*

Anatomy, development, functional morphology, and evolution of living vertebrate animals.

275. Invertebrate Zoology

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.

276. Plant Anatomy

First semester, alternate years. Four credits. Two class periods and two 2-hour laboratory periods. Prerequisite: BIOL 108 or 110 or instructor consent. *Jones*

Internal structure of seed plants: development and environmental responses.

277. Floristics of Vascular Plants

First semester. Four credits. Two class periods and two 2-hour laboratory periods. Prerequisite: BIOL 110.

Taxonomy of common local vascular plants.

280. Evolution of Green Plants

(Also offered as EEB 380.) Second semester, alternate years. Four credits. Two one and a half class periods and one 3-hour laboratory period. Prerequisite: BIOL 108 or 110 or instructor consent. *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.

281. Ornithology

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.

281W. Ornithology

Second semester. Three credits. Prerequisite: Consent of instructor; ENGL 105 or 110 or 111 or 250. *Rubega*

Content as in EEB 281; requires major writing assignment.

283. Introduction to Animal Parasitology

First semester, alternate years. Four credits. Two class periods, and two 2-hour laboratory periods. Prerequisite: BIOL 108. *Caira*

Protozoan and metazoan parasites of humans and other animals.

284. Medical Entomology

Second semester, alternate years. Three credits. Two class periods and one 2-hour laboratory period. Prerequisite: BIOL 108. *Schaefer*

Identification and biology of disease-spreading poisonous, and parasitic arthropods.

284W. Medical Entomology

Four credits. Prerequisite: BIOL 108; ENGL 105 or 110 or 111 or 250.

Content as in EEB 284; requires major writing assignment.

286. General Entomology

First semester. Four credits. Two class periods and two 2-hour laboratory periods. Prerequisite: BIOL 108. *Henry, Schaefer, Wagner*

The biology of insects: anatomy, physiology, ecology, behavior, development, evolution, and diversity.

287. Ornithology Laboratory

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 281. *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.

288. Concepts of Applied Entomology

Second semester, alternate years. Four credits. Three class periods and one 3-hour laboratory period. Pre-

requisite: BIOL 108 or 110. *Schaefer*

Control, ecology, economics, damage assessment and detection of insect infestations.

289. Variable Topics

Either semester. Three credits. With a change of topic, may be repeated for credit. Prerequisites and recommended preparation vary.

290. Biology of the Algae

(Also offered as EEB 390.) First semester, alternate years. Four credits. Three lectures and one 4-hour laboratory. Prerequisite: BIOL 108 or 110 or instructor consent. *L. Lewis*

Laboratory and field-oriented study of major groups of algae, emphasizing structure, function, evolution, systematics, and ecology.

292W. Senior Research Thesis in Ecology and Evolutionary Biology

Either semester. Three credits. Hours by arrangement. Prerequisite: Three credits of EEB 299, which may be taken concurrently; ENGL 105 or 110 or 111 or 250. 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.

293S. Methods of Ecology (W,C)

First semester. Four credits. Two class periods and two 3-hour laboratories. Prerequisite: EEB 244 or instructor consent; ENGL 105 or 110 or 111 or 250. 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.

294. Marine Biology

(Also offered as MARN 294.) First semester. Three credits. Two class periods and one 2-hour laboratory period. Prerequisite: One year of laboratory biology. *Whitlatch*

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.

296. Physiological Ecology of Animals

Second semester, alternate years. Three credits. Prerequisites: BIOL 107 and BIOL 108. *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.

297. Undergraduate Seminar

Either or both semesters. Credits and hours by arrangement. May be repeated for credit with a change in topic. Content varies with instructor.

298. Special Topics

Either semester. Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary.

299. Independent Study

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.

Economics (ECON)

Head of Department: Professor Kathleen Segerson
Department Office: Room 328, Monteith Building

For major requirements, see the College of Liberal Arts and Sciences section of this *Catalog*.

101. Essentials of Economics

Either semester. Three credits. Not open for credit to students who have passed ECON 102, 111, 112, 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.

102. Principles of Economics (Intensive)

(Formerly offered as ECON 113.) Either semester. Four credits. Four class periods. Recommended preparation: ECON 101. Not open for credit to students who have passed ECON 102, 111, 112, or 113. May not be taken concurrently with ECON 111 or 112.

Same core principles as ECON 111 and 112. One half macroeconomics and one half microeconomics. More demanding than ECON 111 and 112. Substitutes for ECON 111 or 112 as a prerequisite for all junior-senior level courses. May or may not substitute for ECON 111 and 112 outside economics; check *Catalog*.

111. Principles of Macroeconomics

Either semester. Three credits. May be taken before or after ECON 112. Not open for credit to students who have passed ECON 102 or 113. May not be taken concurrently with ECON 102.

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).

111C. Principles of Macroeconomics**112. Principles of Microeconomics**

Either semester. Three credits. May be taken before or after ECON 111. Not open for credit to students who have passed ECON 102 or 113. May not be taken concurrently with ECON 102.

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).

201. Economic History of Europe

First semester. Three credits. Prerequisite: ECON 111 and 112, or 102 or 113 (112 may be taken concurrently). Open to sophomores or higher. *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.

201W. Economic History of Europe

Prerequisite: ECON 111 and 112, or 102 or 113 (112 may be taken concurrently); ENGL 105 or 110 or 111 or 250. Open to sophomores or higher.

202. Topics in Economic History and Thought

Either semester. Three credits. Prerequisite: ECON 111 and 112, or 102 or 113 or instructor consent. May be repeated for credit, with change of topic. *Carstensen, Cosgel, Langlois, Minkler, Szama*

Special topics in economic history, the history of economic thought, the philosophy and methodology of economics, or alternative economic theories.

202W. Topics in Economic History and Thought
Prerequisite: ECON 111 and 112, or 102 or 113 or instructor consent; ENGL 105 or 110 or 111 or 250.

203. Economic History of the United States
Second semester. Three credits. Prerequisite: ECON 111 and 112, or 102 or 113 (112 may be taken concurrently). Open to sophomores or higher. *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.

203W. Economic History of the United States
Prerequisite: ECON 111 and 112, or 102 or 113. (112 may be taken concurrently); ENGL 105 or 110 or 111 or 250. Open to sophomores or higher.

204. Economic History of the Middle East
First semester. Three credits. Prerequisites: ECON 111 and 112, or 102 or 113. (112 may be taken concurrently). Open to sophomores or higher. *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.

204W. Economic History of the Middle East
Prerequisites: ECON 111 and 112, or 102 or 113. (112 may be taken concurrently); ENGL 105 or 110 or 111 or 250. Open to sophomores or higher.

205. History of Economic Thought
Second semester. Three credits. Prerequisite: ECON 111 and 112, or 102 or 113. *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.

205W. History of Economic Thought
Prerequisite: ECON 111 and 112, or 102 or 113; ENGL 105 or 110 or 111 or 250.

206. Philosophy and Economics
(Also offered as PHIL 245.) Either semester. Three credits. Prerequisite: ECON 102 or 112 or 113.

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.

207. Beyond Self-Interest
First semester. Three credits. Prerequisite: ECON 102 or 112 or 113. *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.

207W. Beyond Self-Interest
Prerequisite: ECON 102 or 112 or 113; ENGL 105 or 110 or 111 or 250.

212V. Empirical Methods in Economics I (W,Q,C)
Second semester. Three credits. Two class periods and one 2-hour laboratory period. Prerequisite: ECON 111 and 112, or 102 or 113; and MATH 106Q or 113Q or 115Q or 118Q; and STAT 100V or 110V. Open to sophomores or higher. A course recommended for all students majoring in economics. *Couch, Lott, Ray*

Introduction to the empirical testing of economic theories. Student projects testing simple economic models.

213Z. Empirical Methods in Economics II (W,Q,C)
Second semester. Three credits. Prerequisite: ECON 212V; ENGL 105 or 110 or 111 or 250. *Lott, Ray*

Analysis of economic time series, estimation of single- and simultaneous-equation economic models, and statistical decision theory.

214Q. Mathematical Economics
First semester. Three credits. Prerequisite: ECON 111, 112, or 102 or 113; MATH 106Q or 113Q or 115Q or 118Q. *Heffley, Knoblauch, Lott, Ray, Segerson*

Application of mathematical techniques to economic problems. Methods studied: set theory, linear algebra, equilibrium analysis, unconstrained and constrained optimization, comparative statics, and linear programming.

216V. Operations Research (Q,C)
First semester. Three credits. Two 75-minute classes per week. Seven of the classes will be held at the computer lab. Prerequisite: MATH 101 or passed Q Readiness Test or passed Q course. Recommended preparation: ECON 111, 112, or 102 or 113. *Sacks*

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.

217. Information Technology for Economics
Either semester. Three credits. Prerequisites: ECON 111, 112, or 102 or 113; and STAT 100V or 110V. *Ahking, Cosgel, Sacks*

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.

218. Intermediate Microeconomic Theory
Either semester. Three credits. Prerequisite: ECON 102 or 112 or 113. Recommended preparation: ECON 111 and one of MATH 106Q, 113Q, 115Q, 118Q, or 120Q. Open to sophomores or higher. *Cosgel, Heffley, Kimenyi, Knoblauch, Lott, Miceli, Minkler, Randolph, Ray, Sacks, Segerson*

Intermediate microeconomic theory, covering demand and supply, exchange and production, pricing, and welfare economics.

218Q. Intermediate Microeconomic Theory
Prerequisite: ECON 102 or 112, or 113; MATH 106Q or 113Q or 115Q or 118Q. Recommended preparation: ECON 111. Open to sophomores or higher. *Knoblauch, Randolph, Segerson*

Applies mathematical techniques to intermediate microeconomic theory.

219. Intermediate Macroeconomic Theory
Either semester. Three credits. Prerequisite: ECON 102 or 111 or 113. Recommended preparation: ECON 112 and one of MATH 106Q, 113Q, 115Q, 118Q or 120Q. Open to sophomores or higher. *Ahking, Allen, Cunningham, Morand*

Intermediate macroeconomic theory, covering national income accounting; the determination of aggregate output, employment and price levels; elements of business cycles and economic growth.

219Q. Intermediate Macroeconomic Theory
Prerequisite: ECON 102 or 111 or 113; MATH 106Q or 113Q or 115Q or 118Q. Recommended prepara-

tion: ECON 112. Open to sophomores or higher. *Ahking, Cunningham, Morand*

Applies mathematical techniques to macroeconomic theory.

220. Economics of Taxation and Government Spending

Either semester. Three credits. Prerequisite: ECON 102 or 112 or 113. Recommended preparation for students who have completed ECON 112: ECON 111. Open to sophomores or higher.

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.

221. Urban Development and Policy
Second semester. Three credits. Prerequisite: ECON 112 or 102.

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.

223. Economics of Poverty
(Formerly offered as ECON 257.) First semester. Three credits. Prerequisite: ECON 111 and 112, or 102 or 113. Open to sophomores or higher. *Kimenyi*

Analysis of poverty and income maintenance programs: theories of income distribution and comparison of public policies in the U.S. and other countries.

224. Women and Minorities in the Labor Market
(Formerly offered as ECON 279.) First semester. Three credits. Prerequisite: ECON 111 and 112, or 102 or 113. Open to sophomores or higher. *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.

225. Labor Economics
(Formerly offered as ECON 274.) Second semester. Three credits. Prerequisite: ECON 112, or 102 or 113. Recommended preparation: ECON 218. Open to sophomores or higher. *Barth, Couch, Kimenyi*

Economics of labor: human capital theory, discrimination, unemployment, manpower policy, and trade unions.

225W. Labor Economics
(Formerly offered as ECON 274W.) Prerequisite: ECON 112, or 102 or 113; ENGL 105 or 110 or 111 or 250. Recommended preparation: ECON 218. Open to sophomores or higher.

226. Labor Legislation
(Formerly offered as ECON 276.) Second semester. Three credits. Prerequisite: ECON 112, or 102 or 113. Open to sophomores or higher. *Barth*

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.

228. Transitional Economies of Russia and Eastern Europe
(Formerly offered as ECON 244.) First semester. Three credits. Prerequisite: ECON 111 and 112, or 102 or 113. Open to sophomores or higher. *Allen*

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.

230. Money and Banking

Either semester. Three credits. Prerequisite: ECON 111 and 112, or 102 or 113. (112 may be taken concurrently.) Open to sophomores or higher. *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.

232. Government and Industry

(Formerly offered as ECON 264.) Second semester. Three credits. Prerequisite: ECON 112, or 102 or 113. Open to sophomores or higher. *Langlois, Minkler*

Relations between government and business. Public policies enforcing, supplementing, or replacing competition in particular markets, studies of selected industries and legal cases.

233. Economics of the Oceans

Either semester. Three credits. Prerequisite: ECON 102 or 112 or 113. Recommended preparation for those students who have passed ECON 111. Open to sophomores or higher.

Economies of industries that use and manage ocean resources. Applications of industrial organization, law and economics, natural resource theory, and environmental economics.

237. Special Problems in Money and Banking

(Formerly offered as ECON 231.) Second semester. Three credits. Prerequisites: ECON 230, and 219 or 219Q. Recommended preparation: One of: MATH 106Q, 113Q, 115Q, 118Q, or 120Q. Not open for credit to students who have passed ECON 231. *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.

242. International Trade

Either semester. Three credits. Prerequisite: ECON 218 or 218Q. Recommended preparation: ECON 111 or 102, or 113, and one of: MATH 106Q, 113Q, 115Q, 118Q, or 120Q. *Allen*

Economic basis of international trade, trade policies, and international economic organizations.

242W. International Trade

Prerequisite: ECON 218 or 218Q; ENGL 105 or 110 or 111 or 250. Recommended preparation: ECON 111 or 102, or 113, and one of: MATH 106Q, 113Q, 115Q, 118Q, or 120Q.

243. International Finance

Either semester. Three credits. Prerequisites: ECON 219 or 219Q. Recommended preparation: ECON 112, or 102, or 113, and one of: MATH 106Q, 113Q, 115Q, or 120Q. *Ahking, Allen*

Payments and financing of international trade: foreign exchange markets, the balance of payments, capital flows, and international monetary arrangements.

247. Economic Development

Either semester. Three credits. Prerequisites: ECON 111, or 102, or 113 and 218 or 218Q. Recommended preparation: One of: MATH 106Q, 113Q, 115Q, 118Q, or 120Q. *Randolph*

Economics of problems facing developing nations: theories of development, and strategies and policies to promote economic development.

247W. Economic Development

Prerequisites: ECON 111, or 102, or 113 and 218 or 218Q; ENGL 105 or 110 or 111 or 250. Recommended preparation: One of: MATH 106Q, 113Q, 115Q, 118Q, or 120Q.

253. Public Finance

Either semester. Three credits. Prerequisites: ECON 218 or 218Q. Recommended preparation: ECON 111, 102, or 113, and one of: MATH 106Q, 113Q, 115Q, 118Q, or 120Q. *Kimenyi, Miceli, Sacks, Szama, Segerson*

Government expenditures and tax policies: theories of public choice, size and mix of government budgets, alternative tax systems, and tax reform.

253W. Public Finance

Prerequisites: ECON 218 or 218Q; ENGL 105 or 110 or 111 or 250. Recommended preparation: ECON 111, 102, or 113, and one of: MATH 106Q, 113Q, 115Q, 118Q, or 120Q.

258W. Contemporary Problems in Economics

Either semester. Three credits. Prerequisites: ECON 218 and 219 (one of which may be taken concurrently); ENGL 105 or 110 or 111 or 250. Recommended preparation: One of: MATH 106Q, 113Q, 115Q, 118Q, or 120Q.

Current issues of government economic policy, primarily microeconomic: energy, income maintenance, labor markets for minorities and women, government regulation, health care, and others.

259. Urban and Regional Economics

(Also offered as URBN 259.) Second semester. Three credits. Prerequisite: ECON 218 or 218Q. Recommended preparation: ECON 111, 102 or 113 and one of: MATH 106Q, 113Q, 115Q, 118Q, or 120Q. *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.

259W. Urban and Regional Economics

Prerequisite: ECON 218 or 218Q; ENGL 105 or 110 or 111 or 250. Recommended preparation: ECON 111, 102 or 113 and one of: MATH 106Q, 113Q, 115Q, 118Q, or 120Q.

261. Health Economics

Second semester. Three credits. Prerequisite: ECON 218 or 218Q. Recommended preparation: One of: MATH 106Q, 113Q, 115Q, 118Q, or 120Q. *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.

267. Organization of Industry

First semester. Three credits. Prerequisite: ECON 218 or 218Q. Recommended preparation: One of: MATH 106Q, 113Q, 115Q, 118Q, or 120Q. *Knoblauch, Langlois, Minkler*

The nature of competition and economic organization. Competitive effects of business practices, and their influence on price, production, and technological change.

268. Economics of the Law

Either semester. Three credits. Prerequisite: ECON 218 or 218Q. Recommended preparation: ECON 111, or 102 or 113 and one of: MATH 106Q, 113Q, 115Q, 118Q, or 120Q. *Langlois, 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.

275. Theory of Labor Markets

Either semester. Three credits. Prerequisite: ECON 218 or 218Q. Recommended preparation: One of: MATH 106Q, 113Q, 115Q, 118Q, or 120Q. *Barth, Couch, Kimenyi*

Theoretical analysis of labor markets: labor supply and demand; wage differentials; human capital; and the inflation-unemployment tradeoff.

286W. Seminar in Economics

Either semester. Three credits. Prerequisite: ECON 218 and 219 (one of which may be concurrent); ENGL 105 or 110 or 111 or 250. Recommended preparation: One of: MATH 106Q, 113Q, 115Q, 118Q, or 120Q.

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, Economics Scholars, and Candidates for a Degree with Distinction in Economics.

289W. Senior Thesis in Economics

Either semester. Three credits. Hours by arrangement. Open only with consent of instructor. Prerequisite: ECON 286W or consent of the Department Honors Advisor; ENGL 105 or 110 or 111 or 250.

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.

293. Foreign Study

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.

294. Internship – Field Study

Either semester. Two credits. Hours by arrangement. Consent of instructor is required. Students must have: nine credits of 200-level 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 200-level economics courses. 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. Does not count toward the economics major. Must be taken concurrently with ECON 295; 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). *Sazama*

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).

295. Internship – Research Paper

Either semester. One credit. Hours by arrangement. Consent of instructor required. Students must have nine credits of 200-level economics courses (six of which may be concurrent). Students must be at least 6th-semester and have a minimum TGPA of 2.25 or a minimum of 2.5 in 200-level economics courses. Must be taken concurrently with ECON 294; no credit will be given for one course without the other. *Sazama*

Research paper of 3,000-4,000 words on approved topic related to the internship field study.

297. Variable Topics

Either semester. Three credits. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary.

298. Special Topics

Either semester. Credits and hours by arrangement. With a change in topic, this course may be repeated for credit. Prerequisites and recommended preparation vary.

299. Independent Study

Either or both semesters. Credits and hours by arrangement. Open only to seniors with consent of instructor. A student may receive credit for no more than 6 credits of ECON 299.

Tutorial course to enable qualified students to round out their training in economics. Independent reading conferences and short research papers.

Education (EGEN)

294. Seminar/Clinic: The Student as Learner

First semester. One credit. 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.

295. Seminar/Clinic: The Student in the School Context

Second semester. One credit. Prerequisite: EGEN 294. Open only to students in the Integrated Bachelor's/Master's Teacher Preparation Program.

Integration of concepts of linguistic diversity, social and community issues, and exceptionality with clinical experiences.

296. Seminar/Clinic: Methods of Teaching

First semester. Three credits. Prerequisite: EGEN 295. Open only to students in the Integrated Bachelor's/Master's Teacher Preparation Program.

Integration of concepts of learning assessment and exceptionality with area specific methods.

296W. Seminar/Clinic: Methods of Teaching

Prerequisite: EGEN 295; ENGL 105 or 110 or 111 or 250.

297. Seminar/Clinic: Analysis of Teaching

Second semester. Three credits. Prerequisite: EGEN 296 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.

298. Honors Seminar

Either semester. Three credits. Restrictions: Students must be accepted by the School of Education Honors Committee as candidates for Degrees with Distinction, Honors Scholars, or University Scholars. Can be repeated for credit.

299. Independent Study: Honors Thesis Preparation

Either semester. Three credits. Restrictions: Students must be accepted by the School of Education Honors Committee as candidates for Degrees with Distinction, 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*.

201. Introduction to Teaching

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.

204. Introduction to Bilingual-Bicultural Education

Semester by arrangement. Three credits. *Gort, Leach, Reagan, Reyes*

This course deals with cultural-historical background and processes of establishment and implementation of bilingual-bicultural education program.

211. Curriculum and Teaching of Reading

Semester and hours by arrangement. Variable credits, not to exceed three. Prerequisite: EGEN 294 and EGEN 295. *Doyle, Irwin, Kaufman*

An introduction to the principles and practices of teaching reading in the elementary school. Field experience may be included.

212. Introduction to Outdoor Education

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.

220. Teaching the Language Arts in the Elementary School

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.

221. Teaching Reading and Writing in the Elementary School

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.

222. Teaching Mathematics in the Elementary School

First semester. Two credits. Prerequisite: Open only to Elementary Education and Special Education majors. *DeFranco, McGivney-Buelle*

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.

223. Teaching Science in the Elementary School

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.

224. Teaching Social Studies in the Elementary School

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.

231. Sociolinguistic Diversity and the Classroom

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.

232. Foundations of Education: Philosophical Tools for Teachers

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.

233. Social and Community Issues in Education

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.

258. Methods in Elementary School Music

Semester by arrangement. Three credits. Prerequisite: Satisfactory progress in applied music, and consent of instructor.

260. Methods of Foreign Language Instruction, Pre K-12

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.

262. Directed Observation and Participation

Credits by arrangement, not to exceed three. Open only with consent of instructor. This course may be taken for more than one semester.

This course 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.

266. Instruction and Curriculum in the Secondary School

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.

272. The Teaching of Reading in Middle and High Schools

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.

273. Teaching Reading and Writing in the Content Areas

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.

276. Directed Student Teaching

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.

277. Directed Student Teaching

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.

297. Computer Literacy

Either semester. Variable credit, not to exceed three. Prerequisite: Admission to the Neag School of Education.

This course will provide an introduction to the nature, functioning and application of microcomputers. The major languages typically used with microcomputers will be surveyed.

298. Variable Topics

Either semester. Credits and hours by arrangement. Open only with consent of instructor. May be repeated for credit.

299. Independent Study for Undergraduates

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.

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 200 level courses are open to EKIN majors only or by consent of instructor.

160. Courses in Lifetime Sports Program

(Formerly offered as ESLE 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 160) 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.

161. Introduction to Athletic Injuries I

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.

162. Introduction to Athletic Injuries II

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.

163. Introduction to Athletic Injuries III

Second semester. First seven weeks. One credit. Prerequisite: Open only to students in Kinesiology programs.

A survey class to explore general considerations of recognizing and treating athletic injuries. This section covers the lower extremity.

164. Introduction to Athletic Injuries IV

Second semester. Second seven weeks. One credit. Prerequisite: Open only to students in Kinesiology programs.

A survey class to explore general considerations of recognizing and treating athletic injuries. This section covers the upper extremity, head, face, neck, abdomen, thorax, and spine.

201. The Camping Experience

(Formerly offered as ESLE 201.) Second semester. Three credits. Prerequisite: Open only to students in Kinesiology programs. *Morrone*

A study of the various aspects of camping: the staff; campers; program; site and facilities; management, business and finance; support services; and marketing.

202. Theory of Coaching

First semester. Three credits. Prerequisite: Open only to students in Kinesiology programs. *Morrone*

This course 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.

204. Principles of Recreational Service

(Formerly offered as ESLE 204.) First semester. Three credits. Prerequisite: Open only to students in Kinesiology programs. *Servedio*

The involvement of present day recreational service, and basic concepts.

205. Introduction to Therapeutic Recreational Service

(Formerly offered as ESLE 205.) First semester. Three credits. Prerequisite: Open only to students in Kinesiology programs. *Shivers*

Recreational Rehabilitation for special populations. The practice of therapeutic recreational service for clients in treatment centers or communities.

206. Sport Administration I

First semester. Three credits. Prerequisite: Open only to students in Kinesiology programs. *Morrone*

This course focuses on the many administrative roles the coach assumes 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.

207. Sport Administration II

Second semester. Three credits. Prerequisite: Open only to students in Kinesiology programs and EKIN 206. *Morrone*

This course 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.

208. Skill Acquisition in Team Sports

First semester. Two credits. Prerequisite: Open only to students in Kinesiology programs.

This course is designed to provide fundamental skills and tactical theories in various team sports.

209. Skill Acquisition in Individual Sports

Second semester. Two credits. Prerequisite: Open only to students in Kinesiology programs.

This course is designed to provide fundamental skills and tactical theories in various individual sports.

210. Exercise and Sport Science for Coaches

First semester. Four credits. Prerequisite: Open only to students in Kinesiology programs. *Van Heest*

This course is designed to provide fundamental physiological principles and their application to coaching competitive athletics.

230. Nature and History of Sport

(Formerly offered as ESLE 230.) First semester. Three credits. Prerequisite: Open only to students in Kinesiology programs. *Hurwitz*

Historical perspective of sport: ancient and modern Olympics, physical education, collegiate sports, participation by women.

234. Rehabilitation of Athletic Injuries

(Formerly offered as ESLE 234.) First semester. Three credits. Prerequisite: Open only to students in Athletic

Training.

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.

236. Sport and Society

(Formerly offered as ESLE 236.) First semester. Three credits. Prerequisite: SOCI 107 or 107W, or SOCI 115 or 115W and open only to students in Kinesiology programs. *Yiannakis*

Sport as an institution. Sociological issues involving gender, race, and intercollegiate, professional, and children's sports.

236W. Sport and Society

Prerequisite: SOCI 107 or 107W, or SOCI 115 or 115W and open only to students in Kinesiology programs; ENGL 105 or 110 or 111 or 250.

239. Therapeutic Modalities for Athletic Injuries

Second semester. Three credits. Prerequisite: Open only to students in Athletic Training.

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.

248. Physiological Systems in Human Performance

(Formerly offered as ESLE 248.) First semester. Three credits. Prerequisite: PNB 264-265 and open only to students in Kinesiology programs. *Armstrong, Maresh, Van Heest*

An organ systems approach to optimal human performance including metabolism, energy transfer, nerve transmission, muscle contraction, endocrine control, and cardiopulmonary physiology.

249. Pathophysiology and Pharmacology for Athletic Trainers

Second semester. Three credits. Prerequisite: Open only to students in Athletic Training.

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.

250. Clinical Instruction for Athletic Trainers I

Second semester. Three credits. Prerequisite: Open only to students in Athletic Training.

Hands on instruction/demonstration/practice/ implementing of basic emergency procedures, training room procedures, and taping/bracing/wound care procedures. Also, the first of four practical field experiences.

251. Clinical Instruction for Athletic Trainers II

First semester. Three credits. Prerequisite: Open only to students in Athletic Training. *Maye*

Hands on instruction/demonstration/practice/ implementing of basic rehabilitation modalities and conditioning procedures. Also, the second of four practical field experiences.

252. Clinical Instruction for Athletic Trainers III

First semester. Three credits. Prerequisite: Open only to students in Athletic Training. *Fiala*

Hands on instruction/demonstration/practice/ implementing of basic evaluation and treatment procedures of specific body regions. Also, the third of four practical field experiences.

253W. Current Research and Issues in Athletic Training

First semester. Three credits. Prerequisite: Open only to students in Athletic Training; ENGL 105 or 110 or 111 or 250. *Casa*

Acquaint students with the recent research in the field, the components of conducting and publishing research in the field, and preparation for research endeavors at the graduate level. Additionally, important issues relevant to the athletic training profession will be explored and discussed.

254. Athletic Training Administration

Second semester. Three credits. Prerequisite: Open only to students in Athletic Training.

Administrative/Management concerns for the athletic trainer. Insurance, budgeting, counseling, facility design, hiring, record keeping, and other issues will be covered.

255. Health and Medicine

First semester. Three credits. Prerequisite: Open only to students in Athletic Training.

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.

257. Strength and Conditioning for Athletic Trainers

(Formerly offered as ESLE 257.) Second semester, odd years. Three credits. Prerequisite: Open only to students in Athletic Training.

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.

258. Mechanisms and Adaptations in Sport and Exercise

(Formerly offered as ESLE 258.) Second semester. Four credits. Prerequisite: PNB 264-265 and open only to students in Kinesiology programs. *Armstrong, Maresh, Van Heest*

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.

259W. Fitness Management

(Formerly offered as ESLE 259W.) Second semester. Three credits. Prerequisite: Open only to students in Kinesiology programs; ENGL 105 or 110 or 111 or 250. *Casa, Van Heest*

Health fitness programming; a management perspective.

260. Assessment of Athletic Injuries

(Formerly offered as ESLE 260.) Second semester. Three credits. Prerequisite: Open only to students in Athletic Training.

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.

262. Directed Observation and Participation

(Formerly offered as ESLE 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, athletic trainers, sport professionals.

263. Applied Anatomy and Kinesiology

(Formerly offered as ESLE 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.

265. Fundamentals of Resistance Training

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.

268. Physiological Assessment of Competitive Athletics

Second semester. Three credits. Prerequisite: EKIN 248 and 258. Open only to students in Kinesiology programs. *Van Heest*

The course 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.

272. Sport Biomechanics

(Formerly offered as ESLE 272.) First semester. Three credits. Prerequisite: PHYS 101Q or 121Q, PNB 264-265 and open only to students in Kinesiology programs.

Qualitative analysis of linear and angular motion, force and torque, momentum, energy, equilibrium, projectiles, aerodynamics.

280. Recreational Services for the Mentally III

(Formerly offered as ESLE 280.) First semester. Three credits. Prerequisite: Open only to students in Kinesiology programs. *Shivers*

Planning, implementation, programming, evaluation, and treatment team functions for clients, using systematic practice.

281. Introduction to Sport Marketing

(Formerly offered as ESLE 281.) Second semester. Three credits. Prerequisite: ECON 111, 112 and open only to students in Kinesiology programs.

This course introduces the basic concepts, principles, and tools for sport marketing.

282. The Sociology of Leisure

(Formerly offered as ESLE 282.) Second semester. Three credits. Prerequisite: SOCI 107 or 107W or SOCI 115 or 115W and open only to students in Kinesiology programs. *Yiannakis*

An examination of the functions of leisure (& tourism) for society and the individual, with special emphasis on life satisfaction, self actualization over the life course, gender issues, and societal constraints with regard to leisure satisfaction.

283. The Organization of Recreational Services

(Formerly offered as ESLE 283.) Second semester. Three credits. Prerequisite: Open only to students in Kinesiology programs. *Servedio*

Programming activities in public and private agencies emphasizing personnel needs, facilities, marketing, and organization.

284. Introduction to Recreational Service Administration

(Formerly offered as ESLE 284.) First semester. Three credits. Prerequisite: Open only to students in Kinesiology programs. *Servedio*

Management practices, legal issues, budgeting, and supervision.

285. Therapeutic Recreational Service for the Physically Disabled and the Neurologically Impaired

(Formerly offered as ESLE 285.) Second semester. Three credits. Prerequisite: Open only to students in Kinesiology programs. *Shivers*

Adaptive programming for clients with permanent disabilities.

286. Issues in Sport

(Formerly offered as ESLE 286.) Either semester. Three credits. Prerequisite: Open only to students in Kinesiology programs. *Morrone*

The study of socio-cultural, economic, political, and other related issues in sport.

289. Leadership in Recreational Services

(Formerly offered as ESLE 289.) Second semester. Three credits. Prerequisite: Open only to students in Kinesiology programs. *Shivers*

Group dynamics and interpersonal behavior theories with leadership techniques for field application.

289W. Leadership in Recreational Services

Prerequisite: Open only to students in Kinesiology programs; ENGL 105 or 110 or 111 or 250. *Casa*

290. Internship

(Formerly offered as ESLE 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.

292. Emergency Procedures in Athletic Training

(Formerly offered as ESLE 292.) First semester. Three credits. Prerequisite: Open only to students in Athletic Training. *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.

295. Introduction to Honors Research

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.

296. Honors Literature Review

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.

297W. Honors Thesis

Both semesters. Three credits. Prerequisite: Open only to Honors Students in Kinesiology programs; ENGL 105 or 110 or 111 or 250.

The student will collect and interpret data and will write the Honors Thesis, completing work begun during EKIN 296.

298. Variable Topics

(Formerly offered as ESLE 298.) Either semester. Credits and hours by arrangement. Open only with consent of instructor. May be repeated for credit with a change in content.

299. Independent Study for Undergraduates

(Formerly offered as ESLE 299.) Either semester. Credits and hours by arrangement. Open only to seniors with consent of the Department Head. 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.

Educational Leadership (EDLR)

Head of Department: Professor Edward F. Iwanicki
Department Office: Room 406, Gentry Building

For major requirements, see the Neag School of Education section of this *Catalog*.

250. Experiential Learning and Education

First semester. Three credits.

Experiential learning, individual values, personality characteristics. Learning as a life-long process, adult transition research.

251. Introduction to Organizations and Human Resources Education

Either semester. Three credits.

Theories and principles of organizations and organizational behavior as they relate to human resources development in education.

252. Introduction to Management and Human Resources Education

Either semester. Three credits.

Issues and tasks of human resources management (HRM) in educational settings. Theory and practice.

253. Introduction to Planning and Evaluation and Human Resources Education

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.

254. Introduction to Budget Planning and Human Resources Education

Either semester. Three credits.

Comprehensive budgeting, profit planning and control applied to human resources development. Fiscal management problems, budget planning in educational programs.

255. Contemporary Labor Issues

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.

282. College Freshmen: Their Characteristics and Their Adjustment to College Life

Second semester. Three credits. Prerequisite: Consent of instructor.

Personal and social characteristics of college freshmen; adjustment to college life. Techniques for successful transitions.

283. Student Organization Leadership

Three credits. Prerequisite: Consent of instructor.

Examination of leadership issues and development of skills in leading organizations. Experiential application to student's current co-curricular involvement in UConn clubs and organizations.

291. Practicum: Black Experience in Education

Either semester. Not to exceed three credits. Hours by arrangement. Prerequisite: Consent of instructor.

Experiences, cooperatively arranged by the

department, with an educational agency that addresses issues and problems of importance to Black people.

298. Variable Topics

Either semester. Credits and hours by arrangement. Open only with consent of instructor. May be repeated for credit with a change in content.

299. Independent Study for Undergraduates

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 210, Gentry Building

For major requirements, see the Neag School of Education section of this *Catalog*.

206. Introduction to Exceptionality

Either semester. Three credits. Prerequisite: PSYC 132. *Roberts*

This course considers the nature of exceptionalities as well as current policy and programs in the schools and community.

207. Exceptionality I

Second semester. One credit. Prerequisite: Open only to students in the Integrated Bachelor's/Master's Teacher Preparation Program. *Karan*

Characteristics of students with exceptionalities.

208. Exceptionality II

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.

210. Collaborative Program Planning in Special Education

First semester. Three credits. Prerequisite: Open only to Special Education and Elementary Education majors. *Karan, Norlander-Case*

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.

212. Diagnosis, Assessment, and Program Planning

First semester. Three credits. Prerequisite: Open only to Special Education and Elementary Education majors. *Madaus, McGuire, Norlander-Case*

Diagnosis of students with special needs, use of test data in planning instruction and report writing.

213. Positive Behavior Supports and Interventions for Students with Disabilities

Second semester. Three credits. Prerequisite: Open only to Special Education majors. *Martinez*

Overview of preferred practices for providing positive behavior supports for students with disabilities across a variety of classroom and other educational environments.

221. Educational Psychology

Either semester. Three credits. Prerequisite: PSYC 132. *Brown, Kulikowich, Young*

The psychology of learning and teaching, and the

study of the nature and development of children and adolescents.

226. Field Study in Education

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.

230. Peer Counseling

Either semester. Three credits. Prerequisite: Consent of instructor.

This course will focus 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.

240. Technology in Education

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.

250. Learning I

First semester. One credit. Prerequisite: PSYC 132 and open only to students in the Integrated Bachelor's/Master's Teacher Preparation Program. *Brown, Reis, Young*

Theory and practices of learning.

251. Learning II

First semester. One credit. Prerequisite: Open only to students in the Integrated Bachelor's/Master's Teacher Preparation Program. *Brown, Reis, Young*

Theory and practices of learning.

252. Assessment of Learning I

First semester. One credit. Prerequisite: Open only to students in the Integrated Bachelor's/Master's Teacher Preparation Program. *Archambault, Kulikowich, O'Connell*

Theory and practices of the assessment of learning.

253. Assessment of Learning II

First semester. One credit. Prerequisite: Open only to students in the Integrated Bachelor's/Master's Teacher Preparation Program. *Archambault, Kulikowich, O'Connell*

Theory and practices of the assessment of learning.

262. Directed Observation and Participation

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. *McGuire*

This course 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.

277. Directed Student Teaching: Special Education

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. *Abdulaziz, Norlander*

Practicum experience with mentally retarded, learning disabled and/or emotionally disturbed students.

298. Variable Topics

Either semester. Credits and hours by arrangement. Open only with consent of instructor. May be repeated for credit.

299. Independent Study for Undergraduates

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.

Electrical and Computer Engineering (ECE)

Head of Department: Professor Robert Magnusson

Department Office: Room 312, A.B. Bronwell

Building (Engineering III)

For major requirements, see the School of Engineering section of this *Catalog*.

201. Fundamentals of Circuit Analysis

(Formerly offered as EE 201.) Either semester. Three credits. Three class periods and one discussion period. Prerequisite or corequisite: MATH 211 and PHYS 152. Open to sophomores or higher. This course and ECE 220 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.

202. Signals and Systems

(Formerly offered as EE 202.) Either semester. Three credits. Three class periods and one discussion period. Prerequisite: ECE 201 or ECE 220.

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.

204. Electronic Devices and Circuits

(Formerly offered as EE 204.) Either semester. Three credits. Prerequisite: ECE 201. 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.

205. Electromagnetic Fields and Waves

(Formerly offered as EE 205.) Either semester. Three credits. Prerequisite: PHYS 152 and MATH 210 and 211. 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.

209W. Electrical Circuit Design Laboratory

(Formerly offered as EE 209W.) Either semester. Two credits. One 2-hour laboratory period and one 1-hour discussion period. Prerequisite: ECE 201, may be taken concurrently; ENGL 105 or 110 or 111 or 250. Open to sophomores or higher.

Design and evaluation of analog circuits. Emphasizes out-of-laboratory preparation and troubleshooting. Introduction to laboratory instruments including oscilloscopes, signal sources and meters.

210W. Electrical Circuits

Either semester. Four credits. Three 1-hour lectures and one 2-hour laboratory. Prerequisite: PHYS 152Q and MATH 211Q, both of which may be taken con-

currently. Open to sophomores or higher. This course and either ECE 201 or 209W 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.

212. Electronic Circuit Design and Analysis

Either semester. Four credits. Prerequisite: ECE 201 and ECE 209W; or ECE 210. Three 1-hour lectures and one 2-hour laboratory. This course and either ECE 204 or 261 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.

213. Digital Integrated Circuit Design and Analysis

Either semester. Four credits. Prerequisite: ECE 204 and ECE 261; or ECE 212. Three 1-hour lectures and one 2-hour laboratory. This course and ECE 215 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.

214. Power Electronics

Either semester. Two credits. Prerequisite: ECE 204 and ECE 261; or ECE 212. One 1-hour lecture and one 2-hour laboratory. This course and ECE 262W 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.

215. Digital Integrated Circuits

(Formerly offered as EE 215.) Semester by arrangement. Three credits. Prerequisite: ECE 204 and CSE 207. This course and ECE 213 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.

220. Electrical and Computer Engineering Principles

(Formerly offered as EE 220.) First semester. Three credits. Prerequisite: MATH 211Q and PHYS 152Q, both of which may be taken concurrently. This course and ECE 201 or ECE 210W may not both be taken.

Basic concepts of circuit analysis as applied to electronic circuits and electromechanical devices, including measuring instruments.

228. Fiber Optics

(Formerly offered as EE 228.) First semester. Three credits. Prerequisite: ECE 205 or ECE 207 or PHYS 255.

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.

229. Fiber Optics Laboratory

(Formerly offered as EE 229.) Second semester. Three credits. One four-hour laboratory period. Prerequisite: ECE 228.

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.

230. Electrical Instrumentation

(Formerly offered as EE 230.) First semester. Three credits. Prerequisite: ECE 202, ECE 204 and CSE 207.

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.

232. Systems Analysis

(Formerly offered as EE 232.) Either semester. Three credits. Prerequisite: ECE 202.

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.

234. Digital Control Systems

(Formerly offered as EE 234.) Second semester. Three credits. Prerequisite: ECE 232.

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.

240. Electronic Circuits and Applications

(Formerly offered as EE 240.) Second semester. Three credits. Prerequisite: ECE 204 and 232.

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.

241. Communication Systems

(Formerly offered as EE 241.) First semester. Three credits. Prerequisite: ECE 202, and STAT 224Q.

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.

242. Digital Communications and Networks

(Formerly offered as EE 242.) Second semester. Three credits. Prerequisite: ECE 202 and STAT 224Q.

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.

245. Micro/Opto-electronic Devices

(Formerly offered as EE 245.) Second semester. Three credits. Prerequisite: ECE 204.

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.

246. Introduction to Dielectric and Magnetic Materials

(Formerly offered as EE 246.) Semester by arrangement. Three credits. Prerequisite: ECE 205 or ECE 206.

Complex permittivity and permeability of isotropic materials. Polarization and magnetization. Ferroelectric and ferromagnetic materials. Electrostriction and magnetostriction. The Meissner effect and superconducting magnets. Engineering applications.

247. Introduction to Digital Signal Processing

(Formerly offered as EE 247.) Second semester. Three credits. Prerequisite: ECE 202.

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.

249. Very Large Scale Integrated Circuit (VLSI) Design and Simulation

(Formerly offered as EE 249.) First semester. Four credits. Two-hour lecture and three-hour laboratory period. Prerequisite: ECE 215. 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.

252. Digital Systems Design

(Also offered as CSE 252.) (Formerly offered as EE 252.) Either semester. Three credits. Prerequisite: CSE 207.

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.

257. Numerical Methods in Scientific Computation

(Also offered as CSE 257.) (Formerly offered as EE 257.) Either semester. Three credits. Prerequisite: CSE 123C and MATH 210Q and MATH 211Q.

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.

261. Analog Electronics Design Laboratory

(Formerly offered as EE 261.) Either semester. Three credits. One class period and one 4-hour laboratory period. Prerequisite: ECE 209W or 210W, 202, and 204; ECE 202 and 204 may be taken concurrently. This course and ECE 212 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.

262W. Switching and Digital Electronics Design Laboratory

(Formerly offered as EE 262W.) Either semester. Three credits. One class period and one 4-hour laboratory period. Prerequisite: ECE 261 or ECE 212; ENGL 105 or 110 or 111 or 250. This course and ECE 214 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.

263. Communications Systems Design Laboratory

(Formerly offered as EE 263.) Either semester. Three credits. One 4-hour laboratory. Prerequisites: ECE 205 or ECE 207, and 262W.

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.

265. Independent Design Laboratory

(Formerly offered as EE 265.) Either or both semesters. Three credits. Prerequisite: ECE 262 and consent of instructor. 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.

266. Microprocessor Applications Laboratory

(Formerly offered as EE 266.) First 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

267. Systems Laboratory

(Formerly offered as EE 267.) Second semester. Three credits. One 4-hour laboratory period. Prerequisite: ECE 232 and ECE 262.

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.

268. Micro/Opto-electronic Devices and Circuits Fabrication Laboratory

(Formerly offered as EE 268.) Second semester. Three credits. One class period, and one 4-hour laboratory period. Prerequisite: ECE 245, ECE 215.

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.

271. Physiological Control Systems

(Formerly offered as EE 271.) Semester by arrangement. Three credits. Prerequisite: ECE 232.

Analysis of human physiological control systems

and regulators through the use of mathematical models. Identification and linearization of system components. System interactions, stability, noise, and the relationship of system malfunction to disease. The analysis and design of feedback systems to control physiological states through the automatic administration of drugs.

272. Introduction to Biomedical Engineering (Also offered as BME 210.) (Formerly offered as EE 272.) First semester. Three credits. Prerequisite: BIOL 107. Corequisite: PHYS 151Q and MATH 210Q. Open to sophomores or higher.

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.

280. Digital Design Laboratory (Also offered as CSE 280.) (Formerly offered as EE 280.) Second semester. Three credits. Four hours of laboratory. Prerequisite or corequisite: CSE/ECE 252.

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.

281. Digital Hardware Laboratory (Also offered as CSE 261.) (Formerly offered as EE 281.) Second semester. Three credits. One 4-hour laboratory period. Prerequisite: ECE 252 or CSE 252.

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.

290. Electrical and Computer Engineering Design I (Also offered as CSE 290.) (Formerly offered as EE 290 and EE 297.) Either semester. Two credits. Prerequisite: Senior standing.

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 CSE/ECE 291 is carried out. Written progress reports, a proposal, an interim project report, a final report, and oral presentations are required.

291. Electrical and Computer Engineering Design II (Also offered as CSE 291.) (Formerly offered as EE 291 and EE 270.) Either semester. Three credits. Prerequisite: ECE 290. Hours to be arranged.

Design of a device, circuit, system, process, or algorithm. Team solution to an engineering design problem as formulated in CSE/ECE 290, from first concepts through evaluation and documentation. Written progress reports, a final report, and oral presentations are required.

292. Information Processing Systems Laboratory Second semester. Three credits. Prerequisite: ECE 202.

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.

295. Special Topics in Electrical and Computer Engineering (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.

299. Independent Study in Electrical and Computer Engineering (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.

Engineering (ENGR)

Dean: Amir Faghri

Assistant Dean for Undergraduate Education: M.E. Wood

Office: Room 304, EII Castleman Building

Director of Undergraduate Advising: David Jordan

Office: Room 326, EII Castleman Building

100. Orientation to Engineering 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. Not open for credit for students who have passed ENGR 150. 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.

150C. Introduction to Engineering I Either semester. Three credits. Two lecture periods and one 2-hour discussion period. Not open to Junior or Senior students in the School of Engineering. Not open for credit for students who have passed ENGR 100 or 166.

Introduction to engineering and the engineering profession. Topics include: problem solving, design projects, group work, oral and written reports, Fortran computer programming, and engineering graphics.

151. Introduction to Engineering II Either semester. Three credits. Two lecture periods and one 2-hour discussion period. Prerequisite: ENGR 150C or CSE 110C, and MATH 110Q or 113Q or 115Q, which may be taken concurrently. Not open to Junior or Senior students in the School of Engineering. Not open for credit for students who have passed ENGR 100 or 166.

Introduction to engineering and the engineering profession through application of physical conservation principles in analysis and design. Topics include: problem solving, conservation laws, materials properties and selection, engineering economics, group design projects, and oral and written reports.

166. Foundations of Engineering Second semester. Three credits. Two class periods of lecture, and one two period laboratory per week. Not open for credit to Junior or Senior students in the School of Engineering. Not open for credit for students who have passed ENGR 150 or 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.

200. History of Materials and Technology First semester. Three credits. Open to sophomores or higher. May not be used as a professional requirement in the School of Engineering. *Kattamis*

Evolution of man's knowledge of materials and technology from prehistoric cultures until the Industrial Revolution. Interaction between materials, art, science and technology. Goals, status and methods of the materials technologist in Sumerian, Babylonian, Egyptian, Greek, Roman, Extreme Oriental, Islamic civilizations and through the Middle Ages and the Renaissance in modern civilizations set in the political, social, and economic frames of the times.

201. History of Engineering Second semester. Three credits. Open to sophomores or higher. May not be used as a professional requirement in the School of Engineering. *Kattamis*

History of civil, electrical, mining, metallurgical, chemical, mechanical, naval, aeronautical and textile engineering from the Industrial Revolution to the dawn of the twentieth century. Interaction between technology, and industrial, economic, political and cultural forces.

289. EUROTECH Internship Abroad 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.

295. Special Topics in Engineering 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.

English (ENGL)

Head of Department: Professor John Abbott

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*.

103. English for Foreign Students 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.

104. Basic Writing Either semester. Two credits. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

Development of the reading and writing skills essential to university work. Students placed in ENGL 104 must pass the course before electing ENGL 105, 110, or 111. Not open to students who have passed ENGL 105, 109, 110, or 111.

105. English Composition

Either semester. Three credits. Not open for credit to students who have passed ENGL 110.

Instruction in composition through critical reading and frequent short essays.

109. Literature and Composition

Either semester. Three credits. Prerequisite: ENGL 105. Not open for credit to students who have passed ENGL 111 or 250.

Continued training in writing expository prose through the study of selections from prose, poetry, and drama.

110. Seminar in Academic Writing

Either semester. Four credits. Not open for credit to students who have passed ENGL 105. Students placed in ENGL 104 must pass that class before enrolling in ENGL 110.

Instruction in academic writing through interdisciplinary reading. Assignments emphasize interpretation, argumentation, and reflection. Revision of formal assignments and instruction on grammar, mechanics and style.

111. Seminar in Writing through Literature

Either semester. Four credits. Not open for credit to students who have passed ENGL 109. Students placed in ENGL 104 must pass that class before enrolling in ENGL 111.

Instruction in academic writing through literary reading. Assignments emphasize interpretation, argumentation, and reflection. Revision of formal assignments and instruction on grammar, mechanics and style.

112. Classical and Medieval Western Literature

First semester. Three credits. Prerequisite: ENGL 105 or 110 or 111.

This and ENGL 113 offer a study of European literature from ancient times to the present. ENGL 112 considers ancient and medieval literature through Dante.

112W. Classical and Medieval Western Literature

Prerequisite: ENGL 110 or 111 or both 105 and 109; the latter may be taken concurrently. Offered at regional campuses only.

113. Renaissance and Modern Western Literature

Second semester. Three credits. Prerequisite: ENGL 105 or 110 or 111.

Literature in the European tradition from the Renaissance through the modern periods.

113W. Renaissance and Modern Western Literature

Prerequisite: ENGL 110 or 111 or both 105 and 109; the latter may be taken concurrently. Offered at regional campuses only.

120. Major Works of Eastern Literature

Either semester. Three credits. Prerequisite: ENGL 105 or 110 or 111.

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.

127. Major Works of English and American Literature

Either semester. Three credits. Prerequisite: ENGL 105 or 110 or 111.

Includes important works from the major genres and historical periods since Beowulf.

127W. Major Works of English and American Literature

Prerequisite: ENGL 110 or 111 or both 105 and 109; the latter may be taken concurrently. Offered at regional campuses only.

146. Creative Writing I

Either semester. Three credits. Prerequisite: ENGL 105 or 110 or 111.

First course in creative expression in fiction, poetry, and other forms.

193. Foreign Study

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.

200. Children's Literature

Either semester. Three credits. Prerequisite: ENGL 110 or 111 or 250 or both 105 and 109.

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.

201. Literature for High School Students

Either semester. Three credits. Prerequisite: ENGL 110 or 111 or 250 or both 105 and 109. Designed primarily for English education majors. May not be used to meet the English major requirement.

An introduction to the guidance of high school reading in literature.

204. Milton

Either semester. Three credits. Prerequisite: ENGL 110 or 111 or 250 or both 105 and 109.

The lyric, epic and dramatic poetry of Milton, with some consideration of his prose writing.

205. British Literature I

Either semester. Three credits. Open to sophomores or higher. Prerequisite: ENGL 110 or 111 or 250 or both 105 and 109.

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.

206. British Literature II

Either semester. Three credits. Open to sophomores or higher. Prerequisite: ENGL 110 or 111 or 250 or both 105 and 109.

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.

209W. Advanced Composition for Prospective Teachers

Either semester. Three credits. Prerequisite: ENGL 110 or 111 or 250 or both 105 and 109. Open to sophomores or higher. 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.

210. Poetry

Either semester. Three credits. Prerequisite: ENGL 110 or 111 or 250 or both 105 and 109. Open to sophomores or higher.

A study of the techniques and conventions of the chief forms and traditions of poetry in English.

211. Modern Poetry in English

Either semester. Three credits. Prerequisite: ENGL 110 or 111 or 250 or both 105 and 109.

Poetry of the 20th century, from the major modernist innovators to significant contemporaries.

212. The Modern Novel

Either semester. Three credits. Prerequisite: ENGL 110 or 111 or 250 or both 105 and 109. Open to sophomores or higher.

Major twentieth-century novels.

216. The Short Story

Either semester. Three credits. Prerequisite: ENGL 110 or 111 or 250 or both 105 and 109. Open to sophomores or higher.

The short story as a literary form with study of significant Continental, British, and American writers.

217. Studies in Literature and Culture

Either semester. Three credits. Prerequisite: ENGL 110 or 111 or 250 or both 105 and 109. May be repeated for credit with a change in topic. Open to sophomores or higher.

An examination of social and culture aspects of printed literature and of its relationship to other media. Contents will vary by section.

218. Literature and Culture of the Third World

Either semester. Three credits. Prerequisite: ENGL 110 or 111 or 250 or both 105 and 109. May be repeated for credit with a change in topic. Open to sophomores or higher.

The literature of regions outside North America and Europe. Contents of the course will vary according to regional focus.

219. Drama

Either semester. Three credits. Prerequisite: ENGL 110 or 111 or 250 or both 105 and 109. Open to sophomores or higher.

An introduction to the chief forms and traditions of dramatic literature through the study of a broad range of major works.

220. Medieval English Literature

Either semester. Three credits. Prerequisite: ENGL 110 or 111 or 250 or both 105 and 109. Open to sophomores or higher.

Readings in the literature of the English Middle Ages — lyrics, narratives, dramas, and didactic forms.

220W. Medieval English Literature

Prerequisite: ENGL 110 or 111 or 250 or both 105 and 109. Open to sophomores or higher.

221. Renaissance English Literature

Either semester. Three credits. Prerequisite: ENGL 110 or 111 or 250 or both 105 and 109. Open to sophomores or higher.

Writers studied include More, Spenser, Shakespeare, Donne, Jonson, and Milton.

221W. Renaissance English Literature

Prerequisite: ENGL 110 or 111 or 250 or both 105 and 109. Open to sophomores or higher.

222. Restoration and 18th-Century English Literature

Either semester. Three credits. Prerequisite: ENGL 110 or 111 or 250 or both 105 and 109. Open to sophomores or higher.

Includes such writers as Dryden, Pope, Swift, Johnson, Burney, and Austen.

222W. Restoration and 18th-Century English Literature

Prerequisite: ENGL 110 or 111 or 250 or both 105 and 109. Open to sophomores or higher.

223. Romantic and Victorian English Literature

Either semester. Three credits. Prerequisite: ENGL 110 or 111 or 250 or both 105 and 109. Open to sophomores or higher.

Includes such writers as Austen, Wordsworth, Coleridge, Keats, Tennyson, Browning, the Brontes, G. Eliot, and Arnold.

223W. Romantic and Victorian English Literature

Prerequisite: ENGL 110 or 111 or 250 or both 105 and 109. Open to sophomores or higher.

226. Modern English Literature

Either semester. Three credits. Prerequisite: ENGL 110 or 111 or 250 or both 105 and 109. Open to sopho-

mores or higher.

Modern literature from the British Isles, including such writers as Yeats, Eliot, Joyce, Woolf, Lawrence, Lessing, and Shaw.

226W. Modern English Literature

Prerequisite: ENGL 110 or 111 or 250 or both 105 and 109. Open to sophomores or higher.

227. World Literature in English

Either semester. Three credits. Prerequisite: ENGL 110 or 111 or 250 or both 105 and 109. Open to sophomores or higher.

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.

227W. World Literature in English

Prerequisite: ENGL 110 or 111 or 250 or both 105 and 109. Open to sophomores or higher.

230. Shakespeare I

Either semester. Three credits. Prerequisite: ENGL 110 or 111 or 250 or both 105 and 109. Open to sophomores or higher.

Romantic comedies and principal tragedies.

230W. Shakespeare I

Prerequisite: ENGL 110 or 111 or 250 or both 105 and 109. Open to sophomores or higher. Offered at regional campuses only.

231. Shakespeare II

Second semester. Three credits. Prerequisite: ENGL 230 or instructor consent.

The early plays, problem plays, and late plays.

232. Chaucer

Either semester. Three credits. Prerequisite: ENGL 110 or 111 or 250 or both 105 and 109.

The Canterbury Tales and other selected works, and such attention to the Middle English language as is necessary to an understanding of the text.

233. Early and Modern Irish Literature

Either semester. Three credits. Prerequisite: ENGL 110 or 111 or 250 or both 105 and 109.

Irish literature in English to 1939: fiction, drama, and verse, including such early Irish myth as the *Tain bo Cuallge* and such writers as Mangan, Somerville & Ross, Yeats, Gregory, Synge, Joyce, and O'Connor.

234. Contemporary Irish Literature

Either semester. Three credits. Prerequisite: ENGL 110 or 111 or 250 or both 105 and 109.

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.

236. Modern Drama

Either semester. Three credits. Prerequisite: ENGL 110 or 111 or 250 or both 105 and 109.

Modern British, American, and Continental drama, with the reading and discussion of some 25 representative plays.

237. Maritime Literature

Either semester. Three credits. Prerequisite: ENGL 110 or 111 or 250 or both 105 and 109.

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.

238. Maritime Non-Fiction

Either semester. Three credits. Prerequisite: ENGL 110 or 111 or 250 or both 105 and 109.

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.

239. American Nature Writing

Either semester. Three credits. Prerequisite: ENGL 110 or 111 or 250 or both 105 and 109.

Study of writings, from the colonial era to the modern, reflecting diverse ways of imagining humanity's relation to the natural environment.

240. Literature and Religion

Either semester. Three credits. Prerequisite: ENGL 110 or 111 or 250 or both 105 and 109.

Study of diverse imaginative writings concerned with the human search for God, transcendence, and ultimate meaning.

242. The English Language

First semester. Three credits. Prerequisite: ENGL 110 or 111 or 250 or both 105 and 109.

A descriptive study of modern American English: constituent sound (phonology), structure of words (morphology), and syntax, with some attention to lexicography and usage.

244. The History of the English Language

Either semester. Three credits. Prerequisite: ENGL 110 or 111 or 250 or both 105 and 109.

Readings in Old English, Middle English, and Early Modern with a survey of the main developments in the language since Anglo-Saxon times.

246. Creative Writing II

Either semester. Three credits. Prerequisite: ENGL 110 or 111 or 250 or both 105 and 109. 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.

247. Writing Workshop

Either semester. Three credits. Prerequisite: ENGL 110 or 111 or 250 or both 105 and 109. 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.

248W. Writing Tutorial

Either semester. Three credits. Hours by arrangement. Prerequisite: ENGL 110 or 111 or 250 or both 105 and 109. This course may be taken only in conjunction with specially designated sections of English courses numbered 200 or above and may be repeated once for credit in conjunction with a different course.

Intensive supervised practice in writing about literature.

249S. Advanced Expository Writing

Either semester. Three credits. Three class periods. Prerequisite: ENGL 110 or 111 or 250 or both 105 and 109.

Writing on topics related, usually, to students' individual interests and needs.

249W. Advanced Expository Writing

Prerequisite: ENGL 110 or 111 or 250 or both 105 and 109.

Honors Course Sequence

The Honors course sequence, ENGL 250 through ENGL 258, 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.

250. Honors I: Approaches to Literature

First semester. Three credits. Hours by arrangement. Open only with consent of instructor. May be used to satisfy the ENGL 110 or 111 requirement. Not open for credit to students who have passed ENGL 109 or 110 or 111. May not be used to meet the English major requirements.

Study of a variety of approaches to literature and of their critical assumptions.

251W. Honors II: American Literature

Second semester. Three credits. Hours by arrangement. Open only with consent of instructor. Prerequisite: ENGL 110 or 111 or 250 or both 105 and 109.

Early writers and Romantics through Twain and James.

252W. Honors III: American Literature

First semester. Three credits. Hours by arrangement. Open only with consent of instructor. Prerequisite: ENGL 110 or 111 or 250 or both 105 and 109.

Realism, naturalism, modern American authors.

253W. Honors IV: English Literature

First semester, alternate years. Three credits. Open only with consent of instructor. Hours by arrangement. Prerequisite: ENGL 110 or 111 or 250 or both 105 and 109.

Medieval through Jacobean literature.

254W. Honors V: English Literature

First semester, alternate years. Three credits. Hours by arrangement. Open only with consent of instructor. Prerequisite: ENGL 110 or 111 or 250 or both 105 and 109.

Seventeenth and eighteenth century to Romantics.

255W. Honors VI: English Literature

Second semester, alternate years. Three credits. Hours by arrangement. Open only with consent of instructor. Prerequisite: ENGL 110 or 111 or 250 or both 105 and 109.

Nineteenth century literature.

256W. Honors VII: English Literature

Second semester, alternate years. Three credits. Hours by arrangement. Open only with consent of instructor. Prerequisite: ENGL 110 or 111 or 250 or both 105 and 109.

Twentieth century literature.

258. Honors VIII: Honors Thesis

Either semester. Credits and hours by arrangement. Prerequisite: ENGL 105 or 110 or 111 or 250. 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.

264. Studies in Individual Writers

Either semester. Three credits. Prerequisite: ENGL 110 or 111 or 250 or 105.

Concentrated study in one or two authors writing in English. May be repeated for credit with a change in topic.

266. Studies in Criticism

Either semester. Three credits. Prerequisite: ENGL 110 or 111 or 250 or 105.

Studies in the history and theories of literary criticism.

267. Studies in Literature

Either semester. Three credits. Prerequisite: ENGL 110 or 111 or 250 or 105. 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.

268W. Seminars in Literature

Either semester. Three credits. Prerequisite: ENGL 110 or 111 or 250 or both 105 and 109. May be repeated for credit with a change in topic.

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.

270. American Literature to 1880

Either semester. Three credits. Prerequisite: ENGL 110 or 111 or 250 or 105. Open to sophomores or higher.

American literature from the beginnings: Poe, Emerson, Thoreau, Hawthorne, Melville, Whitman, Douglass, Stowe, Dickinson, Twain, and others.

270W. American Literature to 1880

Prerequisite: ENGL 110 or 111 or 250 or both 105 and 109. Open to sophomores or higher.

271. American Literature Since 1880

Either semester. Three credits. Prerequisite: ENGL 110 or 111 or 250 or 105. Open to sophomores or higher.

Modern and contemporary American literature: James, Wharton, Dreiser, Cather, Frost, Hemingway, Fitzgerald, Faulkner, Morrison, and others.

271W. American Literature Since 1880

Prerequisite: ENGL 110 or 111 or 250 or both 105 and 109. Open to sophomores or higher.

272. Native American Literature

Either semester. Three credits. Prerequisite: ENGL 110 or 111 or 250 or 105. Open to sophomores or higher. *Tilton, Makowski*

Examination of the literatures of pre-contact, post-contact, and contemporary indigenous American cultures.

274. Asian American Literature

(Also offered as AASI 274.) Either semester. Three credits. Prerequisite: ENGL 110 or 111 or 250 or 105. Open to sophomores or higher. *Chow*

Literature, theatre, film about Asian American communities and culture in the United States from the mid-nineteenth century to the present.

276W. Black American Writers I

First semester. Three credits. Prerequisite: ENGL 110 or 111 or 250 or both 105 and 109.

Critical and historical examination of the literature of black American writers from Phyllis Wheatley to the present.

277W. Black American Writers II

Second semester. Three credits. Prerequisite: ENGL 110 or 111 or 250 or both 105 and 109.

Extensive readings in the works of four or five contemporary black American writers.

278. Ethnic Literatures of the United States

Either semester. Three credits. Prerequisite: ENGL 110 or 111 or 250 or both 105 and 109.

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.

278W. Ethnic Literatures of the United States

Prerequisite: ENGL 110 or 111 or 250 or both 105 and 109.

279. Advanced Study: Drama

Either semester. Three credits. Prerequisite: ENGL 110 or 111 or 250 or 105.

Intensive study of particular topics in dramatic literature. May be repeated for credit with a change of topic.

280. Advanced Study: Poetry

Either semester. Three credits. Prerequisite: ENGL 110 or 111 or 250 or 105.

Intensive study of particular topics in poetry. May be repeated for credit with a change of topic.

281. Advanced Study: Prose

Either semester. Three credits. Prerequisite: ENGL 110 or 111 or 250 or 105.

Intensive study of particular topics in literary prose. May be repeated for credit with a change of topic.

282. Advanced Study: Literary Criticism and Theory

Either semester. Three credits. Prerequisite: ENGL 110 or 111 or 250 or 105.

Intensive study of particular topics in literary criticism and theory. May be repeated for credit with a change of topic.

283. Advanced Study: British Literature

Either semester. Three credits. Prerequisite: ENGL 110 or 111 or 250 or 105.

Intensive study of particular topics in the literature of the British Isles. May be repeated for credit with a change of topic.

284. Advanced Study: American Literature

Either semester. Three credits. Prerequisite: ENGL 110 or 111 or 250 or 105.

Intensive study of particular topics in the literature of the United States. May be repeated for credit with a change of topic.

285. Women in Literature Before 1900

First semester. Three credits. Prerequisite: ENGL 110 or 111 or 250 or 105.

Analysis of the representation of women in a variety of works from different countries.

286. Women in Twentieth-Century Literature

First semester. Three credits. Prerequisite: ENGL 110 or 111 or 250 or 105.

Analysis of the representation of women in a variety of works from different countries.

287. Advanced Study: Ethnic Literature

Either semester. Three credits. Prerequisite: ENGL 110 or 111 or 250 or 105.

Intensive study of particular topics in British or American literature written by ethnic writers. May be repeated for credit with a change of topic.

288. Advanced Study: Anglophone Literature

Either semester. Three credits. Prerequisite: ENGL 110 or 111 or 250 or 105.

Intensive study of particular topics in the English literature of one or more regions, such as South Asia, Africa or the Caribbean. May be repeated for credit with a change of topic.

289. Advanced Study: Literature of Australia, Canada, Ireland, and New Zealand

Either semester. Three credits. Prerequisite: ENGL 110 or 111 or 250 or 105.

Intensive study of particular topics in the literature of these Commonwealth countries. May be repeated for credit with a change of topic.

290. Advanced Study: Lesbian, Gay, Bisexual and Transgendered Literature

Either semester. Three credits. Prerequisite: ENGL 110 or 111 or 250 or 105.

Intensive study of particular topics in the literary expression of lesbian, gay, bisexual and transgendered identity. May be repeated for credit with a change of topic.

291. Literature and Other Disciplines

Either semester. Three credits. Prerequisite: ENGL 110 or 111 or 250 or 105. 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.

292. Studies in Britain

Second semester. Three credits. Prerequisite: ENGL 110 or 111 or 250 or 105. 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.

293. Foreign Study

Either or both semesters. Credits and hours by arrangement. Prerequisite: ENGL 110 or 111 or 250 or 105. 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.

294C. Publishing

Either semester. Three credits. Prerequisite: ENGL 110 or 111 or 250 or 105.

An introduction to publishing and to writing for publication in this, 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.

295. Variable Topics

Either semester. Three credits. With a change in topics, may be repeated for credit. Prerequisite: ENGL 110 or 111 or 250 or 105. Other prerequisites and recommended preparation vary.

296. Writing Practicum

Either semester. Credits and hours by arrangement. May be repeated for credit with a change in topic. Prerequisite: ENGL 110 or 111 or 250 or 105.

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.

297. Writing Internship

Either semester. Credit and hours by arrangement, not to exceed six credits per semester. Prerequisite: ENGL 110 or 111 or 250 or 105. With a change of placement, may be repeated once for credit. Open only with consent of instructor. 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.

298. Special Topics

Either semester. Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisite: ENGL 110 or 111 or 250 or 105. Other prerequisites and recommended preparation vary.

299. Independent Study

Either semester. Credits and hours by arrangement. Prerequisite: ENGL 110 or 111 or 250 or 105. 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. (Recommended for distinction candidates in English.)

Environmental Engineering (ENVE)

Program Director: Nelly M. Abboud

Office: Room 312, F.L. Castleman Building

110. The Environmental Debate I

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.

201. Decision Analysis in Civil and Environmental Engineering

(Also offered as CE 201.) First semester. Three credits. Prerequisite: MATH 114 or 116. This course may not be taken for credit if the student has taken CE 251, CE 281, or ENVE 251. *Anagnostou, Ivan*

Time value of money. Evaluation of alternative projects. Fundamentals of probability theory and statistics. Critical path method for project scheduling. Optimization using linear mathematical models.

210. The Environmental Debate II

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.

251. Probability and Statistics in Civil Engineering

(Also offered as CE 251.) First semester. Three credits. Recommended preparation: MATH 113Q or 115Q/115V. Open to sophomores or higher. This course and ENVE 201 or CE 201 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.

259C. Soil Chemistry

(Also offered as PLSC 259C.) First semester, alternate years, even. Three credits. Two class periods and one 2-hour laboratory period. Prerequisites: CHEM 128 and 141. PLSC 250 is recommended. *Schulthess*

Basic concepts of the physical chemistry of soil constituents. Topics include soil solution, soil atmosphere, soil organic matter, soil mineralogy, mineral surface characteristics and chemical weathering process.

260. Water Quality Engineering

(Also offered as CE 260.) Second semester. Three credits. Prerequisites: CE 263 and (CE 297 or CHEG 223). *Abboud, Hoag, Smets*

Physical, chemical, and biological principles for the treatment of aqueous phase contaminants; reactor dynamics and kinetics. Design projects.

262. Environmental Engineering Laboratory

(Also offered as CE 262.) Second semester. Three credits. Two class periods and one 3-hour laboratory period. Prerequisites: CE 263; and prerequisite or corequisite (CE 297 or CHEG 223). *Abboud, Holmen, Smets*

Aqueous analytical chemical techniques, absorption, coagulation/flocculation, fluidization, gas stripping, biokinetics, interpretation of analytical results, bench-scale design projects, written and oral reports.

262P. Environmental Engineering Laboratory

(Also offered as CE 262P.) Prerequisites: CE 263; and CE 297 or CHEG 223, which may be taken concurrently; ENGL 105 or 110 or 111 or 250. Must be taken with another P course in Environmental Engineering to equal one W course.

263. Environmental Engineering Fundamentals

(Also offered as CE 263.) First semester. Three credits. Prerequisites: CHEM 128 or 130. Open to sophomores or higher. *Hoag, MacKay, Smets*

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.

265. Hydraulic Engineering

(Also offered as CE 265.) Second semester. Three credits. Prerequisites: CE 297 or (CHEG 223 and CHEG 224). *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.

266. Hydraulic Engineering Laboratory

(Also offered as CE 266.) Second semester. Two credits. One class period. One 2-hour laboratory. Prerequisite: CE 297.

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 similitude.

267. Engineering Hydrology

(Also offered as CE 267.) First semester. Three credits. Prerequisites: CE 297 or (CHEG 223 and CHEG 224). *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.

268. Limnology

(Also offered as CE 268 and as EEB 247.) First semester. Three credits. Prerequisites: (MATH 109 or 112 or 115) and (CHEM 122, 127, or 129 or 137). Recommended preparation: BIOL 107 or an introductory biology course.

Physical, chemical, and biotic interrelationships of freshwater habitats.

270. Environmental Engineering Chemistry

First semester. Three credits. Prerequisite: (CHEM 128 or 130) and MATH 211. *MacKay*

Quantitative variables governing chemical behavior in environmental systems. Thermodynamics and kinetics of acid/base, coordination, precipitation/dissolution, and redox reactions. Organic chemistry nomenclature.

279. Environmental Modeling

(Also offered as CE 279.) Second semester. Three credits. Prerequisite: CE 263 and (CHEG 223 or CE 297).

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.

280. Introduction to Environmental Rate Processes

(Also offered as CHEG 280.) First semester. Three credits. Recommended preparation: CHEM 128.

Application of thermodynamics, chemical kinetics and transfer operations to environmental problems; water pollution control. Open only to students not majoring in chemical engineering.

281. Introduction to Water Pollution

(Also offered as CHEG 281.) Second semester. Three credits. Recommended preparation: CHEG 224.

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.

283. Introduction to Biochemical Engineering

(Also offered as BME 221 and as CHEG 273.) Second semester. Three credits. Recommended preparation: CHEG 251. *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.

285. Introduction to Air Pollution

(Also offered as CHEG 285.) Second semester. Three credits. Recommended preparation: CHEG 211 or ME 233 or ME 238. *Helble*

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.

290W. Environmental Engineering Design I

First semester. Three credits. Prerequisite: ENGL 105 or 110 or 111 or 250. 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.

291W. Environmental Engineering Design II

Second semester. Three credits. Prerequisite: ENVE 290W. To be taken during the senior year.

Students working individually or in groups complete the implementations of protocols and techniques covered in ENVE 290W, final cost of entire project, feasibility, oral presentation and written reports. Instructors will supply initial conditions and performance expectations.

295. Special Topics in Environmental Engineering

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.

296. Thesis

Either semester. Three credits. Prerequisite: Consent of instructor.

Designed to extend student knowledge in a specialized area of environmental engineering and introduction to research.

299. Independent Study

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

293. Foreign Study

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.

295. Special Topics in European Studies

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.

298. Variable Topics

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.

299. Independent Study

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 198. 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 198, 210, 230.

198. Contemporary Issues in Finance

Semester by arrangement. One credit. May be repeated for credit in different sections in combination with BADM 198 or MGMT 198 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.

201. Financial Management

Either semester. Three credits. Prerequisite: ACCT 200, which may be taken concurrently; ECON 111 and 112 or 102; ENGL 110 or 111 or 250, or (105 and 109); MATH 106 or 114 or 116; and STAT 100 or 110. Not open to students who have passed or are taking BADM 230.

An introductory examination of how a business plans its needs for funds, raises the necessary funds, and invests them to attain its goals.

202. Investment and Security Analysis

Either semester. Three credits. Prerequisite: FNCE 201.

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.

202W. Investment and Security Analysis

Prerequisite: FNCE 201.

203. Applications in Financial Management

First and/or second semester. Three credits. Prerequisite: FNCE 201. Recommended preparation: OPIM 203C.

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.

203P. Applications in Financial Management

Prerequisite: FNCE 201. Recommended preparation: OPIM 203C. Must be taken with FNCE 206P to equal one W requirement.

204. Financial Risk Management

First and/or second semester. Three credits. Prerequisite: FNCE 201.

Applications of financial structuring and engineering with particular attention to uses of derivatives.

205. Global Financial Management

Either semester. Three credits. Prerequisite: FNCE 201.

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.

206. Financial Services

First and/or second semester. Three credits. Prerequisite: FNCE 201.

Study of the role of financial services companies in the money and capital markets, funds acquisitions, investment and credit extension.

206P. Financial Services

Prerequisite: FNCE 201. Must be taken with FNCE 203P to equal one W requirement.

210. Personal Finance

Either semester. Three credits. 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.

217. Economics for Global Business Decisions

First and/or second semester. Three credits. Prerequisite: FNCE 201 (may be taken concurrently).

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.

221. Risk Management and Insurance

Either semester. Three credits.

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.

223. Health Insurance

Second semester. Three credits. Prerequisite: FNCE 221.

This course will provide 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 insentive 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.

224. Social Insurance

Second semester. Three credits.

An examination of causes, effects and proposed remedies for financial insecurity resulting from occupational injuries, unemployment, old age and premature death, and general illness. Emphasis is placed on the role of the government in dealing with these economic problems.

225. Life Insurance and Retirement Security

First semester. Three credits. Prerequisite: FNCE 221.

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.

228. Risk Management: Property and Liability Exposures

First semester. Three credits. Prerequisite: FNCE 221.

This course critically examines the risk management process introduced in FNCE 221. Emphasis is on identification and treatment of pure loss exposures faced by commercial and institutional entities. Available risk management treatment techniques are identified and discussed. Analysis of applicable commercial property and liability insurance coverages is stressed.

228W. Risk Management: Property and Liability Exposures

Prerequisite: FNCE 221; ENGL 105 or 110 or 111 or 250.

230. Real Estate Principles

Either semester. Three credits.

Overview of the personal, social and business aspects of real estate. Emphasis on home purchase decisions, location analysis, market characteristics and investment decision-making.

232. Real Estate Investments

First or second semester. Three credits. Prerequisite: FNCE 201 or FNCE 230 or BADM 230.

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.

232W. Real Estate Investments

Prerequisite: FNCE 201 or FNCE 230 or BADM 230.

233. Real Estate Finance

First or second semester. Three credits. Prerequisite: FNCE 201 or FNCE 230 or BADM 230.

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.

234. GIS Applications and Use of the Internet in Real Estate Markets

First or second semester. Three credits.

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.

289. Field Study Internship

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 Finance 230. For all others, completion of Finance 201 and at least one other finance course related to the internship area, with a grade of "C" or better in each course. Consent of instructor and Department Head 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.

293. Foreign Study

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.

Special topics taken in a foreign study program.

296W. Senior Thesis in Finance

Either semester. Three credits. Hours by arrangement. Prerequisite: ENGL 105 or 110 or 111 or 250. Open only to Finance Department Honors Students with consent of instructor and Department Head.

298. Special Topics

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.

299. Independent Study

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.

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.

181, 182. African-American Experience in the Arts: Contemporary Problems and Expressions of African-American Creators; Historical and Cultural Perspectives

Both semesters. Two credits. One 2-hour evening meeting per week. *Molette*

Guest lecturers and University faculty discuss their points of view as black creators, with particular reference to social context and creative expression, and discuss historical and cultural perspectives of African and African-American arts with emphasis on the influences and developments affecting African-American creators of today.

200. The Arts and Their Interrelations

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: Professor David K. Herzberger
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.

161-162. Elementary French I and II

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.

163-164. Intermediate French I and II

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 162 or 173 or two years of high school French.

Continuation of 161-162. Review and extension of French grammar. Graded composition. Intensive and extensive reading. Intensive oral practice.

165-166. French for Reading Knowledge

Either semester. Three credits per course. Open only to seniors and graduate students. Not open to undergraduates who have had FREN 161-162 or 172-173. May not be used to meet the undergraduate foreign language requirement or as a prerequisite for other French courses.

Basic French 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.

169. Studies in the French-Speaking World

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.

171. French Cinema

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.

172 through 175. Intensive French I-IV

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 of two years in two semesters. French 172-173 (fall) covers the same material as 161-162; French 174-175 (spring) covers the same material as 163-164.

193. Foreign Study

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.

210. French Art and Civilization

First semester. Three credits. Recommended preparation: FREN 164 or 175 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.

211. Contemporary France

Second semester. Three credits. Recommended preparation: FREN 164 or 175 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.

215. Practical Translation

Either semester. Three credits. Recommended preparation: FREN 267 or 268 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.

216. Advanced Translation

Either semester. Three credits. Prerequisite: FREN 215 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.

217. Business French

Either semester. Three credits. Recommended preparation: FREN 164 or 175 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.

218. Francophone Studies

Either semester. Three credits. Recommended preparation: FREN 261 or 262 or 210 or 211 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.

220. Theater Studies

Either semester. Three credits. Recommended preparation: FREN 261 or 262 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.

221. Forms and Topics in French Fiction

Either semester. Three credits. Recommended preparation: FREN 261 or 262 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.

222. Poetry

Either semester. Three credits. Recommended preparation: FREN 164 or 175 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.

223. French Film and Theory

Either semester. Three credits. One class period. Recommended preparation: FREN 261 or 262 or 210 or 211 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.

224. Issues in Cultural Studies, the Media, and the Social Sciences

Either semester. Three credits. Recommended preparation: FREN 211 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.

230. The Middle Ages: Myths and Legends

Either semester. Three credits. Recommended preparation: FREN 261 or 262 or instructor consent.

Founding myths and legends of Occidental culture, including a socio-cultural approach. Strong audiovisual component.

231. Renaissance and Reformation

Either semester. Three credits. Recommended preparation: FREN 261 or 262 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."

232. French Classical Culture and Society

Either semester. Three credits. Recommended preparation: FREN 261 or 262 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.

233. The 18th Century: Travelers, Philosophers, and Libertines

Either semester. Three credits. Recommended preparation: FREN 261 or 262 or instructor consent.

The most important texts and figures of the Enlightenment: Montesquieu, Voltaire, Diderot, and Rousseau.

234. Romanticism, Realism, Fin de Siècle: 19th-Century Literature

Either semester. Three credits. Recommended preparation: FREN 261 or 262 or instructor consent.

The literary and artistic innovations that made France the center of 19th-century culture. The Fantastic, Realism, Naturalism, and Decadence.

235. French Modernity

Either semester. Three credits. Recommended preparation: FREN 261 or 262 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.

250. Global Culture in French I

Either semester. Three credits. Recommended preparation: FREN 164 or 175 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.

251. Global Culture in French II

Either semester. Three credits. Recommended preparation: Four years of high school French or French 250 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.

257. French Phonetics

Either semester. Three credits. Recommended preparation: FREN 164 or 175 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.

258. French Language: From Old French to Modern Slang

Either semester. Three credits. Recommended preparation: FREN 261 or 262 or instructor consent.

French language through the ages, from the very first literary texts written in "Old French" to the modern variations corresponding to different linguistic levels.

261. From the Holy Grail to the Revolution: Introduction to Literature

Either semester. Three credits. Recommended preparation: FREN 164 or 175 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.

262. From the Romantics to the Moderns: Introduction to Literature

Either semester. Three credits. Recommended preparation: FREN 164 or 175 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.

267. Grammar and Culture

Either semester. Three credits. Recommended preparation: FREN 164 or 175 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.

268. Grammar and Composition

Either semester. Three credits. Recommended preparation: FREN 164 or 175 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.

269. Advanced French Grammar

First or second semester. Three credits. Three hours per week. Recommended preparation: French 268 or equivalent.

Intensive course in French grammar through a variety of fictional and non-fictional texts.

270W. French Literature and Civilization in English

Either semester. Three credits. Prerequisite: ENGL 105 or 110 or 111 or 250.

Representative works of French literature, on a particular theme. How literary forms articulate the ideas and values of different periods.

272. French Literary Theory

Either semester. Three credits. Recommended preparation: FREN 268 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.

280. Women's Studies in French

Either semester. Three credits. Recommended preparation: FREN 261 or 262 or 210 or 211 or instructor consent.

Women in French and Francophone literature. Women's writings. The development of French and Francophone feminisms. Contemporary issues concerning women in the French-speaking world.

281. Quebec Studies

Either semester. Three credits. Recommended preparation: FREN 261 or 262 or 210 or 211 or instructor consent.

Study of French-Canadian society and its literary and artistic production. Special attention will be given to current issues.

283. French Cultural Studies

Either semester. Three credits. Recommended preparation: FREN 261 or 262.

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.

293. Foreign Study

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.

295. Variable Topics

Either semester. Three credits. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary.

298. Special Topics

Either semester. Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary.

299. Independent Study

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)

Bachelor of General Studies and Non-Degree:

Room 114, Merlin Bishop Center

For major requirements, see the College of Continuing Studies section of this *Catalog*.

200. BGS Continuous Registration

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.

201. BGS External Study

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.

209. Introduction to UNIX/Linux

Either semester. Three credits. Prerequisite: Basic computing skills required. Online access required.

This course is intended for those wanting to understand what UNIX is and how to use it. You will gain a technical overview of UNIX by building your knowledge and understanding through hands-on experiences. The topics covered will include 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. The course material is intended to prepare students for versatile use of any UNIX system and as a foundation for numerous UNIX certification programs.

210. Introduction to Information Technology

Either semester. Three credits.

This is an overview of information technologies including fundamentals of the Internet, service protocols, web development and deployment, and fundamentals of networking.

211. Introduction to Object Oriented Programming with Java

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.

212. Introduction to System Administration with UNIX/Linux

Either semester. Three credits. Prerequisite: GS 209 or equivalent experience. Basic computing skills and an understanding of the UNIX/Linux operating environments required. Online access required.

This course will expand the use of a UNIX system from that of the user to the administrator. You will gain the ability to perform system administration tasks and gain a greater understanding of process interdependencies, kernel resource management and system control. 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.

213. Web Application Development with PERL/PHP

Either semesters. Three credits. Prerequisite: Basic computing skills required. Unix skills course required; can be taken concurrently.

This course will immerse the student in the culture of web application programming. Through participation in cooperative assignments the student will gain appreciation for the process of web application development. This includes the design and implementation of simpler programs and the group development of advanced web applications.

217. Entrepreneurial I

Either semester. Three credits. Not applicable to School of Business degree requirements.

"The Idea" and is it really viable; market research and the competition; promotion and advertising; patents, copyrights, and trademarks; cash flow management; pricing of products and services; record keeping and accounting; organization forms such as incorporation, partnerships and dba; taxes and tax implications of decisions and actions; government regulations; leases and licenses; and how to get your accountant and lawyer involved.

218. Entrepreneurial II

Either semester. Three credits. Not applicable to School of Business degree requirements.

Interviewing, hiring, evaluation and firing of employees; legal issues related to Human Resources; fringe benefit issues; time management; providing excellent customer service; the diversity of the market place; presentation skills and presentation etiquette; using Powerpoint for presentations and proposal preparation; how to deal with success and growth; how to deal with failure; the positives and the negatives of being an entrepreneur and is it for you.

219. Advanced Entrepreneurial

Either semester. Three credits. Not applicable to School of Business degree requirements.

Integrating topics in Entrepreneurial Skills I and II with more detailed information on types of financial support and how the types differ, on pricing a product and service in the marketplace, on what e-commerce is and how to use it effectively together with more traditional marketing methods, and on the managerial and fiscal management that is required for success; quality control issues, working in teams and team building, and long range planning and strategizing will also be covered.

220. Entrepreneurial Seminar

Either semester. Three credits. Not applicable to School of Business degree requirements.

In-depth discussion of business plans and the different types of business plans and how each type relates to the type of funding sought (e.g., a bank versus a venture capitalist) together with the actual writing of a business plan. Students can work individually or on a team basis to prepare and present a business plan suitable to the type of funding source desired using a real entrepreneurial idea or doing the plan as an academic exercise. Each student or team must present the plan to class on a trial run basis for class comment and analysis. The polished business plan must then be presented to an external panel and the panel acts as if it were a funding agent being asked to give money to implement the plan.

221. Dimension of American Civic Engagement

Either semester. Three credits.

The purpose of this course is to examine the concept of citizenship in America and to discuss and evaluate the state of citizenship through historical, philo-

sophical, cultural and contemporary political analyses. Discussion course will focus on selected theoretical traditions of citizenship, the historical development of citizenship and community in America, citizenship as political participation, some challenges to participation, and the development of citizenship skills. Through discussion of assigned readings and current issues, it is hoped that the student will come to a greater understanding of rights, responsibilities, and unique challenges of civic engagement that frame the concept of citizenship in America.

222. Federal Law and Collective Bargaining

Second semester. Three credits. *Hoffman, Sullivan*

This course provides the student with the fundamental skills needed to understand the collective bargaining under federal law.

240. Marketing Concepts and Practices into the 21st Century

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.

241. Financial Statement Analysis for Non-Financial Managers

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.

261. Issues in Contract Bargaining

Both semesters. Three credits. *Sullivan*

This course provides the student with the introductory skills needed to participate fully in bargaining.

262. Introduction to Mediation and Arbitration

Second semester. Three credits. *Crosdale, Sullivan*

This course provides the student with the fundamental skills needed to participate fully in any situation requiring dispute resolution capacities.

271. Workplace Chemical Hazards

Both semesters. Three credits.

This course provides a comprehensive overview of the workplace chemical hazard and their biological effects.

272. Workplace Safety Hazards

Both semesters. Three credits.

This course provides a comprehensive overview of the workplace safety hazards and their occurrence and controls.

273. Psychology of Workplace Safety

Both semesters. Three credits.

This course provides a comprehensive overview of the human factors and behavior which impact upon the safety performance of workers in the workplace.

274. Workplace Environmental Issues

Both semesters. Three credits.

This course provides a comprehensive overview of the environmental factors and how they impact the workplace.

275. Workplace Environmental Law and Regulations

Both semesters. Three credits.

This course provides a comprehensive overview of the environmental laws and regulations and how they impact the workplace environment.

276. Workplace Security and Violence

Both semesters. Three credits.

This course provides a comprehensive overview of the workplace security issues and the aspects of workplace violence.

293. Foreign Study

Either semester. Credits and hours by arrangement. *Joshee, Rodin*

Utilizing experiential learning approaches, this course will provide students the hands-on opportunity to learn about a particular country, culture, religion, society and people. Students in this course will physically travel to the country to be studied and participate in a series of lectures and seminars together with site visits and field trips of historic places, educational institutions, museums and libraries.

296. BGS Internship

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.

297. BGS Summary Project

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.

298. Variable Topics

Either semester. Credits and hours by arrangement. With a change in content, may be repeated for credit.

299. Independent Study

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.

Geography (GEOG)

Head of Department: Professor William Berentsen
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*.

104. Introduction to Geography

(Formerly offered as GEOG 150.) Either semester. Three credits. Two class periods and one 1-hour discussion/laboratory period.

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.

105. Climate, Weather, and the Environment

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.

130. The City in the Western Tradition

(Also offered as URBN 130.) 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.

160. World Regional Geography

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.

193. Foreign Study

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.

200. Economic Geography

Either semester. Three credits. Open to sophomores or higher.

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.

204. Global Issues in Human Geography

First semester. Three credits.

Geographic perspectives on global issues focusing on the relationships between human behavior/activities, and the physical, economic, and cultural environments.

205. Introduction to Physical Geography

Either semester. Three credits. Open to sophomores or higher.

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.

210. Social Uses of Space

(Formerly offered as GEOG 211.) Second semester. Three credits.

Identification of social space (regions) at varying scales from neighborhood to national, and movement within and among these social spaces. Attention also to geographical aspects of social identity, including territoriality and community, and problems of locating social facilities.

210W. Social Uses of Space

Prerequisite: ENGL 105 or 110 or 111 or 250.

215. Climate and Weather

First semester. Three credits.

Analysis of atmospheric processes giving rise to weather systems and climatic patterns. The dynamic integration of atmospheric systems is emphasized.

230. Fluvial Geomorphology

First semester, alternate years. Three credits. One required weekend field trip. Prerequisite: GEOG 205 or GEOL 102 or BIOL 108 or instructor consent.

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.

231. Location Analysis

Either semester. Three credits. Recommended preparation: GEOG 200.

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.

232. Principles and Applications of Physical Geography

First semester. Four credits. Recommended preparation: GEOG 205 or 215. Not open for credit to students who have passed GEOG 214 or 232W.

Laboratory and field study of the physical environment. Techniques, methodologies, and basic concepts of physical geography.

233. Urban Geography

(Also offered as URBN 233.) 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.

234. The Geography of Economic Development

Second semester. Three credits. Prerequisite: GEOG 200.
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.

236. Human Modifications of Natural Environments

Either semester. Three credits. Not open for credit to students who have passed GEOG 206.

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.

237. Environmental Planning and Management

Second semester. Three credits. Recommended preparation: GEOG 236.

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.

238. Applied Population Geography

Either semester. Three credits. Recommended preparation: GEOG 104 (Formerly GEOG 150) or 200.

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.

239. Geography of Asian American Experience

(Also offered as AASI 239.) First semester. Three credits.

Geographical perspective on issues facing Asian American communities: immigration, community formation, economic structure, race relations, and political participation. The changing dynamics of American ethnicity and study of the enturburb. Diversity among Asian Americans, and comparison with other ethnic groups.

240C. Cartographic Techniques

Second semester. Four credits. One 2-hour lecture and two 2-hour laboratory periods. Open to sophomores or higher.

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.

242Q. Geographic Data Analysis

Second semester. Four credits. Three class periods and one 2-hour laboratory. Prerequisite: MATH 101 or passed Q Readiness Test or passed a Q course. Recommended preparation: 100-level STAT.

An introduction to the use of quantitative methods in conducting research, with particular emphasis on the processing and analysis of geographic data.

245V. Introduction to Computer Assisted Cartography (Q,C)

Second semester. Four credits. Three class periods and one 2-hour Laboratory. Prerequisite: MATH 101 or passed Q Readiness Test or passed a Q course. Recommended preparation: GEOG 242 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.

246C. Introduction to Geographic Information Systems

First semester. Four credits. One 2-hour lecture and two 2-hour laboratory periods. Recommended preparation: GEOG 242.

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.

248C. Applications of Geographic Information Systems

Second semester. Four credits. One 2-hour lecture and two 2-hour laboratory periods. Prerequisite: GEOG 246. Not open for credit to students who have passed GEOG 247.

Applications of geographic information systems. Particular attention to land use planning and resource management.

249. Selected Topics in Geographic Information Systems

Either semester. Two credits. May be repeated once for credit with change in content. Recommended preparation: GEOG 242Q.

Selected problems in geospatial decisionmaking and the most commonly used GIS functions, databases, and analyses for decision support.

252. The American Landscape

Second semester, alternate years. Three credits.

The changing attitudes toward the American environment from pre-Columbian times to the twentieth century, and the consequences of those attitudes for the development of contemporary landscapes in the United States.

252W. The American Landscape

Prerequisite: ENGL 105 or 110 or 111 or 250.

253. Geography of Russia and Eastern Europe

First semester, alternate years. Three credits.

Interactive study of geographic patterns in Russia, Eastern Europe and Central Asia including analyses of climate and resources; population, culture, and urbanization; economic development; and political organization in an historical and contemporary framework.

253W. Geography of Russia and Eastern Europe

Prerequisite: ENGL 105 or 110 or 111 or 250.

254. Contemporary Europe: A Geography

Either semester. Three credits.

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.

255. Geography of Latin America

Second semester. Three credits.

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.

255W. Geography of Latin America

Prerequisite: ENGL 105 or 110 or 111 or 250.

258. Geography of Africa

Second semester. Three credits.

Problems of economic, political, social and spatial integration in Africa. Focus on past and contemporary patterns of change (including associated conflicts) examined within the context of the broader global economy.

274. Urban and Regional Planning

Either semester. Three credits. Recommended preparation: GEOG 200 or instructor consent. Open only with consent of instructor.

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.

280W. Geographical Analysis of Urban Social Issues

Second semester. Three credits. Prerequisite: ENGL 105 or 110 or 111 or 250. Recommended preparation: GEOG 210 or 233.

Analysis of socioeconomic patterns and issues within urban areas, with emphasis on applied geographical research. Policy implications are stressed.

282V. Computer Applications in Spatial Analysis (Q,C)

First semester, alternate years. Three credits. Prerequisite: MATH 101 or passed Q Readiness Test or passed a Q course. Recommended preparation: GEOG 242 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.

284W. Advanced Economic Geography

Second semester. Three credits. Prerequisite: GEOG 200 or instructor consent; ENGL 105 or 110 or 111 or 250.

Problems involved in analyzing spatial variations of selected economic variables. Emphasis on location theory with view toward integrating geographic viewpoint and economic concepts.

285W. Advanced Physical Geography

Second semester, alternate years. Three credits. Prerequisite: GEOG 205 or instructor consent; ENGL 105 or 110 or 111 or 250.

Problems involving the application of physical processes in our changing environment.

286W. Environmental Evaluation and Assessment

First semester. Three credits. Prerequisite: ENGL 105 or 110 or 111 or 250. Recommended preparation: GEOG 205 or 236.

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.

287W. Environmental Restoration

First semester. Three credits. Prerequisite: GEOG 205 or GEOL 102 or BIOL 108 or instructor consent; ENGL 105 or 110 or 111 or 250.

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.

288W. Regional Development and Policy

First semester. Three credits. Prerequisite: GEOG 200 or instructor consent; ENGL 105 or 110 or 111 or 250.

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.

293. Foreign Study

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.

Special topics taken in a foreign study program.

294. Internship in Geography: Seminar

Either semester. Credits, not to exceed three, by arrangement. Prerequisite: Consent of instructor. Corequisite: GEOG 295.

Description, analysis, and evaluation of the fieldwork portion (GEOG 295) of the internship. Written reports are required.

295. Internship in Geography: Field Study

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. Corequisite: GEOG 294. 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.

296. Senior Thesis

Either semester. Three credits. Hours by arrangement. Prerequisite: One advanced seminar in geography and/or 3 credits of independent study in geography. Open only with consent of instructor and department head.

296W. Senior Thesis

Prerequisite: One advanced seminar in geography and/or 3 credits of independent study in geography; ENGL 105 or 110 or 111 or 250. Open only with consent of instructor and department head.

297. Variable Topics

Either semester. Three credits. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary.

298. Special Topics

Either or both semesters. Credits and hours by arrangement. Open only with consent of instructor. May be repeated for credit.

299. Independent Study

Either or both semesters. Credits, not to exceed 6, and hours by arrangement. May be repeated for credit.

Geology and Geophysics (GEOL)

Head of Department:

Associate Professor Timothy Byrne

Department Office: Beach Hall

For major requirements, see the College of Liberal Arts and Sciences section of this *Catalog*.

Geology

101. Introductory Environmental Geology

Either semester. Three credits. Not open for credit to students who have passed GEOL 102.

Designed for the nonscience major. Applied geologic principles and processes. Environmental hazards, mineral resources and water problems affecting land use.

102. Introductory Geology

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.

111. Age of the Dinosaurs

Either semester. Three credits. *Thorson*

A reconstruction of the Mesozoic world of the dinosaurs as interpreted from geological and paleontological evidence. Course includes fundamental concepts of stratigraphy, historical geology, paleoclimatology, and paleontology.

205. Current Issues in Environmental Science

(Also offered as EEB 205.) Second 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.

212. Field Geology

Second semester. Six credits. Four weeks intensive study following final examination period. Prerequisite: GEOL 102. *Gray, Philpotts*

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.

213. Spring Field Trip

Second semester. Variable credits. Prerequisite: GEOL 250, 251, 252, and 253, 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.

214Z. Igneous Petrology (Q,W,C)

Second semester, alternate years. Four credits. Three class periods and one 3-hour laboratory. Prerequisite: GEOL 253; MATH 101 or passed Q Readiness

Test or passed a Q course; ENGL 105 or 110 or 111 or 250. Recommended preparation: MATH 114 or 116. *Philpotts*

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.

215V. Metamorphic Petrology (Q,C)

Second semester, alternate years. Three credits. Two class periods and one 3-hour laboratory. Prerequisite: GEOL 253; MATH 101 or passed Q Readiness Test or passed a Q course. Recommended preparation: MATH 114 or 116. *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.

217. Advanced Structural Geology

Second semester. Three credits. Two class periods and one 3-hour laboratory period. Prerequisite: GEOL 252. *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.

219. Invertebrate Paleontology

First semester, alternating years. Four credits. Two class periods and two 2-hour laboratory periods. Prerequisite: GEOL 250.

The systematics, anatomy, evolutionary patterns and ecology of the major groups of invertebrate fossils.

220. Principles of Geomorphology

First semester. Three credits. Two 1-hour class periods and one 3-hour laboratory (occasionally used for field trips). Prerequisite: GEOL 251. *Thorson*

Interpretation of landscape genesis with an emphasis on causal processes and paleoenvironmental implications.

223. Glacial Processes and Materials

Second semester. Three credits. One 2-hour class period and one 3-hour laboratory (for lab exercises and field trips). Recommended preparation: GEOL 251. *Thorson*

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.

227. Polarized Light Microscopy

First semester. Three credits. Two class periods and one 3-hour laboratory period. Prerequisite: GEOL 253. *Gray*

Principles of optical crystallography. Optical properties of crystals in both transmitted and reflected light. Relationship between crystallographic and optical directions. Application of polarized light microscopy to petrofabric analysis.

229. Engineering and Environmental Geology

Second semester. Three credits. Recommended preparation: GEOL 101 or 102. *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.

234C. Introduction to Ground-Water Hydrology

First semester. Four credits. Three class periods and one 2-hour laboratory for which occasional field trips will be substituted. Prerequisite: MATH 114 or 116 and GEOL 102, or instructor consent. *Robbins*

Basic hydrologic principles with emphasis on hydrologic and geologic relationships, use of quantitative techniques.

235. Chemical Hydrogeology

Second semester. Four credits. Three hours lecture and three hours laboratory. Prerequisite: GEOL 234 and CHEM 127-128. *Gray, 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 groundwater and the media through which it travels. Applications of geochemical processes and principles understanding to the mitigation of environmental problems.

240. Sedimentation and Stratigraphy

First semester. Three credits. Two class periods and one 3-hour laboratory period. Prerequisite: GEOL 251.

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.

250. Earth History and Global Change

Second semester. Three credits. Two class periods and one 3-hour laboratory period. Prerequisite: GEOL 102. 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.

251. Earth Surface Processes

Both semesters. Three credits. Two class periods and one 3-hour laboratory period. Prerequisite: GEOL 102. 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.

252. Earth Structure

First semester. Three credits. Two class periods and one 3-hour laboratory period. Prerequisite: GEOL 102. 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.

253. Earth Materials

First semester. Four credits. Two class periods and two 3-hour laboratory periods. Prerequisite: GEOL 102. Recommended preparation: CHEM 127-128. 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.

257. Field Problems in Earth Structure

First semester. One credit. Two weekend field trips and two 2-hour class meetings. Prerequisite or corequisite: GEOL 252.

Mapping techniques and map interpretation using concepts developed in GEOL 252. Emphasis on mapping moderately deformed rocks in which sedimentary and tectonic features can be differentiated.

271. Plate Tectonics and Geologic Processes

(Formerly offered as GEOL 261.) Second semester. Three credits. Prerequisites: GEOL 250 and 252, 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.

293. Internship in Geology and Geophysics - Field Study

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 293 for the fall semester. Prerequisite or corequisite: GEOL 250, 251, 252, and 253. Must be taken concurrently with GEOL 294; no credit will be given for one course without the other. Credits earned in GEOL 293 cannot be included in the 24 or 36 credits of 200-level Geology and Geophysics courses needed to meet the requirements of the B.A. or B.S. degree, respectively. 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 be placed with government agencies or businesses where academic training will be applied in a program of activities to be planned and agreed upon in advance by the job site supervisor, the faculty coordinator, and the intern. One credit may be earned for each 42 hours of pre-approved activities up to a maximum of three credits.

294. Internship in Geology and Geophysics - Research Paper

Either semester. One credit. May not be repeated. Students with summer internship must preregister for GEOL 294 for the fall semester. Prerequisite or corequisite: GEOL 250, 251, 252, and 253. Must be taken concurrently with GEOL 293; 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.

295. Variable Topics

Either semester. Three credits. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary.

296. Undergraduate Research in Geology and Geophysics

Either semester. Three credits. Hours by arrangement. 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.

297W. Undergraduate Research Thesis in Geology and Geophysics

Either semester. Three credits. Hours by arrangement. Prerequisite: GEOL 296; ENGL 105 or 110 or 111 or 250. Open only with consent of instructor.

Writing of a formal thesis based on independent research conducted by the student.

298. Special Topics

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.

299. Independent Study

Either or both semesters. Credits and hours by arrangement. May be repeated for credit. Open only with consent of instructor.

Geophysics**274Q. Physics of the Earth's Interior**

First semester. Three credits. Prerequisite: PHYS 123 or 132 or 142 or 152, which may be taken concurrently; MATH 113 or 115 or 120, 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.

276Q. Fundamentals of Planetary Science

Second semester. Three credits. Prerequisite: PHYS 123 or 132 or 142 or 152, which may be taken concurrently; MATH 114 or 116 or 121, 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.

277Z. Exploration Seismology (Q, W, C)

First semester. Three credits. Two class periods and one 3-hour laboratory period. Prerequisite: PHYS 123 or 132 or 142 or 152, which may be taken concurrently; MATH 113 or 115 or 120, which may be taken concurrently; ENGL 105 or 110 or 111 or 250; 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.

278Z. Applied and Environmental Geophysics (Q, W, C)

Second semester. Three credits. Two class periods and one 3-hour laboratory period. PHYS 123 or 132 or 142 or 152, which may be taken concurrently; MATH 114 or 116 or 121, which may be taken concurrently; ENGL 105 or 110 or 111 or 250; 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.

German (GERM)

Head of Department: Professor David K. Herzberger
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.

111 through 114. Special Intensive Course

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.

tor. Not open for credit to students who have passed GERM 131 through 134.

Intensive coverage of two years in two semesters. German 111-112 (fall) covers same materials as 131-132, Elementary German; GERM 113-114 (spring) covers same material as GERM 133-134, Intermediate German.

131-132. Elementary German I and II

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 111-112.

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.

133-134. Intermediate German I and II

Both semesters. Four credits each semester. Four class periods and one 1-hour laboratory practice. Prerequisite: GERM 132 or two years of high school German. Not open for credit to students who have passed GERM 113-114.

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.

145-146. German Readings in the Sciences and Humanities

Both semesters. Three credits each semester. Not open for credit to students who have passed GERM 131-132 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.

153. Active Language Skills I

First semester. Two credits. Two class periods. Corequisite or prerequisite: GERM 133. Practice in audio-lingual skills.

Emphasis on everyday vocabulary. Recommended for students intending to travel or study abroad.

154. Active Language Skills II

Second semester. Two credits. Two class periods. Corequisite or prerequisite: GERM 134.

Additional practice in developing communicative abilities in a German-speaking country. Recommended for students intending to travel or study abroad.

169. Contemporary Germany: Society, Culture, and Everyday Life

Either semester. Three credits. *Finger*

This course 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.

171. The German Film

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 twenties to the present. Introduction to film history, analysis and interpretation of films, outside readings, term papers.

190. German Folk Songs

Either semester. One credit. One 2-hour class period. May not be used to meet the undergraduate language requirement. May be repeated once for credit.

German folk songs and Christmas carols from the 15th to the 20th Century. Emphasis on correct pronunciation. Occasional performances on and off campus.

193. Foreign Study

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.

200. Intensive Language Practice

Second semester. Three credits. Hours by arrangement. Prerequisite: GERM 133 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.

201-202. Composition

Both semesters. Three credits each semester. Prerequisite: GERM 134 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 233-234.

Intensive grammar review and extensive practice in writing.

204-205. Conversation

Both semesters. Three credits each semester. Prerequisite: GERM 134 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 233-234.

Intensive oral practice based primarily on cultural readings.

220. German Recitation in Applied Mechanics

First semester. One credit. One class period. Prerequisite or corequisite: GERM 133 or equivalent.

Technical German in engineering through the basic concepts and problem solving techniques used in applied mechanics.

221. Introduction to the Sciences in German

Second semester. One credit. One class period. Prerequisite or corequisite: GERM 134, CHEM 128Q, and PHYS 152Q 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.

222. Fields of Technology

First semester. One credit. One class period. Prerequisite: GERM 220 and GERM 221.

A series of lectures and discussion periods on special topics in science and engineering. Open only with consent of instructor.

231-232. German for Professional Use I and II

Both semesters. Three credits each semester. Prerequisite: GERM 134 or equivalent. Recommended preparation: GERM 233-234.

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*).

233-234. Building Language Skills Through Culture I and II

Both semesters. Three credits each semester. Prerequisite: GERM 134 or equivalent. Not open for credit to students who have passed GERM 201-202 or GERM 204-205.

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.

240W. German Literature in Translation

Either semester. Three credits. Prerequisite: ENGL 105 or 110 or 111 or 250. 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.

245. German Grammar and Etymology

Either semester. Three credits. Corequisite: GERM 233 or equivalent or instructor consent.

German grammar and etymology for advanced students. A conceptual foundation for communicative language skills and comparison with English.

246. The Finishing Touch: A Capstone in German Studies

Either Semester. Three credits. Prerequisite: German 234 plus a minimum of 6 additional 200-level 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.

251. German Culture and Civilization

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.

252. Studies in Early German Literature

Either semester. Three credits. Prerequisite or corequisite: GERM 233 or instructor consent.

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.

253. Studies in German Literature Around 1800

Either semester. Three credits. Prerequisite or corequisite: GERM 233 or instructor consent.

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.

254. Studies in 19th Century German Literature

Either semester. Three credits. Prerequisite or corequisite: GERM 233 or instructor consent.

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.

255. Studies in 20th Century German Literature

Either semester. Three credits. Prerequisite or corequisite: GERM 233 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.

260. Women's Studies in German

Either semester. Three credits. Prerequisite or corequisite: GERM 234 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.

271. Principles of Translation I

First semester. Three credits. Prerequisite: GERM 234 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.

280W. Introduction to Germanic Linguistics

First semester. Three credits. Prerequisite: GERM 132 or LING 202 or instructor consent; ENGL 105 or 110 or 111 or 250. *McCormick*

A study of the relationship among modern and historical Germanic languages. Lectures, readings, and class discussions in English.

281. German Film and Culture

Either semester. Three credits. Prerequisite or corequisite: GERM 233.

Critical analysis of artistic issues in writing screenplays and making movies. Dynamic interplay between German film, the other arts, and their socioeconomic context. Taught in German.

282. Connecticut and the Global Market: The German-Speaking Countries

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.

285. Topics in German Culture

Either semester. Three credits. Prerequisite or corequisite: GERM 233 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.

290. German Language Practicum

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.

293. Foreign Study

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.

295. German Play Production

Second semester. Three credits. Hours by arrangement. Prerequisite: GERM 111 or 131 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.

296. German Seminar

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.

297. Variable Topics

Either semester. Three credits. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary.

298. Special Topics

Either semester. Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary.

299. Independent Study

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.

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 Thomas Miller
Department Office: Room 323, Koons Hall

298. Special Topics

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.

299. Independent Study for Undergraduates

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.

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 280 and 283.

280. Introduction to Health Care Management

First semester. Three credits.
This course introduces basic concepts, principles, and practices associated with the health care delivery

system in the United States. The course will examine 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.

281. Health Care Analysis

Second semester. Three credits. Prerequisite: HSMG 280.

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.

282. Health Care Information Technology

First semester. Three credits. Prerequisite: HSMG 281 and 290.

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.

283. Advanced Topics in Health Care Management

Second semester. Three credits. Prerequisites: HSMG 280, 281, and 290.

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.

285. Clinical and Social Issues in Health Care

First semester. Three credits.

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.

290W. Internship in Health Care Management

Either or both semesters. Six credits. Hours by arrangement. Prerequisite: OPIM 203 and 204, senior standing, and consent of instructor; ENGL 105 or 110 or 111 or 250.

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.

298. Special Topics

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 health systems management as announced in advance for semester.

299. Independent Study for Undergraduates

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 health systems management as mutually arranged between a student and an instructor.

Hebrew (HEB)

Head of Department: Professor David K. Herzberger
Department Office: Room 228, J.H. Arjona Building

Consult the Departmental Handbook for courses being offered and further description of these courses.

149-150. Elementary Biblical Hebrew I and II

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.

151-152. Elementary Modern Hebrew I and II

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.

153-154. Intermediate Hebrew I and II

Both semesters. Four credits each semester. Four class periods and one 1-hour laboratory practice. Prerequisite: HEB 152 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.

251-252. Advanced Hebrew

Both semesters. Three credits each semester. Prerequisite: HEB 154 or instructor consent.

Further grammar study. Practice in composition involving the use of everyday vocabulary and idiomatic expressions. Readings in Hebrew culture and history.

Hebrew Civilization (in English)

None of the following courses may be used to meet the foreign language requirement.

101. The Land of Israel from Biblical Times to the Present

(Also offered as JUDS 101.) Either semester. Three credits. Offered in alternate years. *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.

103. Literature and Civilization of the Jewish People

(Also offered as JUDS 103.) Either semester. Three credits. *Miller*

The major concepts, personalities and literary works of the Hebraic tradition from the Biblical and Talmudic periods to the present.

104. Modern Jewish Thought

(Also offered as JUDS Studies 104.) Second semester. Three credits.

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.

201. Selected Books of the Hebrew Bible

(Also offered as JUDS 201.) Either semester. Three credits. Prerequisite: INTD 294 or HIST 213 or HEB 103, 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. *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.

202. Sects and Movements in Judaism

(Also offered as JUDS 202.) Either semester. Three credits. Offered in alternate years.

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.

203. The Holocaust

(Also offered as JUDS 203.) Either semester. Three credits.

A discussion of the Holocaust to be preceded by an examination of the roots of anti-semitism and its effect upon the Jewish experience. Special emphasis will be given to the impact of the Holocaust on Jewish and Christian thought.

218. Palestine Under the Greeks and Romans

(Also offered as CAMS 256, HIST 218, and JUDS 218.) Either semester. Three credits. Recommended preparation: HIST 213 or 214 or 216 or INTD 294 or HEB 202. *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.

277. The Culture of East European Jewry

First semester. Three credits.

The life, folklore, literature and thought of the Jews of Poland and Russia from the sixteenth to the twentieth century. The distinctive contributions of both the Jewish little-town (*shtetl*) and the larger urban community will be explored.

279. Literature of Modern Israel

Second semester. Three credits.

The major themes and literary achievements of modern Hebrew writing. Authors to be emphasized include Feilerberg, Bialik, Brenner, Berdichevsky, Tschernichowsky, Agnon, Greenberg, and Alterman.

193. Foreign Study

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.

293. Foreign Study

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.

295. Variable Topics

Either semester. Three credits. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary.

298. Special Topics

Either semester. Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary.

299. Independent Study

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 Sepphoris during the month of June. This is a six-credit program.

Hindi (HIND)

Head of Department: Professor David K. Herzberger
Department Office: Room 228, J.H. Arjona Building

101-102. Elementary Levels I and II**103-104. Intermediate Levels I and II**

101 and 103 are offered in the first semester, and 102 and 104 in the second. Please refer to the Critical Languages course descriptions in this publication. Consult the Program Director in Arjona 128 or at Ed.Benson@UConn.edu for more information.

History (HIST)

Head of Department: Professor Altina L. Waller
Department Office: Room 121, Wood Hall

For major requirements, see the College of Liberal Arts and Sciences section of this *Catalog*.

100. The Roots of the Western Experience

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.

101. Modern Western Traditions

Either semester. Three credits.

History of political institutions, economic systems, social structures, and cultures in the modern Western world.

106. The Roots of Traditional Asia

Either semester. Three credits.

A survey of the early development and staying power of the traditional cultures from which the major societies of modern Asia have evolved.

108. Modern World History

Either semester. Three credits. *Nwokeji, Omara-Otunno*

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.

121. Women in History

Either semester. Three credits. *I. Brown*

The historical roots of challenges faced by contemporary women as revealed in the European and/or American experience: the political, economic, legal, religious, and family life of women.

195. Special Topics Lecture

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.

198. Varieties of History

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.

200W. Senior Thesis in History

Either semester. Three credits. Hours by arrangement. Open only with consent of instructor and Department Head. Independent study authorization form required. Prerequisite: Three credits of independent study and/or an advanced seminar; ENGL 105 or 110 or 111 or 250.

201. Supervised Field Work

Either semester. Credits up to 12. No more than six credits will count toward the department's major requirements. Hours by arrangement. Open only with consent of Department Head.

Internship in applied history.

203W. History and the Historian

First semester. Three credits. Prerequisite: ENGL 105 or 110 or 111 or 250. *Langer*

Major historical theories and writings from the ancient world to the modern era. For History Honors and other qualified students.

204. Medieval Islamic Civilization to 1700

First semester. Three credits. Recommended preparation: HIST 100 or 101. Open to sophomores or higher. *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.

205. The Modern Middle East from 1700 to the Present

Second semester. Three credits. Open to sophomores 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.

206. Introduction to the History of Science

(Also offered as SCI 206.) First semester. Three credits. Open to sophomores or higher. This course may be used only once to meet the distribution requirement. *Roe*

Rise and development of scientific inquiry; case studies designed to illustrate problems and methods in the study of the history of science.

207W. Science and Social Issues in the Modern World

Second semester. Three credits. Prerequisite: ENGL 105 or 110 or 111 or 250. *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.

209. History of the Family

(Also offered as HDFS 279.) Either semester. Three credits. Not open for credit to students who have passed HDFS 279. *I. Brown*

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.

210. History of Women and Gender in Early America

(Also offered as WS 210.) Either semester. Three credits. Not open to students who have taken HIST 202 or WS 202. *Dayton*

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. For U.S. women's history, 1790 to present, see HIST 215.

211. The Historian's Craft

Either semester. Three credits. Open only to history majors. Open to sophomores or higher.

Learning critical reading, thinking and writing skills by interpreting a variety of primary sources.

212W. Near Eastern Pre-History

(Also offered as ANTH 257W.) Second semester. Three credits. Not open for credit to students who have passed ANTH 257. Prerequisite: ENGL 105 or 110 or 111 or 250.

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.

213. Ancient Near East

(Also offered as CAMS 253.) Either semester. Three credits.

The history of Near Eastern civilization from the Neolithic period to the Persian Empire. The birth of civilization in Mesopotamia and Egypt. The political, economic, social, and cultural achievements of ancient Near Eastern peoples.

214. Ancient Greece

(Also offered as CAMS 254.) Either semester. Three credits. *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.

214W. Ancient Greece

Prerequisite: ENGL 105 or 110 or 111 or 250.

215. History of Women and Gender in the United States, 1790-Present

(Also offered as WS 215.) Either semester. Three credits. Not open for credit to students who have taken HIST 202 or WS 202 before fall 1998. *Porter-Benson*

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.

216. Ancient Rome

(Also offered as CAMS 255.) Either semester. Three credits. *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.

216W. Ancient Rome

Prerequisite: ENGL 105 or 110 or 111 or 250.

217. World of Late Antiquity

(Also offered as CAMS 243.) Either semester. Three credits. *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.

218. Palestine Under the Greeks and Romans

(Also offered as CAMS 256, HEB 218, and JUDS 218.) Either semester. Three credits. Recommended preparation: HIST 213 or 214 or 216 or INTD 294 or HEB 202. *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.

219. Early Middle Ages

First semester. Three credits. *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.

220. The High Middle Ages

Second semester. Three credits. *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.

221. Modern China

Either semester. Three credits. *Wang*

Survey of patterns of modern China since 1800. Topics will include reforms and revolutions, industrialization and urbanization, and family and population growth.

222. History of Pre-Colonial Africa

First semester. Three credits. *Nwokeji, 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.

223. History of Modern Africa

Second semester. Three credits. *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.

224. History of Pan-Africanism

Second semester. Three credits. Recommended preparation: At least one of the following, HIST 222, 223, 238, or 246. *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.

225. History of War in the Modern World

Either semester. Three credits. Recommended preparation: HIST 101. Open to sophomores or higher.

Selected topics analyzing the interactions of warfare, military theories and practice with social, economic and technological developments since 1815.

226. International Human Rights

Either semester. Three credits. Open to sophomores or higher.

Historical and theoretical survey of the evolution of human rights since 1945.

227. Social and Cultural History of Connecticut and New England

Either semester. Three credits. *Dayton, Baldwin, Brown*

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.

228. Europe in the Nineteenth Century

First semester. Three credits. Open to sophomores or higher. Recommended preparation: HIST 101.

This course 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.

228W. Europe in the Nineteenth Century

Prerequisite: ENGL 105 or 110 or 111 or 250. Recommended preparation: HIST 101.

229. Europe in the Twentieth Century

Either semester. Three credits. Open to sophomores or higher. Recommended preparation: HIST 101.

Twentieth Century Europe and its world relationships in the era of two world wars, the great depression, and the cold war.

229W. Europe in the Twentieth Century

Prerequisite: ENGL 105 or 110 or 111 or 250. Recommended preparation: HIST 101.

231. American History to 1877: A Survey

Either semester. Three credits. Open to sophomores or higher.

Political, social, and economic development of the American people through post-Civil War Reconstruction.

231W. American History to 1877: A Survey

Prerequisite: ENGL 105 or 110 or 111 or 250.

232. American History Since 1877: A Survey

Either semester. Three credits. Open to sophomores or higher.

Political, social, and economic development of the American people from Reconstruction to the present.

232W. American History Since 1877: A Survey

Prerequisite: ENGL 105 or 110 or 111 or 250.

233. Social and Intellectual History of the United States through the Civil War

First semester. Three credits. Prerequisite: HIST 231 or instructor consent. *Brown*

This course stresses the impact of political, economic, and social changes on American thought.

234. American Thought and Society Since the Late Nineteenth Century

Second semester. Three credits. Recommended preparation: HIST 232.

The interaction of popular ideas and formal thought with society in the United States during a time of world-wide crises and unrest. Social Darwinism, Populism, reformism, racism, radicalism, liberalism, conservatism, and other ideologies and movements.

235. Constitutional History of the United States

Either semester. Three credits. Recommended preparation: HIST 231.

The Constitution and the Supreme Court in relation to the political, economic, and intellectual history of the United States.

236. Civil War America

Second semester. Three credits. Recommended preparation: HIST 231. *Campbell, 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.

237. American Indian History

Either semester. Three credits. Recommended preparation: HIST 231. *Shoemaker*

Surveys American Indian history in what is now the United States from precolumbian times up to the present. Cultural diversity among Indian peoples, the effects of European contact, tribal sovereignty, and other current issues.

238. African American History to 1865

Either semester. 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.

238W. African American History to 1865

Prerequisite: ENGL 105 or 110 or 111 or 250.

239. History of Connecticut

First semester in odd-numbered years. Three credits. Recommended preparation: HIST 231 or 232. Either 239 or 227, 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.

240W. History Workshop: Topics in American Society and Culture

Either semester. Three credits. Open to sophomores or higher. Prerequisite: ENGL 105 or 110 or 111 or 250. Recommended preparation: HIST 231 or 232.

Techniques of primary historical research based on collaborative research and writing on a topic selected by the instructor. With a change in content, may be repeated for credit.

241. The History of Urban America

(Also offered as URBN 241.) Either semester. Three credits. *Baldwin*

The development of Urban America with emphasis on social, political, physical, and environmental change in the industrial city.

241W. The History of Urban America

(Also offered as URBN 241W.) Prerequisite: ENGL 105 or 110 or 111 or 250.

242. Work and Workers in American Society

Either semester. Three credits. *Porter-Benson*

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.

243. The Establishment of the American Colonies

First semester. Three credits. Recommended preparation: HIST 231. *Dayton, Shoemaker*

Examines the context in which Europeans undertook settlement of North America, and the nature of the Indian response. Emphasis on the development of social, political, and religious institutions in the seventeenth century and in the increasingly ethnically and racially mixed cultures of the eighteenth century.

243W. The Establishment of the American Colonies

Prerequisite: ENGL 105 or 110 or 111 or 250. Recommended preparation: HIST 231.

244. The American Revolution

Second semester. Three credits. Recommended preparation: HIST 231 or 243. *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.

245. Atlantic Voyages

Either semester. Three credits. *Jensen*

Seafaring and society since the age of Columbus. Emphasis on the Anglo-American experience.

246. African American History Since 1865

Either semester. Three credits. *Ogbar*

History of African-American people since the Civil war. Contributions by black people to American development. African-American activity in international arenas.

246W. African American History Since 1865

Prerequisite: ENGL 105 or 110 or 111 or 250.

247. Immigrants and the Shaping of American History

Either semester. Three credits. Recommended preparation: One course in American History.

The origins of immigration to the United States and the interaction of immigrants with the social, political, and economic life of the nation after 1789, with emphasis on such topics as nativism, assimilation, and the "ethnic legacy."

248. U.S. Legal History

Either semester. Three credits. 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.

248W. U.S. Legal History

Prerequisite: ENGL 105 or 110 or 111 or 250.

249. Rise of U.S. Global Power

Either semester. Three credits. Recommended preparation: HIST 231 or 232. *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.

250. Byzantium

Either semester. Three credits. *Langer*

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.

251. Medieval and Imperial Russia to 1855

First semester. Three credits. *Langer*

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.

252. History of Russia Since 1855

Second semester. Three credits. Recommended Preparation: HIST 251. *Langer*

Continuation of History 251. Late imperial Russia, the former Soviet Union, and contemporary Russia.

253. The History of Human Rights

Either semester. Three credits.

Case studies in the emergence and evolution of human rights as experience and concept.

254W. The Habsburg Monarchy and Its Peoples, 1740-1918

Second semester. Three credits. Prerequisite: ENGL 105 or 110 or 111 or 250. Recommended preparation: HIST 101.

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.

255. Germany from the Reformation to 1815

First semester. Three credits. *Bergmann*

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.

255W. Germany from the Reformation to 1815

Prerequisite: ENGL 105 or 110 or 111 or 250.

256. Germany Since 1815

Second semester. Three credits. *Bergmann*

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.

257. The Early Church and Christian Thought
(Also offered as CAMS 250.) Either semester. Three credits. Recommended preparation: HIST 216 or CAMS 255. *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.

258. Intellectual and Social History of Europe in the Nineteenth Century

First semester. Three credits. *Bergmann*

The thought and feeling of Europeans in their social context.

258W. Intellectual and Social History of Europe in the Nineteenth Century

Prerequisite: ENGL 105 or 110 or 111 or 250.

259. Intellectual and Social History of Europe in the Twentieth Century

Second semester. Three credits. *Bergmann*

A continuation of HIST 258.

259W. Intellectual and Social History of Europe in the Twentieth Century

Prerequisite: ENGL 105 or 110 or 111 or 250.

260. Hip-Hop, Politics and Youth Culture in America

Either semester. Three credits. *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.

261. English History to 1603

First semester. Three credits. Open to sophomores or higher. *Olson*

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.

262. History of Modern England

Second semester. Three credits. Open to sophomores or higher. *Watson*

Cultural, political, economic, and intellectual development of modern Britain, with special emphasis on changing ideas of national identity.

264. Social and Economic History of Modern Britain

First semester. Three credits. *Watson*

The change from an agrarian to an industrial society.

265. History of Ireland

Either semester. Three credits. *Canning*

History of Ireland, with emphasis on the modern period. The rise of Irish nationalism, the Irish Literary Revival, and the problems of Northern Ireland.

267. Italy 1250-1600

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.

268. Japanese Americans and World War II

(Also offered as AASI 268.) First semester. Three credits. *Buckley*

The events leading to martial law and executive order 9066, the wartime experience of Japanese Americans, and national consequences.

269. The Modernization of Italy from 1815 to Present

Second semester. Three credits. Open to sophomores or higher. *Davis*

The modernization of Italy's traditional sociopolitical and economic structure; Industrialization, unification, the liberal regime, fascism, and the republic.

270. Variable Topics

Either semester. Three credits. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary.

271. The Renaissance

First semester. Three credits. *Gouwens*

Europe in the fourteenth and fifteenth centuries.

272. The Reformation

Second semester. Three credits.

Europe in the sixteenth century with emphasis on religious developments, rise of the modern state, birth of science, expansion of Europe, and the Commercial Revolution.

273. Europe in the Seventeenth Century

First semester. Three credits.

Conflict of constitutionalism and absolutism, colonial expansion and rivalry, development of science, and the age of reason, the age of the baroque, the age of Louis XIV.

274. Europe in the Eighteenth Century

Second semester. Three credits.

Intellectual, political, and socioeconomic developments in Europe from 1713 to 1789.

275. Latin America and the Great Powers

First semester. Three credits. *Goodwin*

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.

276. Andean Societies

Second semester. Three credits. Recommended preparation: HIST 281 or 282. *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).

277. Modern India

(Also offered as AASI 277.) Either semester. Three credits. *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.

278. History of Latino/as in the United States

(Also offered as PRLS 220.) Either semester. Three credits. *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.

279. France Since 1715

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.

280W. Mexico in the Nineteenth and Twentieth Centuries

Second semester. Three credits. Prerequisite: ENGL 105 or 110 or 111 or 250. Recommended preparation: HIST 281.

The emergence of modern Mexico from

independence to the present with emphasis on the Revolution of 1910.

281. Latin America in the Colonial Period

First semester. Three credits. 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.

282. Latin America in the National Period

Second semester. Three credits. Open to sophomores or higher. *Goodwin, 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.

283W. The Hispanic World in the Ages of Reason and Revolution

First semester. Three credits. Prerequisite: ENGL 105 or 110 or 111 or 250. Recommended preparation: HIST 281. *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.

284. Latinos/as and Human Rights

(Also offered as PRLS 221.) Either semester. Three credits. *Silvestrini*

Latino/a issues related to human, civil and cultural rights, and gender differences.

285. Cuba, Puerto Rico, and the Spanish Caribbean

First semester. Three credits. *Silvestrini*

Discovery and settlement, slavery and plantation economy, recent political and economic developments, and United States relations with the Spanish Caribbean.

286. Argentina and LaPlata Region

First semester. Three credits. Recommended preparation: HIST 281 or 282. *Goodwin*

Colonial heritage, social and economic transformation of Argentina, Uruguay and Paraguay, foreign relations and contemporary turmoil.

287. East Asia to the Mid-Nineteenth Century

(Also offered as AASI 287.) First semester. Three credits. *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.

287W. East Asia to the Mid-Nineteenth Century

(Also offered as AASI 287W.) Prerequisite: ENGL 105 or 110 or 111 or 250.

288. East Asia Since the Mid-Nineteenth Century

(Also offered as AASI 288.) Second semester. Three credits. *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.

288W. East Asia Since the Mid-Nineteenth Century

(Also offered as AASI 288W.) Prerequisite: ENGL 105 or 110 or 111 or 250.

289. War and Diplomacy in East Asia

First semester. Three credits.

European struggle for power in Asia since 1842, in the context of the rise of Japan and the reassertion of Chinese power.

290. The Middle East Crucible

First semester. Three credits. *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.

291. Personality and Power in the Twentieth Century

Second semester. Three credits.

Dynamic leadership in historical crises, including, for example, Churchill, Roosevelt, Stalin, Hitler, DeGaulle, Kennedy, and Mao.

292W. Biography as History

Second semester. Three credits. Two class periods of 75 minutes. Prerequisite: ENGL 105 or 110 or 111 or 250. Open to sophomores or higher.

What the lives of significant individuals reveal about major historical periods and themes. Variable topics.

293. Foreign Study

Either or both semesters. Credits 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.

294. Asian-American Experience Since 1850

(Also offered as AASI 294.) Either semester. Three credits. *Wang*

Survey of Asian-American experiences in the United States since 1850. Responses by Asian-Americans to both opportunities and discrimination.

295W. History through Fiction

Either semester. Three credits. Prerequisite: ENGL 105 or 110 or 111 or 250. Open to sophomores or higher. Recommended preparation: HIST 231 or 232 (if American perspective) or HIST 228 or 229 (if European perspective).

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.

296. Directed Research

Either or both semesters. Three credits. Open only to senior history majors.

An introduction to research methods and resources in history.

297W. Senior Seminar

Either semester. Three credits. Prerequisite or corequisite: HIST 211. Prerequisite: ENGL 105 or 110 or 111 or 250. 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.

298. Special Topics

Either semester. Credits and hours by arrangement. With a change of content, may be repeated for credit. Prerequisites and recommended preparation vary.

299. Independent Study

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.

Human Development and Family Studies (HDFS)

Dean: Charles M. Super

Program Office: Room 106, Family Studies Building
(Design and Resource Management Center)

For major requirements, see the School of Family Studies section of this *Catalog*.

183. Courtship, Marriage, and Sexuality
(Formerly offered as HDFR 183.) Either semester. Three credits.

Development of patterns of interaction in premarital and marital relationships.

190. Individual and Family Development
(Formerly offered as HDFR 190.) Either semester. Three credits.

Human development throughout the life span, with emphasis upon the family as a primary context.

195. Special Topics Lecture

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.

201. Diversity Issues in Human Development and Family Studies

(Formerly offered as HDFR 201.) Either semester. Three credits. Recommended preparation: HDFS 190. Open to sophomores or higher.

Critical issues in diversity and multiculturalism in human development, family relations, and professional practice.

202. Human Development: Infancy Through Adolescence

(Formerly offered as HDFR 202.) Either semester. Three credits. Open to sophomores or higher.

Individual development and behavior from prenatal period through adolescence; impact of peers, school, other social agencies, and especially the family.

204. Human Development: Adulthood and Aging

(Formerly offered as HDFR 204.) Either semester. Three credits. Open to sophomores or higher.

Individual development and behavior from young adulthood through later life with special attention given to family and social influences. Physical, cognitive, social and personality changes, role transitions, and interpersonal and intergenerational relationships.

205. Understanding Research Methods in Human Development and Family Studies

Either semester. Three credits. Prerequisite: STAT 100V or 110V. Prerequisite or corequisite: HDFS 190. Open only to HDFS majors. Not open for credit to students who have completed HDFR 290 or HDFS 290W. Open to sophomores or higher.

Overview of research methods used in human development and family studies, 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.

218. Observational Child Study

(Formerly offered as HDFR 218.) Either semester. Three credits. Two class periods and laboratory by arrangement.

Assessment of developmental skills of young children using a variety of observational methods and procedures. Laboratory experience includes participation in the University of Connecticut's Child Development Laboratories.

220. Introduction to Programs for Young Children

(Formerly offered as HDFR 220.) Either semester. Three credits. Open only with consent of instructor. Must be taken concurrently with HDFS 221 or 224.

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.

220W. Introduction to Programs for Young Children

(Formerly offered as HDFR 220W.) Prerequisite: ENGL 105 or 110 or 111 or 250.

221. Programs for Young Children: Introductory Laboratory

(Formerly offered as HDFR 221.) Either semester. One credit. One 2-hour laboratory by arrangement. Open only to students concurrently enrolled in HDFS 220 or 220W, and open only with consent of instructor.

Guided observation and participation in a program for young children.

222. Integrated Curriculum in Early Childhood Education I

(Formerly offered as HDFR 222.) First semester. Three credits. Two class periods and one 2-hour laboratory period.

Integration of child development theory with best teaching practices for specific age appropriate learning domains from infancy through kindergarten in language, communication, literacy, arts, sensory motor and physical development.

223. Integrated Curriculum in Early Childhood Education II

(Formerly offered as HDFR 223.) Second semester. Three credits. Two class periods and one 2-hour laboratory period.

Integration of child development theory with best teaching practices for specific age appropriate learning domains from infancy through kindergarten in cognitive development, mathematical and scientific thinking, social studies, and personal/social development.

224. Child Development Laboratory: Practicum I

(Formerly offered as HDFR 224.) Either semester. Three credits. Open only with the consent of instructor. Concurrent enrollment in HDFS 220 highly recommended. Recommended preparation in HDFS 202. Weekly seminar. Practicum by arrangement.

Supervised participation in an early childhood education center which has programs for infants, toddlers, preschoolers, and kindergarten children.

225. Analysis of Programs for Young Children

(Formerly offered as HDFR 225.) Either semester. Three credits.

Analytic study of programs designed for young children, history of such programs, underlying theories, specific models; cultural and subcultural issues, parental involvement, and evaluation procedures.

227. Child Development Laboratory: Supervised Teaching Practicum

(Formerly offered as HDFR 227.) Either semester. Nine credits. Two class periods and laboratory by arrangement. Prerequisites: HDFS 202, 220, 222, 223, 224, GPA of 2.5 in HDFS courses, and consent of instructor.

Supervised teaching experience in an early childhood education center which has programs for infants, toddlers, preschoolers, and kindergarten children.

228. Child Development Laboratory: Advanced Teaching Practicum

(Formerly offered as HDFR 228.) Either semester. Six credits. Two class periods and laboratory by arrangement. Prerequisite: HDFS 227, GPA of 2.5 in HDFS courses, and consent of instructor.

Continuation of HDFS 227. Experience in early childhood program implementation, administration, staff supervising, policy making, and curriculum planning.

230. Current Topics in Early Childhood Education

(Formerly offered as HDFR 230.) Semester and hours by arrangement. Variable credits. Open only with consent of instructor. 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.

231. Infancy

(Formerly offered as HDFR 231.) Either semester. Three credits. Prerequisite: HDFS 202 or PSYC 236.

Human development from birth through the second year of life within the family setting.

234. Social and Personality Development During Childhood

(Formerly offered as HDFR 234.) Either semester. Three credits. Prerequisite: HDFS 202 or PSYC 236.

Social and personality development during infancy and childhood; influence of family members, peers, and social institutions on development; aggression, pro-social behaviors, autonomy, self-concept, sex-role development, and moral development.

234W. Social and Personality Development During Childhood

(Formerly offered as HDFR 234W.) Prerequisite: HDFS 202 or PSYC 236; ENGL 105 or 110 or 111 or 250.

240. The Family-School Partnership

(Formerly offered as HDFR 240.) First semester. Three credits.

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.

245. Parent-Child Relations in Cross-Cultural Perspective

(Also offered as ANTH 245.) (Formerly offered as HDFR 245.) Offered every third semester. Three credits.

Theory and research on major dimensions of parenting in the U.S.A. and cross-culturally: parental warmth, control and punishment.

248. Aging in American Society

(Also offered as SOCI 248.) (Formerly offered as HDFR 248.) Either semester. Three credits.

Social gerontology: the role and status of older people in a changing society.

248W. Aging in American Society

(Also offered as SOCI 248W.) (Formerly offered as HDFR 248W.) Prerequisite: HDFS 202 or PSYC 236; ENGL 105 or 110 or 111 or 250.

250. Gender and Aging

(Formerly offered as HDFR 250.) Either semester. Three credits.

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.

250W. Gender and Aging

(Formerly offered as HDFR 250W.) Prerequisite: ENGL 105 or 110 or 111 or 250.

252. Death, Dying, and Bereavement

(Formerly offered as HDFR 252.) Either semester. Three credits.

Cultural context of death, personal meaning of death at different stages in life cycle, and the effect of death upon survivors.

252W. Death, Dying, and Bereavement

(Formerly offered as HDFR 252W.) Prerequisite: ENGL 105 or 110 or 111 or 250.

259. Men and Masculinity: A Social Psychological Perspective

(Formerly offered as HDFR 259.) Either semester. Three credits.

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.

260. Woman: A Developmental Perspective

(Formerly offered as HDFR 260.) Either semester. Three credits.

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.

264. Legal Aspects of Family Life

(Formerly offered as HDFR 264.) First semester. Three credits.

Law in family life.

266. Introduction to Counseling

(Formerly offered as HDFR 266.) Either semester. Three credits.

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.

267. Latino Health

First semester. Three credits.

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).

268. Latinos: Sexuality and Gender

Either semester. Three credits.

Critical discussion of issues involving gender and sexuality among Latinos, with particular attention to race, class, ethnicity, and acculturation.

269. Family Violence

(Formerly offered as HDFR 269.) Either semester. Three credits.

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.

270. Low Income Families

(Formerly offered as HDFR 270.) Either semester. Three credits.

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.

271. Black American Family Patterns

(Formerly offered as HDFR 271.) Either semester. Three credits.

Continuities and discontinuities between black American subcultural patterns and dominant cultural norms as reflected by black American families.

272. Family and Work

(Formerly offered as HDFR 272.) Either semester. Three credits.

Interaction of the world of work with family structure; social psychological dynamics that enhance or impede working families' lives.

273. Family Interaction Processes

(Formerly offered as HDFR 273.) Either semester. Three credits.

Family interaction: communication processes, bonding behaviors, management of conflict and aggression, negotiation of family crisis.

274. Public Policy and the Family

(Formerly offered as HDFR 274.) Either semester. Three credits.

Analysis of government programs and policies impacting the family: child care, aging, family law, mental health, family violence, income maintenance, and family impact analysis.

275. Family Pathology

(Formerly offered as HDFR 275.) Either semester. Three credits.

Theory, research and intervention in families under stress.

276. Planning and Managing Human Service Programs

(Formerly offered as HDFR 276.) Either semester. Three credits.

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.

276W. Planning and Managing Human Service Programs

(Formerly offered as HDFR 276W.) Prerequisite: ENGL 105 or 110 or 111 or 250.

277. Issues in Human Sexuality

(Formerly offered as HDFR 277.) Either semester. Three credits.

Contemporary issues concerning human sexuality; impact upon individuals and family units.

278. Family in Society

(Formerly offered as HDFR 278.) Either semester. Three credits.

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.

278W. Family in Society

(Formerly offered as HDFR 278W.) Prerequisite: ENGL 105 or 110 or 111 or 250.

279. History of the Family

(Also offered as HIST 209.) (Formerly offered as HDFR 279.) Second semester. Three credits. Not open for credit to students who have passed HIST 209.

Preindustrial and industrial family life in Western society since the Middle Ages; changes in demography, family size and structure, family economy, social expectations, sex roles, sexuality, and affective bonds.

280. Material Culture in American Family Life

(Formerly offered as HDFR 280.) Either semester. Three credits.

Material culture of the American family; interaction between family members and the artifacts in their near environment; role of personal possessions, household objects, housing and diet in daily family life and rituals over time.

281. Comparative Family Policy

(Formerly offered as HDFR 281.) Second semester. Three credits.

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.

283. Family Resource Management

Either semester. Three credits.

Decision-making process of families concerning the utilization of financial, personal, environmental and social resources.

284. Adolescence: Youth and Society

(Formerly offered as HDFR 284.) Either semester. Three credits. Prerequisite: HDFS 202 or PSYC 236.

Contemporary adolescence, the multiple forces and behavioral characteristics of this period of development.

285. Child Welfare, Law and Social Policy

Either semester. Three credits. Prerequisite: HDFS 190. Recommended preparation: HDFS 202, 290.

Examines the methods through which empirical social science research can affect law and public policy affecting children and families.

287. Parenthood

(Formerly offered as HDFR 287.) Either semester. Three credits.

Parent behavior and the dynamics of parenthood; interpersonal, familial, and societal roles of parents and variables influencing these roles.

287W. Parenthood.

(Formerly offered as HDFR 287W.) Prerequisite: ENGL 105 or 110 or 111 or 250.

288. Supervised Field Experience

(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 200 level 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 fieldwork 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.

289. Fieldwork in Community Settings

(Formerly offered as HDFR 289.) Either semester. Three credits. Prerequisites: HDFS 288; GPA of 2.5 in HDFS courses: 15 credits of 200 level 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.

290. Research Methods in Human Development and Family Studies

(Formerly offered as HDFR 290.) Either semester. Three credits. Prerequisite: HDFS 190 and PSYC 132 and 133 or 135. Open only to Human Development and Family Studies majors. Not open for credit to students who have completed HDFS 205.

Research methods used in human development and family studies.

290W. Research Methods in Human Development and Family Studies

(Formerly offered as HDFR 290W.) Prerequisite: HDFS 190 and PSYC 132 and 133 or 135; ENGL 105 or 110 or 111 or 250.

292. Research Practicum in Human Development and Family Studies

(Formerly offered as HDFR 292.) Either semester. Credits and hours by arrangement. Prerequisite: GPA of 2.5 in HDFS courses and consent of instructor.

Supervised experience conducting research in human development and family studies.

294. Foreign Study

(Formerly offered as HDFR 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.

295. Senior Seminar in Research Methods

Either or both semesters. Three credits. Prerequisites: HDFS 205, 12 credits of 200-level HDFS/HDFS courses. Open only to Human Development and Family Studies Majors. Open only with consent of instructor.

Students will work as research team to conduct a research project through all of its phases, from formulating a research question to final presentation of findings.

298. Selected Topics in Human Development and Family Studies

(Formerly offered as HDFR 298.) Either semester. Three credits. With a change in content this course may be repeated for credit.

299. Independent Study for Undergraduates

(Formerly offered as HDFR 299.) Either or both semesters. Credits and hours by arrangement. 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.

Interdepartmental (INTD)

Head of Department: Vice Provost for Undergraduate Education

Department Office: Room 318, Family Studies Building

165. Introduction to American Studies

First semester. Three credits. Not open to students who have passed INTD 276.

What is an American? A multi-disciplinary inquiry into American societies and cultures.

180. FYE University Learning Skills

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. The course involves assignments that will provide opportunities for students to enhance their academic and interpersonal skills.

181. FYE Learning Community Seminar

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.

182. FYE Faculty/Student Seminar

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.

193. Foreign Study

Either or both semesters. Credits and hours by arrangement. May be repeated for credit (to a maximum of 15). Consent of appropriate area studies director required before departure.

Course work undertaken within approved Study Abroad programs, usually focussing on the history, culture, and society of a particular country.

195. Special Topics Lecture

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.

196. Special Topics Seminar

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.

197. Special Topics Independent Study

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.

198. Freshman Honors Seminar

First semester. One credit. One class period. Open only with consent of Honors Director.

A overview of some aspects of university education. Designed to help students set learning goals to be achieved during the baccalaureate experience.

210. Urban Field Studies

Either semester. Nine credits. Hours by arrangement. Open only with consent of the Director of the Urban Semester Program. Must be taken concurrently with INTD 211 and 212. This course is also listed under Sociology.

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.

211. Seminar in Urban Problems

Either semester. Three credits. Hours by arrangement. Open only with consent of the Director of the Urban Semester Program. Must be taken concurrently with INTD 210 and 212.

Discussions based upon assigned readings and led by invited speakers from within the University.

212. Urban Semester Field Work Seminar

Either semester. Three credits. Hours by arrangement. Open only with consent of the Director of the Urban Semester Program. Must be taken concurrently with INTD 210 and 211.

Students make analytic presentations of their field experiences, relating these to the pertinent available literature. Particular urban problems are discussed with invited experts from outside the University.

212W. Urban Semester Field Work Seminar

Prerequisite: ENGL 105 or 110 or 111 or 250. Must be taken concurrently with INTD 210 and 211.

220. Studies in the Culture of the Middle Ages

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. Sponsored by the Committee for Medieval Studies.

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.

222. Linkage through Language

Either semester. One credit. Prerequisite: Language skills equivalent 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 & Classical Languages Department in collaboration with the department offering the companion course.

This 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.

224. Spanish Language and Culture for the Health Professions ("Spanning")

Either semester. One credit. Open with the consent of instructor to students in health care professions and social services. With a change in content, may be repeated for credit. Sponsored by Spanish/Modern & Classical Languages department in collaboration with schools of Nursing and Allied Health Professions.

Supplements professional training with focused instruction in Spanish language, culture, and health issues of relevance to professionals working with Spanish-speaking populations.

240C. Social Science Data Utilization

Either semester. Three credits. Three class periods and one 1-hour laboratory. This course is also listed under Political Science and Sociology. This course may not be counted toward the major in Political Science or in Sociology. Sponsored by the Social Science Data Center and the Political Science Department. Offered only at the Avery Point campus.

Davis

Introduction to social science data analysis and utilization. Laboratory assignments will use the University Computer Center facility for the execution of statistical package setups, and data bases by the Social Science Data Center/Roper Center.

245. Human Rights Internship and Portfolio

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.

249. Violence: Sources and Alternatives

First semester. Three credits. *Blank, Prewitt, Reed*

Sources of violence in the individual, the home, the nation, and among nations are examined. Alternatives to the use of violence at each of these levels are explored.

250. Global Militarism and Human Survival
Second semester. Three credits. Two class periods (one 2-hour and one 1-hour). *Luyster*

A consideration of the threat posed to humanity's survival by a growing global militarism and the unprecedented destructiveness of nuclear weapons.

265. Seminar in American Studies
Second semester. Three credits.

An in-depth study of an event, historical period, or cultural production from an interdisciplinary perspective.

280. Library Research Methods

Either semester. Two credits. Two class periods. Open only with consent of instructor. Offered at the Waterbury Campus.

Specific instruction in the use of a university library and in the use of the bibliographic tools and methods that are an essential part of library research.

291. Interdisciplinary Honors Seminar

Either semester. Three credits. Open only with consent of instructor.

An interdisciplinary seminar designed for honors students and open to other qualified students. Topics vary from semester to semester. May be repeated once for credit with change of topic. Sponsored by the Office of Honors Programs.

293. Foreign Study

Either or both semesters. Credits and hours by arrangement. May be repeated for credit (to a maximum of 17). Consent of appropriate area studies director or major advisor required before departure. May count toward the major with consent of advisor.

Course work undertaken within approved Study Abroad programs, usually focusing on the history, culture, and society of a particular country.

294. The Bible

First semester. Three credits, which may be counted toward the related field requirement in History, Philosophy, or English. Sponsored by and listed under the English, History, and Philosophy Departments.

The literary, historical, and philosophical content, circumstances and problems of the Old and New Testaments.

297. Variable Topics

Either semester. Three credits. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary.

298. Special Topics

Either semester. Credits and hours by arrangement. Open only with consent of instructor. May be repeated for credit.

299. Independent Study

Either semester. Credits and hours by arrangement. Open only with consent of instructor. May be repeated for credit.

Italian Literary and Cultural Studies (ILCS)

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.

145-146. Elementary Italian I and II

(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.

147-148. Intermediate Italian I and II

(Formerly offered as ITAL 147-148.) Both semesters. Four credits each semester. Four class periods and one 1-hour laboratory practice. Prerequisite: ILCS 146 or equivalent.

Review of elementary Italian grammar. Graded composition and translation. Intensive and extensive reading. Oral practice in the language.

175-178. Intensive Italian I - IV

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 145 through ILCS 148.

Intensive coverage of two years of Italian in two semesters. Intensive Italian 175-176 (Fall) covers the same material as ILCS 145-146; Intensive Italian 177-178 (Spring) covers the same material as ILCS 147-148.

213. Year Abroad in Italy: Preparation

(Formerly offered as ITAL 213.) Second semester. Three credits. Open only to students selected for the Year Abroad in Florence Program.

A comprehensive review of Italian language and civilization.

237. Italy Today

(Formerly offered as ITAL 237.) First semester. Three credits. Prerequisite: ILCS 148.

A survey of contemporary Italian political, social, economic and cultural life.

238. Italian Civilization in the Renaissance

(Formerly offered as ITAL 238.) Either semester. Three credits. Prerequisite: ILCS 148 or equivalent.

A survey of social, cultural and artistic trends in Italy during the Renaissance.

239. Italian Composition and Conversation I

(Formerly offered as ITAL 239.) First semester. Three credits. Prerequisite: ILCS 148 or equivalent.

Practice in written and oral composition. Syntax study.

240. Italian Composition and Conversation II

(Formerly offered as ITAL 240.) Second semester. Three credits. Prerequisite: ILCS 239 or equivalent.

Further practice in written and oral composition. Treatment of the finer points in syntax.

243. Main Currents of Italian Literature Through the Renaissance

(Formerly offered as ITAL 243.) First semester. Three credits. Prerequisite: ILCS 148 or equivalent.

The history of Italian literature through 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.

244. Main Currents of Italian Literature After the Renaissance

(Formerly offered as ITAL 244.) Second semester. Three credits. Prerequisite: ILCS 148 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.

250. Italian Theatre of the Eighteenth Century

(Formerly offered as ITAL 250.) Second semester. Three credits. Prerequisite: ILCS 237 or 239 or 243 or equivalent.

Readings from Metastasio, Goldoni, and Alfieri.

251-252. Machiavelli, Michelangelo and Renaissance Literature

(Formerly offered as ITAL 251-52.) Both semesters. Three credits each semester. Prerequisite: ILCS 237 or 239 or 243 or equivalent.

Selected readings from the works of Poliziano, Leonardo da Vinci, Lorenzo de' Medici, Michelangelo, Ariosto, Machiavelli, Castiglione, Tasso, and others.

253. Dante and His Time

(Formerly offered as ITAL 253.) Either semester. Three credits. Prerequisite: ILCS 237 or 239 or 243 or equivalent.

Selected readings from Dante, Petrarch, Compagni, Villani.

254. Boccaccio and His Time

(Formerly offered as ITAL 254.) Either semester. Three credits. Prerequisite: ILCS 237 or 239 or 243 or equivalent.

Readings from Boccaccio and others with special attention to the problems of social and sexual ethics.

261. Twentieth-Century Italian Literature

(Formerly offered as ITAL 261.) Either semester. Three credits. Recommended preparation: ILCS 237 or 239 or 240. *Bouchard*

Major trends in twentieth-century Italian Literature from the early modern period to contemporary times.

262. Nineteenth-Century Italian Literature

(Formerly offered as ITAL 262.) Either semester. Three credits. Recommended preparation: ILCS 237 or 239 or 240 or 243 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.

299. Independent Study

(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.

Florence Program. The Florence Program is open to sophomores, juniors, and seniors. Courses include intensive Italian, Italian literature, and, with the consent of the director of the Program, any course offered by the University of Florence. Offered at the Florence campus.

Italian Studies (*in English*)

101. The Italian Renaissance

(Formerly offered as ITAL 101.) First semester. Three credits. A knowledge of Italian is not required. Taught in English.

A survey of Italian Renaissance civilization, with emphasis on literature and intellectual life.

149. Cinema and Society in Contemporary Italy

(Formerly offered as ITAL 149.) Second semester. Three credits. Three class periods and one 2-hour laboratory period. Lectures in English. Films in Italian with English subtitles.

A critical analysis of contemporary Italian society seen through the media of film and literature.

158. Italian American Experience in Literature and Film

Either semester. Three credits. Three class periods and one 2-hour laboratory period.

Focuses on the Italian American experience as represented in a variety of fields, including literature and cinema.

255W. Dante's Divine Comedy in English Translation

Either semester. Three credits. Prerequisite: ENGL 105 or 110 or 111 or 250. This course may not be counted toward the Italian Literary and Cultural Studies major or minor group. *Masciandaro*

Dante's poem as a unique synthesis of Medieval

culture. Emphasizes its integration of ethics, political thought, and theology with poetic imagination.

256W. The Literature of the Italian Renaissance (Formerly offered as ITAL 256W.) Second semester. Three credits. Prerequisite: ENGL 105 or 110 or 111 or 250. Not open to students who have passed ILCS 251-252. This course may not be counted in the Italian Literary and Cultural Studies major group.

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.

258. Cinematic Representations of Italian Americans

Either semester. Three credits. Three class periods and one 2-hour laboratory period.

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.

258W. Cinematic Representations of Italian Americans

Prerequisite: ENGL 105 or 110 or 111 or 250.

260W. Italian Cinema

(Formerly offered as ITAL 260W.) Either semester. Three credits. Prerequisite: ENGL 105 or 110 or 111 or 250. Two class periods and one 2-hour laboratory period. Lectures in English. 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.

193. Foreign Study

(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.

293. Foreign Study

(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.

295. Variable Topics

(Formerly offered as ITAL 295.) Either semester. Three credits. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary.

298. Special Topics

(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.

Japanese (JAPN)

Head of Department: Professor David K. Herzberger
Department Office: Room 228, J.H. Arjona Building

101-102. Elementary Levels I and II

103-104. Intermediate Levels I and II

101 and 103 are offered in the first semester, and 102 and 104 in the second. Please refer to the Critical Languages course descriptions in this publication.

Consult the Program Director in Arjona 128 or at Ed.Benson@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*.

101. Introduction to Journalism

Either semester. Three credits.

A survey of the principles, trends, attitudes and philosophies of journalism with emphasis on newspapers and magazines.

102. The Press in America

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.

200W. Newswriting I

Either semester. Three credits. Prerequisite: ENGL 105 or 110 or 111 or 250. One 75-minute lecture and one 2-hour laboratory plus field work. Open to sophomores or higher. *Worcester*

Definition of news, newswriting style, community reporting, covering governmental meetings and writing statistical matter. Laboratory offers intensive practical writing exercises. Field trips required.

201W. Newswriting II

Either semester. Three credits. One 75-minute lecture and one 2-hour laboratory plus field work. Prerequisite: JOUR 200; ENGL 105 or 110 or 111 or 250. Open to sophomores or higher. *Dufresne*

Provides in-depth explanations and demonstrations of what reporters can expect to find, and report, in the courts, schools, town halls, land use agencies and other civic offices, boards and commissions.

202. Journalism Ethics

Either semester. Three credits. Prerequisite: JOUR 102. *Breen*

Discussion of such contemporary problems as privacy, good taste, community standards, effectiveness of the press and responsibility of the press.

212W. Feature Writing

Either semester. Three credits. Prerequisite: JOUR 201; ENGL 105 or 110 or 111 or 250. Open to sophomores or higher.

Emphasis on finding, developing and writing feature stories. Outside stories will be assigned weekly.

213W. Magazine Journalism

Either semester. Three credits. Prerequisite: JOUR 201; ENGL 105 or 110 or 111 or 250. Recommended preparation: JOUR 212.

Students research, report and write, for publication, a magazine-length non-fiction article.

216. Publication Practice

Either semester. One to 3 credits. May be repeated for credit. Hours by arrangement. Open only with consent of instructor. *Worcester*

Students and faculty work together to research, write, edit and produce a publication.

219. Daily Campus Critique

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.

220. Law of Libel and Communications

Either semester. Three credits.

Typical subjects: libel, slander, invasion of privacy, obscenity, legal problems of newsgathering, protecting the political process, protecting state secrets, protecting the public welfare.

230W. Copy Editing I

Either semester. Three credits. Prerequisite: JOUR 201; ENGL 105 or 110 or 111 or 250.

Editing for grammar, style and content, headline writing, introduction to basic newspaper design concepts.

231C. Copy Editing II

Second semester. Three credits. Prerequisite: JOUR 230. *Croteau*

Emphasis on copy and picture selection, copy fitting, photo editing and computer-assisted editing, page layout and production.

233. Opinion Writing

First semester. One credit. Prerequisite: JOUR 201. One two-hour lab-lecture period. *Breen*

Writing for the editorial and op-ed pages.

235C. Advanced Reporting Techniques

First semester. Three credits. Prerequisite: JOUR 201. *Dufresne*

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.

240W. Newswriting for Radio and Television

Either semester. Three credits. Prerequisite: JOUR 200; ENGL 105 or 110 or 111 or 250. Two 75-minute lab-lecture sessions plus a field trip.

Application of newswriting techniques to the broadcast media.

241. Reporting and Editing TV News

Either semester. Three credits. Prerequisite: JOUR 240.

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.

245. Specialized Journalism

Either semester. Three credits. Prerequisite: JOUR 200.

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.

250. Professional Seminar

Three credits. Three hours. Prerequisite: JOUR 200, 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.

293. Foreign Study

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*

295. Variable Topics

Either semester. Three credits. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary.

297. Supervised Field Internship

Either semester. One to three credits. Hours by arrangement. Prerequisite: JOUR 200, 201 and 220. Open only with consent of Department Head. *Croteau* Students research, report and write for newspapers, news departments of radio and television stations, and public relations offices under supervision of professionals.

298. Special Topics

Either semester. Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary.

299. Independent Study

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 and Studies and Contemporary 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*.

101. The Land of Israel from Biblical Times to the Present

(Also offered as HEB 101.) Either semester. Three credits. Offered in alternate years. *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.

103. Literature and Civilization of the Jewish People

(Also offered as HEB 103.) Either semester. Three credits. *Miller*

The major concepts, personalities and literary works of the Hebraic tradition from the Biblical and Talmudic periods to the present.

104. Modern Jewish Thought

(Also offered as HEB 104.) Second semester. Three credits.

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.

201. Selected Books of the Hebrew Bible

(Also offered as HEB 201.) Either semester. Three credits. Prerequisite: INTD 294 or HIST 213 or HEB 103, which may be taken concurrently. A knowledge of Hebrew is not required. May be repeated with change of content and consent of instructor. *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.

202. Sects and Movements in Judaism

(Also offered as HEB 202.) Either semester. Three credits. Offered in alternate years.

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.

203. The Holocaust

(Also offered as HEB 203.) Either semester. Three credits.

A discussion of the Holocaust to be preceded by an examination of the roots of anti-semitism and its effect upon the Jewish experience. Special emphasis will be given to the impact of the Holocaust on Jewish and Christian thought.

218. Palestine Under the Greeks and Romans

(Also offered as CAMS 256, HEB 218, and HIST 218.) Either semester. Three credits. Recommended preparation: HIST 213 or 214 or 216 or INTD 294 or HEB 202. *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.

242. American Jewry

(Also offered as SOCI 242.) Three credits. Either semester. *Dashefsky*

Historical, demographic, organizational, and sociopsychological perspectives.

Korean (KORE)

Head of Department: Professor David K. Herzberger
Department Office: Room 228, J.H. Arjona Building

101-102. Elementary Levels I and II**103-104. Intermediate Levels I and II**

101 and 103 are offered in the first semester, and 102 and 104 in the second. Please refer to the Critical Languages course descriptions in this publication. Consult the Program Director in Arjona 128 or at Ed.Benson@UConn.edu for more information.

Latin American Studies (LAMS)

Director, Center for Latin American and Caribbean Studies: Professor Elizabeth Mahan
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.

190. Perspectives on Latin America

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.

190W. Perspectives on Latin America

Prerequisite: ENGL 105 or 110 or 111 or 250.

193. Foreign Study

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 focussing on the history, culture, and society of a particular Latin American or Caribbean country or countries.

270. Latin American Popular Culture

Second semester, alternate years. Three credits. *Mahan*
Culture, subcultures, and culture industries in Latin America. Conditions that affect the mass production, dissemination and reception of entertainment products.

275. Cinema and Society in Latin America

Either or both semester. 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.

284. Latin America

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.

290. Latin American Studies Research Seminar

Either semester. Three credits. Prerequisite: Consent of instructor.

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.

293. Foreign Study

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.

295. Variable Topics

Either semester. Three credits. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary.

298. Special Topics

Either or both semesters. With a change in topic, may be repeated for credit.

299. Independent Study

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.

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: Professor Diane Lillo-Martin
Department Office: Room 332, Arjona Bldg.

For major requirements, see the College of Liberal Arts and Sciences section of this *Catalog*.

101. Language and Mind

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.

102. Language and Environment

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.

110Q. The Science of Linguistics

Either semester. Three credits. Prerequisite: MATH 101 or passed Q Readiness Test or passed a Q course.

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.

193. Foreign Study

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.

195. Special Topics Lecture

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.

202. Principles of Linguistics

Either semester. Three credits. Open to sophomores or higher.

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.

205Q. Phonology

First semester. Three credits. Prerequisite: LING 202; MATH 101 or passed Q Readiness Test or passed a Q course. *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.

206Q. Syntax and Semantics

Second semester. Three credits. Prerequisite: LING 101 or 202; MATH 101 or passed Q Readiness Test or passed a Q course. *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.

208W. The Linguistic Basis of Reading and Writing

Semester by arrangement. Three credits. Prerequisite: LING 202; ENGL 105 or 110 or 111 or 250. Open to sophomores or higher.

The relationship between writing systems and linguistic structures; the psycholinguistic basis of reading.

215C. Experimental Linguistics

Semester by arrangement. Three credits. Prerequisite: PSYC 132 and LING 101 or 202. *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.

225. Second Language Acquisition.

Either semester. Three credits. Prerequisite: LING 101, or 202. *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.

244W. Language and Culture

First semester. Three credits. Prerequisite: ENGL 105 or 110 or 111 or 250. Not open for credit to students who have passed ANTH 244 prior to Fall 1998. *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.

293. Foreign Study

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 the consent of the advisor.

Special topics taken in a foreign study program.

295. Variable Topics

Either semester. Three credits. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary.

298. Special Topics

Either semester. Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary.

299. Independent Study

Either or both semesters. Credits and hours by arrangement. May be repeated for credit.

Management (MGMT)

Head of Department: Professor John F. Veiga
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 198. 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 class: MGMT 198.

198. Contemporary Issues in the World of Management

Semester by arrangement. One credit. May be repeated in different sections, in combination with BADM 198, up to a maximum of three credits. May not be used to satisfy Junior-Senior level major requirements of the School of Business.

201. Managerial and Interpersonal Behavior

Either semester. Three credits. Prerequisite or corequisite: ACCT 131, ECON 111 and 112 or 102, ENGL 110 or 111 or 250, or ENGL 105 and 109, MATH 106 or 114 or 116, STAT 100 or 110. Not open to students who have passed or are taking BADM 240.

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.

225. International Business

Semester by arrangement. Three credits. Prerequisite: FNCE 201, OPIM 204, MGMT 201, MKTG 201.

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.

234. Management of Small Businesses and Venture Enterprises

Semester by arrangement. Three credits. Prerequisite: ACCT 200, FNCE 201, BLAW 271 or 275, OPIM 203, MGMT 201, MKTG 201, and senior standing.

Emphasis on managerial aspects of organizing and operating small firms by means of case discussions and assigned readings. Students can obtain insights regarding opportunities of self-employment in traditional small businesses as well as entrepreneurial careers in more sophisticated business ventures.

235. Entrepreneurship and Venture Management

Semester by arrangement. Three credits. Prerequisite: ACCT 200, FNCE 201, MGMT 201, MKTG 201. Senior standing preferred.

In this field course, students investigate the special problems of newly formed firms. Course emphasis is on the planning skills necessary for start-up operations. The course is designed to acquaint students with the unique strategic problems faced by such firms and to teach them how to evaluate new venture plans.

239. Managing a Diverse Workforce

Semester by arrangement. Three credits.

This course 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.

245. Managerial Behavior in Cross-Cultural Settings

Semester by arrangement. Three credits.

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.

250W. Management Communications

Semester by arrangement. Three credits. Prerequisite: ENGL 105 or 110 or 111 or 250. Open to Management majors only.

This course has two objectives; to acquaint the student with the functional importance of communication in business management, and to teach the techniques of oral and written communication.

265. The Dynamics of Organization

Semester by arrangement. Three credits.

Dynamics of organization; relationship between people and organization. The organization viewed as a system interacting with a changing environment, as a structure of organized human cooperation, as an instrument of management strategy. Experiential exercises and case studies used to gain a better understanding of organization strategy, design and structure.

265W. The Dynamics of Organization

Prerequisite: ENGL 105 or 110 or 111 or 250.

271. Human Resources Management

Semester by arrangement. Three credits. Prerequisite: MGMT 201.

Study of the personnel function from the managerial perspective. Emphasizes human resources planning, recruitment, selection, employee and management development, and performance evaluation.

272. Career Development in Business

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.

273. Labor Relations

Semester by arrangement. Three credits. Prerequisite: MGMT 201.

Study of employer-employee relations in unionized settings, both public and private sectors. Covers such areas as the National Labor Relations Act, labor contract negotiation, and administration.

281. Corporate Social Responsibility

Semester by arrangement. Three credits.

This course is designed to help the student relate business and its external culture, the social system, and the total environment. Develops an understanding of the role of the manager as the linking element between the business organization and the social environment.

281W. Corporate Social Responsibility

Prerequisite: ENGL 105 or 110 or 111 or 250.

289. Field Study Internship

Either or both semesters. One to six credits. Hours by arrangement. Prerequisite: Consent of instructor and Department Head. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

This course is 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.

290. Strategy, Policy and Planning

Either semester. Three credits. Prerequisite or corequisite: ACCT 200, FNCE 201, OPIM 203 and 204 (or CSE 123 and MEM 211 for MEM majors), MGMT 201, MKTG 201, and either BLAW 271 or 275. Open only to School of Business students with senior class standing. Not open to students who have passed or are taking MGMT 292.

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.

291. Small Business Consulting

Semester by arrangement. Three credits. Hours by arrangement. Prerequisite: 7th semester or higher stand-

ing in the School of Business plus a minimum of one course from each of the following areas: ACCT, BLAW, FNCE, MGMT, MKTG and OPIM.

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.

292. Strategic Analysis

Both semesters. Three credits. Prerequisite or corequisite: ACCT 200, FNCE 201, OPIM 203 and 204, MGMT 201, MKTG 201, and either BLAW 271 or 275. Open only to Business students with senior class standing. Not open for credit to students who have passed or are taking MGMT 290.

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.

293. Foreign Study

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.

Special topics taken in a foreign study program.

296W. Senior Thesis in Management

Either semester. Three credits. Hours by arrangement. Prerequisite: ENGL 105 or 110 or 111 or 250. Open only to Management Department Honors Students with consent of instructor and Department Head.

298. Special Topics

Semester by arrangement. 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 management as announced in advance for each semester.

299. Independent Study

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 management as mutually arranged between a student and an instructor.

Management and Engineering for Manufacturing (MEM)

Co-Directors: School of Business: Lakshman S. Thakur, Associate Professor

School of Engineering: Robert G. Jeffers, Associate Professor

151. Introduction to Management and Engineering for Manufacturing Program

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.

210. Manufacturing Equipment Lab

Either semester. One credit. One and one-half hours of laboratory per week. Open to sophomores or higher.

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.

211. Introduction to Manufacturing Systems

Second semester. Three credits. Prerequisite: STAT 110V. Open to sophomores or higher.

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.

215W. Advanced Manufacturing Systems

Second semester. Four credits. Two three-hour laboratory periods. Prerequisite: ME 221 and MEM 211; ENGL 105 or 110 or 111 or 250.

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.

221. Introduction to Products and Processes

First semester. Three credits. Prerequisite: MEM 211.

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.

225. Advanced Products and Processes

First semester. Three credits. Prerequisite: MEM 221.

Introduction to advanced topics relevant to the design and manufacture of products. Special emphasis on the relationship between manufacturing products and processes. Student projects.

231. Computers in Manufacturing

Second semester. Three credits. Prerequisite: EE 220 and MEM 211, 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.

296. Manufacturing Internship

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.

Marine Sciences (MARN)

Interim Department Head: Professor James O'Donnell
Department Office: Marine Sciences, Avery Point

For major requirements, see the College of Liberal Arts and Sciences section of this *Catalog*.

135. The Sea Around Us

Second semester. Three credits.
History of ocean exploration, interaction between the oceans and the atmosphere, impact of technology on the marine environment, climate modification and exploitation of ocean resources.

170. Introduction to Oceanography

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 171.

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.

171. Introduction to Oceanography with Laboratory

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 170. *Codiga/P. Kremer*

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.

172. Oceanography Laboratory

Either semester. One credit. One three-hour laboratory per week. Prerequisite: MARN 170 or equivalent. Not open to students who have passed MARN 171.

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.

210. Coastal Systems Science I

Second semester (Avery Point). Three credits. Prerequisite: MARN 170 and any two of the following: BIOL 107, 108, CHEM 127Q, 128Q, PHYS 121Q, 122Q, 131Q, 132Q. Open to sophomores or higher. *J. Kremer*

Biological, chemical, physical, and geological structure and function of coastal systems; a worldwide survey with emphasis on important coastal habitats and processes.

211. Coastal Systems Science II

First semester (Avery Point). Four credits. Three hours lecture and three hours laboratory. Prerequisite: MARN 170 and any two (2) of the following: BIOL 107, 108; CHEM 127Q, 128Q; PHYS 121Q, 122Q, 131Q, 132Q. *J. Kremer*

Biological, chemical, physical and geological structure and function of coastal systems; a worldwide survey with emphasis on important coastal habitats and processes.

212C. Measurement and Analysis in Coastal Ecosystems

First semester (Avery Point). Four credits. Two 1-hour lectures and two 3-hour laboratories. Required field trips. Prerequisite: MARN 170 and any two (2) of the following: BIOL 107, 108; CHEM 127Q, 128Q; PHYS 121Q, 122Q, 131Q, 132Q. *J. Kremer*

Examination of oceanographic processes in local coastal systems; collection and analyses of samples from field trips and lab experiments; data analysis using computers.

220Q. Environmental Reaction and Transport

Second semester. Four credits. Prerequisite: CHEM 127 and one additional semester of CHEM, BIOL or PHYS; one semester of calculus (MATH 112, 115, 118 or 120) or concurrent enrollment in Calculus (115, 118, 120). *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.

230. Coastal Circulation and Sediment Transport

First semester (Avery Point). Three credits. Prerequisite: MARN 210 and 211; MATH 112 or 115 or 118 or 120.

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.

235. Environmental Fluid Dynamics

First semester. Three credits. Recommended preparation: PHYS 122 or 132 or 142 or 152; and MATH 220 (may be taken concurrently). *Bogden*

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.

236. Marine Microbiology

(Also offered as MCB 236.) 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 229 or instructor consent. *Visscher*

A general survey of the taxonomy, physiology and ecology of marine microorganisms.

240. Seminar on Marine Mammals

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.)

241. Marine Invertebrate Biology: Adaptations and Community Structure

First semester (alternate years). Three credits. Prerequisites: BIOL 107 and 108. Recommended preparation: MARN 170 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.

242. Environmental Physiology of Marine Animals

First semester (alternate years). Three credits. Prerequisites: BIOL 107 and 108. Recommended preparation: MARN 170 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.

244. Coastal Ecology

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.)

255W. Coastal Studies Seminar

Second semester (Avery Point). Two credits. Prerequisite: MARN 210, 211, and 212 or instructor consent; ENGL 105 or 110 or 111 or 250.

Scientific analysis of coastal zone issues and their interdisciplinary implications. Written analysis and discussion of readings from the primary literature.

256. Science and the Coastal Environment

Second semester (Avery Point). Three credits. Prerequisite: MARN 210, 211, and 212; or at least two (2) of the following: MARN 270, 275, and 280. *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).

260. Biological Oceanography

Second semester. Three credits. Prerequisite: MARN 270 and MARN 280W (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.

265. Molecular Approaches to Biological Oceanography

First semester. Three credits. Two-hour lecture, three-hour lab. Recommended preparation: one of BIOL 108, MARN 260, MCB 204. *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.

270. Descriptive Physical Oceanography

First semester. Three credits. Prerequisite: PHYS 122, 142 or 152; MATH 114 or 116. *Codiga*

Ocean basin characteristics, properties of sea water, distribution of water masses, oceanic and atmospheric circulation, waves, tides, near-shore circulation, methods and instrumentation.

275W. Geological Oceanography

First semester. Three credits. Prerequisite: One year of laboratory science in CHEM, GEOL, MARN and/or PHYS or instructor consent; ENGL 105 or 110 or 111 or 250. *Torgersen*

Basic concepts in geological oceanography, plate tectonics and the role of ocean floor dynamics in the control of the Earth and ocean system.

280W. Marine Biogeochemistry

First semester. Three credits. Two 1-hour lectures. Prerequisite: CHEM 128, MATH 114 or 116, PHYS 122 or equivalents; ENGL 105 or 110 or 111 or 250. *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.

282. Coastal Pollution and Bioremediation

First semester (alternate years). Three credits. Two class periods, 1 two-hour lab period. Required preparation: BIOL 107, 108 and CHEM 127-128 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.

294. Marine Biology

(Also offered as EEB 294.) 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.

296. Variable Topics

Either semester. Three credits. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary.

297. Internship in Marine Sciences

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 40 hours of pre-approved activities in a semester to a maximum of three credits.

298. Special Topics

Either semester. Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary.

299. Independent Study

Either or both semesters. Credits and hours by arrangement. Open only with consent of instructor. May be repeated for credit.

Marketing (MKTG)

Head of Department: Professor Susan Spiggle
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.

201. Introduction to Marketing Management

Either semester. Three credits. Prerequisite: ACCT 131, ECON 111 and 112 or 102, ENGL 110 or 111, or ENGL 105 and 109, MATH 106, or 114 or 116, STAT 100 or 110. Not open to students who have passed or are taking BADM 250.

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.

208. Consumer Behavior

Either semester. Three credits. Prerequisite: MKTG 201. Not open for credit to students who have passed, or are currently enrolled in, MKTG 209.

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.

208W. Consumer Behavior

Prerequisite: MKTG 201. Open to Marketing majors only.

209. Industrial Buyer Behavior

Either semester. Three credits. Prerequisite: MKTG 201. Not open for credit to students who have passed, or are currently enrolled in, MKTG 208.

This course 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.

225. Integrated Marketing Communications

Either semester. Three credits. Prerequisite: MKTG 201 or BADM 250. Not open to students who have passed or are currently enrolled in COMM 280 or COMS 220.

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 marketplace.

225W. Integrated Marketing Communications

Prerequisite: MKTG 201 or BADM 250. Not open to students who have passed or are currently enrolled in COMM 280 or COMS 220. Open to Marketing majors only.

227. Product and Price Policies

First or second semester. Three credits. Prerequisite: MATH 106 or 114 or 116; STAT 100V or 110V; MKTG 201 or BADM 250.

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.

241. Retail Management

First or second semester. Three credits. Prerequisite: MKTG 201 or BADM 250.

A study of the management of retail operations, including buying, pricing, inventory control and selling.

252. Professional Selling

Either semester. Three credits. Prerequisite: MKTG 201 or BADM 250.

This course 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.

253. Sales Force Automation

Either semester. Three credits. Prerequisite: MKTG 201 and 252 and consent of instructor.

This course focuses on using technology to maximize sales force efficiency. Its focus is on enhancing the selling process and includes such topics as: building customer databases, segmenting and targeting high-value customers, forecasting sales opportunities, and communicating with customers efficiently utilizing customer relationship management technology. Learning tools will include: work groups, case studies, and special projects.

254. National/Global Account and Sales Management

Either semester. Three credits. Prerequisite: MKTG 201 or BADM 250 and MKTG 252.

This course focuses on managing large national/global accounts as well as the activities and problems of sales force management. Particular emphasis is placed on organizing the sales force, recruiting, training, compensation, motivation, forecasting, territory design, evaluation, and control. Learning tools include: interaction, role-playing, work groups, case studies, and outside business interactions.

265. Marketing on the Internet

First and/or second semester. Three credits. Prerequisite: MKTG 201 or BADM 250.

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.

270. Global Marketing Strategy

First or second semester. Three credits. Prerequisite: MKTG 201; MKTG 208 or 209; MKTG 280 and senior class standing.

A study of the marketing concepts and analytical processes used in the development of programs in international markets. The course 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.

280. Marketing Research

Either semester. Three credits. Prerequisite: MKTG 201 and OPIM 203.

This course 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.

281. Database Marketing

Either semester. Three credits. Prerequisite: MKTG 280.

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.

282. Marketing Planning and Strategy

First or second semester. Three credits. Prerequisite: MKTG 201, 208 or 209, 280, 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.

282W. Marketing Planning and Strategy

Prerequisite: MKTG 201, 208 or 209, 280, and senior class standing.

289. Professional Practice in Marketing

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).

This course is 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 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.

293. Foreign Study

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.

296W. Senior Thesis in Marketing

Either semester. Three credits. Hours by arrangement. Prerequisite: ENGL 105 or 110 or 111 or 250. Open only to Marketing Department Honor Students with consent of instructor and Department Head.

298. Special Topics

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.

299. Independent Study

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.

Mathematics (MATH)

Head of Department: Professor Charles Vinsonhaler
Department Office: Room 102, Mathematical Sciences Building

For major requirements, see the College of Liberal Arts and Sciences section of this *Catalog*.

101. Basic Algebra with Applications

Either semester. Three credits. Not open to students who have passed any Q-course.

Polynomials, exponents, Cartesian coordinate system, linear and quadratic equations, inequalities.

This course is required of all students who fail the Q-course readiness exam.

102Q. Problem Solving

Either semester. Three credits. Prerequisite: MATH 101 or passed Q Readiness Test or passed a Q course. Not eligible for course credit by examination. Not open for credit to students who have passed any mathematics course other than MATH 101, 103, 105, 107, 108, or 109. *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.

103Q. Elementary Discrete Mathematics

Either semester. Three credits. Prerequisite: MATH 101 or passed Q Readiness Test or passed a Q course. Not open for credit to students who have passed any MATH course other than MATH 101, 102, 105, 107, 108, or 109.

Problem solving strategies, solutions of simultaneous linear equations, sequences, counting and probability, graph theory, deductive reasoning, the axiomatic method and finite geometries, number systems.

105Q. Mathematics for Business and Economics

Either semester. Three credits. Prerequisite: MATH 101 or passed Q Readiness Test or passed a Q course.

Linear equations and inequalities, exponents and logarithms, matrices and determinants, linear programming. Applications.

106Q. Calculus for Business and Economics

Either semester. Three credits. (One credit for students who have passed MATH 113, 115, or 120.) Prerequisite: MATH 101 or passed Q Readiness Test or passed a Q course. Recommended preparation: MATH 105. Not open for credit to students who have passed MATH 118.

Derivatives and integrals of algebraic, exponential and logarithmic functions. Functions of several variables. Applications.

107Q. Elementary Mathematical Modeling

Either semester. Three credits. Prerequisite: MATH 101 or passed Q Readiness Test or passed a Q course. Not open to students who have passed any MATH course other than MATH 101, 102, 103, 105, 108. This course and MATH 109 cannot both be taken for credit. This course should not be considered as adequate preparation for MATH 106, 112, 115, or 120.

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.

108V. Mathematical Modeling in the Environment

Either semester. Three credits. Prerequisite: MATH 101 or passed Q Readiness Test or passed a Q course. 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.

109Q. Algebra and Trigonometry

Either semester. Three credits. Prerequisite: MATH 101 or passed Q Readiness Test or passed a Q course. Not open for credit to students who have passed MATH 107, 112, 115, or 120. Students may not receive credit for this course and MATH 107.

A review of algebra, simultaneous and quadratic equations, logarithms, the trigonometric functions, solution of triangles, trigonometric equations.

112Q. Introductory Calculus 1

Either semester. Four credits. Four class periods. Prerequisite: MATH 101 or passed Q Readiness Test or passed a Q course. Students cannot receive credit for

MATH 112 and either MATH 115 or 120. Students who have not passed the Calculus Readiness Test take this course rather than MATH 115 or 120.

Limits, derivatives, and extreme values of algebraic functions, with supporting algebraic topics.

113Q. Introductory Calculus 2

Either semester. Four credits. Four class periods. Prerequisite: MATH 112. Recommended preparation: A grade of C- or better in MATH 112. Students cannot receive credit for MATH 113 and either MATH 115 or 120. May be used in place of MATH 115 or 120 to fulfill any requirement satisfied by MATH 115 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.

114Q. Introductory Calculus 3

Either semester. Four credits. Four class periods. Prerequisite: MATH 113. Recommended preparation: A grade of C- or better in MATH 113. Note: MATH 115 is not adequate preparation for MATH 114. Not open for credit to students who have passed MATH 116 or 121. May be used in place of MATH 116 or 121 to fulfill any requirement satisfied by MATH 116 or 121.

The transcendental functions, formal integration, polar coordinates, infinite sequences and series, lines and planes in three dimensions, vector algebra.

115Q or V. Calculus I

Either semester. Four credits. Four class periods. Prerequisite: Passing score on the Calculus Readiness Test. Students cannot receive credit for MATH 115 and either MATH 112, 113, or 120. Suitable for students with some prior calculus experience. May be used in place of MATH 112 or 120 to fulfill any requirement satisfied by MATH 112 or 120.

Limits, continuity, differentiation, antidifferentiation, definite integrals, with applications to the physical and engineering sciences. Sections with V credit integrate computer-laboratory activity.

116Q or V. Calculus II

Either semester. Four credits. Four class periods. Prerequisite: MATH 113 or 115 or 120, 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 113 and 115. Not open to students who have passed MATH 121. Substitutes for MATH 114 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 V credit integrate computer-laboratory activity.

118Q. A Survey of Calculus with Applications I

Either semester. Three credits. Prerequisite: MATH 101 or passed Q Readiness Test or passed a Q course. Not open for credit to students who have passed MATH 106, 113, 115, or 120.

Derivatives and integrals of elementary functions including the exponential and logarithm functions; applications include optimization, marginal functions, exponential growth and decay, compound interest.

120Q. Enhanced Calculus I

Either semester. Four credits. Four class periods. Prerequisite: Passing score on the Calculus Readiness Test. Students cannot receive credit for MATH 120 and either MATH 113 or 115. May be used in place of MATH 113 or 115 to fulfill any requirement satisfied by MATH 113 or 115. Intended to provide superior preparation for prospective mathematics, science and engineering majors. Recommended for those who have taken a semester of calculus in high school.

The subject matter of MATH 115 in greater depth, with emphasis on the underlying mathematical concepts.

121Q. Enhanced Calculus II

Either semester. Four credits. Four class periods. Prerequisite: MATH 120 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). Not open for credit to students who have passed MATH 114 or 116. May be used in place of MATH 114 or 116 to fulfill any requirement satisfied by MATH 114 or 116. Intended to provide superior preparation for prospective mathematics, science and engineering majors. Recommended for those who have taken a semester of calculus in high school.

The subject matter of MATH 116 in greater depth, with emphasis on the underlying mathematical concepts.

193. Foreign Study

Either or both semesters. Credits and hours by arrangement. May be repeated for credit (to a maximum of 15 for MATH 193 and 293 together). Consent of the Department Head or Undergraduate Coordinator required, normally before the student's departure.

195Q. Special Topics Lecture

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.

204Q. Introduction to Mathematical Modeling

Either semester. Three credits. Prerequisite: MATH 221; or MATH 211 and 227. Knowledge of a programming language is strongly recommended. Not open for credit to students who have passed MATH 304 or 305, CHEM 305, or PHYS 305.

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.

210Q. Multivariable Calculus

Either semester. Four credits. Four class periods. Prerequisite: MATH 114, 116, or 121 or a score of 4 or 5 on the Advanced Placement Calculus BC exam. Recommended preparation: A grade of C- or better in MATH 114 or 116. Not open for credit to students who have passed MATH 220. Open to sophomores or higher.

Two- and three-dimensional vector algebra, calculus of functions of several variables, vector differential calculus, line and surface integrals.

211Q. Elementary Differential Equations

Either semester. Three credits. Prerequisite: MATH 114, 116, or 121. Recommended preparation: MATH 210 or 220. Not open for credit to students who have passed MATH 221. Open to sophomores or higher.

Introduction to ordinary differential equations and their applications, linear differential equations, systems of first order linear equations, numerical methods.

213Q. Transition to Advanced Mathematics

Either semester. Three credits. Prerequisite: MATH 210 or 220 or instructor consent. Open to sophomores or higher. Not open for credit to students who have passed MATH 214 or CSE 254. Students intending to major in mathematics should ordinarily take this course or MATH 214 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.

214Q. Introduction to Discrete Systems

Either semester. Three credits. Prerequisite: CSE 111 or 130C or instructor consent. Open to sophomores or higher. Not open for credit to students who have passed MATH 213 or CSE 254. Students who intend to major in mathematics should ordinarily take this course or MATH 213 during the third or fourth semester.

Mathematical methods for characterizing and analyzing discrete systems. Modern algebraic concepts, logic, set theory, grammars and formal languages, and graph theory. Applications to the analysis of computer systems and computational structures.

215Q. Linear Algebra

Either semester. Three credits. (Two credits for students who have passed MATH 227.) Prerequisite: MATH 213 or 214.

Linear algebra and its applications; systems of equations, matrices, linear transformations, vector spaces, determinants, canonical forms, applications.

216Q. Abstract Algebra I

Either semester. Three credits. Prerequisite: MATH 213 or 214. Recommended preparation: MATH 215 or 227.

The fundamental topics of modern algebra including elementary number theory, groups, rings, polynomials and fields.

217Q. Abstract Algebra II

Either semester. Three credits. Prerequisite: MATH 216.

Topic chosen from modules, linear algebra, geometric algebra, extension fields, algebraic coding, algebraic combinatorics.

220Q. Enhanced Multivariable Calculus

Either semester. Four credits. Prerequisite: MATH 114 or 116 or 121. Open to sophomores or higher. Not open to students who have passed MATH 210. MATH 220 satisfies any requirement met by MATH 210, and provides superior preparation for prospective mathematics, science, and engineering majors.

The subject matter of MATH 210 in greater depth, with emphasis on the underlying mathematical concepts.

221Q. Enhanced Differential Equations

Either semester. Three credits. Prerequisite: MATH 114 or 116 or 121. Open to sophomores or higher. Not open to students who have passed MATH 211. MATH 221 satisfies any requirement met by MATH 211, and provides superior preparation for prospective mathematics, science, and engineering majors.

The subject matter of MATH 211 in greater depth, with emphasis on the underlying mathematical concepts.

223Q. Geometry

Either semester. Three credits. Prerequisite: MATH 113 or 115 or 120. MATH 113 may be taken concurrently. Open to sophomores or higher.

Deductive reasoning and the axiomatic method, Euclidean geometry, parallelism, hyperbolic and other non-Euclidean geometries, geometric transformations.

224Q. Projective Geometry

Either semester. Three credits. Prerequisite: MATH 213Q.

Finite and infinite geometries as logical systems based on axioms. Synthetic and analytic projective geometry.

227Q. Applied Linear Algebra

Either semester. Three credits. Prerequisite: MATH 114, 116, or 121. Recommended preparation: A grade of C- or better in MATH 114 or 116. Not open for credit to students who have passed MATH 215. Open to sophomores or higher.

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.

231Q. Probability

Either semester. Three credits. Prerequisite: MATH 210 or 220, 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.

232Q. Elementary Stochastic Processes

(Also offered as STAT 235Q.) Either semester. Three credits. Prerequisite: STAT 220 or 224 or 230 or MATH 231. Not open for credit to students who have passed STAT 235Q.

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.

235Q. Introduction to Mathematical Logic

Either semester, alternate years. Three credits. Prerequisite: MATH 213 or 214 or CSE 207. PHIL 211 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.

237Q. Theory of Computability

Either semester, alternate years. Three credits. Prerequisite: MATH 213 or 214 or CSE 254.

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.

242W. History of Mathematics

Either semester, alternate years. Three credits. Prerequisite: MATH 210 and 211, or 221; ENGL 105 or 110 or 111 or 250. 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.

247Q-248Q. Fundamentals of Algebra and Geometry

Either semester. Three credits each semester. Prerequisite: PSYC 132 and three credits of Mathematics other than MATH 101. Not open for credit to students who have passed MATH 210 or 211 or 220. 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.

250Q. Elements of Topology

Either semester, alternate years. Three credits. Prerequisite: MATH 213 or 214.

Metric spaces, topological spaces and functions, topological properties, surfaces, elementary topics in geometric topology.

252Q. Introduction to Complex Variables

(Also offered as MATH 352.) Either semester. Three credits. Prerequisite: MATH 210 and 211, or 221. MATH 252Q not open for credit to students who have passed MATH 352.

Functions of a complex variable, integration in the

complex plane, conformal mappings.

255Q. Principles of Computer Graphics

Either semester. Three credits. Prerequisite: CSE 111 or 130, MATH 227 or 215, MATH 210, and consent of instructor. Not open for credit to students who have passed CSE 275.

Representation of two- and three-dimensional data, internal representation of data structures, transformations, mapping of functions to graphics screen, graphics hardware. Programming projects assigned.

258Q. Introduction to Number Theory

Either semester, alternate years. Three credits. Prerequisite: MATH 213 or 214.

Congruences, unique factorization, primitive roots, numerical functions, quadratic reciprocity and other selected topics, with emphasis on problem solving.

272Q. Differential Equations for Applications

Either semester. Three credits. Prerequisite: MATH 210 and 211, or 221. Not open for credit to students who have passed MATH 279.

Series solutions of differential equations, Bessel functions, Fourier series, partial differential equations and boundary value problems, nonlinear differential equations.

273Q-274Q. Analysis

Either semester. Three credits each semester. Prerequisite: MATH 213 or 214, and 211 or 221.

Introduction to the theory of functions of one and several real variables.

277Q. Applied Analysis

(Also offered as MATH 377.) Either semester. Three credits. Prerequisite: MATH 272. Offered in alternate years. MATH 277Q not open for credit to students who have passed MATH 377.

Convergence of Fourier Series, Legendre and Hermite polynomials, existence and uniqueness theorems, two point boundary value problems, and Green's functions.

278Q. Partial Differential Equations

(Also offered as Mathematics 378.) Either semester, alternate years. Three credits. Prerequisite: MATH 272 or its equivalent. MATH 278Q not open for credit to students who have passed MATH 378.

Solution of first and second order partial differential equations with applications to engineering and the sciences.

279Q. Introduction to Field Theory

Either semester. Three credits. Prerequisite: MATH 210 and 211. Not open for credit to students who have passed MATH 272.

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.

281Q. Numerical Analysis I

Either semester. Three credits. Prerequisite: MATH 210Q, 211Q, and either 215Q or 227Q; 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.

282Q. Numerical Analysis II

Either semester. Three credits. Prerequisite: MATH 281.

Approximate integration, difference equations, solution of ordinary and partial differential equations.

283Q. Calculus and Probability Problems

Either semester. One or two credits. Hours by arrangement. Prerequisite: MATH 210 and 231.

Problems in calculus and probability designed to help students prepare for the first actuarial examination.

285Q. Financial Mathematics I

(Also offered as MATH 365.) Either semester. Three credits. Prerequisite: MATH 114, 116, or 121.

The mathematics of measurement of interest, accumulation and discount, present value, annuities, loans, bonds, and other securities.

286Q. Introduction to Operations Research

(Also offered as STAT 286Q and STAT 356.) Either semester. Three credits. Prerequisite: MATH 231 or STAT 220 or 230. Not open for credit to students who have passed STAT 286 or 356.

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.

287Q-288Q. Actuarial Mathematics

(Also offered as MATH 387-388.) Either semester. Three credits each semester. Prerequisite: MATH 231 or STAT 230; and MATH 285, which may be taken concurrently.

Survival distributions, claim frequency and severity distributions, life tables, life insurance, life annuities, net premiums, net premium reserves, multiple life functions, and multiple decrement models.

289. Financial Mathematics II

Either semester. Three credits. Prerequisite: MATH 285. Also ACCT 131, which may be taken concurrently.

The continuation of MATH 285Q. Measurement of financial risk, the mathematics of capital budgeting, mathematical analysis of financial decisions and capital structure, and option pricing theory.

290. Field Study Internship

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).

292W. Senior Thesis in Mathematics

Either semester. Three credits. Prerequisite: ENGL 105 or 110 or 111 or 250. 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 thesis credit.

293. Foreign Study

Either or both semesters. Credit and hours by arrangement. May be repeated for credit (to a maximum of 15 for MATH 193 and 293 together). Consent of the Department Head or Undergraduate Coordinator required, normally before the student's departure. May count toward the major with consent of the Advisor and either the Department Head or Undergraduate Coordinator.

295. Variable Topics

Either semester. Three credits. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary.

296. Problem Seminar

Either semester. One credit. One class period. Prerequisite: MATH 114, 116, or 121. Open to sophomores or higher. 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.

297. Undergraduate Seminar

Either semester. Three credits. Open only with consent of instructor. This course, with a change of topic, may be repeated for credit.

298. Special Topics

Either semester. Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary.

299. Independent Study

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.

Mechanical Engineering (ME)

Head of Department: Professor Theodore L. Bergman
Department Office: Room 480, United Technologies Engineering Building

For major requirements, see the School of Engineering section of this *Catalog*.

205. Introduction to Mechanical Engineering

Three credits. Prerequisite: CE 211 and PHYS 151Q, both of which may be taken concurrently. Open to sophomores or higher.

Introduction to Mechanical Engineering through application of engineering principles and computers in practical problem solving, design and manufacturing. Topics include elementary numerical analysis, overview of manufacturing processes, simplified engineering modeling and analysis of systems, and computer analysis and simulation. A design project throughout the course incorporates these topics; a presentation of project results is required.

214. Dynamics of Particles and Rigid Bodies

Second semester. Three credits. Prerequisite: CE 212.

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.

217. Metal Cutting Principles

First semester. Three credits. Two class periods and one 2-hour laboratory period. Prerequisite: CE 287 and MMAT 202 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.

218. Manufacturing Systems

Second semester. Three credits. Two class periods and one 2-hour laboratory period. Prerequisite: ME 217, which may be taken concurrently.

A study of process aspects of manufacturing with particular references to metal joining and casting. Relationship between manufacturing process and product design. Basic elements of numerically controlled metal processing systems. Organization required to manufacture.

220. Dynamics of Mechanical Systems

Second semester. Three credits. Prerequisite: MATH 210 and 211, ME 205, and CE 215 or 212.

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.

221. Manufacturing Automation

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.

222. Production Engineering

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.

224. Analysis and Design of Mechanisms

First semester. Three credits. Prerequisite: MATH 210 and 211 and CE 211.

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.

225. Computer-Aided Design, Modeling, and Graphics

Both semesters. Three credits. Prerequisite: CSE 123, CE 287, MATH 210 and consent of instructor.

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.

227. Design of Machine Elements

First semester. Three credits. Prerequisite: ME 205 and CE 287.

Application of the fundamentals of engineering mechanics, materials and manufacturing to the design and analysis of machine elements.

228. Introduction to Fatigue in Mechanical Design

Second semester. Three credits. Prerequisite: CE 287. Not open to students who have passed ME 365.

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.

229. Machine Design

Second semester. Three credits. Prerequisite: CE 287. 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.

230. Linear Automatic Control Systems

Semester by arrangement. Three credits. Prerequisite: MATH 210 and 211.

Consolidated treatment of system analysis including modelling of electromechanical, pneumatic, hydraulic, thermal, and mechanical systems and their components. Closed loop control concepts related to these systems. Stability, instability issues. Basic treatment of Routh analysis, root locus, Bode, and Nyquist criterion. A hands-on open-ended control design project.

233. Thermodynamic Principles

Second semester. Three credits. Prerequisite: CHEM 127Q, PHYS 151Q and MATH 210Q and 211Q which may be taken concurrently. Open to sophomores or higher.

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.

234. Applied Thermodynamics

First semester. Three credits. Prerequisite: ME 233 or CHEG 211.

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.

239. Pollution from Combustion

Either semester. Three credits. Prerequisite: ME 234.

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.

240. Principles of Combustion

First semester. Three credits. Prerequisite: ME 234, and 250, or equivalent.

A first course in combustion introducing some basic chemical thermodynamics and chemical kinetics principles as a background for an elementary treatment of flame propagation in pre-mixed mixtures, diffusion flames, explosions and detonations. Some aspects of coal combustion will also be discussed.

242. Heat Transfer

First semester. Three credits. Prerequisite: ME 233, and 250.

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.

245. Aerodynamics

Semester by arrangement. Three credits. Prerequisite: MATH 210 and 211 and either ME 250 or CE 297.

Application of fluid mechanics to the aerodynamics of flight. Classical inviscid theory for two-dimensional shapes and finite-span wings.

250. Fluid Dynamics I

Second semester. Three credits. Prerequisite: ME 205 and 233, and MATH 210 and 211. This course and CE 297 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.

251. Fluid Dynamics II

Either semester. Three credits. Prerequisite: ME 250 or CE 297.

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.

253. Linear Systems Theory

First semester. Three credits. Prerequisite: ME 205, which may be taken concurrently, CE 212 and MATH 211Q.

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.

255. Computational Mechanics

First semester. Three credits. Prerequisite: MATH 211Q and CE 287.

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.

257. Mechanical Engineering Analysis

Either semester. Three credits. Three class periods. Prerequisite: MATH 211Q.

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.

260W. Measurement Techniques

Second semester. Three credits. Two class periods and one 2-hour laboratory period. Prerequisite: ECE 220; ENGL 105 or 110 or 111 or 250.

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.

262. Introductory Thermo-Fluids Laboratory

First semester. Three credits. One class period and one 3-hour laboratory period. Prerequisite and corequisite: ECE 220 and ME 233.

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.

263W. Experimental Mechanical Engineering I

(Formerly offered as ME 264W.) First semester. Four credits. Two class periods and one 3-hour laboratory period. Prerequisite: ME 242 and ME 250, both of which may be taken concurrently; ENGL 105 or 110 or 111 or 250.

Analyses of basic engineering problems with subsequent verification of the analyses.

270. Engineering Design Project

Second semester. Four credits. Two 3-hour laboratory periods. Prerequisite: ME 227.

Design of a device, machine, process, or system. Students working singly and in small groups produce a solution to an engineering design problem, from first concepts through preliminary sketches, analysis, construction, evaluation and report. A written report and oral presentation of the design project are required. Shop safety qualification is required.

272P. Senior Design Project I

First semester. Three credits. Prerequisite: ME 250; ME 227, may be taken concurrently; ENGL 105 or 110 or 111 or 250.

This course is 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.

273P. Senior Design Project II

Second semester. Three credits. Prerequisites: ME 272P, 260, and 262.

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.

295. Special Topics in Mechanical Engineering

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.

298. Mechanical Engineering Undergraduate Seminar

Second semester. One credit. One class period. Open only to seniors in mechanical engineering.

Presentation and discussion of advanced topics in mechanical engineering.

299. Problems in Mechanical Engineering

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.

This course is 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.

Medical Laboratory Sciences Programs (MLS)

Cytotechnology Program Academic Coordinator: Associate Professor Denis A. Coble

Cytotechnology Program Office: Room 306, Koons Hall

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 318, Koons Hall

For major requirements, see the School of Allied Health section of this *Catalog*.

200. Basic Laboratory Techniques in Medical Laboratory Sciences

First semester. Three credits. One 2-hour lecture and one 2-hour laboratory period. Open to students in the following majors: Cytotechnology, Medical Technology, and Diagnostic Genetic Science.

Introduction to diagnostic genetic sciences, diagnostic molecular technologies, cytotechnology and medical technology, microscopy, laboratory safety, medical terminology, staining theory and technique, hematopoiesis, phlebotomy, laboratory equipment and volumetrics, quality assurance, interdisciplinary case studies.

206. Anatomy and Physiology for the Medical Laboratory Sciences

First semester. Two 1-1/2-hour lectures and one two-hour laboratory period. Prerequisite: CHEM 128Q; and two of the following four courses: BIOL 103, BIOL 107, BIOL 108, PNB 264; 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 265.

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.

208. Immunology for the Medical Laboratory Sciences

Second semester. Three credits. Three hours of lecture. Recommended preparation: MT 210 or MCB 229 which may be taken concurrently. Open to students in the following majors: Cytotechnology, Medical Technology, and Diagnostic Genetic Science; others with consent of instructor.

Mechanisms of innate and acquired immunity, antigen-antibody interactions, function of the human immune system in normal and diseased states.

208W. Immunology for the Medical Laboratory Sciences

Prerequisite: ENGL 105 or 110 or 111 or 250.

298. Special Topics

Either semester. Credits and hours by arrangement. Prerequisite: The completion of all Freshman - Sophomore level requirements in Medical Laboratory 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.

299. Independent Study for Undergraduates

Either semester. Credits and hours by arrangement. Open only with consent of the 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 cytology, diagnostic genetic sciences, clinical laboratory medicine or medical technology.

Medical Technology (MT)

Medical Technology Program Director: Rosanne Lipcius

Program Office: Room 318, Koons Hall

For major requirements, see the School of Allied Health section of this *Catalog*.

210. Infectious Disease Process I

First semester. Four credits. One 2-hour lecture, 4 hours of laboratory. Prerequisite: CHEM 141 or MCB 203 or MCB 204 which may be taken concurrently. Open only to Medical Technology majors; others with consent of Medical Technology Program Director. Not open for credit for students who have passed MCB 229.

Fundamentals of microbial classification, structure, growth and metabolism. Principles of disease and epidemiology, mechanisms of pathogenicity and identification of bacteria causing human disease.

213. Clinical Immunology and Virology

Either semester. Three credits. Prerequisite: To enroll in the course the student must earn a "C" or better in MLS 208 or 208W, which may be taken concurrently. 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.

250. Clinical Chemistry and Instrumentation

Either semester. Five credits. Prerequisite: MCB 203. 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.

251. Clinical Chemistry Laboratory

Second semester. Three credits. Prerequisite: To enroll in the course the student must earn a "C" or better in MT 250. Open only to Medical Technology majors; others with consent of Medical Technology Program Director.

Application of the theory and techniques learned in MT 250 to the clinical laboratory setting. Understanding work flow, teamwork, evaluation of normal and abnormal results; instrumentation and quality assurance or the general laboratory environment.

252. Infectious Disease Process II

Either semester. Two credits. Prerequisite: To enroll in the course the student must earn a "C" or better in MT 210. Open only to Medical Technology majors; others with consent of Medical Technology Program Director.

Isolation and identification of pathogenetic and opportunistic fungi that infect humans, pathogenesis and identification of human parasites and correlation of organisms to disease states.

260. Theory of Phlebotomy

Either semester. One credit. Prerequisite: To enroll in the course the student must earn a "C" or better in MLS 200. 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.

261. Phlebotomy Laboratory

Either semester. One credit. Prerequisite: To enroll in the course the student must earn an "S" or better in MT 260. 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 260 to the clinical laboratory setting. Understanding work flow, scheduling, teamwork, and quality assurance in the general laboratory environment.

264. Hematology

Either semester. Three credits. Prerequisite: To enroll in the course the student must earn a "C" or better in MLS 200. 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.

266. Clinical Microbiology

First semester. Four credits. Prerequisite: To enroll in the course the student must earn a "C" or better in MT

210. 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.

267. Clinical Microbiology Laboratory

Second semester. Four credits. Prerequisite: To enroll in the course the student must earn a "C" or better in MT 266. Open only to Medical Technology majors; others with consent of Medical Technology Program Director.

Application of the theory and techniques learned in MT 252 and MT 266 to the clinical laboratory setting. Understanding work flow, teamwork, evaluation of normal and abnormal results, instrumentation, and quality assurance in the general laboratory environment.

269. Clinical Immunology Laboratory

Second semester. One credit. Prerequisite: To enroll in the course the student must earn a "C" or better in MT 213. Open only to Medical Technology majors; others with consent of Medical Technology Program Director.

Application of the theory and techniques learned in MT 213 to the clinical laboratory setting. Understanding work flow, teamwork, evaluation of normal and abnormal results, instrumentation, and quality assurance in the general laboratory environment.

270. Transfusion Services

First semester. Two credits. Prerequisite: To enroll in the course the student must earn a "C" or better in MLS 208 or 208W. 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.

272. Urinalysis

First semester. One credit. Prerequisite: To enroll in the course the student must earn a "C" or better in MLS 200. 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.

273. Urinalysis Laboratory

Either semester. One credit. Prerequisite: To enroll in the course the student must earn a "C" or better in MT 272. Open only to Medical Technology majors; others with consent of Medical Technology Program Director.

Application of the theory and techniques learned in MT 272 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.

274. Hematology Laboratory

Second semester. Three credits. Prerequisite: To enroll in the course the student must earn a "C" or better in MT 264. Open only to Medical Technology majors; others with consent of Medical Technology Program Director.

Application of the theory and techniques learned in MT 264 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.

275. Transfusion Services Laboratory

Second semester. Two credits. Prerequisite: To enroll in the course the student must earn a "C" or better in MT 270. Open only to Medical Technology majors; others with consent of Medical Technology Program Director.

Application of the theory and techniques learned in MT 270 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.

280. Seminar in Medical Technology

Second semester. Two credits. Prerequisite: To enroll in the course the student must earn a "C" or better in AH 241W. 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.

298. Special Topics

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.

299. Independent Study for Undergraduates

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 areas in the field of Medical Technology.

Metallurgy & Materials Engineering (MMAT)

Head of Department: Professor John Morral

Department Office: Room 111, Institute of Materials Science Building

For major requirements, see the School of Engineering section of this *Catalog*.

(Metallurgy & Materials Engineering courses were formerly offered under the MTGY department abbreviation using the same course numbers.)

201. Materials Science & Engineering I

Both semesters. Three credits. Prerequisite: CHEM 128 or 130. Open to sophomores or higher. Not open to students who have passed MMAT 243.

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.

202. Materials Science & Engineering Lab

Both semesters. One credit. One 3-hour laboratory period. Prerequisite: MMAT 201, 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.

207. Failure Analysis

Second semester. Three credits. Prerequisite: MMAT 201 or 243.

Methods for determining the nature and cause of materials failure in structures and other mechanical devices. Analysis of case histories.

219. The Metallurgy of Welding

Either semester. Three credits. Prerequisite: MMAT 243 or 201. *Kattamis*

Basic metallurgical principles applied to welding and brazing processes. Effects of welding on material. Treatment and properties of welded joints. Welding defects and quality control.

229. Physical Ceramics

Semester and hours by arrangement. Three credits. Prerequisite: CHEM 128 or 130 and PHYS 152. *Kattamis*

Microstructure of crystalline ceramics and glasses and role of thermodynamics and kinetics in its establishment. Effect of process variables on microstructure and ultimately on mechanical, chemical and physical properties.

230. Introduction to Composite Materials

Either semester by arrangement. Three credits. Prerequisite: MMAT 266.

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.

232. Introduction to High Temperature Materials

Semester by arrangement. Three credits. Prerequisite: MMAT 201 or 243.

Plastic deformation of metals and other solid materials at elevated temperatures. Dislocation mechanisms; creep processes; oxidation. Strengthening mechanism, including ordering and precipitation hardening.

234. Materials Protection

Semester by arrangement. Three credits. Not open to students who have passed MMAT 343. *Greene*

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.

236. Materials Characterization

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: MMAT 201 or 243.

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.

236W. Materials Characterization

Prerequisite: MMAT 201 or 243; ENGL 105 or 110 or 111 or 250.

238. Alloy Casting Processes

Second semester by arrangement. Three credits. Prerequisite: MMAT 255 and 265.

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.

243. Introduction to Structure, Properties, and Processing of Materials I

First semester. Three credits. Prerequisite: CHEM 128. Not open to students who have passed MMAT 201. Open to sophomores or higher.

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.

244. Introduction to Structure, Properties, and Processing of Materials II

Second semester. Three credits. Prerequisite: MMAT 243 or MMAT 201. Open to sophomores or higher.

Structures, properties, and processing of ceramics; structure, properties and processing of polymers and composites; electrical, thermal, magnetic and optical properties of solids; and corrosion.

255. Transport Phenomena in Materials Processing

First semester. Three credits. Prerequisite: MMAT 265 and MATH 210Q, 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.

256. Applied Thermodynamics of Materials

Second semester. Three credits. Prerequisite: ME 233 or CHEG 211, both of which may be taken concurrently.

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.

265. Phase Transformation Kinetics and Applications

First semester. Three credits. Prerequisite: MMAT 243 or 201.

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.

266. Mechanical Behavior of Materials

Second semester. Three credits. Prerequisite: MMAT 243 or 201.

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.

267. Electromagnetic and Environmental Properties

First semester. Three credits. Prerequisite: PHYS 152Q and MMAT 243; or MMAT 201.

Principles underlying electrical, magnetic, and chemical behavior will be applied to the selection and design of materials. Topics covered will include: thermoelectricity, photoelectricity, conductors,

semiconductors, dielectrics, superconductors, magnetism, corrosion, and oxidation.

276. Thermal/Mechanical Processing of Materials

Second semester. Three credits. Prerequisite: MMAT 255, 265, and 266. Corequisite: MMAT 256.

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.

277. Processing of Materials in the Liquid and Vapor State

First semester. Three credits. Prerequisite: MMAT 255 and 256.

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.

284. Materials Characterization and Processing Laboratory

Second semester. One credit. Prerequisite: MMAT 244, which may be taken concurrently. One 3-hour laboratory period. Open to sophomores or higher. Not open to students who have passed MMAT 283.

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.

285. Mechanical Behavior Laboratory

First semester. One credit. Prerequisite: MMAT 266, 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.

286. Materials Processing and Microstructures Laboratory

Second semester. One credit. Prerequisite: MMAT 284. Corequisite: MMAT 265. 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.

287. Capstone Design Project I

First semester. Two credits. Four hours practicum. Prerequisite: MMAT 266 and MMAT 276.

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.

288. Capstone Design Project II

Second semester. Two credits. Four hours practicum. Prerequisite: MMAT 266 and MMAT 276.

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.

298. Special Topics in Materials Engineering

Both semesters. Three credits. Prerequisite: Consent of instructor. With a change in topic this course may be repeated for credit.

299. Introduction to Research

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.

Military Science (MISI)

Head of Department: Lieutenant Colonel Charles P. Lynch

Department Office: ROTC Office, Army, 28 North Eagleville Road

131. General Military Science I

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.

132. General Military Science II

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.

133. General Military Science: Air Rifle Marksmanship

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.

145. General Military Science II

Either semester. One credit. One class period and leadership laboratory.

Map reading, mountaineering, principles of war.

146. General Military Science II

Either semester. One credit. One class period and leadership laboratory.

Emergency First Aid, leadership, military instruction techniques.

252. General Military Science III

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.

253. General Military Science III

Second semester. Three credits. One 3-hour class period and leadership laboratory. One weekend field training exercise. Prerequisite: MISI 252.

Dynamics of small unit tactics, and branches of the Army.

297. General Military Science IV

First semester. Three credits. One 3-hour class period and leadership laboratory. One weekend field training exercise. Prerequisite: MISI 253.

Army staff organization, unit administration and management, logistics, military intelligence, leadership seminar, the international system, and strategic doctrine.

298. General Military Science IV

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 and Classical Languages

Head of Department: Professor David K. Herzberger
Department Office: Room 228, J.H. Arjona Building

For descriptions of all majors offered by Modern and Classical Languages, see the College of Liberal Arts and Sciences section of this *Catalog*. For course descriptions, see these topics listed alphabetically throughout this course directory: American Sign Language, Arabic, Chinese, Classics and Ancient Mediterranean Languages, Critical Languages, French, German, Hebrew, Hindi, Italian Literary and Cultural Studies, Japanese, Korean, Modern Greek, Polish, Portuguese, Russian, Spanish, and Vietnamese.

Modern Greek (MGRK)

Head of Department: Professor David K. Herzberger
Department Office: Room 228, J.H. Arjona Building

101-102. Elementary Levels I and II**103-104. Intermediate Levels I and II**

101 and 103 are offered in the first semester, and 102 and 104 in the second. Please refer to the Critical Languages course descriptions in this publication. Consult the Program Director in Arjona 128 or at Ed.Benson@UConn.edu for more information.

Molecular and Cell Biology (MCB)

Head of Department: Professor Philip L. Yeagle
Department Office: Room 205, Life Sciences Annex

For major requirements, see the College of Liberal Arts and Sciences section of this *Catalog*.

200. Human Genetics

First semester. Three credits. Two lectures and one problem session. Prerequisite: BIOL 107. Open to sophomores or higher. *Strausbaugh*

Principles of genetics as applied to humans. Focus on modern methods of molecular genetics.

201. Gene Expression

Second semester. Three credits. Recommended preparation: MCB 200 or 210 or 229. Open to sophomores or higher. *Hightower*

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.

203. Introduction to Biochemistry

Either semester. Four credits. Three class periods and one 3-hour laboratory period. Prerequisite: CHEM 141 or 244. (CHEM 244 may also be corequisite.) Open to sophomores or higher. Not open for credit to students who have passed MCB 204.

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 204.

204. Biochemistry

First semester. Five credits. Four class periods and one 3-hour laboratory. Prerequisite or corequisite: CHEM 244. Recommended preparation: MCB 210 or MCB 229. Not open for credit to students who have passed MCB 203. *Reiter, Cole*

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.

205. Human Metabolism and Disease

Second semester, alternate years. Two credits. Prerequisite: MCB 203 or 204 or instructor consent. *Albert*

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.

206. Fundamentals of Structural Biology

First semester. Three credits. Prerequisite: BIOL 107 or CHEM 128 or instructor consent. *Yeagle*

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.

207Q. Introduction to Biophysical Chemistry

Second semester. Three credits. Prerequisite: CHEM 243; MATH 114 or 116; PHYS 122, 132 or 142 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.

208Q. Techniques of Biophysical Chemistry

Second semester. Three credits. Prerequisite: MCB 207, or CHEM 263 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.

209. Structure and Function of Biological Macromolecules

Second semester. Three credits. Prerequisite or corequisite: MCB 204 or 203 or instructor consent. *Alexandrescu, Cole*

Correlation of three-dimensional molecular architecture with biochemical function in proteins, nucleic acids, and large assemblies such as viruses and

ribosomes. Folding motifs and domains; molecular ancestry/homology; molecular recognition at the atomic level, as in DNA/protein complexes; structural basis of enzyme specificity and catalysis. Structure prediction from sequence; principles of structure determination by x-ray diffraction, NMR and CD spectroscopies, and electron microscopy.

210. Cell Biology

First semester. Three credits. Prerequisite: BIOL 107. This course is intended to be taken before MCB 203 or 204 (Biochemistry). Open to sophomores or higher. *Knecht/Lee*

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.

211. Basic Immunology

First semester. Three credits. Prerequisite: BIOL 107. Recommended preparation: MCB 210. *Lynes*

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.

212. Genetic Engineering and Functional Genomics

Second semester. Three credits. Prerequisite: MCB 200 or 213. Recommended preparation: MCB 204 or 203. *R. O'Neill*

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.

213. Concepts of Genetic Analysis

Second semester. Four credits. Three class periods and 2-hour laboratory. Prerequisite: BIOL 108 or 110, or MCB 200 or equivalent, and CHEM 128. Open to sophomores or higher. *Zhang*

Survey of genetic theory and applications of genetic analysis. Model genetic systems in animals, plants, and microbes.

214. Experiments in DNA Identification

Second semester. Two credits. One fifty minute lecture period and one three hour laboratory session. Prerequisite: MCB 200. *O'Neill*

An introductory laboratory course in principles and techniques of DNA manipulation and identification. Course simulates independent research, using modern molecular genetics techniques.

215. Experiments in Molecular Genetics

First semester. Three credits. One 1-hour lecture and two 3-hour laboratory periods. Open only with consent of instructor. Recommended preparation: MCB 204; 212 or 217. Not open for credit to students who have passed MCB 230. *Reiter*

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.

217. Molecular Biology and Genetics of Prokaryotes

First semester. Four credits. Three lecture periods and one 2-hour discussion. Prerequisite: MCB 229. *Noll*

Molecular genetics of bacteria, archaeobacteria, and their viruses. Transcription and replication of DNA, mapping, transduction, conjugation, genetic mapping, mutagenesis, regulation of gene expression, genome organization.

218. Heredity and Society

First semester. Three credits. Open to sophomores or higher. May not be counted toward the biology major.

The principles of heredity and their implications for society.

218W. Heredity and Society

First semester. Four credits. Three class periods and library research. Prerequisite: ENGL 105 or 110 or 111 or 250. Open to sophomores or higher. May not be counted toward the biology major.

219. Developmental Biology

Second semester. Three credits. Prerequisite: BIOL 107. Recommended preparation: MCB 210 and 213 or 200, which may be taken concurrently. *Krider*

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, nematode, fruit fly, and frog.

220. Laboratory in Developmental Biology

Second semester. Three credits. Two 3-hour laboratory periods and a discussion/recitation period. Prerequisite or corequisite: MCB 219, 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.

220W. Laboratory in Developmental Biology

Second semester. Four credits. Two 3-hour laboratory periods and two discussion/recitation periods. Prerequisite: MCB 219, which may be taken concurrently, or two semesters of college biology and consent of instructor; ENGL 105 or 110 or 111 or 250.

221. Introduction to Molecular Evolution and Bioinformatics

First semester. Three credits. Recommended preparation: At least one 200 level course in MCB. Open to sophomores or higher. *Gogarten*

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.

222W. Human Disease and the Development of Therapeutic Agents

First semester. Three credits. Prerequisite: ENGL 105 or 110 or 111 or 250. Recommended preparation: one 200 level course in MCB. *Kendall*

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.

224. Experiments in Bacterial Genetics

Second semester. Three credits. Two 3 1/2 hour laboratory/lecture periods. Prerequisite: MCB 213. Prerequisite or corequisite: MCB 217 or 229. Open only with consent of instructor.

Experiments in bacterial genetics, emphasizing genetic manipulations using modern techniques for mutant isolation, DNA characterization and cloning. These include the use of transposons, DNA isolation, restriction analysis, gel electrophoresis, PCR and DNA sequencing.

226W. Advanced Biochemistry Laboratory

Second semester. Four credits. One 1-hour lecture and two 4-hour laboratories. Prerequisite: Either MCB 204, or MCB 203 with consent of instructor; ENGL 105 or 110 or 111 or 250. *Teschke*

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.

229. Fundamentals of Microbiology

Either semester. Four credits. Three lecture periods and one 2-1/2-hour laboratory period. Prerequisite or corequisite: CHEM 141 or 243. Recommended preparation: BIOL 107 or equivalent. Open to sophomores or higher. *Gage, Terry, Vinopal*

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.

232C. Microcomputer Applications in Molecular and Cell Biology

First semester. Three credits. One 1-hour lecture and two 3-hour laboratories. Recommended preparation: MCB 200 or 204 or 210 or 213 or 229.

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).

233. Pathogenic Microbiology

Second semester. Four credits. Two class periods and two 2-hour laboratory periods. Prerequisite: MCB 229. Recommended preparation: MCB 204 (or 203).

A detailed study of microbial genera, emphasizing species which are important in diseases of man and animals and which have special public health significance. Diagnostic methods include some standard serological procedures.

235. Applied Microbiology

Second semester. Four credits. Two class periods and two 2-hour laboratory periods. Prerequisite: MCB 229. Recommended preparation: MCB 204 (or 203). *Benson*

A study of the biology, physiology, and genetics of microorganisms useful in industry, agriculture, and selected environmental processes.

236. Marine Microbiology

(Also offered as MARN 236.) Second semester. Three credits. Two lecture-discussion class periods and one 2-hour laboratory period for which field trips may be substituted. Offered at the Avery Point Campus. Prerequisite: MCB 229 or instructor consent.

A general survey of the taxonomy, physiology, and ecology of marine microorganisms.

240W. Bacterial Diversity and Ecology

First semester. Four credits. Two lecture periods and two 3-hour laboratory/discussion periods. Prerequisite: MCB 229 or instructor consent; ENGL 105 or 110 or 111 or 250. Recommended preparation: MCB 204 or 203. *Leadbetter*

A study of the ecophysiology of diverse bacterial types with particular emphasis on the activities of bacteria *in situ*. Investigative laboratory includes individual projects.

241W. Research Literature in Molecular and Cell Biology

Second semester. Three credits. Open only with consent of instructor. Prerequisite: ENGL 105 or 110 or 111 or 250. Recommended preparation: one 200's course in MCB. With a change in content, may be repeated for credit. *Leadbetter*

Discussion of current research in molecular and cell biology. Focus on microbes as agents of environmental change.

246. Virology

Second semester. Three credits. Three lecture periods. Prerequisite: MCB 229. Recommended preparation: MCB 204 or 210. *Marcus*

Biological, biochemical, physical, and genetic characteristics of viruses, with an emphasis on molecular and quantitative aspects of virus-cell interactions.

259. Plant Physiology

First semester. Three credits. Three 1-hour class periods. Recommended preparation: BIOL 108 (or 110) and CHEM 128.

Functioning of plants in relation to external and internal factors. The course integrates pertinent findings from cell biology, genetics and molecular biology. Topics include photosynthesis, long distance and trans-membrane transport, selected biochemical pathways, phytohormones, photomorphogenesis and movements in plants.

289. Variable Topics

Either semester. Three credits. With a change of topic, may be repeated for credit. Prerequisites and recommended preparation vary.

290. Forensic Application of DNA Science

Second semester. Three credits. Recommended preparation: a course in genetics. *Strausbaugh*

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.

292W. Senior Research Thesis in Molecular and Cell Biology

Either semester. Three credits. Hours by arrangement. Prerequisite: Three credits of MCB 299, which may be taken concurrently; ENGL 105 or 110 or 111 or 250. 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.

297. Undergraduate Seminar

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.

298. Special Topics

Either semester. Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary.

299. Independent Study

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.

Music (MUSI)

Head of Department: Professor Robert F. Miller
Department Office: Room 230, Music Building

For major requirements, see the School of Fine Arts section of this *Catalog*.

101. Convocation, Concert and Recital Repertoire

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). *Maker, Larrabee*

108. Varsity Band

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.

109. Marching Band

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.

110. Band

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.

111. Chorus

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. *Bagley*

Choral repertoire from all periods, concentration on vocal and choral techniques as related to musical styles, preparation and presentation of concerts.

112. Orchestra

Either semester. One credit each semester. Three laboratory periods. Open only with consent of instructor. May be repeated for credit. *Sacco*

Standard symphonic repertoire, technique of orchestral routine, preparation and presentation of concerts.

113. Chamber Ensemble

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 110, 111, or 112.

Chamber music for various combinations of voices, string, woodwind, brass, percussion and keyboard instruments. Preparation and presentation of concerts.

114. Voices of Freedom Gospel Choir

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.

115. Jazz Ensemble

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.

116. Small Ensemble

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 110, 111, or 112.

Small ensemble music under the direction of a conductor. Preparation and presentation of concerts.

117. Women's Choir

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.

118. Collegium Musicum

(Formerly offered as MUSI 220.) Either semester. One credit per semester. One lecture period, two laboratory periods. Open only with consent of instructor. May be repeated for credit. *Bellingham*

Performance practices, iconography, notation, instrumentation in vocal and instrumental music before 1700. Preparation and participation in historically authentic performance.

119. Opera Workshop

(Formerly offered as MUSI 221.) 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.

121. Secondary Applied Music

Either semester. One credit each semester. May be repeated for credit. Ensemble required with conditions stated under MUSI 122. 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 \$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.

122. Applied Music

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 110, 111, or 112, is required each semester for students registered in MUSI 122 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 \$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.

123. Class Instruction in Piano

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*

124. Applied Accompanying

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.

125. Applied Music Techniques

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.

126. Introduction to Diction for Singers

First semester. One credit. Two one-hour laboratory periods. Prerequisite: concurrent registration in applied voice study under MUSI 122, 222, or 323. *McClain*

An introduction to the International Phonetic Association (IPA) symbols with special application to the study of English diction for singers.

127. Italian Diction for Singers

Second semester. One credit. Two one-hour laboratory periods. Prerequisite: MUSI 126 and concurrent registration in applied voice study under MUSI 122, 222, or 323.

A continuing study of the IPA symbols with their special application to the study of Italian diction for singers.

128. German Diction for Singers

First semester. One credit. Two one-hour laboratory periods. Prerequisite: MUSI 126 and concurrent registration in applied voice study under MUSI 122, 222, or 323. *McClain*

A continuing study of the IPA symbols with their special application to the study of German diction for singers.

129. French Diction for Singers

Second semester. One credit. Two one-hour laboratory periods. Prerequisite: MUSI 126 and concurrent registration in applied voice study under MUSI 122, 222, or 323.

A continuing study of the IPA symbols with their special application to the study of French diction for singers.

135. Honors Harmony I

First semester. Four credits. Three class periods and two 1-hour laboratory periods. Prerequisite: Open only with consent of instructor. *Kaminsky*

Writing and analysis of tonal harmony; study of harmony in relation to melody and counterpoint. Elementary score reading; sight-singing; melodic and harmonic dictation; introduction to counterpoint; model composition and elements of form.

136. Honors Harmony II

Second semester. Four credits. Three class periods and two 1-hour laboratory periods. Prerequisite: MUSI 135. *Kaminsky*

Continuation of Honors Harmony I.

138. Introduction to Improvisation

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.

145. Harmony I

First semester. Four credits. Three class periods and two 1-hour laboratory periods. Open only with consent of instructor. Not open for credit to students who have passed MUSI 135. *Kaminsky*

Writing and analysis of tonal harmony; relation to melody and counterpoint. Elementary scorereading; sight-singing; melodic harmonic dictation, and keyboard application.

146. Harmony II

Second semester. Four credits. Three class periods and two 1-hour laboratory periods. Prerequisite: MUSI

145. Not open for credit to students who have passed MUSI 136. *Kaminsky*
Continuation of MUSI 145.

153. Fundamentals of Music I

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.

154. Fundamentals of Music II

Second semester. Three credits. Prerequisite: MUSI 153. *Laszloffy*

Traditional harmonic principles, four-part writing, sight singing and melodic dictation.

155. Introduction to Ear Training

Second semester. Three credits.

Music reading, sight-singing, and dictation.

190. Non-Western Music

Either semester. Three credits. Intended primarily for students who are not music majors. Not open for credit to students who have passed MUSI 292W.

Folk, popular, and classical musics of selected non-Western cultures, with an emphasis on the distinctive characteristics of each culture.

191. Music Appreciation

Either semester. Three credits. No previous training is required. Not appropriate for students who have previously passed MUSI 193 or 194. Not intended for students with previous musical experience.

An approach toward intelligent listening, illustrated by recordings.

193. Introduction to Music History I

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.

194. Introduction to Music History II

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.

195. Special Topics Lecture

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.

201. Practicum in Music

Either or both semesters. Credits and hours by arrangement. 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).

210W. Music, History, and Ideas

Either semester. Three credits. Prerequisite: ENGL 105 or 110 or 111 or 250. Open only with consent of instructor.

Relationships of musical styles to cultural and intellectual backgrounds.

211. The Composer and the Composer's World

Either semester. Three credits. Prerequisite: MUSI 286. 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).

211W. The Composer and the Composer's World

Prerequisite: MUSI 286; ENGL 105 or 110 or 111 or 250

212. Music of the Church

First semester. Three credits. Prerequisite: MUSI 286.

Plainsong, mass, motet, cantata, oratorio, and other forms of church music.

212W. Music of the Church

Prerequisite: MUSI 286; ENGL 105 or 110 or 111 or 250

213. Music of the Theater

Second semester. Three credits. Prerequisite: MUSI 286.

Opera, ballet, and other types of music for the theater.

213W. Music of the Theater

Prerequisite: MUSI 286; ENGL 105 or 110 or 111 or 250

214. Orchestral Music

First semester. Three credits. Prerequisite: MUSI 286.

Concerto, symphony, symphonic poem, and other forms of music for orchestral ensembles.

214W. Orchestral Music

Prerequisite: MUSI 286; ENGL 105 or 110 or 111 or 250

215. Chamber Music

Second semester. Three credits. Prerequisite: MUSI 286.

String quartet, trio sonata, and other forms of music for various small ensembles.

215W. Chamber Music

Prerequisite: MUSI 286; ENGL 105 or 110 or 111 or 250

216. Solo Literature

Second semester. Three credits. Prerequisite: MUSI 286.

Keyboard music, the art song, and other types of music for instrumental or vocal soloists.

217. A History of Jazz

Either semester. Three credits. Prerequisite: MUSI 146.

222. Applied Music, Advanced Course

Either or both semesters. Credits and hours by arrangement. Ensemble required with conditions stated under MUSI 122. Prerequisite: Advanced standing in performance as recommended by a faculty jury, recommendation by an instructor in this department, and consent of the Department Head. May be repeated for credit.

A continuation of MUSI 122 for students with proven ability. Fees for this course are at the same rate as described for MUSI 122.

225. Vocal Literature I

First semester. Two credits. Two class periods. Corequisite: MUSI 222 and consent of instructor.

Songs and arias of the Renaissance and Baroque Periods: Oratorio Literature.

226. Vocal Literature II

Second semester. Two credits. Two class periods. Corequisite: MUSI 222 and consent of instructor.

Classical Period Songs; German Lied.

227. Vocal Literature III

First semester. Two credits. Two class periods. Corequisite: MUSI 222 and consent of instructor.

French melodie; Songs of Nationalistic origin.

228. Vocal Literature IV

Second semester. Two credits. Two class periods. Corequisite: MUSI 222 and consent of instructor.

British and American Songs; The Modern Period.

229. Instrumental Pedagogy and Literature

Either semester. One or two credits. One or two instrumental hours per week. Corequisite: MUSI 222 (upperclass level). May be repeated for credit to a maximum of four semesters. Open only with consent of instructor.

232. Conducting I

Either semester. Two credits. Prerequisite: MUSI 146. *Renshaw*

Physical aspects of conducting, reading of full and condensed scores.

233. Conducting II: Choral

Either semester. Two credits. Prerequisite: MUSI 232. *Bagley*

234. Conducting II: Instrumental

Either semester. Two credits. Prerequisite: MUSI 232. *Renshaw*

235. Honors Harmony III

First semester. Four credits. Three class periods and two 1-hour laboratory periods. Prerequisite: MUSI 136. Open to sophomores or higher.

Continuation of Honors Harmony II, including writing and analysis of chromatic harmony; formal analysis.

236. Honors Harmony IV

Second semester. Four credits. Three class periods and two 1-hour laboratory periods. Prerequisite: MUSI 235. Open to sophomores or higher. *Bass*

Continuation of Honors Harmony II, including writing and analysis of chromatic harmony; formal analysis.

238. Jazz Improvisation and Performance

Either semester. One credit. One laboratory period. Prerequisite: MUSI 138. May be repeated for credit.

Advanced jazz theory, styles, and ensemble techniques.

239. Jazz Arranging I

First semester. Two credits. Two class periods. Prerequisite: MUSI 146 or equivalent and consent of instructor.

Arranging and composition of chamber jazz ensembles and big band.

240. Jazz Arranging II

Second semester. Two credits. Two class periods. Prerequisite: MUSI 239 and consent of instructor.

Continuation of MUSI 239.

241. Jazz: Theory and Performance

Either semester. Two credits. Two class periods. Prerequisite: MUSI 146 and consent of instructor. Open to sophomores or higher.

Performance, improvisation, arranging, and ensemble techniques.

245. Harmony III

First semester. Four credits. Three class periods and two 1-hour laboratory periods. Prerequisite: MUSI 146. Open to sophomores or higher. Not open for students who have passed MUSI 235. *Bass*

246. Harmony IV

Second semester. Four credits. Three class periods and two 1-hour laboratory periods. Prerequisite: MUSI 245. Open to sophomores or higher. Not open for credit to students who have passed MUSI 236. *Bass*

250. Introduction to Electronic Composition

Either semester. Three credits. Prerequisite: MUSI 264.

Composition by synthesizer and computer.

251. Composition I

First semester. Three credits. Prerequisite: MUSI 246. Creative writing in the smaller forms. Extensive analysis and discussion.

252. Composition II

Second semester. Two credits. Prerequisite: MUSI 251 and consent of instructor.

253. Composition III

Either or both semesters. Two credits. Hours by arrangement. May be repeated for credit. Prerequisite: MUSI 252 and consent of instructor.

Individual instruction in musical composition.

257. Form and Analysis I

Either semester. Three credits. Prerequisite: MUSI 246. Not open for credit to students who have passed MUSI 236 with a grade of "B" or better.

Musical structure and expression; melodic, harmonic, rhythmic and contrapuntal relationships; style analysis.

257W. Form and Analysis I

Prerequisite: MUSI 246; ENGL 105 or 110 or 111 or 250.

258. Form and Analysis II

Either semester. Three credits. Prerequisite: MUSI 257. Continuation of MUSI 257. Emphasis on the larger works of the 19th-century and 20th-century styles.

258W. Form and Analysis II

Prerequisite: MUSI 257; ENGL 105 or 110 or 111 or 250.

259. Music for the Classroom Teacher

Either semester. Three credits. *Junda*

Primarily for the non-music major preparing to teach in the elementary school. Elementary music materials, organization of learning experiences, and teaching methods.

261Q. Acoustics and the Perception of Music

Either semester. Three credits. Prerequisite: MATH 101 or passed Q Readiness Test or passed a Q course.

Science of Music, using basic quantitative techniques.

262. Elementary Descriptive Acoustics

Either semester. Three credits.

Nature of sound as it applies to music.

263. Psychology of Music

Second semester. Three credits. Prerequisite: PSYC 132.

Traditional approaches to music perception, learning and development.

264. Electronic Music Techniques

Either semester. Three credits. Open only with consent of instructor.

Theory and application of standard electronic music systems and techniques of sound synthesis.

265. Music Communications

First semester. Three credits. Prerequisite: MUSI 262 and 263.

Communication between performer and listener in music.

266. Musical Tests and Measurements

Either semester. Three credits. Prerequisite: MUSI 246 (Harmony IV) or equivalent and consent of instructor.

Significant aspects of musical evaluation, with emphasis on the uses and limitations of standardized music tests of achievement and aptitude and problems of musical performance evaluation.

267C. Microcomputers in Music Education

Either semester. Two credits. Two laboratory/discussion periods. Open only with consent of instructor.

Uses of micro-computers in the school music program.

271. Seminar: The Life and Works of Individual Composers

Either semester. Three credits. Prerequisite: MUSI 286 and one MUSI 200-level W course. Open only with consent of instructor. With a change in content, may be repeated once for credit.

272. Seminar: Style Periods in Music History

Either semester. Three credits. Prerequisite: MUSI 286 and one MUSI 200-level W course. Open only with consent of instructor. With a change in content, may be repeated once for credit.

273. Seminar in Music Education

Either semester. One or two credits. One or two class periods. 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.

274. Seminar: History of Musical Forms

Either semester. Three credits. Prerequisites: MUSI 286 and one MUSI 200-level W course. 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.

275. Orchestration I

Second semester. Three credits. Prerequisite: MUSI 245 and consent of instructor. *Maker*

Range, tone quality, and characteristics of the various orchestral and band instruments. Elementary scoring problems.

276. Orchestration II

First semester. Three credits. Prerequisite: MUSI 275. *Maker*

Scoring problems, score reading, and study of scores in the standard literature.

277. Counterpoint I

Either semester. Three credits. Prerequisite: MUSI 246.

Two- and three-voiced textures in the principal 16th-century styles: Josquin, Lassus, Palestrina.

278. Counterpoint II

Either semester. Three credits. Prerequisite: MUSI 277.

279Q. Twentieth Century Theory and Analysis

Either semester. Three credits. Prerequisite: MUSI 246 and MUSI 257; MATH 101 or passed Q Readiness Test or passed a Q course. With consent of instructor, MUSI 257 may be taken concurrently. *Bass*

Analytical techniques appropriate to selected styles of twentieth century music. Problems in twentieth century counterpoint and composition.

281. Vocal Pedagogy

Either semester. Two credits. Two class periods. Prerequisite: MUSI 222 and consent of instructor. *Vasil*

Vocabulary, methodology and practical application of pedagogical techniques.

282. Orchestral Techniques

Semester by arrangement. One credit. Open only with consent of instructor. May be repeated for credit.

The art of practice, preparation, and performance of orchestral literature.

283. Marching Band Techniques

First semester. Two credits. Two class periods. Open only with consent of instructor. *Mills*

Scoring for the outdoor band, administration, marching and maneuvering.

284. Music History and Literature Before 1700

(Formerly offered as MUSI 287.) First semester. Three credits. Prerequisite: MUSI 146. Open to sophomores or higher. *Bellingham*

Medieval, Renaissance, to High Baroque periods. Score study, development of notation, and relation to other artistic traditions.

285. Music History and Literature 1700-1830

First semester. Three credits. Prerequisite: MUSI 284. Open to sophomores or higher.

Leading composers, genres, elements of style, form and harmony, musical institutions and aesthetics in the High Baroque, Pre-classic, and Classic periods.

286. Music History and Literature 1830 to Present

Second semester. Three credits. Prerequisite: MUSI 285. Open to sophomores or higher.

The romantic period and the Twentieth Century.

290. Theory Review

First semester. Three credits.

An overview of traditional undergraduate theory. Intended for graduate students in Music.

291. Procedures in Historical Research

Either semester. Three credits. Prerequisite: MUSI 286 and one MUSI 200-level W course. Open only with consent of instructor.

A project-oriented approach to bibliographic tools and research methods applicable to the historical study of music.

292W. Music in World Cultures

Either semester. Three credits. Not open for credit to students who have passed MUSI 190. Prerequisite: MUSI 286 and consent of instructor; ENGL 105 or 110 or 111 or 250.

Comparison of musical concepts, styles, and performance practice in the social context of various cultures.

295. Music of the Twentieth Century

Either semester. Three credits. Prerequisite: MUSI 286.

297. Senior Recital

Required of all Bachelor of Music performance majors. No credit. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

298. Special Topics

Either semester. Credits and hours by arrangement. Open only with consent of instructor. May be repeated for credit.

Classroom course in a special topic as announced in advance for each semester.

299. Independent Study

Either semester. Credits and hours by arrangement. Open only with consent of head of department. May be repeated for credit.

Natural Resources Management and Engineering (NRME)

Department Head: Professor David B. Schroeder
Department Office: Room 308, W.B. Young Building

For major requirements, see the College of Agriculture and Natural Resources section of this *Catalog*.

100. Environmental Science

First semester. Three credits. Two class periods and one 3-hour laboratory period. *Neumann*

An introduction to basic concepts and understanding of Natural Resources Systems and the effects of society on the environment.

110. Introduction to Natural Resources

First semester. One credit. Open only to Freshman - Sophomore students.

An introduction to the field of renewable resources. Field trips required.

130. Environmental Conservation

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.

204. Wetlands Biology and Conservation

Second semester, alternate years (even). Three credits. Three class periods and one weekend field trip. Recommended preparation: BIOL 107 and 108. *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.

205. Stream Ecology

Second semester. Three credits. Prerequisite: EEB 244.

A broad overview of stream ecology will be presented. Emphasis will be placed on the biota and the application of ecosystem and community ecology to running water habitats. Human influences on stream systems will also be discussed. One or more field trips required.

208. Introduction to Aquaculture

Either semester. Three credits. Two class periods, one 2-hour laboratory. Prerequisite: BIOL 107 or 108.

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.

210. Air Pollution

First semester. Three credits. Prerequisite: NRME 241. *Miller*

The meteorology, effects and controls of air pollution.

211. Watershed Hydrology

Second semester, alternate years (even). Three credits. Recommended preparation: NRME 242 or ENGR 150. Open to sophomores or higher. *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.

214. Dendrology

First semester. Three credits. Two class periods and one 3-hour laboratory period. Recommended preparation: BIOL 108 or 110. Open to sophomores or higher. *Schroeder*

The taxonomy, silvics, and distribution of trees and shrubs of the United States with emphasis upon Northeastern species. Field trips will be required.

217. North American Wildlife

First semester. Three credits. Recommended preparation: BIOL 107. Open to sophomores or higher. *Ortega*

An introduction to wildlife conservation programs and resource values. The distribution, life history and status of those birds and mammals whose populations humans are attempting to preserve, reestablish, or to control are examined.

232P. Wildlife Management

Second semester. Three credits. Prerequisite: NRME 217; ENGL 105 or 110 or 111 or 250. Recommended preparation: Prior course work in ecology. Must be taken with another P course in NRME to equal one W course. *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.

233. Wildlife Management Techniques

First semester, alternate years. Two credits. One 4-hour laboratory period. Prerequisite: NRME 232. Open only with consent of instructor. One or more field trips will be required. *Barclay*

Collection and reporting of biological data upon which wildlife conservation decisions are based.

235P. Principles of Fishery Management

Second semester. Three credits. Two class periods and one 2-hour laboratory period. Prerequisite: ENGL 105 or 110 or 111 or 250. Must be taken with another P course in NRME to equal one W course. *Neumann*

Introduction to fisheries management principles with applications to the biotic, habitat, and human components of fishery systems. Selected topics include sampling and gears, harvest regulations, stocking, population dynamics, habitat management, and management of pond, lake, reservoir, and stream fisheries.

237. Introductory Remote Sensing

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.

238V. Advanced Remote Sensing

Second semester. Three credits. Two class periods and one 2-hour laboratory period. Prerequisite: NRME 237; MATH 101 or passed Q Readiness Test or passed a Q course. 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.

239W. Natural Resources Planning and Management

Second semester. Three credits. Prerequisite: Senior standing; ENGL 105 or 110 or 111 or 250. *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.

240. Environmental Law

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.

241. Meteorology

First semester. Three credits. *Yang*

A survey course in meteorology at the introductory level covering weather and climate processes.

242. Natural Resources Measurements

First semester. Four credits. Two class periods and two 2-hour laboratories. Field trips required. Open to sophomores or higher. *Miller*

Principles and instrumentation used in the measurement of environmental conditions and processes.

246. Water Quality Management

First semester, alternate years (odd). Three credits. Recommended preparation: NRME 211 or NRME 260P. *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.

247P. Public Lands Wildlife Management

Second semester. Three credits. Prerequisite: ENGL 105 or 110 or 111 or 250. Recommended preparation: NRME 217, 232P, EEB 244. Open only with consent of instructor. Must be taken with another P course in NRME to equal one W course. *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.

251C. Computer Utilization in Agriculture and Natural Resources

Second semester. Three credits. Two class periods and one two-hour laboratory.

Instruction in the utilization of microcomputer technology in a variety of natural resources management and engineering applications, such as forest mensuration, water runoff and soil erosion estimation, land use planning, ecological modeling, and general problems from commercial agriculture. Skills will be developed in the use of popular programming languages, such as BASIC and FORTRAN, and commercial packages, including spreadsheets, data base managers, computer graphics and application-specific software.

252. Geographic Information Science for Natural Resources Management

Second semester. Four credits. Three class periods and one two-hour laboratory period. Prerequisite: NRME 242, MATH 112Q or higher calculus course. Recommended preparation: PHYS 121Q. 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.

256. Natural Resources Modeling

First semester. Three credits. Prerequisite: MATH 112Q 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.

260P. Soil and Water Management and Engineering

Second semester, alternate years (odd). Three credits. Prerequisite: ENGL 105 or 110 or 111 or 250. Recommended preparation: NRME 211 or CE 265. Must be taken with another P course in NRME to equal one W course. *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.

271. Environmental Meteorology

Second semester, even numbered years. Three credits. Recommended preparation: NRME 241. *Yang*

Applied meteorology in environmental science and engineering. Solar energy, winds and air pollution,

atmospheric-hydrologic interactions, agricultural and forest meteorology, and biometeorology.

280P. Forest Management

Second semester, alternate years (odd). Four credits. Two class periods and one 4-hour laboratory period. Prerequisite: NRME 214; ENGL 105 or 110 or 111 or 250. Must be taken with another P course in NRME to equal one W course. *Broderick, Schroeder*

An introduction to forest mensuration, ecology, silviculture, and multiple-use management. Field trips required.

285. Forest Ecology

First semester alternate years (even). Three credits. Two class periods and one 3-hour laboratory. Prerequisite: NRME 214.

Forest stand dynamics and ecosystem function including tree response to local and regional site factors individually and in community interactions with other species, and the role of forest stands in ecosystem function (e.g., habitat diversity, interactions among ecosystems, nutrient cycling). Laboratory will be outside or in computer lab.

287. Field Study Internship

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.

This course is 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.

295. Seminar

Second semester. One credit. May be repeated for credit. Open only with consent of instructor.

298. Special Topics

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.

299. Independent Study

Either or both semesters. Credits and hours by arrangement. May be repeated for credit. Open only with consent of instructor.

Nursing (NURS)

Dean: Laura Cox Dzurec

Office: Room 111, Storrs Hall

For major requirements, see the School of Nursing section of this *Catalog*.

110. Introduction to Health

Both semesters. Three credits.

An interdisciplinary course that provides an introduction to the intrinsic and extrinsic factors that influence health. Includes approaches to health promotion and disease prevention, study of leading causes of illness, injury and death in a university community, and cultural practices and beliefs about health. Examples of topics covered include: sexuality and sexually transmitted diseases, assessment of genetic history, healing practices to enhance wellness.

111. Humanizing Health Care: Nursing's Past, Present and Future

Both semesters. Three credits.

This course is designed to explore the history of health care in the United States as it relates to nursing.

Historical imperatives, dealing with such issues as gender related constraints and other social, political and economic factors will be identified. Both external and internal forces that shape the substance of nursing education, practice and research and reinforce its mission to society will be analyzed.

112. Health Care Delivery System

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.

198. Introduction to Nursing Arts

Either semester. One credit.

Introduction to foundational allopathic and holistic nursing art skills needed in all practice settings, grounded in Nightengale's philosophy/theory of nursing. Includes psychomotor competency, theoretical and philosophic foundations for nursing as a caring/healing art, and self-care foundations for becoming a nurse healer.

202. The Basis of Scientific Inquiry

Either semester. Three credits. Prerequisite: PHIL 104. Open to sophomores or higher.

This course will acquaint the learner with issues salient to an understanding of science as a source of knowledge. Perspectives on scientific truth, the nature of science, and the science in modern culture will be presented.

204. Clinical Science I

First semester. Three credits. Open to Nursing majors only. Prerequisite: CHEM 127Q and 128Q, PNB 264, PNB 265 concurrent or prerequisite. Open to sophomores or higher.

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.

205. Theoretical Foundations of Nursing I

First semester. Two credits. Prerequisite: PHIL 212, SCI 240 or NURS 202.

An exploration of the empirical way of knowing in nursing. Selected models and theories illustrating an empirical approach will be analyzed.

206. Theoretical Foundations of Nursing II

Second semester. Two credits. Prerequisite: NURS 205, 217, or RN license.

An exploration of the existential way of knowing in nursing. Selected models and theories illustrating an existential approach will be analyzed.

207. Clinical Science II A

Second semester. Three credits. Prerequisite: PNB 264 and NURS 204; PNB 265 concurrent. Open to sophomores or higher.

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.

211C. Information Systems in Health Care

Either semester. Three credits. Two class periods and two hours of laboratory. Open to sophomores or higher.

Concepts of problem-solving and decision-making will be used to explore the basic elements of information processing. Applications of computerized information processing in health care will be examined.

212. Clinical Science for Sub-acute and Chronically Ill Adults

First semester. Three credits. Prerequisite: NURS 110, 111, 112, 204, 207 and 221.

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.

213. Nursing Research

Either semester. Three credits. Open only to Nursing majors. Prerequisite: STAT 100V or 110V.

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.

213W. Nursing Research

Prerequisite: STAT 100V or 110V; ENGL 105 or 110 or 111 or 250.

214. Clinical Science II B

First semester. Three credits. Prerequisite: CHEM 127Q and 128Q; PNB 264 and 265; PHYS 101; NURS 204; open only to Nursing majors.

Concepts from pathophysiology, pharmacology, and normal and therapeutic nutrition as they relate to the nursing care of adults with acute non-life threatening health problems.

216. Adult Health I

First semester. Three credits. Must be taken concurrently with NURS 214.

Clinical decision-making utilizing functional health patterns, dependent, independent, and interdependent nursing actions related to care of adults with acute non-life threatening and/or life modifying health problems.

217. Practicum: Adult Health I

First semester. Five credits. Fifteen laboratory hours. Must be taken concurrently with NURS 216.

Application of functional health patterns to the care of adults with acute, non-life threatening and/or life modifying health problems. Focus is on psychomotor, communication and decision-making skills basic to nursing.

218. Nursing Science for Adults with Sub-Acute and Chronic Health Issues

First semester. Three credits. Prerequisite: NURS 110, 111, 112, 207 and 221.

Critical examination of theory, research and expert clinical practice supportive of nursing with adults experiencing sub-acute and chronic health problems and their families.

219. Practicum with Sub-acute and Chronically Ill Adults

First semester. Six credits. Prerequisite: NURS 110, 111, 112, 204, 207, 221; NURS 212, 218 concurrent.

Nursing and interdisciplinary care of person and family with sub-acute and chronic health issues.

220. Historical and Contemporary Topics in Nursing

Either semester. Three credits. Open to non-majors only with the consent of the instructor.

Contemporary topics in nursing will be explored from historical and phenomenological perspectives. The ideas and actions of individuals, the genesis and impact of various professional issues, and pervasive themes throughout nursing will be examined.

220W. Historical and Contemporary Topics in Nursing

Prerequisite: ENGL 105 or 110 or 111 or 250.

221. Health Assessment through the Lifespan

Second semester. Three credits. Prerequisite: PNB 264; PNB 265 concurrent. Open only to Nursing

majors. Open to sophomores or higher.

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.

224. Clinical Science III

Second semester. Four credits. Prerequisite: NURS 214.

Concepts from pharmacology, microbiology, nutrition and pathophysiology as they relate to the nursing care of adults with life modifying, life threatening health problems.

225. Theoretical Foundations of Nursing III

First semester. Three credits. Prerequisite: NURS 219 or RN license.

An exploration of the ethical way of knowing in nursing. Selected models and theories illustrating an ethical approach will be analyzed.

226. Adult Health II

Second semester. Two credits. Recommended Preparation: NURS 224 and 227, both of which may be taken concurrently.

Clinical decision-making utilizing functional health patterns, dependent and interdependent nursing actions related to care of adults with life threatening health problems.

227. Practicum: Adult Health II

Second semester. Five credits. Fifteen laboratory hours. Concurrent or recommended preparation: NURS 214, 216, and 217. Corequisite: NURS 224 and 226.

Application of functional health patterns to the care of adults with life threatening health problems. Focus is on independent decision making.

232. Clinical and Nursing Science: Nursing Care of the Childbearing Family

Both semesters. Four credits. Prerequisite: NURS 212, 218, and 219.

This course 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.

234. Clinical Science IV

Either semester. Two credits. Prerequisite: NURS 224.

Concepts from pharmacology, microbiology, pathophysiology, and nutrition as they relate to child bearing, child rearing families.

235. Theoretical Foundations of Nursing IV

Second semester. Three credits. Prerequisite: NURS 225, 259, 269, 279 or RN license.

An exploration of the esthetic way of knowing in nursing. Selected models and theories illustrating an esthetic approach will be analyzed.

236. Parent-Child Nursing

Either semester. Four credits. Prerequisite: NURS 224 and 226. Corequisite: NURS 234.

Functional health patterns and clinical decision-making related to the care of the child bearing, child rearing family. Focus is an anticipatory guidance, preventive intervention, and health restoration.

237. Practicum Parent-Child Nursing

Either semester. Five credits. Fifteen laboratory hours. Prerequisite: NURS 220 or 220W and 213 or 213W. Corequisite: NURS 234 and 236.

Application of functional health patterns and clinical decision-making in care of the child bearing, child rearing family.

239. Practicum with Childbearing Families

Both semesters. Three credits. Prerequisite: NURS 212, 218, and 219; NURS 232 concurrent; open only to Nursing majors.

This course 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.

240. Epidemiology in Nursing Practice: Clinical Science V-A

Either semester. One credit. Prerequisite: NURS 227 or RN license.

An introduction to the principles of epidemiology used in nursing practice.

241. Community Health Nursing

Either semester. Two credits. Prerequisite: NURS 206, 226 and 224. Corequisite: NURS 240.

Analysis of theories from nursing and related disciplines for application to community health nursing. Provide the basis for clinical decision-making for individuals, families, and groups.

242. Clinical Science in Psychiatric-Mental Health Nursing Practice: Clinical Science V-B

Either semester. One credit. Prerequisite: NURS 227 or RN license.

Concepts from microbiology, pharmacology, nutrition and pathophysiology as they relate to psychiatric-mental health nursing.

243. Psychiatric-Mental Health Nursing

Either semester. Two credits. Prerequisites: NURS 206, 224 and 226. Corequisite: NURS 242.

Analysis of theories from nursing and related disciplines for application to psychiatric-mental health nursing. Focus is on nursing processes for clinical decision-making for individuals, families, and groups.

248. Community Health Nursing Practice

Either semester. Three credits. Prerequisite: NURS 213 or 213W, 220 or 220W, 226 and 227.

Clinical application of theory from nursing and related disciplines to individuals, families and community groups in a variety of community health settings. Focus is on nursing care applied throughout the wellness illness continuum in collaboration with other members of the health care team.

249. Psychiatric-Mental Health Nursing Practice

Either semester. Two credits. Prerequisite: NURS 213 or 213W, 220 or 220W, 226 and 227. Corequisite: NURS 240 and 242.

Focus is on the application of nursing theory, the Caring-Praxis Model and therapeutic communication to psychiatric-mental health nursing. Emphasis on a) application of the lived experience persons with mental illness; b) self-reflective abilities and their significance to affecting the nurse patient encounter; c) therapeutic use of self, and d) actualizing intuitive and rational ways of knowing in responding to the mental health and/or psychiatric illness experience.

250. Nursing Leadership in the 21st Century

Second semester. Three credits. Prerequisite: NURS 219, 239, 259, 269, and 279; NURS 289 concurrent; 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.

252. Clinical and Nursing Science for Nursing Care of Childrearing Families

Both semesters. Four credits. Prerequisite: NURS 212, 218, 219; NURS 232 concurrent; open only to Nursing majors.

This course 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.

253. Professional Nursing Practice: Leadership, Management and Financial Issues

Second semester. Two credits.

Designed to examine and prepare individuals for the lived experience of nursing as a business. The course addresses management, leadership and fiscal skills as they relate to health care delivery and the profession of nursing.

259. Practicum with Childrearing Families

Both semesters. Three credits. Prerequisite: NURS 212, 218, 219; NURS 252 concurrent; open only to Nursing majors.

This course 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, childbirth education classes, schools, clinics, group homes, women's health centers and agencies providing acute and chronic care.

262. Clinical Science for Psychiatric and Mental Health Nursing

Both semesters. Two credits. Prerequisite: NURS 212, 218 and 219; open only to Nursing majors.

Biochemical, neural activity, functional and structural aspects of the brain, cognition, mental health and illness (behavioral health) are overviewed. The psychopharmacology and nutrition of behavioral health is addressed. Psychopharmacological issues will consist of how to offer a safe and effective biochemical environment for a person (group or family) with mental health (behavior health) issues. Psychological, sociological, and physiological integrity will be addressed for behavioral health.

263. Nursing Science for Psychiatric and Mental Health Nursing

Both semesters. Two credits. Prerequisite: NURS 212, 218, 219; NURS 262, which may be taken concurrently; open only to Nursing majors.

The role of nursing, in regard to psychiatric and social parameters of any person, family or group with a medical or psychiatric illness is examined. Major elements are the use of therapeutic communication, critical thinking, and the nursing process to examine multiple therapeutic interventions. This course stresses assessment of health and mental illness in populations that will be the focus of interventions in a professional nurse's career. Students will be exposed to knowledge that explicates how to provide a safe and effective environment in diverse milieus; how to promote health and support growth and development issues through the lifespan; how to assist persons in coping and adaptation and how to reduce risks in population of interest.

269. Practicum for Psychiatric and Mental Health Nursing

Both semesters. Three credits. Prerequisite: NURS 212, 218, 219; NURS 262 and 263, which may be taken concurrently; open only to Nursing majors.

This course 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.

270. Public Health Nursing

Both semesters. Three credits; 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.

272. Clinical Science for Adults with Acute Illness

Both semesters. Two credits. Prerequisite: NURS 212, 218 and 219; open only to Nursing majors.

Critical examination of pharmacology, microbiology, nutrition and pathophysiology as they relate to nursing care of adults experiencing acute, life threatening problems.

273. Nursing Science for Acutely Ill Adults

Both semesters. Two credits. Prerequisite: NURS 212, 218 and 219; NURS 272, which may be taken concurrently; open only to Nursing majors.

Critical examination of theory, research and expert clinical practice supportive of nursing with adults experiencing acute life-threatening health problems.

279. Practicum with Acutely Ill Adults

Both semesters. Three credits. Prerequisite: NURS 212, 218, 219; NURS 272 and 273, which may be taken concurrently; open only to Nursing majors.

Nursing and interdisciplinary care of acutely ill persons and their families.

289. Capstone Practicum

Second semester. Variable credits. Prerequisite: NURS 219, 239, 259, 269 and 279; NURS 250 concurrent; open only to Nursing majors. Undergraduate students should register for 6 credits.

This course is the capstone clinical practicum and seminar taken in the final semester of the baccalaureate program. The course is designed to provide the student with opportunities to apply knowledge and skills from all required courses to special clinical situations. The student works with a clinical preceptor in the development, implementation and evaluation of objectives specific to clinical emphasis area.

290. Health Assessment and Fundamentals of Nursing Praxis

Twelve credits. Prerequisites: PNB 264/265, CHEM 122, BIOL 107, MCB 200, NURS 204, Portfolio Review as required; equivalent coursework will be accepted for all courses. Student must be accepted into Basic Nursing Certificate Program.

This course 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. The course will address the nursing science, clinical science and disease science as appropriate to the assessment and skills.

291. Nursing Across the Lifespan I

Twelve credits. Prerequisite: NURS 290. Student must be accepted into Basic Nursing Certificate Program.

This course is a 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.

292. Health Perspectives on Alcohol and Other Drug Abuse

Either semester. Three credits. Open to non-nursing majors.

An interdisciplinary examination of the health consequences of alcohol and other drug abuse across the lifespan with emphasis on: epidemiology; pharmacology; theoretical models; strategies for prevention and treatment; needs of special populations; and, ethical, political and legal ramifications.

292W. Health Perspectives on Alcohol and Other Drug Abuse

Prerequisite: ENGL 105 or 110 or 111 or 250.

293. Nursing Across the Lifespan II

Twelve credits. Prerequisite: NURS 291. Student must be accepted into Basic Nursing Certificate Program.

This course 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.

298. Special Topics in Nursing

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.

299. Independent Study

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.

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*.

160. The Science of Food

(Also offered as ANSC 160.) Second semester. Three credits. *Dzurec*

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.

165. Fundamentals of Nutrition

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.

166. Food, Culture and Society

Second semester. Three credits. *Lammi-Keefe*

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.

167. Honors Colloquium in Nutrition

First semester. One credit. One class period and one 2-hour discussion/laboratory every other week. Concurrent enrollment in NUSC 165 required. *Clark*

Lectures, discussions, and laboratory exercises to complement topics from NUSC 165. Primarily for, but not restricted to, honors students.

195. Special Topics Lecture

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.

200. Nutrition and Human Development

First semester. Three credits. Recommended preparation: NUSC 165. Open to sophomores or higher. *Ferris*

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.

212. Principles of Food Science

Second semester. Three credits. Recommended preparation: MCB 203 or 204. *Dzurec*

Chemical, physical, microbiological, and legal aspects of food production, preservation and processing. Safety, aesthetics and nutrition topics included.

213. Principles of Food Science Laboratory

Second semester. Two credits. One class period and one 2-hour laboratory period. Consent of instructor required. Recommended preparation: NUSC 212.

Flavor, color, texture, viscosity and consistency, enzyme reactions, and processing. Field trips.

233. Food Composition and Preparation

First semester. Three credits. Prerequisite: NUSC 165. Recommended preparation: CHEM 141 or 243. *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.

235. Food Composition and Preparation Laboratory

First semester. One credit. One 3-hour laboratory period. Prerequisite: NUSC 165 and concurrent registration in NUSC 233. Recommended preparation: CHEM 141 or 243. Enrollment restricted to Nutritional Sciences and Allied Health Dietetic majors. 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.

236. Principles of Nutrition

Second semester. Three credits. Prerequisite: NUSC 165. Recommended preparation: PNB 250 or 265, MCB 203 or 204. *Clark*

Function and metabolism of carbohydrates, proteins, fats, minerals, and vitamins.

241. Nutritional Assessment

Second semester. One credit. One class period and one 2-hour laboratory, every other week. Prerequisite: NUSC 200. Recommended preparation: MCB 203 or 204, PNB 250 or 265. Enrollment restricted to Nutritional Sciences and Kinesiology majors. *Clark*

Anthropometric, clinical, and biochemical techniques for assessment of human nutritional status.

250. Nutrition for Exercise and Sport

Second semester. Three credits. Prerequisite: NUSC 165 and PNB 250 or 265. *Rodriguez*

Basic nutrition principles. Physical activity, exercise, sport performance and consequences of nutritional ergogenic aids.

260. Readings in Human Nutrition

First semester. Two credits. Two class periods. Prerequisite: NUSC 200.

Readings dealing with utilization and metabolism of nutrients in the human body, with particular emphasis on understanding research methodology.

265. Medical Nutrition Therapy

First semester. Three credits. Prerequisite: NUSC 241. Recommended preparation: MCB 203 or 204. *Rodriguez*

Metabolic basis for medical nutrition therapy. Enteral and parenteral nutrition. Pathology of disease. Role of dietary management of disease.

266. Medical Nutrition Therapy Recitation

First semester. One credit. Prerequisite: NUSC 241. NUSC 265 must be taken concurrently. *Rodriguez*

Case studies and presentations. Medical terminology. Practical aspects of medical nutrition therapy administration.

267. Principles of Community Nutrition

First semester. Three credits. Prerequisite: NUSC 200 which may be taken concurrently. *Perez-Escamilla*

Role of community structures, agencies, services and the professional nutritionist in community health.

270W. Food Services Systems Management I

Second semester. Three credits. Two class periods and one 2-hour laboratory/discussion period. Prerequisite: ENGL 105 or 110 or 111 or 250. Recommended preparation: AH 244 or MGMT 201, NUSC 233, 235. *Shanley*

Quantity food procurement, preparation and distribution; recipe standardization; sanitation and safety; portion and quality control; food cost control; computer applications; and personnel management.

272C. Food Service Systems Management II

First semester. Three credits. Two class periods and one 2-hour laboratory/discussion period. Prerequisite: NUSC 270W. *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.

275. Experience in Food Service Systems Management

Either semester. One to six credits. Prerequisite: NUSC 270W. 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.

281. Experience in Community Nutrition

Either semester. One to six credits. Prerequisite: NUSC 165. Recommended preparation: NUSC 267. 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.

295. Seminar

Second semester. One credit. One class period. Prerequisite: NUSC 200. May be taken twice.

Review, evaluation, and oral and written presentation of contemporary nutrition issues.

296W. Senior Thesis in Nutrition

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 105 or 110 or 111 or 250.

298. Special Topics

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.

299. Independent Study

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.

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.

203C. Business Information Systems

Either semester. Three credits. Prerequisite: ACCT 131. Open only to School of Business students; others with the consent of the Operations and Information Management Department Head. Not open to students who have passed or are taking BADM 260.

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.

204. Operations Management

Either semester. Three credits. Prerequisite: OPIM 203.

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.

205. Introduction to Database Management

Either semester. Three credits. Prerequisite: OPIM 203C or equivalent. Consent of Department Head and BGS Mentor is required. Cannot be used toward fulfilling MIS major requirements. Offered only at the Stamford Regional Campus.

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.

206. Business Application Programming

Either semester. Three credits. Prerequisite: OPIM 203C or equivalent. Consent of Department Head and BGS Mentor is required. Cannot be used toward fulfilling MIS major requirements. Offered only at the Stamford Regional Campus.

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.

207. Internet Technologies and Electronic Commerce

Either semester. Three credits. Prerequisite: OPIM 205, OPIM 206; consent of Department Head and BGS Mentor is required. Cannot be used toward fulfilling MIS major requirements. Offered only at the Stamford Regional Campus.

This course 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.

208. System Development and Process Management

Either semester. Three credits. Prerequisite: OPIM 205, OPIM 206; consent of Department Head and BGS Mentor is required. Cannot be used toward fulfilling MIS major requirements. Offered only at the Stamford Regional Campus.

The course 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.

210. Operations Research for Information Systems Analysis

Either semester. Three credits. Prerequisite: OPIM 203C, 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.

211. Systems Analysis and Design

Either semester. Three credits. Prerequisite: OPIM 203C, 220, 221, 222; 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.

212. Advanced Information Technologies

Either semester. Three credits. Prerequisite: OPIM 203C, 220, 221, 222; 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.

220. Business Software Development

Either semester. Three credits. Prerequisite: OPIM 203C, which may be taken concurrently; open only to MIS majors.

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.

221. Business Data Base Systems

Either semester. Three credits. Prerequisite: OPIM 203C (may be taken concurrently). Open to MIS majors only.

Development and implementation of database applications for business. Topics include: data modeling, relational database concepts, query languages, hands-on design and implementation of a relational database system, database administration, non-relational database models, distributed architectures, and advanced object bases.

222. Network Design and Applications

Either semester. Three credits. Prerequisite: OPIM 203C (may be taken concurrently.) Open to MIS majors only. Open only to juniors and seniors.

Principles and applications of business telecommunications emphasized. Course covers important network systems as well as crucial techniques in building these systems. Students participate in network design and implementation project.

223. Advanced Business Application Development

Three credits. Prerequisite: OPIM 203C. Open to MIS majors only. Open only to juniors and seniors.

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.

230. Management of Production/Operations Systems

Second semester. Three credits. Prerequisite: OPIM 204.

In-depth study of the problems and models applicable to the design, operation and control of systems which produce goods and services. Students will learn to define, relate to, and solve production and operations problems using such media and methods as cases, projects, simulations, behavioral and quantitative models.

252. Industrial Quality Control

Semester by arrangement. Three credits. Prerequisite: STAT 100 or 110, and OPIM 204 or MEM 211.

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.

289. Field Study Internship

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.

293. Foreign Study

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. 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.

296W. Senior Thesis in Operations and Information Management

Either semester. Three credits. Hours by arrangement. Prerequisite: Open only by consent of instructor and department head; open only to OPIM Department Honors Students; ENGL 105 or 110 or 111 or 250.

298. Special Topics

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 operations management, operations research and information management as announced in advance for each semester.

299. Independent Study

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.

Pathobiology and Veterinary Science (PVS)

Interim 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*.

103. The Biology of Human Health and Disease (Also offered as BIOL 103.) (Formerly offered as PATH 103.) First semester. Four credits. Three lecture periods and one 2-hour laboratory. This course may not be combined with BIOL 102 to satisfy the General Education Group VIII Requirement. *Smolin, Terry, Van Kruiningen.*

A laboratory course which introduces the concepts of biology and their application to the individual, society and humankind by focusing on health and disease issues.

113. Biomedical Issues in Pathobiology (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.

195. Special Topics Lecture

Either semester. Credits, prerequisites, and hours as determined by the Senate Curricula and Courses Com-

mittee. May be repeated for credit with a change in topic.

200. Anatomy and Physiology of Animals

(Formerly offered as PATH 200.) First semester. Four credits. Prerequisite: BIOL 107 or equivalent. Three class periods and one 2-hour discussion/laboratory period. Open to sophomores or higher. *Bushnich*

A study of the anatomy and physiology of animals with reference to pathological changes of the component parts of the body.

202. Health and Disease Management of Animals

(Formerly offered as PATH 202.) Second semester. Three credits. Prerequisite: PVS 200. Open to sophomores or higher. *Bushnich*

This course is 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.

235. Clinical Chemistry

(Formerly offered as PATH 235.) Second semester, alternate years (odd). Four credits. Prerequisite: CHEM 141. Recommended preparation: Biochemistry course. *D. Hill*

Deviations in normal concentrations of endogenous chemicals in biological fluids and tissues and use in the diagnosis of disease. Analysis and relationship of these chemicals to diagnostic interpretations.

248. Principles of Animal Virology

(Formerly offered as PATH 248.) First semester. Three credits. *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.

248W. Principles of Animal Virology

(Formerly offered as PATH 248W.) Prerequisite: ENGL 105 or 110 or 111 or 250.

252. Pathobiology of the Avian Species

(Formerly offered as PATH 252.) First semester. Three credits. 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.

256. Systemic Pathology and Microbiology of Finfish and Shellfish

(Formerly offered as PATH 256.) Second semester. Three credits. Offered in even-numbered years. Two class periods and one 2-hour laboratory. Prerequisites: BIOL 107 or 108, PNB 250 or PVS 200/202. Recommended MCB 203 or 204, MCB 229, EEB 200 and NRME 298. *French, Frasca*

A systematic study of infectious and noninfectious diseases of commercial finfish and shellfish. Emphasis is placed upon the pathology, diagnoses and preventive measures. For each system of the body, pertinent anatomy, physiology, histology, and gross and microscopic pathology will be discussed.

295W. Seminar

Either or both semesters. Two credits. One class period. Prerequisite: ENGL 105 or 110 or 111 or 250. Open only with consent of instructor. Majors may take

this course in each semester of the senior year. May be repeated for credit. *Whiteley*

296. Histologic Structure and Function

(Formerly offered as PATH 296.) First semester. Four credits. Three class periods and one 2-hour laboratory. Open only with consent of instructor. *French*

The course is 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.

297. Principles of Pathobiology

(Formerly offered as PATH 297.) Second semester. Three credits. *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.

298. Special Topics

(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.

299. Independent Study

(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.

Pharmacy (PHAR)

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 (four years) of the School of Pharmacy.

Drugs and the Diseased State

Director: Professor Ronald O. Langner
Office: Room R-301, Pharmacy Building

195. Pharmacy Special Topics Lecture Course
Either semester. Credits and hours as determined by the Senate Curricula and Courses Committee. May be repeated for credit with a change in topic.

200. Drugs and the Diseased State I

First semester. Three credits. Prerequisite: PHAR 212 and 229, MCB 203 and 229. *Nieforth*

Basic principles of physiology and pharmacology, basic organ system anatomy and physiology, receptor theory.

214. Drugs and the Diseased State II

First semester. Five credits. Five class periods. Prerequisite: PHAR 200, which may be taken concurrently. *Henkel*

Nervous system physiology, pharmacology and SAR, hematological pharmacology and SAR.

225. Human Physiology I

First semester. Four credits. Hours by arrangement. Open only with consent of instructor. Not open to pharmacy students. *Fournier*

Basic principles of physiology, basic organ system anatomy and physiology, respiratory and nervous system physiology.

226. Human Physiology II

Second semester. Three credits. Hours by arrangement. Open only with consent of instructor. Not open to pharmacy students. *Fournier*

Cardiovascular, renal, endocrine and GI physiology.

242. Drugs and the Diseased State III

Second semester. Four credits. Four class periods. Prerequisite: PHAR 200 and 214. *Langner*

Cardiovascular, renal and steroid endocrine physiology, pharmacology and SAR.

243. Drugs and the Diseased State IV

Second semester. Four credits. Four class periods. Prerequisite: PHAR 242, which may be taken concurrently. *Manautou*

GI and non-steroidal endocrine physiology, pharmacology and SAR, anti microbial, anti viral, antineoplastics, anti allergic agents and SAR.

243W. Drugs and the Diseased State IV

Prerequisite: PHAR 242, which may be taken concurrently; ENGL 105 or 110 or 111 or 250. Open only with consent of the course director. *D. Manautou*

245. Drugs and the Diseased State Laboratory

Second semester. One credit. One 3-hour laboratory period. Taken concurrently with PHAR 242 and 243. *Rosenberg*

254. Mechanisms of Drug Action I

First semester. Three credits. Prerequisite: PNB 264, 265, MCB 203, or their equivalents. Open only with consent of instructor. Not open for credit to undergraduate pharmacy students. Not open to sophomores. *Rosenberg*

Basic principles pharmacology, receptor theory, nervous system and respiratory system pharmacology.

255. Mechanisms of Drug Action II

Second semester. Three credits. Prerequisite: PHAR 254. Open only with consent of instructor. Not open for credit to undergraduate pharmacy students. *Langner*

Endocrine, cardiovascular and renal, GI pharmacology, anti microbial, anti viral, antineoplastics, anti allergic agents.

Drugs and Dosage Forms

Director: Associate Professor Kevin R. Sweeney
Office: Room C2019, Health Center (Farmington)

229. Drugs and Dosage Forms I

Second semester. Five credits. Five class periods per week. Prerequisite: PHAR 207, 208, 209 and MATH 110. *Burgess*

Kinetics of drug stability, diffusion, and dissolution; solutions as dosage forms; colloids, suspensions, emulsions, aerosols, suppositories, ointments, parenterals ophthalmics. Oral solid dosage forms, controlled drug delivery systems. Rheology.

230C. Drugs and Dosage Forms II

Second semester. Three credits. One 4-hour laboratory and two 1-hour lectures per week. Prerequisite: PHAR 207, 208, 209 and MATH 110. *Palmer*

Preparation and dispensing of dosage forms. Pharmacy-practice computer systems are utilized for selected clinical and administrative functions.

233. Drugs and Dosage Forms III

First semester. Four credits. Two 2-hour class periods. Prerequisite: PHAR 229, 230C. *Kramer*

Basic principles of pharmacokinetics; compartmental analysis; drug absorption, distribution, and excretion; optimization of both single and multiple dose regimens.

233W. Drugs and Dosage Forms III

Prerequisite: PHAR 229, 230C; ENGL 105 or 110 or 111 or 250.

Physico-Chemical Principles of Drug Systems

Director: Professor J. Michael Edwards
Office: Room 254, Pharmacy Building

207. Physico-Chemical Principles of Drug Systems I

First semester. Four credits. Five class periods. Prerequisite: PHYS 122 and CHEM 244. Open only to Pharmacy students enrolled in the Professional Program. *Bogner*

Basic physical and chemical phenomena applied to drug systems. Thermodynamics, solution theory, ionic equilibrium, non-covalent interactions, interfacial phenomena.

208. Physico-Chemical Principles of Drug Systems II

First semester. Four credits. Prerequisite: PHYS 122 and CHEM 244. Open only to Pharmacy students enrolled in the Professional Program. *Rhodes*

Identification and analysis of drug molecules. Instrumental and functional group analysis. Chemical reactivity, physical organic chemistry.

209. Physico-Chemical Principles of Drug Systems III

First semester. Two credits. One 3-hour laboratory and one 1-hour lecture per week. Prerequisite: PHYS 122 and CHEM 244. Open only to Pharmacy students enrolled in the Professional Program. *Moring*

Pharmaceutical analysis.

212. Physico-Chemical Principles of Drug Systems IV

Second semester. Five credits. Five class periods. Prerequisite: MCB 203 and 229, PHAR 207, 208, 209 and CHEM 245. *Nieforth*

Physical and chemical properties of drug molecules.

212W. Physico-Chemical Principles of Drug Systems IV

Prerequisite: MCB 203 and 229, PHAR 207, 208, 209 and CHEM 245; ENGL 105 or 110 or 111 or 250.

213. Physico-Chemical Principles of Drug Systems V

Second semester. Two credits. One 3-hour laboratory and one 1-hour lecture per week. Prerequisite: PHAR 207, 208, 209 and CHEM 245. *Witczak*

A laboratory for Pharmacy 212.

Drugs and Society

Director: Associate Professor Kenneth A. Speranza
Office: Room 136, Pharmacy Building

240. Drugs and Society I: Social and Legal Aspects of Pharmacy Practice

First semester. Four credits. Two 2-hour class periods. Prerequisite: ECON 111 and any 100's level, 3 credit sociology course. Open only to pharmacy majors. *Facchinetti*

The pharmacist's role in society. Principles of pharmaceutical care, pharmaceutical sociology, federal drug law, and pharmacy practice law.

246. Drugs and Society II: Pharmaceutical Marketing

Second semester. Three credits. Prerequisite: PHAR 240. *Speranza*

Economic and societal constraints on the delivery of health and pharmaceutical care. Pharmacoeconomics, professional ethics, U.S. health care system, managed care and third party financing.

266. Drugs and Society III: Management of Pharmacy Systems

Second semester. Three credits. Prerequisite: PHAR 246. Open only to students who have passed all the courses of the first professional year. *Kelly*

Organizational theory and the delivery of health

and pharmaceutical care. Finance and personnel management in pharmaceutical care systems.

266W. Drugs and Society III: Management of Pharmacy Systems

Prerequisite: PHAR 246; ENGL 105 or 110 or 111 or 250.

Other Required Courses

241. Immunology

Second semester. Three credits. Prerequisite: MCB 229. *Hubbard*

Basic principles of immunity. Mechanisms of B and T cell mediated responses.

280. Therapeutics

First semester. Five credits. Four class periods. Prerequisite: PHAR 214, 242, 243, and PVS 297. *Cardoni*

Basic pathophysiology, diagnosis, and pharmacotherapy of human disease.

280W. Therapeutics

Prerequisite: PHAR 214, 242, 243, and PVS 297; ENGL 105 or 110 or 111 or 250.

281. Principles of Toxicology

First semester. Three credits. Prerequisite: PHAR 200 and MCB 203. *Cohen*

Target organs, environmental chemicals and biochemical mechanisms.

291. Institutional Clerkship

Either semester. Five credits. Prerequisite: PHAR 233, 280, and 281. Open only with consent of instructor. *Chapron*

Introduction to the practice of pharmacy in an institutional setting.

292. Community Pharmacy Externship

Either semester. Five credits. Hours and sequencing by arrangement. Prerequisite: Completion of the third and fourth year of the Pharmacy curriculum and attendance at an orientation meeting. Open only with consent of instructor. Site assignments and sequencing arrangements will be made by instructor. Students register for each of the two sections. *Kelly*

293. Hospital Pharmacy Externship

Both semesters and summers. Five credits. Hours by arrangement. Prerequisite: Completion of the third and fourth year of the Pharmacy curriculum. Open only with consent of instructor. *Palmer*

An experience program conducted at participating hospitals. Duties of a hospital pharmacist pertaining primarily to the drug distribution and administrative roles.

Elective Courses Pharmacy (PHAR)

150. Toxic Chemicals and Health

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.

201. Pharmacy Research Seminar

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. *Bogner*

A seminar series providing an overview of current research areas and contemporary issues in pharmacy practice and the pharmaceutical sciences.

247-248. Pharmacology

Both semesters. Three credits each semester. Prerequisite: PNB 264, 265, MCB 203 and CHEM 141, or

243, 244. Not open for credit to pharmacy students. *Gianutsos*

A study of the effect produced by drugs and the mechanisms whereby these effects are produced.

262. Geriatric Pharmacy Practice

Second semester. Three credits. Prerequisite: PHAR 200, 214, and 233. *Kelly*

The course is designed to present basic concepts in aging and their concomitant effects on the drug use process to students of pharmacy. The course deals with physical, social and economic aspects of the aging individual. The population focus is the ambulatory elderly. Basic concepts and applications will be presented to expose the student to potential problem-solving activities in pharmacy practice.

263. Industrial Pharmacy

Either semester. Three credits. Two class periods and one 3-hour laboratory period. Prerequisite: PHAR 207 and 229. *Kalonia*

A study in the formulation and preparation of pharmaceutical dosage forms using modern manufacturing techniques.

269. Non-Prescription Medication

First semester. Three credits. Prerequisite: PHAR 243. Open only with consent of instructor. *Palmer*

Drug products designed for self-medication (non-prescription or over-the-counter drugs). Drugs are discussed and evaluated from a pharmaceutical and pharmacological standpoint.

277. Hospital Pharmacy Administration

Second semester. Three credits. Open to Professional Program Pharmacy students. *Rubino*

A detailed overview of the administration, functions, and organization of contemporary hospital pharmacy services.

294. Advanced Clinical Experience

Second semester. Five credits. Prerequisite: PHAR 291. Open only with consent of instructor. *Kelly*

An advanced level clinical pharmacy practicum in one of a variety of specialized rotations.

295. Introduction to Clinical Pharmacy

Second semester. One credit. Prerequisite: PHAR 214. Open only with consent of instructor. *Cerreto*

A course intended for those students wishing to obtain some exposure to the operations and activities that take place in the clinical environment before enrolling in Pharmacy 291. Physical assessment practices, organization of problem-oriented medical records, patient-practitioner communication skills, and clinical interactions in several therapeutic areas, including the cardiovascular and central nervous systems.

296. Home Health Care

First semester. Two credits. Two class periods. *Toce*

An introduction to the area of home health care with special emphasis on those topics which impact upon pharmacy practice. Emphasis is placed on the devices, aids, and products used in home health care.

297W. Honors Thesis in Pharmacy

Either semester. Three credits. Hours by arrangement. Prerequisite: ENGL 105 or 110 or 111 or 250. Open only to honors students within the School of Pharmacy with consent of the instructor and Associate Dean. *Bogner*

298. Special Topics

Either semester. Credits by arrangement. Open only with consent of instructor. This course may be repeated for credit. *Speranza*

299. Undergraduate Research

Either semester. Credits by arrangement. Open only with consent of instructor and Associate Dean. This course may be repeated for credit. *Speranza*

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: Kenneth A. Speranza, Sr., Ph.D.
Office: Room 152, School of Pharmacy, Hewitt Building

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.

200. Evaluation Skills

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.

201. Pharmaceutical Care I

First and second semester. One credit total. Hours by arrangement. *James*

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.

202. Health Care Organization

First semester. One credit. One class period. Prerequisite: ECON 111. *Speranza*

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.

203. Social And Behavioral Aspects Of Pharmacy

First semester. Two credits. Two class periods. Prerequisite: SOCI 107 and COMM 105. *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.

205. Principles of Pharmacoeconomics

First semester. Two credits. One class period. Prerequisite: ECON 111. *McCarthy*

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.

206. Interpersonal Skills Development in Pharmacy Practice

Second semester. Two credits. One class period and one two-hour laboratory. Prerequisite: COMM 105; PHRM 202, 203, 204, 205. *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 interprofessional communications.

207. Pharmaceutical Care II

First and second semester. One credit total. Hours by arrangement. *McCarthy*

208. Pharmacy Law and Ethics

Second semester. Three credits. Three class periods. Prerequisite: PHRM 206. *Speranza*

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.

208W. Pharmacy Law and Ethics

Prerequisite: PHRM 206; ENGL 105 or 110 or 111 or 250.

209. Pharmaceutical Care III

First and second semester. One credit total. Hours by arrangement. Prerequisite: PHRM 207. *Jeffery*

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.

210. Non-Prescription Medication

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.

211. Introduction to Clinical Practice

Second semester. Two credits. Hours by arrangement. Prerequisite: PHRM 255, concurrent with PHRM 256. *Campbell*

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.

212. Pharmacy Practice Laboratory

Second semester. Three credits. One two-hour lecture and three-hour laboratory period. Prerequisite: PHRM 255. Corequisite: PHRM 256. *James*

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.

213. Community Pharmacy Management

First semester. Two credits. One class period. *Speranza*

A study of the concepts and theories, with case study application, underlying the successful management of a community pharmacy practice.

219. General Principles and Organ System Overview

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.

220. Nervous System

Second semester. Five credits. Five class periods. Prerequisite: PHRM 219. *Gianutsos*

Functions of the autonomic, somatic and central nervous systems; pharmacological effects and mecha-

nism of action of drugs and biotechnologically-derived products used to treat diseases of the autonomic nervous system, sensory system disorders and neurological 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.

221. Cardiovascular/Renal/Respiratory Systems

First semester. Four credits. Four class periods. Prerequisite: PHRM 220. *Langner*

A study of the physiology, pharmacology, and structure-activity relationships of drugs affecting the cardiovascular, renal, and respiratory systems.

221W. Cardiovascular/Renal/Respiratory Systems

Prerequisite: PHRM 220; ENGL 105 or 110 or 111 or 250.

222. Endocrine/Gastrointestinal Systems

Second semester. Three credits. Three class periods. Prerequisite: PHRM 221. *Manautou*

A study of the physiology, pharmacology, and structure-activity relationships of drugs affecting the gastrointestinal and endocrine systems.

223. Pharmacology Discussion / Lab

First semester. One credit. Three hours of laboratory/conference. Prerequisite: PHRM 222. *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.

224. Chemotherapy

First semester. Two credits. Two class periods. Prerequisite: PHRM 222, 234, 254; PVS 297. *D. 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.

225. Toxicology

First semester. Two credits. Two class periods. Prerequisite: PHRM 222, 234, 254; PVS 297. *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.

226. Immunology

Second semester. Three credits. Three class periods. Prerequisite: PHRM 222, 234, 254; PVS 297. *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.

233. Pharmaceutical Bio-Organic Chemistry I

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.

234. Pharmaceutical Bio-Organic Chemistry II

First semester. Three credits. Three class periods. Prerequisite: PHRM 233. *Bowrier*
A continuation of PHRM 233.

234W. Pharmaceutical Bio-Organic Chemistry II

Prerequisite: PHRM 233; ENGL 105 or 110 or 111 or 250.

235. Pharmaceutical Bio-Organic Chemistry Laboratory

Second semester. One credit. One laboratory session and one pre-laboratory session. Must be taken concurrently with PHRM 234. *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.

242. Solution and Solid Dosage Forms

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.

242W. Solution and Solid Dosage Forms

Prerequisite: Must have satisfied all science requirements of first two years; ENGL 105 or 110 or 111 or 250.

244. Dosage Forms Preparation Laboratory

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 242. *Pikal*

Extemporaneous preparation of sterile and non-sterile dosage forms, with particular attention to solutions, solids and dispersed systems.

245C. Pharmacokinetics

First semester. Three credits. Three class periods. Prerequisite: Must have satisfied all science requirements of first two years, PHRM 220, 234. *Sweeney*

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.

246. Dispersed Systems

Second semester. Three credits. Three class periods. Prerequisite: PHRM 242. *Burgess*

Investigation of the principles and factors affecting the performance of dosage forms classified as dispersed systems: suppositories, aerosols, emulsions, suspensions, transdermals, and ointments.

247. Dosage Forms Preparation Laboratory II

Second semester. One credit. One class period and one three-hour laboratory. Prerequisite: Must be taken concurrently with PHRM 246. *Bogner*

Extemporaneous preparation of sterile and non-sterile dosage forms, with particular attention to solutions, solids and dispersed systems.

253. Therapeutics I

First semester. Three credits. One two-hour class period and one two-hour conference. Prerequisite: PHRM 220 and concurrent with PHRM 221. *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.

254. Therapeutics II

Second semester. Four credits. Three lecture hours and three conference hours. Prerequisite: PHRM 253; 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.

254W. Therapeutics II

Prerequisite: PHRM 253; ENGL 105 or 110 or 111 or 250.

255. Therapeutics III

First semester. Three credits. Two class periods. One two-hour class period and one two-hour conference. *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.

256. Therapeutics IV

Second semester. Four credits. Three lecture hours and three conference hours. Prerequisite: PHRM 255; 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.

257. Clinical Pharmacokinetics

First semester. One credit. Prerequisite: PHRM 245, 254; open to Pharmacy students only. *Sweeney*

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.

262. Professional Experience in Community Pharmacy *

Either semester. Four credits. Hours by arrangement. Prerequisite: PHRM 210, PHRM 211, PHRM 212, PHRM 256. *James*

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.

263. Professional Experience in Institutional Pharmacy I

Either semester. Four credits. Prerequisite: PHRM 210, PHRM 211, PHRM 212, PHRM 256. *McCarthy*

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.

264. Professional Experience in Ambulatory Care Pharmacy *

Either semester. Four credits. Prerequisite: PHRM 210, PHRM 211, PHRM 212, PHRM 256. *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.

265. Professional Experience in General Medicine *

Either semester. Four credits. Prerequisite: PHRM 210, PHRM 211, PHRM 212, PHRM 256. *Folstad*

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.

Electives, minimum of 5 (one month each). At least 2 of the electives must be direct patient contact.

Direct patient contact indicated by *

266. Professional Experience in Cardiology *

Either semester. Four credits. Prerequisite: PHRM 210, PHRM 211, PHRM 212, PHRM 256. *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.

267. Professional Experience in Infectious Disease *

Either semester. Four credits. Prerequisite: PHRM 210, PHRM 211, PHRM 212, PHRM 256. *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.

268. Professional Experience in Oncology *

Either semester. Four credits. Prerequisite: PHRM 210, PHRM 211, PHRM 212, PHRM 256. *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.

269. Professional Experience in Psychiatry *

Either semester. Four credits. Prerequisite: PHRM 210, PHRM 211, PHRM 212, PHRM 256. *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.

270. Professional Experience in Pediatrics *

Either semester. Four credits. Prerequisite: PHRM 210, PHRM 211, PHRM 212, PHRM 256. *McCarthy*

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.

271. Professional Experience in Geriatrics *

Either semester. Four credits. Prerequisite: PHRM 210, PHRM 211, PHRM 212, PHRM 256. *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.

272. Professional Experience in Community Practice II *

Either semester. Four credits. Prerequisite: PHRM 210, PHRM 211, PHRM 212, PHRM 256. *James*

A continuation of PHRM 262. 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.

273. Professional Experience in Critical Care *

Either semester. Four credits. Prerequisite: PHRM 210, PHRM 211, PHRM 212, PHRM 256. *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.

274. Professional Experience in Dermatology

Either semester. Four credits. Prerequisite: PHRM 210, PHRM 211, PHRM 212, PHRM 256. *McCarthy*

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.

275. Professional Experience in Drug Control

Either semester. Four credits. Prerequisite: PHRM 210, PHRM 211, PHRM 212, PHRM 256. *McCarthy*

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.

276. Professional Experience in Emergency Medicine

Either semester. Four credits. Prerequisite: PHRM 210, PHRM 211, PHRM 212, PHRM 256. *McCarthy*

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.

277. Professional Experience in Home Health Care

Either semester. Four credits. Prerequisite: PHRM 210, PHRM 211, PHRM 212, PHRM 256. *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.

278. Professional Experience in Institutional Pharmacy II

Either semester. Four credits. Prerequisite: PHRM 210, PHRM 211, PHRM 212, PHRM 256. *McCarthy*

A continuation of PHRM 263. 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.

279. Professional Experience in Industry

Either semester. Four credits. Prerequisite: PHRM 210, PHRM 211, PHRM 212, PHRM 256. *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.

280. Professional Experience in Managed Care

Either semester. Four credits. Prerequisite: PHRM 210, PHRM 211, PHRM 212, PHRM 256. *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.

281. Professional Experience in Nuclear Pharmacy

Either semester. Four credits. Prerequisite: PHRM 210, PHRM 211, PHRM 212, PHRM 256. *McCarthy*

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.

282. Professional Experience in Nutrition

Either semester. Four credits. Prerequisite: PHRM 210, PHRM 211, PHRM 212, PHRM 256. *McCarthy*

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.

283. Professional Experience in Obstetrics/Gynecology

Either semester. Four credits. Prerequisite: PHRM 210, PHRM 211, PHRM 212, PHRM 256. *McCarthy*

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.

284. Professional Experience in a Skilled Care Nursing Facility

Either semester. Four credits. Prerequisite: PHRM 210, PHRM 211, PHRM 212, PHRM 256. *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.

285. Professional Experience in Surgery

Either semester. Four credits. Prerequisite: PHRM 210, PHRM 211, PHRM 212, PHRM 256. *McCarthy*

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.

286. Professional Experience in General Medicine II *

Either semester. Four credits. Prerequisite: PHRM 265. May be taken concurrently with PHRM 265. *Folstad*

A continuation of PHRM 265. 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.

287. Professional Experience in Ambulatory Care *

Either semester. Four credits. Prerequisite: PHRM 264. May be taken concurrently with PHRM 264. *Jeffery*

A continuation of PHRM 264. 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.

288. Professional Experience in Pharmacist-Directed Anticoagulation Service *

Either semester. Four credits. Prerequisites: PHRM 210, PHRM 211, PHRM 212, PHRM 256. *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.

289. Professional Experience in Gastroenterology *

Either semester. Four credits. Prerequisites: PHRM 210, PHRM 211, PHRM 212, PHRM 256. *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.

290. Professional Experience in Hospice Care *

Either semester. Four credits. Prerequisites: PHRM 210, PHRM 211, PHRM 212, PHRM 256. *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.

291. Professional Experience in Sub-acute Care and Chronic Disease and Rehabilitate Medicine *

Either semester. Four credits. Prerequisites: PHRM 210, 211, 212, 256. *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.

298. Special Topics in Clinical Rotations

Either semester. Credits by arrangement. This course may be repeated for credit.

299. Undergraduate Experiential Research Rotations

Second semester. Credits by arrangement. Recommended preparation: Cumulative GPA of 2.8 or higher.

Elective Courses Pharmacy (PHAR): See course descriptions in PHAR section: 201, 297W, 298, 299

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*.

101. Problems of Philosophy

Either semester. Three credits. No student may receive more than 6 credits for PHIL 101, 102, 103, 104, 105, 106.

Topics may include skepticism, proofs of God, knowledge of the external world, induction, free-will, the problem of evil, miracles, liberty and equality.

102. Philosophy and Logic

Either semester. Three credits. No student may receive more than 6 credits for PHIL 101, 102, 103, 104, 105, 106.

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.

102C. Philosophy and Logic

103. Philosophical Classics

Either semester. Three credits. No student may receive more than 6 credits for PHIL 101, 102, 103, 104, 105, 106.

Discussion of selections from such philosophers as Plato, Aristotle, Descartes, and Hume.

104. Philosophy and Social Ethics

Either semester. Three credits. No student may receive more than 6 credits for PHIL 101, 102, 103, 104, 105, 106.

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.

105. Philosophy and Religion

Either semester. Three credits. No student may receive more than 6 credits for PHIL 101, 102, 103, 104, 105, 106.

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.

106. Non-western and Comparative Philosophy

Either semester. Three credits. No student may receive more than 6 credits for PHIL courses 101, 102, 103, 104, 105, 106.

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.

175. Ethical Issues in Health Care

Either semester. Three credits. *Krimerman*

Theories of ethics, with specific application to ethical issues in modern health care.

185W. Philosophy and Literature

Either semester. Three credits. Prerequisite: ENGL 105 or 110 or 111 or 250.

Philosophical problems raised by, and illuminated in, major works of literature.

200. Philosophical Issues in Contemporary Life

Either semester. Three credits. Prerequisite: At least one of PHIL 101, 102, 103, 104, 105, 106. 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.

205. Aesthetics

Either semester. Three credits. Prerequisite: At least one of PHIL 101, 102, 103, 104, 105, 106. Open to sophomores or higher.

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.

205W. Aesthetics

Prerequisite: At least one of PHIL 101, 102, 103, 104, 105, 106; ENGL 105 or 110 or 111 or 250. Open to sophomores or higher.

210. Metaphysics and Epistemology

Either semester. Three credits. Prerequisite: At least one of PHIL 101, 102, 103, 104, 105, 106. Open to sophomores or higher.

Topics may include time, personal identity, free-will, the mind-body problem, skepticism, induction, perception, *a priori* knowledge.

210W. Metaphysics and Epistemology

Prerequisite: At least one of PHIL 101, 102, 103, 104, 105, 106; ENGL 105 or 110 or 111 or 250. Open to sophomores or higher.

211Q. Symbolic Logic I

Either semester. Three credits. Prerequisite: At least one of LING 101, POLS 106, PHIL 101, 102, 103, 104, 105, 106; MATH 101 or passed Q readiness test or passed a Q course. Open to sophomores or higher. *Lehmann, Wheeler*

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.

211V. Symbolic Logic I (Q,C)

Prerequisite: At least one of LING 101, POLS 106, PHIL 101, 102, 103, 104, 105, 106; MATH 101 or passed Q readiness test or passed a Q course. Open to sophomores or higher.

Emphasis on computer-related material.

212. Philosophy of Science

Either semester. Three credits. Prerequisite: At least one of PHIL 101, 102, 103, 104, 105, 106. Open to sophomores or higher.

Issues concerning the nature and foundations of scientific knowledge, including, for example, issues about scientific objectivity and progress.

212W. Philosophy of Science

Prerequisite: At least one of PHIL 101, 102, 103, 104, 105, 106; ENGL 105 or 110 or 111 or 250. Open to sophomores or higher.

213. Philosophy of Social Science

Either semester. Three credits. Prerequisite: At least one of PHIL 101, 102, 103, 104, 105, 106. Open to sophomores or higher.

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.

214Q. Symbolic Logic II

Second semester. Three credits. Prerequisite: PHIL 211. *Lehmann*

Logical concepts developed in PHIL 211 applied to the study of philosophical issues in the foundations of mathematics.

215. Ethics

Either semester. Three credits. Prerequisite: At least one of PHIL 101, 102, 103, 104, 105, 106. Open to sophomores or higher.

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?

215W. Ethics

Prerequisite: At least one of PHIL 101, 102, 103, 104, 105, 106; ENGL 105 or 110 or 111 or 250. Open to sophomores or higher.

216. Environmental Ethics

Second semester. Three credits. Prerequisite: At least one of PHIL 101, 102, 103, 104, 105, 106. *Bontly, Lehmann*

Inquiry into obligations to, or concerning, the environment, particularly the moral standing of animals, species, ecosystems, and natural objects.

217. Social and Political Philosophy

Either semester. Three credits. Prerequisite: At least one of PHIL 101, 102, 103, 104, 105, 106. Open to sophomores or higher.

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.

217W. Social and Political Philosophy

Prerequisite: At least one of PHIL 101, 102, 103, 104, 105, 106; ENGL 105 or 110 or 111 or 250. Open to sophomores or higher.

218. Feminist Theory

Either semester. Three credits. Prerequisite: At least one of PHIL 101, 102, 103, 104, 105, 106 or WS 103, 104, or 124. *Meyers*

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.

221. Ancient Philosophy

(Also offered as CAMS 257.) Either semester. Three credits. Prerequisite: At least one of PHIL 101, 102, 103, 104, 105, 106. Open to sophomores or higher.

Greek philosophy from its origin in the Pre-Socratics through its influence on early Christianity. Readings from the works of Plato and Aristotle.

221W. Ancient Philosophy

Prerequisite: At least one of PHIL 101, 102, 103, 104, 105, 106; ENGL 105 or 110 or 111 or 250. Open to sophomores or higher.

222. Seventeenth and Eighteenth-Century Philosophy

Either semester. Three credits. Prerequisite: At least one of PHIL 101, 102, 103, 104, 105, 106. Open to sophomores or higher. *Troyer*

Central philosophical issues as discussed by philosophers such as Descartes, Locke, Berkeley, Hume and Kant.

222W. Seventeenth and Eighteenth-Century Philosophy

Prerequisite: At least one of PHIL 101, 102, 103, 104, 105, 106; ENGL 105 or 110 or 111 or 250. Open to sophomores or higher.

224. Nineteenth-Century Philosophy

Either semester. Three credits. Prerequisite: At least one of PHIL 101, 102, 103, 104, 105, 106. Open to sophomores or higher.

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.

224W. Nineteenth-Century Philosophy

Prerequisite: At least one of PHIL 101, 102, 103, 104, 105, 106; ENGL 105 or 110 or 111 or 250. Open to sophomores or higher.

225W. Analysis and Ordinary Language

Either semester. Three credits. Prerequisite: At least one of PHIL 210, 221, 222, 227; ENGL 105 or 110 or 111 or 250.

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.

226. Philosophy of Law

Either semester. Three credits. Prerequisite: At least one of PHIL 101, 102, 103, 104, 105, 106, 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.

228. American Philosophy

Either semester. Three credits. Prerequisite: At least one of PHIL 101, 102, 103, 104, 105, 106.

Doctrines advanced by recent American philosophers.

230. Contemporary Marxism and Its Foundation

Either semester. Three credits. Prerequisite: At least one of PHIL 101, 102, 103, 104, 105, 106, 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.

230W. Contemporary Marxism and Its Foundation

Prerequisite: At least one of PHIL 101, 102, 103, 104, 105, 106, which may be taken concurrently; ENGL 105 or 110 or 111 or 250.

231. Philosophy of Religion

Either semester. Three credits. Prerequisite: At least one of PHIL 101, 102, 103, 104, 105, 106. Open to sophomores or higher.

Various religious absolutes, their meaning and validity, existentialism and religion, the post-modern religious quest.

234. Phenomenology

Second semester. Three credits. Prerequisite: At least one of PHIL 101, 102, 103, 104, 105, 106. *Elder*

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.

241. Language: Meaning and Truth

Either semester. Three credits. Prerequisite: PHIL 102 or 211, and at least one of PHIL 210, 221, 222, 227.

An analysis of the concepts used in thinking about language.

243W. Philosophy of History

Either semester. Three credits. Prerequisite: At least one of PHIL 101, 102, 103, 104, 105, 106; ENGL 105 or 110 or 111 or 250.

Philosophical problems concerning the nature of historical explanation, the foundations of historical knowledge, and the nature of historical change.

245. Philosophy and Economics

(Also offered as ECON 206.) Either semester. Three credits. Prerequisite: ECON 102, 112, or 113.

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.

250. Philosophy of Mind

Either semester. Three credits. Prerequisite: At least one 200-level, three-credit philosophy course.

Contemporary issues in the philosophy of mind. Topics may include the nature of the mental; the relation of the mental to the physical; specific phenomena such as emotions, beliefs, or sensations, and relevant scientific developments.

261. Medieval Philosophy

Second semester. Three credits. Prerequisite: At least one of PHIL 210, 221, 222, 227. *McGrade*

Readings from the principal philosophers between the fourth and fourteenth centuries.

263. Oriental Philosophy and Religion

Either semester. Three credits. Prerequisite: At least one of PHIL 101, 102, 103, 104, 105, 106. *Luyster*

The historical, religious, and philosophical development of Hinduism, Buddhism, Tantrism, and Taoism.

264. Classical Chinese Philosophy and Culture

Either semester. Three credits. Prerequisite: At least one of PHIL 101, 102, 103, 104, 105, 106.

Classical Chinese philosophy, including such works as *The Analects of Confucius* and the works of Chuang Tzu, and their influence on Chinese culture.

293. Foreign Study

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.

296W. Senior Thesis in Philosophy

Either semester. Three credits. Hours by arrangement. Prerequisite: ENGL 105 or 110 or 111 or 250. Open only with consent of instructor and Department Head. Independent study authorization form required. Prerequisite: Twelve credits in Philosophy at the 200's level or above, three of which may be taken concurrently.

297. Variable Topics

Either semester. Three credits. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary.

298. Special Topics

Either semester. Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary.

299. Independent Study

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.

Physical Therapy (PT)

Head of Department: Professor Scott M. Hasson
Department Office: Room 214, Koons Hall

For major requirements, see the School of Allied Health section of this *Catalog*.

210. Fundamentals of Assessment

Either semester. Five credits. Hours by arrangement. Clinical field experiences will be required. Open only to Pre-Physical Therapy majors; others with consent of Physical Therapy Program Director. Prerequisite: PT 213, 215, 217 and 220.

This course provides a foundation for the physical therapy assessment process, introducing the student to more general observational and interview skills to gather, document and analyze evaluation data. Students build skill in specific evaluation procedures which are fundamental to the practice of physical therapy. Students explore the scientific evidence which supports or questions the measuring characteristics of selected evaluation procedures. Students begin to use information from assessments in decisions for diagnosis, program planning and referrals.

212. Fundamentals of Treatment: Acute Care

Either semester. Six credits. Hours by arrangement. Clinical Field experiences will be required. Open only to Pre-Physical Therapy majors; others with consent of Physical Therapy Program Director. Prerequisite: PT 213, 215, 217, 210 and 240.

An exploration of the practice of physical therapists in the acute care setting. Students will develop competency in clinical assessment of functional limitations, identification of appropriate treatment options and implementation of interventions to improve performance of functional activities for patients commonly encountered in acute care practice settings.

213. Human Anatomy

Summer. Three credits. Three hours of lecture. Prerequisite: To enroll in the course the student must have earned a "C" or better in PNB 265. Open only to Pre-Physical Therapy majors; others with consent of Physical Therapy Program Director.

Discussion of the conceptual and structured bases of osteology, myology, neurology, human development and basic kinesiology and biomechanics. Selected anatomical and physiological dysfunctions will also be analyzed.

215. Human Anatomy Laboratory

Summer. Three credits. Laboratory and discussion. Prerequisite: To enroll in the course the student must have earned a "C" or better in PNB 265. Open only to Pre-Physical Therapy majors; others with consent of Physical Therapy Program Director.

Laboratory and discussion utilizing bones, models, audiovisuals and prosected human specimens to provide in-depth study of the skeletal, articular, muscular, cardiovascular, respiratory and nervous systems of the entire human body.

217. Human Physiology

Summer. Three credits. Prerequisite: To enroll in the course the student must have earned a "C" or better in PT 213 and 215. Open only to Pre-Physical Therapy majors; others with consent of Physical Therapy Program Director.

Discussion of the biochemical, nutritional, cellular and physiological principles necessary for the analysis of the normal and abnormal function and for the rehabilitation of the human musculoskeletal, cardiovascular and respiratory systems. The effects of exercise and of selected pathologies upon these systems will also be analyzed.

220. Tissue Dysfunction

Summer. Hours by arrangement. Prerequisite: To enroll in the course the student must have earned a "C" or better in PT 213 and 215. Open only to Pre-Physical Therapy majors; others with consent of Physical Therapy Program Director.

After a general introduction to cellular mechanisms by which an organism becomes dysfunctional, pathological conditions common to the musculoskeletal, gastrointestinal, genitourinary, endocrine, integumentary, central and peripheral nervous and cardiopulmonary systems are overviewed. Focus is on knowledge of pathology and disease management as a basis for program planning in physical therapy. Discussion groups may be scheduled.

221. Pharmacology for Physical Therapy

Either semester. Two credits. Hours by arrangement. Open only to Pre-Physical Therapy majors; others with consent of Physical Therapy Program Director. Prerequisites: PT 217 and PT 220.

The body's response to single and multiple medications, radiation and chemical treatments are considered as they relate to safe, comprehensive and effective outcomes of physical therapy care.

222. Musculoskeletal Dysfunction

Either semester. Four credits. Hours by arrangement. Open only to Pre-Physical Therapy majors; others with consent of Physical Therapy Program Director. Prerequisites: PT 210, PT 240; and PT 221 which may be taken concurrently.

Pathology related to the musculoskeletal system is overviewed. Focus is on knowledge of pathology and disease management as a basis for assessment, diagnosis, program planning, treatment and referrals in physical therapy. Interaction with physicians and other health professionals gives students an understanding of the role physical therapy plays in a complex multiprofessional health care system.

224. Neuromuscular Dysfunction

Either semester. Three credits. Hours by arrangement. Open only to Pre-Physical Therapy and Physical Therapy majors; others with consent of Physical Therapy Program Director. Prerequisites: PT 210, PT 221 and PT 260.

Focus is on pathology related especially to the neuromuscular systems. Knowledge of pathology and disease management is presented for assessment, diagnosis, program planning, treatment and referrals in physical therapy. Interaction with physicians and other health professionals as well as consumers gives the students the basis for understanding the role physical therapy plays in a complex multiprofessional health care system.

226. Field Work in Socialization and Leisure Time Activity with Persons with Disabilities

Either semester. Two credits. Hours by arrangement. Field work and independent study. Open only to Physical Therapy majors and sophomore Pre-Allied Health majors in the College of Liberal Arts & Sciences; others with consent of instructor.

Students will have the opportunity to meet and work with persons with disabilities outside of the regular clinical setting through participation in residential weekends at an outdoor recreational center. In addition to studying the common physical barriers, students will examine the common psychological and social difficulties encountered in an attempt to reach an optimal level of productivity in society. Students are required to provide their own transportation.

227. Field Work in Normal Motor Development

Either semester. Three credits. Hours by arrangement. Open only to Physical Therapy majors and sophomore Pre-Allied Health majors in the College of Liberal Arts & Sciences; others with consent of instructor.

This course provides an opportunity for observation of normal motor skill development through participation in the educational programming, daily care, and social and emotional support offered to infants, toddlers, and preschool age children. Students are required to spend six hours per week participating in programming and care of the children. Field work and independent study are used to develop expertise in a selected area of motor development and students are required to present in-service training in their chosen area.

240. Clinical Kinesiology

Either semester. Three credits. Hours by arrangement. Prerequisite: PHYS 122; PT 213 and 215 which may be taken concurrently. Open only to Pre-Physical Therapy majors; others with consent of Physical Therapy Program Director.

Students will analyze the impact of force systems on the human body during functional motion, thus preparing the student to apply knowledge of normal anatomical structure and function to therapeutic intervention.

260. Functional Neurology and Movement

Either semester. Four credits. Hours by arrangement. Prerequisite: PT 213 and 215. Open only to Pre-Physical Therapy majors; others with consent of Physical Therapy Program Director.

The goal of this course is to provide the students with basic information on the central nervous system structure and function in order that they may better understand normal movement, the movement of patients with neurological disorders and the neurological basis behind treatment procedures. Emphasis will be placed on the analysis of segmental motion as seen in the acquisition of posture, postural reactions and adult movement patterns.

280W. Research for Physical Therapists

Summer. Three credits. Hours by arrangement. Prerequisite: ENGL 105 or 110 or 111 or 250 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

298. Special Topics

Either semester. Credits and hours by arrangement. Open only with consent of instructor. (Investigation of special topics is available to qualified students.) May be repeated for credit. Open only to Pre-Physical Therapy majors; others with consent of Physical Therapy Program Director.

Investigation of special topics related to, but not ordinarily covered in the undergraduate offerings. These courses will be announced in advance for each semester.

299. Independent Study for Undergraduates

Either semester. Credits and hours by arrangement. Open only with consent of instructor. May be repeated for credit. Open only to Pre-Physical Therapy majors; others with consent of Physical Therapy Program Director.

The course is designed primarily for students who wish to extend their knowledge in some specialized subject in the field of physical therapy.

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*.

101Q. Elements of Physics

Either semester. Four credits. Three class periods and one 2-hour laboratory period. Prerequisite: MATH 101 or passed Q readiness test or passed a Q course. Not open for credit to students who have passed PHYS 121, 131, 141 or 151.

Basic facts and principles of physics with introduction to quantitative laboratory.

103Q. Physics of the Environment

Either semester. Three credits. Prerequisite: MATH 101 or passed Q readiness test or passed a Q course. 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.

104Q. Physics of the Environment with Laboratory

Either semester. Four credits. Three class periods and one 2-hour laboratory period. Prerequisite: MATH 101 or passed Q readiness test or passed a Q course. No previous knowledge of physics is assumed. Not open for credit to students who have passed PHYS 103Q.

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.

107Q. Physics of Music

First semester. Four credits. Three class periods and one 2-hour laboratory period. Prerequisite: MATH 101 or passed Q readiness test or passed a Q course. PHYS

101Q and 107Q may not both be combined to satisfy the Group 8 requirement.

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.

121Q-122Q. General Physics

Either semester. Four credits each semester. Three class periods and one 3-hour laboratory period. Prerequisite: MATH 112 or 109 or 118 or passing score on the calculus readiness test or equivalent. PHYS 121 not open for credit to students who have passed PHYS 131, 141 or 151. PHYS 122 not open for credit to students who have passed PHYS 132, 142 or 152. PHYS 121 required for PHYS 122.

Basic facts and principles of physics. The laboratory offers fundamental training in precise measurements.

123Q. General Physics Problems

Either semester. Three credits. Prerequisite: PHYS 122 and MATH 114 or 116, both of which may be taken concurrently. Not open for credit to students who have passed PHYS 141 or 151.

Problems, including applications of calculus, dealing with topics in general physics. Intended for those students who have taken or are taking PHYS 122 and who desire to have a calculus-based physics sequence equivalent to PHYS 131-132.

125Q. General Physics Problems for Engineers

Either semester. Four credits. Three class periods and one 1-hour recitation period. Prerequisite: PHYS 122 and MATH 114 or 116, both of which may be taken concurrently. Not open for credit to students who have passed PHYS 123, 141 or 151.

Problems, including applications of calculus, dealing with topics in general physics. Intended for those students who have taken or are taking PHYS 122 and who desire to have a calculus-based physics sequence equivalent to PHYS 141-142 or 151-152.

131Q-132Q. General Physics with Calculus

Either semester. Four credits each semester. Three class periods and one 3-hour laboratory period. Prerequisite for PHYS 131: MATH 101 or passed Q readiness test or passed a Q course. Prerequisite for PHYS 132: PHYS 131. Recommended preparation: MATH 113 or 115, for PHYS 131, and MATH 114 or 116, for PHYS 132. PHYS 131 is not open for credit to students who have passed PHYS 141 or 151. PHYS 132 not open for credit to students who have passed 142 or 152. PHYS 131 may be taken for not more than 2 credits, with the permission of the instructor, by students who have received credits for PHYS 121. PHYS 132 may be taken for not more than 2 credits, with the permission of the instructor, by students who have received credit for PHYS 122.

Quantitative study of the basic facts and principles of physics. The laboratory offers fundamental training in physical measurements. This course is recommended for students planning to apply for admission to medical, dental or veterinary schools. It is also recommended for science majors for whom a one year introductory physics course is adequate.

140Q. Introduction to Modern Physics

First semester. Four credits. Two class periods, two recitation periods, and one 3-hour laboratory period. Prerequisite: MATH 101 or passed Q readiness test or passed a Q course. Recommended preparation: MATH 109, which may be taken concurrently, or passed the Calculus Readiness Test.

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. This course is recommended for prospective Physics majors.

141Q. Fundamentals of Physics I

Second semester. Four credits. Three class periods and one 3-hour laboratory period. Prerequisite: MATH 101 or passed Q readiness test or passed a Q course. Recommended preparation: MATH 113 or 115 or 120, any of which may be taken concurrently. MATH 120 is preferred for Physics majors. Not open for credit to students who have passed PHYS 131 or 151. May be taken for not more than three credits, with the permission of the instructor, by students who have received credit for PHYS 121.

Fundamental principles of mechanics, statistical physics, and thermal physics. Basic concepts of calculus are used. This course is recommended for prospective Physics majors.

142Q. Fundamentals of Physics II

First semester. Four credits. Three class periods and one 3-hour laboratory period. Prerequisite: MATH 101 or passed Q readiness test or passed a Q course. Recommended preparation: PHYS 141, and MATH 114 or 116 or 121, any of which may be taken concurrently. MATH 121 is preferred for Physics majors. Not open for credit to students who have passed PHYS 132 or 152. May be taken for not more than three credits, with the permission of the instructor, by students who have received credit for PHYS 122.

Fundamental principles of electromagnetism, optics and wave propagation. Basic concepts of calculus are used. This course is recommended for prospective Physics majors.

151Q. Physics for Engineers I

Either semester. Four credits. Three class periods and one 3-hour laboratory period. Prerequisite: MATH 101 or passed Q readiness test or passed a Q course. Recommended preparation: PHYS 101 or secondary school physics; and CE 211 or 213, as well as either MATH 210 or 220, which may be taken concurrently. Not open for credit to students who have passed PHYS 131 or 141. PHYS 151 may be taken for not more than 2 credits, with the permission of the instructor, by students who have received credit for PHYS 121.

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.

152Q. Physics for Engineers II

Either semester. Four credits. Three class periods and one 3-hour laboratory period. Prerequisite: PHYS 151. Not open for credit to students who have passed PHYS 132 or 142. PHYS 152 may be taken for not more than 2 credits, with the permission of the instructor, by students who have received credit for PHYS 122.

Electric and magnetic fields, electromagnetic waves, quantum effects, introduction to atomic physics.

155Q. Introductory Astronomy

Either semester. Three credits. Two class periods and one 2-hour laboratory period. Prerequisite: MATH 101 or passed Q readiness test or passed a Q course.

A basic introductory astronomy course including celestial coordinate systems, fundamental optics and telescope design, recent space probe results, applications of fundamental physical laws to the sun, stars and groups of stars, stellar evolution, modern cosmology and the early universe. Basic quantitative laboratory techniques relevant to astronomy.

191. Directed Study in General Physics

Either or both semesters. One credit. One class period. To be taken concurrently with any of the following: PHYS 121, 122, 131, 132, 141, 142, 151, or 152.

Open only with consent of instructor. With a change in content this course may be repeated for credit.

A special study course for students who desire extra work and credit in certain 100-level physics courses.

209Q. Intermediate Physics I

First semester. Three credits. Prerequisite: PHYS 132 or 142 or 152 or, with consent of instructor, PHYS 122.

Classical mechanics, electricity, and magnetism.

210Q. Intermediate Physics II

Second semester. Three credits. Prerequisite: PHYS 132 or 142 or 152 or, with consent of instructor, PHYS 122.

Kinetic theory, introduction to quantum mechanics.

230Q. The Development of Quantum Physics

Second semester. Three credits. Prerequisite: PHYS 132 or 142 or 152, which may be taken concurrently; or PHYS 122 with consent of instructor. Open to sophomores or higher.

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.

242Q. Mechanics I

First semester. Three credits. Prerequisite: PHYS 142; or, with consent of instructor, PHYS 123 or 125 or 132 or 152 or 209; MATH 210 or 220, which may be taken concurrently. Open to sophomores or higher.

Newton's Laws of motion applied to mass points, systems of particles, and rigid bodies.

246Q. Mechanics II

Second semester. Three credits. Prerequisite: MATH 211 or 221 and PHYS 242 or CE 212. Open to sophomores or higher.

Further applications of Newton's Laws; continuous media; Lagrange's and Hamilton's formulation of dynamics.

255Q. Electricity and Magnetism I

First semester. Three credits. Prerequisite: PHYS 142; or, with consent of instructor, PHYS 123 or 125 or 132 or 152 or 210; MATH 210 and 211, or 220 and 221.

Properties of electric and magnetic fields; direct and alternating current circuits.

256Q. Electronics

Second semester. Three credits. Two class periods and one 3-hour laboratory period. Prerequisite: MATH 101 or passes Q Readiness Test or passed a Q course. Recommended preparation: PHYS 132 or 142 or 152.

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.

257Q. Electricity and Magnetism II

Second semester. Three credits. Prerequisite: PHYS 255.

Mathematical theory of the electromagnetic field; electric and magnetic properties of matter.

258Z-259Z. Laboratory in Electricity, Magnetism, and Mechanics (Q, W, C)

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 121 or 131 or 141 or 151; Second se-

mester, PHYS 122 or 132 or 142 or 152. Both semesters, Prerequisite: ENGL 105 or 110 or 111 or 250. Open to sophomores or higher.

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.

261Q-262Q. Introductory Quantum Mechanics

Both semesters. Three credits each semester. Prerequisite: PHYS 230; MATH 210 and 211, or 220 and 221.

Elementary principles of quantum mechanics; applications to electrons, atoms, molecules, nuclei, elementary particles, and solids.

271Q. Statistical and Thermal Physics

First semester. Three credits. Prerequisite: PHYS 123 or 125 or 132 or 142 or 152; MATH 210 and 211, or 220 and 221.

The laws of thermodynamics and their microscopic statistical basis; entropy, temperature, Boltzmann factor, chemical potential, Gibbs factor, and the distribution functions.

273Q. Introduction to Solid State Physics

First semester. Three credits. Prerequisite: PHYS 123 or 125 or 132 or 142 or 152.

Crystal lattices, lattice waves, thermal and electronic properties, imperfections in solids.

274Q. Nuclei and Particles

Second semester. Three credits. Prerequisite: PHYS 261 or equivalent.

Properties of nuclei and particles, conserved quantities, isospin, quark model, Fermi gas model, electroweak interaction, high energy scattering.

275Q. Principles of Lasers

Second semester. Three credits. Prerequisite: PHYS 257 and 261 or instructor consent. Recommended preparation: PHYS 281.

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.

281Q. Optics

First semester. Four credits. Three class periods and one 3-hour laboratory period. Prerequisite: MATH 101 or passed Q readiness test or passed a Q course. Recommended preparation: PHYS 255.

An introduction to geometrical and physical optics. Thick lenses, stops, aberrations, interference, diffraction, polarization.

285Z. Experimental Physics Design Laboratory (Q,W,C)

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 230, 242 or 246, and 257; PHYS 261, which may be taken concurrently; and PHYS 258 or 259 or ECE 262 or MMAT 236; ENGL 105 or 110 or 111 or 250.

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.

291. Seminar in Current Topics

Either or both semesters. One credit. One class period. To be taken concurrently with any of the following: PHYS 242, 246, 255, 257, 261, 262, 271 or 281.

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.

293. Foreign Study

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.

295. Variable Topics

Either semester. Three credits. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary.

298. Special Topics

Either semester. Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary.

299. Independent Study

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.

Physiology and Neurobiology (PNB)

Head of Department: Professor Angel de Blas
Department Office: Room 104, Physiology and Neurobiology Building (Horsebarn Hill #4 Annex)

For major requirements, see the College of Liberal Arts and Sciences section of this *Catalog*.

225. Biological Rhythms

Second semester. Three credits. Prerequisite: One 200-level course in PNB or instructor consent. *Goldman*

Neuroendocrine and environmental factors in the control of biological rhythmicity, especially circadian and annual rhythms. Emphasis on animals.

230. Hormones and Behavior

First semester. Three credits. Prerequisite: One 200-level course in PNB or instructor consent. *Goldman*

Hormones and regulation of behaviors: reproductive, parental, social, and aggressive behaviors, as well as migration, hibernation, learning and memory.

235. Fish Physiology and Endocrinology

Second semester. Three credits. Prerequisite: One 200-level course in PNB or instructor consent. *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.

250. Animal Physiology

First semester. Three credits. Prerequisite: BIOL 107 and either 108 or 110. Open to sophomores or higher. *Crivello, Renfro*

Physiological mechanisms and regulation in vertebrate animals.

250W. Animal Physiology

Prerequisite: BIOL 107 and either 108 or 110 or instructor consent; ENGL 105 or 110 or 111 or 250.

251. Biology of the Brain

Second semester. Three credits. Two class periods. Prerequisite: One 200-level course in PNB or instructor consent. *LoTurco*

Brain functions, from molecular and cellular to overall central nervous system organization. Topics of current scientific interest.

260. Microtechnique

First semester. Four credits. One class period and two 3-hour laboratory periods. Offered in alternate years. Open only with consent of instructor.

Preparation of cells and tissues for microscopic examination, using histological stains, immunohistochemistry, and photomicrography.

262. Mammalian Endocrinology

Second semester. Two credits. Two class periods. Prerequisite: One 200-level course in PNB or instructor consent. *Gallo*

Functions of hormones in mammalian physiology emphasizing humans.

263W. Investigations in Neurobiology

First semester. Three credits. One 1-hour discussion, one 4-hour laboratory period. Prerequisite: PNB 250 or PNB 274-275; ENGL 105 or 110 or 111 or 250. *Moiseff*

Experimental investigations in neurobiology. Emphasis on designing and carrying out independent research projects, and on communicating the results.

264-265. Human Physiology and Anatomy

Both semesters. Four credits each semester. Three class periods and one 3-hour laboratory. Prerequisite: CHEM 122Q or 127Q. Recommended preparation: BIOL 107, PHYS 101 or 122. Open to sophomores or higher. Not open to students who have passed PNB 274-275. These courses must be taken in sequence to obtain credit, and may not be counted toward the Biological Sciences or Physiology and Neurobiology majors. *Chapple, Kimball, Moiseff, Nishiyama, Rubio*

Fundamentals of human anatomy and physiology for students in medical technology, physical therapy, nursing, and education (Sport Science).

274-275. Enhanced Human Physiology and Anatomy

Both semesters. Four credits each semester. Three class periods and one 3-hour laboratory. Prerequisite: BIOL 107, CHEM 127Q. Recommended preparation: PHYS 121, 131, or 141. Not open to students who have passed PNB 264-265. Must be taken in sequence to obtain credit. Open to sophomores or higher. *Chapple, Kimball, Moiseff, Nishiyama, Rubio*

Fundamentals of human physiology and anatomy enhanced through inquiry-based laboratories.

292W. Senior Research Thesis in Physiology and Neurobiology

Either semester. Three credits. Hours by arrangement. Prerequisite: Three credits of PNB 299, which may be taken concurrently; ENGL 105 or 110 or 111 or 250. 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.

295. Variable Topics

Either semester. Three credits. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary.

297. Undergraduate Seminar

Either or both semesters. Credits and hours by arrangement. May be repeated for credit with a change in topic.

298. Special Topics

Either semester. Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary.

299. Independent Study

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.

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*.

Agronomy

124. Turfgrass Management

First semester. Three credits. Two class periods and one 2-hour laboratory. Not open to students who have passed PLSC 289. *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.

150. Agricultural Technology and Society

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.

205. Soil Morphology, Genesis, and Taxonomy

First semester, alternate years (even). Four credits. Two class periods, one 4-hour field laboratory session. Prerequisite: PLSC 250, GEOL 102 or GEOL 101. Not open for credit to students that have passed PLSC 207 and 208. Students that have passed either PLSC 207 or PLSC 208, but not both, will be allowed to take an appropriately modified version of the course for two credits.

Students will be expected to master the 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 will be rigorously examined, both in theory and in practice. Field trips are required.

219. Principles of Turfgrass Irrigation Systems

First semester. Three credits. Two class periods and one 2-hour laboratory. Taught jointly with SAPL 019. Not open 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.

223. Turfgrass Pests and Control

First semester. Three credits. Two class periods and one 2-hour laboratory. Taught jointly with SAPL 023. Not open to graduate students. *Rackliffe*

Turfgrass weed, insect, disease and vertebrate identification and control. Emphasis on biological controls and IPM. Field trips required.

224. Turfgrass Physiology and Ecology

Second semester. Three credits. Three class periods. Prerequisite: PLSC 124 or 289. *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.

224W. Turfgrass Physiology and Ecology

Prerequisite: PLSC 124 or 289; ENGL 105 or 110 or 111 or 250.

250. Soils

Second semester. Three credits. Two class periods and one 2-hour laboratory period. Prerequisite: CHEM 122, 127 or 129. Open to sophomores or higher. *Luce*

Introduction to the physical, chemical and biological properties of soils: the relationship between soils and the growth of higher plants.

253. Soils, Environmental Quality, and Land Use

Second semester, alternate years (even). Three credits. Three class periods plus required field trips. Prerequisite: PLSC 250. Not open for credit to students that have passed PLSC 209.

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.

253W. Soils, Environmental Quality, and Land Use

Prerequisite: PLSC 250; ENGL 105 or 110 or 111 or 250. Not open for credit to students that have passed PLSC 209.

254. Forage Crops

First semester, alternate years (even). Three credits. Two class periods and one 2-hour laboratory period.

Production, utilization, and storage of species used as forages and their relationship to the ruminant animal.

257. Ecology and Control of Weeds

First semester. Three credits. Two class periods and one 2-hour laboratory. Prerequisite: A course in plant physiology.

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.

258. Soil Fertility

First semester. Three credits. Two class periods and one 2-hour laboratory period. Prerequisite: PLSC 250. Offered in odd-numbered years. *Schulthess*

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.

259C. Soil Chemistry

(Also offered as ENVE 259C.) First semester, alternate years, even. Three credits. Two class periods and one 2-hour laboratory period. Prerequisites: CHEM 128 and 141. PLSC 250 is recommended. *Schulthess*

Basic concepts of the physical chemistry of soil constituents. Topics include soil solution, soil atmosphere, soil organic matter, soil mineralogy, mineral surface characteristics and chemical weathering process.

283. Golf Course Management

Second semester. Three credits. Taught jointly with SAPL 083. 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.

284. Golf Course Design

First semester. Two credits. Taught jointly with SAPL 084. Not open for credit to graduate students. *Guillard, Miniutti*

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.

Horticulture**101. Fundamentals of Horticulture**

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.

203. Plant Diseases

First semester. Three credits. Two class periods and one 2-hour laboratory. Prerequisite: BIOL 108 or 110. *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.

204. Integrated Pest Management

First semester. Three credits. *Gauthier*

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.

212. Vegetable Crops and Their Environment

Second semester. Four credits. Three class periods and one 2-hour laboratory period. *Bible*

The responses of vegetable crops to mineral nutrients, soil pH, plant population, temperature, photoperiod, pest organisms and to the modification of these factors by technology. Radish, lettuce, tomato, cucumber, sweet corn, basil, cauliflower and watercress are grown by students in the laboratory.

213. Physiology of Economic Plants

Second semester. Three credits. Two class periods and one 2-hour laboratory period. Prerequisite: BIOL 110 and CHEM 122 or 127. Open to sophomores or higher. *Bible*

Water uptake, water potential, transpiration, stomatal movement, ion uptake, nutrient deficiencies, respiration, photosynthesis, phytohormones, phytochrome, circadian leaf movement, flowering, dormancy, cold injury and allelochemicals.

225. Greenhouse Technology and Operations

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.

226. Greenhouse Crop Production I

Second semester. Three credits. Two class periods and one 2-hour laboratory period. Field trips required. Prerequisite: PLSC 225. Taught jointly with SAPL 026. 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.

230. Floral Art

Second semester. Two credits. One class period and one 2-hour studio period. Taught jointly with SAPL 030. Open to sophomores or higher.

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.

231. Herbaceous Ornamental Plants

Second semester. Three credits. Taught jointly with SAPL 031. Open to sophomores or higher.

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.

235. Advanced Floral Design

Second semester. Two credits. Taught concurrently with SAPL 035. Not open for credit to graduate students. One class period and one 2-hour lab. Prerequisite: PLSC 230. *Pastormerlo*

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.

238. Plant Propagation

Second semester. Three credits. Two class periods and one 2-hour laboratory period. *Bridgen, Elliott*

Fundamental principles of reproducing plants by seeds, cuttings, grafting, layering, divisions, and tissue culture. Techniques of propagating plants to establish and maintain clones.

240. Nursery Management

First semester, alternate years (odd). Three credits. Two class periods and one 2-hour laboratory period. *Corbett*

Principles of field and container production of nursery stock. Emphasis on production practices for woody nursery stock from propagule to sale.

240W. Nursery Management

Prerequisite: ENGL 105 or 110 or 111 or 250.

243. Plant Biotechnology

Second semester. Three credits. Prerequisites: One of PLSC 213, BIOL 110, BIOL 201, BIOL 204. *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.

244. Garden Center Management

First semester. Three credits. Taught concurrently with SAPL 071. Not open for credit to graduate students. *Ashley*

Fundamentals related to horticultural specialty businesses with particular emphasis on the retail and contracting areas. Specialty and mass merchandising firms are considered and compared.

245. Landscape Plant Maintenance

Second semester. Three credits. One three-hour class period. Taught jointly with SAPL 045. Not open for credit to graduate students.

Provides practical information on the planting and maintenance of trees and shrubs in the landscape. Includes learning how to plan landscape projects, install plant material and maintain the established landscape through proper pruning, mulching, irrigation, fertilization and other horticultural practices.

246. Biotechnology - Science, Application, Impact, Perception

Second 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.

260. Woody Landscape Plants: Deciduous

First semester. Three credits. Two class periods and one 2-hour laboratory. *Auer*

Appropriate landscape use, ornamental features and taxonomy of deciduous ornamental trees, shrubs, vines and ground covers. Laboratories present field identification features and require the examination of plants in the landscape.

261. Woody Landscape Plants: Evergreen

Second semester. Three credits. Two class periods and one 2-hour laboratory. *Auer*

Appropriate landscape use, ornamental feature and taxonomy of coniferous or broadleaf evergreen ornamental trees, shrubs, vines and ground covers. Laboratories present field identification features and require the examination of plants in the landscape.

263. Fruit Culture

First semester. Three credits. Offered in even-numbered years. *Bible*

Biology of small fruit and tree fruit species, technology of fruit production, major aspects and recent advances in pomology.

264. Fruit Production Laboratory

Second semester, alternate years (odd). Two credits. Two 2-hour laboratory periods.

Practical application of techniques associated with the production of fruit crops. Emphasis is on apples, pears, peaches, raspberries, blueberries, and grapes. Oral and written reports are required. Field trips are required.

274. Plant Breeding

Second semester. Three credits. Two class periods and one 2-hour laboratory period. Prerequisite: MCB 213. Offered in even-numbered years.

Principles of cultivated plant improvement, breeding techniques and germplasm manipulation.

285. Plant Gene Transfer Techniques

Second semester. Three credits. *Li*

Techniques of plant gene delivery and transgenic plant production. Verification and analysis of transgenic plants.

286. Pesticide Safety and Management

Second semester. Two credits. Taught jointly with SAPL 086. Not open to graduate students. *Gauthier*

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.

288. Insect Pest Management

Second semester. 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.

292. Plant Micropropagation

First semester, odd-numbered years. Three credits. One class period and two 2-hour laboratory periods. Prerequisite: CHEM 122 or 127 and consent of instructor. *Bridgen*

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.

Landscape Architecture

202. Design of Small Spaces

Second semester. Two credits. One class period and one 2-hour studio. Prerequisites: PLSC 255 and PLSC 275. Not open to Landscape Architecture majors.

Studio-based course emphasizing the acquisition 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.

241C. Computer Applications in Landscape Architecture

First semester. Three credits. Prerequisites: PLSC 256 and 262. *Westa*

This course will provide basic knowledge of a wide variety of computer applications related to Landscape Architecture. A central theme of this course will be the selection and use of the appropriate applications and integrating data between applications.

247. Landscape Contracts

Second semester. Three credits. *Westa*

A study of the various contract documents, their legality, and their relationship to landscape construction and maintenance. Practice in writing contract documents, contract cost estimation and bidding procedures will be provided.

255. Landscape Design Drawing

First semester. Three credits. Three 2-hour studios. Open only with consent of instructor. Open to sophomores or higher. *Schwab*

An introductory drawing course aiming to introduce the landscape design student to the communication of ideas through sketches and presentation drawings. One-point and two-point perspective and isometric drawing techniques are taught. Various drawing media are used in a studio environment.

256. Landscape Design Communication

Second semester. Three credits. Three 2-hour studios. Open only with consent of instructor. Open to sophomores or higher. *Alexopoulos*

The presentation of landscape designs in plan form are covered through studio drawing assignments. The color rendering of plans, the making of cross-sections, elevations and models are studies in a studio environment.

262. Landscape Design Fundamentals

Second semester. Three credits. One lecture and two 2-hour studios. Prerequisite: PLSC 256 which may be taken concurrently. Open to sophomores or higher. *Miniutti*

Introduction to basic landscape design concepts, theory and the design process.

265. Intermediate Landscape Design I

First semester. Four credits. One class period and two 3-hour studios. Prerequisite: PLSC 255, 262 and 275. PLSC 275 may be taken concurrently. Field trips are required. *Miniutti*

The development of a design process utilizing small-scale design projects. A comprehensive investigation of site analysis methods is also covered.

266. Intermediate Landscape Design II

Second semester. Four credits. Three 3-hour studios. Prerequisite: PLSC 265. Field trips are required. *Schwab*

Landscape design studio. Application of the design of landscapes: planning theory, land use planning, visual assessment, urban design, transportation, public participation.

267. Advanced Landscape Design

Second semester. Four credits. Three 3-hour studios. Prerequisite: PLSC 266 and 281. Field trips are required. *Miniutti*

A comprehensive course which covers the range

of projects which the design professional might encounter in practice. Students will be expected to provide recommendations for case studies varying in subject and scale, depending on the particular expertise of the instructor.

268. Planting Studies in Landscape Architecture

First semester. Three credits. Three 2-hour studios. Prerequisite: PLSC 260, 261, 266. Open to landscape architecture majors only. *Alexopoulos*

The role and use of plants in the landscape architectural design process. Technical, functional, and design aspects of plantings are included. Not open to students who have passed PLSC 278. Field trips are required.

271. Professional Practice

Second semester. Three credits. Prerequisite: PLSC 256 and PLSC 262. *Westa*

The course will cover many of the business and professional aspects of Landscape Architecture including: various modes of practice, resumes and portfolios, licensure and ethics, developing and administering contracts, and preparing for the professional registration exam.

275. Landscape Design

First semester. Two credits. Two class periods. Open only with consent of instructor. Open to sophomores or higher. *Miniutti*

An introduction to landscape architecture: landscape history, natural and human factors; planning and design for parks, housing, urban spaces, etc.

276. Community Planning and Design

First semester. Four credits. Three 3-hour studios. Prerequisite: PLSC 266. Open to landscape architecture majors only. Field trips are required. *Westa*

Studio based course which investigates current theories and design of large scaled landscapes with an emphasis on residential, commercial and industrial subdivisions as well as the redesign of town centers.

277. The Development of Landscapes

First semester. Three credits. Prerequisite: PLSC 275. *Alexopoulos*

The development of man-made landscapes through time and their influence on present styles and trends.

278. Planting Design

First semester. Four credits. Three, 3-hour studios. Prerequisite: PLSC 260, 261, and 266. *Alexopoulos*

The use of plants to strengthen design concepts and to achieve special effects.

280. Landscape Construction Materials and Methods

First semester. Three credits. Two class periods and one 2-hour studio. Prerequisite: PLSC 256. *Schwab*

Basic hard materials used in landscape construction: masonry, wood, metals, etc. Construction documents. Layout and detail drawings for landscape structures. Computer applications.

281. Landscape Site Engineering

Second semester. Three credits. One class period and two 2-hour studios. Prerequisite: PLSC 256. *Alexopoulos*

Fundamental site engineering concepts and methods are investigated. Basic grading and drainage of landform are emphasized with the aim to develop essential skills. Earthwork computation, drainage systems, sedimentation and erosion control, and roadway design are also covered.

290W. Environmental Planning and Landscape Design

Second semester. Three credits. Two class periods and one recitation period. Prerequisite: ENGL 105 or 110

or 111 or 250. *Schwab*

Theories, concepts and methods for planning and designing the land to meet societal needs and goals. Topics include landscape planning theory, land use planning, visual assessment, urban design, and other contemporary issues significantly affecting landscape development.

293. Seminar in Landscape Architecture

Either semester. One credit. Open only with consent of instructor. Course may be repeated with credit.

Presentations of topics in landscape architecture.

Plant Science Research and Seminar

287. Field Study Internship

Either semester or summer. One to six credits. Hours by arrangement. Open to Junior - Senior students who have demonstrated outstanding academic ability and who possess excellent 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.

295. Seminar

Either semester. One credit. Open only with consent of instructor. Course may be repeated for credit.

Professional presentations of current topics in Plant Science.

298. Special Topics

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.

299. Independent Study

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.

Polish (PLSH)

Head of Department: Professor David K. Herzberger
Department Office: Room 228, J.H. Arjona Building

101-102. Elementary Levels I and II

103-104. Intermediate Levels I and II

101 and 103 are offered in the first semester, and 102 and 104 in the second. Please refer to the Critical Languages course descriptions in this publication. Consult the Program Director in Arjona 128 or at Ed.Benson@UConn.edu for more information.

Political Science (POLS)

Department Head: Professor John T. Rourke
Department Office: Room 137, Monteith Building

For major requirements, see the College of Liberal Arts and Sciences section of this *Catalog*.

106. Introduction to Political Theory

Either semester. Three credits.

Major themes of political theory such as justice, obligation, and equality, and their relevance to contemporary political concerns.

121. Introduction to Comparative Politics

Either semester. Three credits.

A survey of institutions, politics, and ideologies in democratic and non-democratic states.

121W. Introduction to Comparative Politics

Prerequisite: ENGL 105 or 110 or 111 or 250.

132. Introduction to International Relations

Either semester. Three credits.

The nature and problems of international politics.

132W. Introduction to International Relations

Prerequisite: ENGL 105 or 110 or 111 or 250.

143. Introduction to Nonwestern Politics

Either semester. Three credits.

A survey of institutions, ideologies, development strategies, and the political processes in nonwestern culture.

173. Introduction to American Political Processes

Either semester. Three credits.

Analysis of the organization and operation of the American political system.

173W. Introduction to American Political Processes

Prerequisite: ENGL 105 or 110 or 111 or 250.

201. Classical and Medieval Political Theory

First semester. Three credits.

An examination of Greek, Roman and early Judeo-Christian political ideas and institutions, and their relevance to the present.

202. Modern Political Theory

Second semester. Three credits.

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.

203W. Women in Political Development

(Also offered as WS 203W.) Second semester. Three credits. Prerequisite: ENGL 105 or 110 or 111 or 250.

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.

204. Women and Politics

(Also offered as WS 204.) Either semester. Three credits.

An introduction to feminist thought, the study of women as political actors, the feminist movement and several public policy issues affecting women.

204W. Women and Politics

Prerequisite: ENGL 105 or 110 or 111 or 250.

205. The Theory of Human Rights

Either semester. Three credits. *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.

206W. Western Marxist Tradition

Either semester. Three credits. Prerequisite: ENGL 105 or 110 or 111 or 250.

Exploration of the social and political theories of Marx and Engels, and of later interpretations and modifications of their ideas.

207. American Political Thought and Ideology

Second semester. Three credits.

American political thought from the colonial to

the contemporary period. Political thought discussed as the ideological expression of the larger sociopolitical situation.

208. Politics, Propaganda, and Cinema

Second semester. Three credits.

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.

211. Contemporary International Politics

Either semester. Three credits.

Problems in international relations with emphasis on changing characteristics of international politics.

212. Global Interdependence and the Crisis of World Order

Second semester. Three credits.

The nature and meaning of interdependence; origins and consequences of development and underdevelopment; international resource politics; future world models.

215. American Diplomacy

First semester. Three credits.

A chronological examination of the foreign relations of the United States from 1776 to the first World War.

216. International Political Economy

Either semester. Three credits.

Politics of international economic relations: trade, finance, foreign direct investment, aid.

217. Recent American Diplomacy

Second semester. Three credits.

The foreign relations of the United States from the first World War to the present.

218. Inter-American Relations

Second semester. Three credits.

Major problems in inter-American relations; the Western hemisphere in contemporary world politics.

219. The Politics of American Foreign Policy

Either semester. Three credits.

Instructions, forces and processes in the making of American foreign policy. Emphasis will be on contemporary issues.

220. Simulation and Gaming in Foreign Policy

Second semester. Three credits.

A comparative study of foreign policy making. Use of computer-assisted simulation provides realistic experience in foreign policy decision making and international negotiation.

221. National and International Security

Either semester. Three credits.

Key American national security issues as integral parts of the larger problem of global security.

222. Foreign Policies of the Russian Federation and the Former USSR

Second semester, alternate years. Three credits.

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.

224. American Diplomacy in the Middle East

Either semester. Three credits.

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.

225. International Organizations and Law

Second semester. Three credits.

The role of general, regional and functional

intergovernmental organizations and international law in modern diplomacy, with special attention to questions of war, peaceful settlement of disputes, and social and economic development.

226. International Relations of the Middle East
Either semester. Three credits.

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.

227W. International Politics in East Asia

First semester. Three credits. Prerequisite: ENGL 105 or 110 or 111 or 250.

Comparison and analysis of the foreign policies of the states of East Asia, with special emphasis on the impact of the former Soviet Union (Russia), People's Republic of China, Japan, and the United States.

228W. East Asian Governments and Politics

First semester. Three credits. Prerequisite: ENGL 105 or 110 or 111 or 250.

The processes of political modernization in Japan and other East Asian areas.

229. Chinese Government and Politics

Second semester. Three credits.

Chinese political processes, with emphasis on ideology and problems of development.

230W. Politics in Eastern Europe

Second semester. Three credits. Prerequisite: ENGL 105 or 110 or 111 or 250.

The politics of the East European states in a comparative and analytical framework, stressing ideology, political culture, participation, and elite behavior.

231. Political Institutions and Behavior in Western Europe

Either semester. Three credits. Open to sophomores or higher.

Comparative analysis of the governments and politics of Western Europe.

231W. Political Institutions and Behavior in Western Europe

Prerequisite: ENGL 105 or 110 or 111 or 250. Open to sophomores or higher.

232. Comparative Political Economy

Either semester. Three credits.

Introduction to overlapping themes in economics and political science including the substantive and empirical relationship between these two in advanced industrial democracies.

233. Comparative Political Parties and Electoral Systems

Either semester. Three credits.

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.

233W. Comparative Political Parties and Electoral Systems

Prerequisite: ENGL 105 or 110 or 111 or 250.

235. Latin American Politics

First semester. Three credits.

Theories and institutions of Latin American politics, with emphasis on issues of stability and change.

236W. Political Leadership in the Third World

Second semester, alternate years. Three credits. Prerequisite: ENGL 105 or 110 or 111 or 250.

The objectives and effectiveness of national leaders, with case studies from Asia, Africa, and Latin America.

237. Politics of Russia and the Former Soviet Union

First semester. Three credits.

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.

237W. Politics of Russia and the Former Soviet Union

Prerequisite: ENGL 105 or 110 or 111 or 250.

239W. Politics in Africa

First semester, alternate years. Three credits. Prerequisite: ENGL 105 or 110 or 111 or 250.

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.

241. American Political Parties

Either semester. Three credits. Prerequisite: POLS 173. Open to sophomores or higher.

An analysis of the aims, organization, and growth of parties in the United States.

241W. American Political Parties

Prerequisite: POLS 173; ENGL 105 or 110 or 111 or 250. Open to sophomores or higher.

242. Political Opinion and Electoral Behavior

Either semester. Three credits.

Analysis of public opinion and its potential to affect government policies. Emphasis on explaining elections and the basis for voters' decisions.

244. Politics of South Africa

First semester. Three credits.

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.

246. Comparative State Politics

Second semester. Three credits.

A comparison of the political parties of the 50 states. The development and the relationship of the local and state parties in the federal system.

246W. Comparative State Politics

Prerequisite: ENGL 105 or 110 or 111 or 250.

247. Black-Feminist Politics

Either semester. Three credits.

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.

248. African-American Politics

Either semester. Three credits.

Political behavior, theory, and ideology of African-Americans, with emphasis on contemporary U.S. politics.

249. Latino Political Behavior

Either semester. Three credits.

Exploration of Latino political behavior in the United States, including Latino ethnic identity, political representation, voting behavior, non-electoral political participation, and public opinion.

250. Law and Popular Culture

Either semester. Three credits.

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.

251. Law and Society

(Formerly offered as POLS 254.) Either semester. Three credits. When students intend to take several courses in the Judicial Process field (250's series), it is recommended that 251 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.

252. Constitutional Law

Either semester. Three credits.

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.

253. Judiciary in the Political Process

Second semester. Three credits. Prerequisite: POLS 173. The Supreme Court in the Political Process.

255. Politics of Crime and Justice

Either semester. Three credits.

Criminal justice in the United States, with emphasis on the links between law, politics, and administration.

256. Constitutional Rights and Liberties

Either semester. Three credits.

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.

257. World Cultures and U.S. Law

Second semester. Three credits.

Legal, cultural and political implications for the United States of global migration and the nature of citizenship, immigration and naturalization.

258. Comparative Perspectives on Human Rights

First semester. Three credits.

Cultural difference and human rights in areas of legal equality, women's rights, political violence, criminal justice, religious pluralism, global security, and race relations.

259. Maritime Law

Either semester. Three credits. *R. Cole*

International and domestic legal concepts concerning jurisdiction in a maritime setting.

260. Public Administration

Either semester. Three credits.

The politics of public administration. Role of administrative agencies and officials in American national, state, and local governments.

261. Politics, Society, and Education Policy

Either semester. Three credits.

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.

263W. Urban Politics

(Also offered as URBN 263W.) Either semester. Three credits. Prerequisite: ENGL 105 or 110 or 111 or 250. Not open for credit to students who have passed URBN 263.

Political systems and problems confronting urban governments.

264. Politics of Budgeting

Either semester. Three credits.

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.

264W. Politics of Budgeting

Second semester. Three credits. Prerequisite: ENGL 105 or 110 or 111 or 250.

265. Financial Management for Public and Nonprofit Organizations

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.

266. Capital Financing and Budgeting

Either semester. Three credits.

An examination of the municipal bond market, capital budgeting techniques, and related public policy issues.

270W. Connecticut State and Municipal Politics

First semester, alternate years. Three credits. Prerequisite: ENGL 105 or 110 or 111 or 250.

An examination of contemporary Connecticut politics on the state and municipal levels.

274. State and Local Government

Either semester. Three credits. Open to sophomores or higher.

The practical working of democracy and the role of state and local governments.

275. The Presidency and Congress

First semester. Three credits.

The contemporary Presidency and its interactions with the Congress in the formation of public policy.

276. The Policy-making Process

Second semester. Three credits.

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.

276W. The Policy-making Process

Prerequisite: ENGL 105 or 110 or 111 or 250.

277. Social Policy

Either semester. Three credits.

Examination of the concepts and principles of public policy analysis, with applications to important social issues.

278. Science, Technology, and Public Policy

Second semester, alternate years. Three credits. *Hiskes*

An examination of how policy is made regarding scientific and technological development; focusing on agencies, citizens and current issues in the areas of science and technology.

279. South Asia in World Politics

Either semester. Three credits.

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.

279W. South Asia in World Politics

Prerequisite: ENGL 105 or 110 or 111 or 250.

287. Foreign Study

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.

288W. Senior Thesis

Either semester. Three credits. Hours by arrangement. Prerequisite: POLS 289; ENGL 105 or 110 or 111 or

250. Open only with consent of instructor and Department Head. All honors and distinction students writing an honors or distinction thesis must register for this course in their last semester.

289. Senior Seminar

First semester. Three credits. Open only with consent of instructor.

Recommended for students in the Honors Program, required of distinction students not in the Honors Program, and open to other qualified students. A weekly seminar on selected topics in political science.

291V. Quantitative Analysis in Political Science (Q,C)

Either semester. Three credits. Prerequisite: MATH 101 or passed Q readiness test or passed a Q course. Recommended preparation: High School Algebra II. Open to sophomores or higher.

Explanation of the quantitative methods used in political science. Application of these methods for the analysis of substantive political questions.

296. Political Issues

Either semester. Three credits. May be repeated for credit with a change in subject matter. Open to sophomores or higher.

An exploration of the fundamental nature of political conflicts on the national and international levels.

296W. Political Issues

Prerequisite: ENGL 105 or 110 or 111 or 250.

297. Supervised Field Work

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).

298. Special Topics

Either semester. Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary.

299. Independent Study

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.

Portuguese (PORT)

Head of Department: Professor David K. Herzberger
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.

135-136. Elementary Portuguese I and II

Both semesters. Four credits each semester. Four class periods and one hour of laboratory practice. The fourth class period is devoted to culture and society. Not open for credit to students who have had three or more years of Portuguese in high school. Students who wish to continue in Portuguese but feel ill prepared should contact the head of the Modern and Classical Languages Department.

Emphasis is on oral and written communication skills.

137-138. Intermediate Portuguese I and II

Both semesters. Four credits each semester. Four class periods including one 1-hour class on Portuguese, Brazilian and Afro-Portuguese culture and social issues, and one hour of laboratory practice. Prerequisite: PORT 136 or two years of Portuguese in high school.

Further development of understanding, speaking, reading and writing skills within a cultural setting.

Readings to enhance awareness of the Portuguese-speaking world.

140. Major Works of Portuguese and Brazilian Literature in Translation

Either semester. Three credits. Knowledge of Portuguese is not necessary.

A study of major works selected from Portuguese and Brazilian writers.

193. Foreign Study

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.

220. Contemporary Portugal

Either semester. Three credits. Prerequisite: PORT 138 or instructor consent.

An analysis of the social structures and cultural life of Portugal today.

221. Contemporary Brazil

Either semester. Three credits. Prerequisite: PORT 138 or instructor consent.

An analysis of the politics, economics, social structures and cultural life of Brazil in relation to other Latin American countries.

234. Portuguese Composition

Either semester. Three credits. Prerequisite: PORT 138 or instructor consent.

Treatment of the finer points of Portuguese grammar. Exercises in translation and free composition. Stylistic analysis of texts chosen from Portuguese and Brazilian authors, newspapers and magazines.

236. Modern Brazilian Literature

Either semester, alternate years. Three credits. Prerequisite: PORT 240 and 241, which may be taken concurrently.

Prose, poetry, and theatre of nineteenth- and twentieth-century Brazil.

237. Modern Portuguese Literature

Either semester, alternate years. Three credits. Prerequisite: PORT 240 and 241, which may be taken concurrently.

Prose, poetry, and theatre of nineteenth- and twentieth-century Portugal.

240. Studies in Portuguese Literature I

Either semester. Three credits. Prerequisite: PORT 138 or instructor consent.

Selected novels, plays, and poems of the Middle Ages and the 16th, 17th, and 18th centuries. Literature in relation to society.

241. Studies in Portuguese Literature II

Either semester. Three credits. Prerequisite: PORT 138 or instructor consent.

Selected novels, plays, and poems of the 19th and 20th centuries in relation to social and cultural issues.

242. Studies in Brazilian Literature I

Either semester. Three credits. Prerequisite: PORT 138 or instructor consent.

Selected novels, stories, plays and poems from the 16th to the 19th century, focusing on a particular aspect of Brazilian cultural history.

243. Studies in Brazilian Literature II

Either semester. Three credits. Prerequisite: PORT 138 or instructor consent.

Selected novels, stories, plays, and poems of the 19th and 20th centuries. Emphasis is on aesthetic, social and cultural qualities particular to Brazilian literature.

244. Portuguese Literature of the Discoveries

Either semester. Three credits. Prerequisite: PORT 138 or instructor consent.

Selected readings from Camões' *Os Lusíadas*, Fernão Mendes Pinto's *Peregrinação*, *História Trágico-Marítima*, and other major works.

A study of the confrontation between the old and the new worlds.

251. Advanced Portuguese Conversation

Either semester. Three credits. Prerequisite: Four years of high school Portuguese or PORT 138.

Extensive practice in oral Portuguese based on authentic cultural materials. Development of language skills and vocabulary for effective communication and self-expression through debates and oral reports on Portuguese films and news programs viewed in class.

270. Business Portuguese

Either semester. Three credits. Prerequisite: PORT 138, which may be taken concurrently, or instructor consent.

Intensive review of Portuguese grammar. Introduction to commercial terminology. Designed to meet the needs of students desiring to use Portuguese as a tool for industry or commerce.

275. Portuguese for Students With a Background in Other Romance Languages

Either semester. Three credits. Prerequisite: Consent of instructor. Knowledge of another Romance language at an advanced level is required.

Intensive study of the Portuguese language in all its aspects – reading, writing, speaking and oral understanding.

276. Portuguese for Reading Knowledge

Either semester. One credit. Consent of instructor.

Basic Portuguese grammar and intensive practice in reading prose and poetry, in preparation for the Ph.D. reading examination.

290. Portuguese Seminar

Either semester. Credits and hours by arrangement. Prerequisite: Consent of instructor. With a change in content, may be repeated for credit.

A study of selected writers and problems in the literature of the Portuguese-speaking world.

293. Foreign Study

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.

295. Variable Topics

Either semester. Three credits. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary.

298. Special Topics

Either semester. Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary.

299. Independent Study

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 Portugal and Brazil. Students may spend a semester or academic year studying Portuguese language and culture at the University of Lisbon in Portugal, or the University of São Paulo in Brazil.

Psychology (PSYC)

Head of Department: Professor Charles Lowe

Department Office: Room 105, Psychology Building

For major requirements, see the College of Liberal Arts and Sciences section of this *Catalog*.

132. General Psychology I

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.

133. General Psychology II

Either semester. Three credits. Prerequisite: PSYC 132. Not open for credit to students who have passed PSYC 135. May not be taken concurrently with PSYC 135.

Psychology as a social science. Research methodology, developmental, personality, clinical, abnormal and social psychology.

135. General Psychology II (Enhanced)

Either semester. Four credits. Three lecture periods and one 1-hour discussion section. Prerequisite: PSYC 132. Not open for credit to students who have passed PSYC 133. May not be taken concurrently with PSYC 133.

Psychology as a social science. Research methodology, developmental, personality, clinical, abnormal and social psychology. Applications of theory, writing, and demonstrations during discussion periods.

202Q. Principles of Research in Psychology

Either semester. Four credits. Three 1-hour lectures and one 2-hour laboratory/discussion. Prerequisite: PSYC 135 or 133 and STAT 100 or 110 (or Statistics Q 100 level). Open to sophomores or higher.

Design and analysis of psychological research. Experimental and quasi-experimental designs, laboratory and correlational techniques, research ethics.

205. Introduction to Behavioral Genetics

First semester. Three credits. Prerequisite: PSYC 132 or BIOL 102, 103, 107, or 108. *Maxson*

Methods, concepts and findings of behavioral genetics in animals and humans.

206. Psychology of Consciousness

First semester. Three credits. Prerequisite: PSYC 132. *Chaffin*

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.

210W. Laboratory in Cognition

Semester by arrangement. Three credits. One 3-hour laboratory period and additional hours by arrangement. Prerequisite: PSYC 202Q, and PSYC 220 or 256, which may be taken concurrently; ENGL 105 or 110 or 111 or 250. *Rueckl*

Selected experiments from the following topics: memory processes, categorization, language comprehension and problem solving.

211W. Psycholinguistics Laboratory

Either semester. Three credits. Two 3-hour laboratory periods. Prerequisite: PSYC 202Q; ENGL 105 or 110 or 111 or 250. Recommended preparation: PSYC 221 or PSYC 256 or LING 202. May be taken concurrently. *Tabor*

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.

215W. Laboratory in Sensation and Perception

Semester by arrangement. Three credits. Two 3-hour laboratory periods. Prerequisite: PSYC 202Q, and PSYC 254, which may be taken concurrently; ENGL 105 or 110 or 111 or 250. *Carello, Grownney*

Techniques for the study of sensory capacities and perceptual processes.

220. Learning

Either semester. Three credits. Prerequisite: PSYC 135 or 133. Open to sophomores or higher.

Learning and memory principles found in animal research and their relationship to human behavior. Human and other species' specific types of unique learning abilities.

221. The Psychology of Language

First semester. Three credits. Prerequisite: PSYC 135 or 133. *Shankweiler*

Those aspects of language that make it a uniquely efficient vehicle for communication and thought.

232W. Laboratory in Developmental Psychology

Second semester. Four credits. Prerequisite: PSYC 236 and PSYC 202Q; ENGL 105 or 110 or 111 or 250. *Naigles*

The techniques necessary for performing psychological research on young children; advanced topics.

236. Developmental Psychology

Either semester. Three credits. Prerequisite: PSYC 135 or 133. Open to sophomores or higher. *Gustafson, Sanders*

Social behavior, personality, perception, cognition, language, intelligence, learning, biobehavioral processes, and research methodology in developmental perspective.

238. Child Psychology

Either semester. Three credits. Prerequisite: PSYC 236. *Dickerson*

Historical and contemporary theories of development. Includes Piaget, Vygotsky, Freud, Erikson, social-learning theory, ethological theory, and information-processing theory.

239. Current Topics in Developmental Psychology

Either semester. Three credits. Prerequisite: PSYC 236 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.

239W. Current Topics in Developmental Psychology

Prerequisite: PSYC 236; ENGL 105 or 110 or 111 or 250.

240. Social Psychology

Either semester. Three credits. Prerequisite: PSYC 135 or 133. Open to sophomores or higher.

Attitudes, social cognition, social influence, interpersonal relations, group dynamics.

241. Current Topics in Social Psychology

Semester by arrangement. Three credits. Prerequisite: PSYC 240 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.

241W. Current Topics in Social Psychology

Prerequisite: PSYC 240 and consent of instructor; ENGL 105 or 110 or 111 or 250.

242. Laboratory in Social Psychology

Semester by arrangement. Three credits. Two class periods and one 2-hour research/laboratory period. Prerequisite: PSYC 202Q or STAT 110; PSYC 240; and consent of instructor.

Methods and techniques of research in social psychology. Supervised research investigations.

242W. Laboratory in Social Psychology

Prerequisite: PSYC 202Q or STAT 110; PSYC 240; and consent of instructor; ENGL 105 or 110 or 111 or 250.

243. The Study of Personality

Either semester. Three credits. Prerequisite: PSYC 135 or 133. Open to sophomores or higher. *Kirsch*

Theories, methods, and research in both clinical and experimental approaches to personality.

244. Laboratory in Personality

First semester. Three credits. One 2-hour laboratory period. Class experimentation and some practice in research writing. Prerequisite: PSYC 202Q or STAT 110, PSYC 243 and consent of instructor.

Experimental design and methodology in personality research, followed by a class project written individually by each student.

244W. Laboratory in Personality

Prerequisite: PSYC 202Q or STAT 110, PSYC 243 and consent of instructor; ENGL 105 or 110 or 111 or 250.

245. Abnormal Psychology

Either semester. Three credits. Prerequisite: PSYC 135 or 133. Open to sophomores or higher. *Schwarz*

Nature of abnormal behavior, theories and data regarding symptoms, etiology, treatment and prevention of mental disorders.

245W. Abnormal Psychology

Prerequisite: PSYC 135 or 133; ENGL 105 or 110 or 111 or 250.

246. Psychology of Women

Either semester. Three credits. Prerequisite: Three credits of 200-level psychology. *Crawford*

Gender roles, socialization, women and work, women's relationships, violence against women, and other topics. Theory and research.

246W. Psychology of Women

Prerequisite: Three credits of 200-level psychology; ENGL 105 or 110 or 111 or 250.

248. Environmental Psychology

Either semester. Three credits. Prerequisite: PSYC 240.

Reciprocal relationships between built and natural environments and human behavior.

249. Emotional/Behavioral Disorders of Childhood

Either semester. Three credits. Prerequisite: PSYC 236.

Theory, research, treatment, and prevention in developmental psychopathology from infancy through adolescence.

253. Animal Behavior

Either semester. Three credits. Prerequisite: BIOL 100 or 102 or 107, and PSYC 132. *Maxson, Miller*

Principles of animal behavior derived from a review of descriptive and analytic studies in laboratory and field. Sometimes offered in multimedia format.

253W. Animal Behavior

Prerequisite: BIOL 100 or 102 or 107, and PSYC 132; ENGL 105 or 110 or 111 or 250.

254. Sensation and Perception

Either semester. Three credits. Prerequisite: PSYC 135 or 133.

Sensory and perceptual processes in vision, hearing, touch, taste, and smell.

255. Motivation and Emotion

(Also offered as COMM 255.) Either semester. Three credits. Prerequisite: PSYC 135 or 133.

Cognition, brain mechanisms, biofeedback, aggression, sex, competence, social influence, and conformity.

256. Cognitive Psychology

Either semester. Three credits. Prerequisite: PSYC 135 or 133. Open to sophomores or higher. *Rickards, Rueckl*

Different views of mental representation and processes involved in memory, language comprehension, perception, attention, and problem solving. Historical development of models in cognitive psychology.

257. Physiological Psychology

Either semester. Three credits. Prerequisite: BIOL 100 or 102 or 107 or PNB 264-265, and PSYC 132. Open to sophomores or higher. *Salamone, Swallow*

Physiological processes related to motivation, emotion, sensory processes, motor skills, learning, and psychiatric conditions.

257W. Physiological Psychology

Prerequisite: BIOL 100 or 102 or 107 or PNB 264-265, and PSYC 132; ENGL 105 or 110 or 111 or 250.

259. Drugs and Behavior

Second semester. Three credits. Prerequisite: PSYC 132 or BIOL 107. Open to sophomores or higher. *Salamone, Chrobak*

An overview of drug effects on chemical transmission in the nervous system, with an emphasis on the behavioral/psychological effects of drugs.

260. Computer Modelling of Cognitive Processes

Semester by arrangement. Three credits. Prerequisite: PSYC 254 or 256. *Dickerson*

Symbolic and connectionist approaches to modeling vision, problem solving, planning, deduction, language understanding, learning, and memory.

263. Laboratory in Animal Behavior and Learning

Semester by arrangement. Three credits. One 3-hour laboratory period and additional hours by arrangement. Prerequisite: PSYC 202Q, 253, and consent of instructor. *Salamone*

A laboratory course to supplement PSYC 253.

263W. Laboratory in Animal Behavior and Learning

Prerequisite: PSYC 202Q, 253, and consent of instructor; ENGL 105 or 110 or 111 or 250.

267. Laboratory in Physiological Psychology

Semester by arrangement. Three credits. One 3-hour laboratory period and additional hours by arrangement. Prerequisite: PSYC 202Q, and PSYC 257, which may be taken concurrently.

Techniques employed in experimental investigation of the anatomical and physiological bases of behavior.

267W. Laboratory in Physiological Psychology

Prerequisite: PSYC 202Q, and PSYC 257, which may be taken concurrently; ENGL 105 or 110 or 111 or 250.

268. Industrial/Organizational Psychology

Either semester. Three credits. Prerequisite: PSYC 135 or 133. Open to sophomores or higher. *Barnes-Farrell, Henning, Magley, Mellor*

Applications of psychology in the workplace: Measurement, personnel decisions, performance appraisal, training, motivation, worker attitudes,

leadership, ergonomics and job design, workplace health and safety.

269. Introduction to Clinical Psychology

Either semester. Three credits. Prerequisite: 245 or 245W.

History of clinical psychology as a profession; graduate training and ethical responsibilities; assessment and treatment of psychological disorders; and clinical sub-specialties.

270. Black Psychology

First semester. Three credits. Prerequisite: PSYC 135 or 133 and consent of instructor. *Williams*

Empirical and theoretical literature on psychological experiences of African Americans. Impact of race, culture, and ethnicity on psychological development.

270W. Black Psychology

Prerequisite: PSYC 135 or 133 and consent of instructor; ENGL 105 or 110 or 111 or 250.

272. Psychology of Aging

Either semester. Three credits. Prerequisite: PSYC 135 or 133.

Psychological theories and research on adult development and aging. Focus on self development from adolescence through young adulthood, midlife and later life.

278. Human Factors Design

Either semester. Three credits. Prerequisite: PSYC 135 or 133. Recommended preparation: PSYC 268. *Henning*

Human factors/ergonomics design applied to human-machine and sociotechnical systems. Independent work in conjunction with class project.

281. Psychological Tests and Measurements

Second semester. Three credits. Prerequisite: PSYC 202Q or STAT 110.

Individual differences, measurement theory, issues of validity, reliability, and sampling. Intelligence, achievement, personnel, vocational, and personality testing.

282W. Social-Organizational Psychology

Either semester. Three credits. Prerequisite: PSYC 268 or PSYC 240 or any 200-level Management course; ENGL 105 or 110 or 111 or 250. *Barnes-Farrell, Magley*

Social psychological phenomena in organizational settings. Motivation, leadership, decision-making, and group productivity.

290. Foreign Study

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.

291. The History and Systems of Psychology

Either semester. Three credits. Prerequisite: PSYC 135 or 133.

Philosophical and scientific origins and major schools, including structuralism, functionalism, behaviorism, gestalt, and psychoanalysis.

291W. The History and Systems of Psychology

Prerequisite: PSYC 135 or 133; ENGL 105 or 110 or 111 or 250.

292. Variable Topics

Either semester. Three credits. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary.

294. Field Experience

Either semester. Credits, not to exceed six per semester, and hours by arrangement. Prerequisite: PSYC 135 or 133. 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.

295. Seminar in Psychology

Semester by arrangement. Three credits. Prerequisite: PSYC 135 or 133 and consent of instructor. With a change in content, may be repeated for credit.

Recent developments in psychology. Topics vary with each offering.

296W. Senior Thesis in Psychology

Either semester. Three credits. Hours by arrangement. Prerequisite: Three credits of PSYC 297 or PSYC 299; ENGL 105 or 110 or 111 or 250. Open only to Honors students with consent of instructor and Department Head.

297. Undergraduate Research

Either semester. Credits, not to exceed six per semester, and hours by arrangement. Open only with consent of instructor. Recommended preparation: PSYC 202Q. With a change in content, this course may be repeated for credit.

Participant activities related to research.

298. Special Topics

Either semester. Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary.

299. Independent Study

Either semester. Credits and hours by arrangement. Prerequisite: PSYC 202Q. 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.

Puerto Rican & Latino Studies (PRLS)

Director, Institute for Puerto Rican & Latino Studies:

Professor Blanca Silvestrini

Office: Room 413, Beach Hall, 4th floor

210. Contemporary Issues in Latino Studies

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.

211. Puerto Rican/Latino Studies Research

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.

212. Field Internship in Latino Studies

Either semester. One to three credits; may be repeated for up to six credits.

Work in cultural community-oriented setting(s).

220. History of Latinos/as in the United States

(Also offered as HIST 278.) Either semester. Three credits. *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.

221. Latinos/as and Human Rights

(Also offered as HIST 284.) Either semester. Three credits. *Silvestrini*

Latino/a issues related to human, civil and cultural rights, and gender differences.

241. Latin American Minorities in the United States

(Also offered as ANTH 241). First 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.

250. Latino Health and Health Care

First semester. Three credits.

An overview of health and health care issues among Latinos in the United States.

251. Latino Sexuality and Gender

Second semester. Three credits.

Introduction to issues of gender/sexuality among United States Latinos. Attention to variations in length of United States residence (acculturation), class, race and ethnicity.

260. Media and Special Audiences

(Also offered as COMM 232.) Either semester. Three credits. Recommended preparation: COMM 100 or COMS 102. *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.

264. Latinas and Media

(Also offered as WS 260 and COMM 233.) Second semester. Three credits. *Rios*

The role of ethnicity and race in women's lives. Special attention to communication research on ethnic and racial minority women.

270. Latino Politics

Either semester. Three credits. *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.

271. Immigration and Transborder Politics

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.

295. Variable Topics in Puerto Rican and Latino Studies

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.

298. Special Topics in Puerto Rican and Latino Studies

Either or both semesters. Three credits. With a change in topic, may be repeated for credit.

Special topics in Puerto Rican and Latino Studies.

299. Independent Study in Puerto Rican and Latino Studies

Either semester. Credits and hours by arrangement. With a change in content, this course may be repeated for credit. Consent of the instructor.

Russian (RUSS)

Head of Department: David Herzberger

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.

155-156. Elementary Russian I and II

Both semesters. Four credits each semester. One lecture, three recitation periods, and one hour of laboratory practice. Not open for credit to students who have had three or more years of Russian in high school. Students who wish to continue in Russian but feel ill prepared should contact the head of the Modern and Classical Languages Department. Not open for credit to students who have passed RUSS 115-116.

Elementary Russian grammar. Extensive training in pronunciation, reading, speaking and writing. Second semester; short stories, outside reading.

157-158. Intermediate Russian I and II

Both semesters. Four credits each semester. Four class periods and one hour of laboratory practice. Prerequisite: RUSS 156 or equivalent. Not open for credit to students who have passed RUSS 117-118.

A thorough grammar review. Reading of selected texts of Russian authors. Oral and written practice. Outside reading.

193. Foreign Study

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.

231. Masterpieces of Modern Russian Literature in Translation

Either semester. Three credits. Conducted in English. Required of all Russian majors, who will be asked to read part of the material in the original. Open to students from other fields with an interest in Russian or comparative literature.

A survey of Russian literature from the Revolution to the present.

232. Masterpieces of 19th-Century Russian Literature in Translation

Either semester. Three credits. Conducted in English. Required of all Russian majors, who are required to read part of the material in the original. Open to students from other fields with an interest in Russian or comparative literature.

A survey of Russian literature from Pushkin to Chekhov.

232W. Masterpieces of 19th-Century Russian Literature in Translation

Prerequisite: ENGL 105 or 110 or 111 or 250.

241. The Russian Cultural Heritage

Either semester. Three credits. Conducted in English.

Contemporary Russian life and its reflection of traditional Russian cultural values.

293. Foreign Study

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.

295. Variable Topics

Either semester. Three credits. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary.

298. Special Topics

Either semester. Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary.

299. Independent Study

Either semester. Credits and hours by arrangement. Open only with consent of instructor. May be repeated for credit.

Science (SCI)

110. Humans and the Changing Global Environment

Either semester. Three credits.

An introduction to the basic scientific principles that govern the interaction between human beings and their environment. Emphasis is placed on understanding the ways in which environmental processes affect humanity and the ways in which human activities affect the environment.

150. Unifying Concepts in Biology, Chemistry and Physics

First semester. Four credits. Three lecture periods and one 2-hour laboratory. Prerequisite: Must have passed Q-readiness test or MATH 101. *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.

193. Foreign Study

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.

206. Introduction to the History of Science

(Also offered as HIST 206.) First semester. Three credits. Open to sophomores or higher. This course may be used only once to meet the distribution requirement.

Rise and development of scientific inquiry; case studies designed to illustrate problems and methods in the study of the history of science.

240. The Nature of Scientific Thought

Second semester. Three credits. Open to sophomores or higher.

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.

241. Seminar in the Nature of Scientific Thought

Second semester. One credit. One class period. Prerequisite: SCI 240 must be taken concurrently. Open to sophomores or higher.

Discussions based on the content of SCI 240.

Sociology (SOCl)

Head of Department: Professor Mike Wallace
Department Office: Room 115, Manchester Hall

For major requirements, see the College of Liberal Arts and Sciences section of this *Catalog*.

107. Introduction to Sociology

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.

107W. Introduction to Sociology

Prerequisite: ENGL 105 or 110 or 111 or 250.

115. Social Problems

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.

115W. Social Problems

Prerequisite: ENGL 105 or 110 or 111 or 250.

125. Race, Class, and Gender

Either semester. Three credits.

Race, class, and gender, as they structure identities, opportunities, and social outcomes.

125W. Race, Class, and Gender

Prerequisite: ENGL 105 or 110 or 111 or 250.

205. Methods of Social Research

Either semester. Three credits. Prerequisite: SOCI 107. *Ratcliffe, Wallace, Weakliem*

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.

207V. Quantitative Methods in Social Research

Either semester. Three credits. Prerequisite: SOCI 205 or instructor consent; and STAT 100 or 110. *Bernstein, Wallace, Weakliem*

Practical work in the design and execution of research, hypothesis testing, data analysis, and interpretation.

208C. Computing in the Social Sciences

Either semester. Three credits. One 2-hour lecture and one 2-hour laboratory per week. Prerequisite: Q course and SOCI 205 or equivalent. *Oates*

Introduction to applied computing skills using a statistical package.

209. Applying Sociology to Social Issues

Either semester. Three credits. Prerequisite: SOCI 107 and 205 or instructor consent. *Ratcliffe*

Applying sociology and its methods to ask research questions, gather information, and evaluate social programs.

216. Criminology

Either semester. Three credits. Open to sophomores or higher. *DeFronzo, Logan*

Theories and research on crime, criminal law, and the criminal justice system.

216W. Criminology

Prerequisite: ENGL 105 or 110 or 111 or 250. Open to sophomores or higher.

217. Deviant Behavior

Either semester. Three credits. *McNeal, Sanders*

Behaviors labeled by society as deviant, such as crime, prostitution, suicide, alcoholism, drug abuse, and mental illness.

217W. Deviant Behavior

Prerequisite: ENGL 105 or 110 or 111 or 250.

218. Juvenile Delinquency

Second semester. Three credits. *Wright*

An overview of sociological theory and research on juvenile delinquency.

218W. Juvenile Delinquency

Prerequisite: ENGL 105 or 110 or 111 or 250.

219. Drugs and Society

Either semester. Three credits. *Sanders*

Drug taking as a social problem, the "war on drugs," drug education, treatment and prevention approaches, the illegal drug market.

219W. Drugs and Society

Prerequisite: ENGL 105 or 110 or 111 or 250.

221. Sociological Perspectives on Asian American Women

(Also offered as AASI 221.) Either semester. Three credits. *Purkayastha*

An overview of social structures and inter-group relations focusing on the experience of Asian American women.

221W. Sociological Perspectives on Asian American Women

(Also offered as AASI 221W.) Prerequisite: ENGL 105 or 110 or 111 or 250.

222. Asian Indian Women: Activism and Social Change in India and the United States

(Also offered as AASI 222.) First semester. Three credits. Prerequisite: SOCI 107, 115 or 125. *Purkayastha*

How gender, class and ethnicity/race structure everyday lives of Asian Indian women in both India and the United States.

226. Modern Africa

Either semester. Three credits. *Gugler*

Cultural patterns, social structure, and political conflict in Sub-Saharan Africa.

226W. Modern Africa

Prerequisite: ENGL 105 or 110 or 111 or 250.

227. Revolutionary Social Movements Around the World

Either semester. Three credits. One 3-hour class per week. Open to sophomores or higher. *DeFronzo*

Lectures and documentary films on the Russian, Chinese, Vietnamese, Cuban and Nicaraguan revolutions and movements in South Africa and the Middle East.

227W. Revolutionary Social Movements Around the World

Prerequisite: ENGL 105 or 110 or 111 or 250. Open to sophomores or higher.

230. Society and the Individual

Either semester. Three credits. Prerequisite: SOCI 107. *Dashefsky, Eisenhandler, Oates*

Modern social systems and the behavior, psychological organization, and development of individuals.

230W. Society and the Individual

Prerequisite: SOCI 107; ENGL 105 or 110 or 111 or 250.

235. African Americans and Social Protest

Either semester. Three credits. *Cazenave*

Social and economic-justice movements, from the beginning of the Civil Rights movement to the present.

236. White Racism

Either semester. Three credits. *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.

240. Ethnicity and Race

Either semester. Three credits. *Oates, Villemez*

Ethnic groups, their interrelations, assimilation, and pluralism. Culture, and identity that arise from differences in race, religion, nationality, region, and language.

240W. Ethnicity and Race

Prerequisite: ENGL 105 or 110 or 111 or 250.

241. Women and Health

(Also offered as WS 241.) Either semester. Three credits. *Ratcliff*

Social factors shaping women's health, health care, and their roles as health-care providers.

242. American Jewry

(Also offered as JUDS 242.) Either semester. Three credits. *Dashefsky*

Historical, demographic, organizational, and sociopsychological perspectives.

242W. American Jewry

Prerequisite: ENGL 105 or 110 or 111 or 250.

243. Prejudice and Discrimination

Either semester. Three credits. *Dashefsky, McNeal, Taylor*

Sources and consequences of racial and ethnic prejudice and discrimination.

243W. Prejudice and Discrimination

Prerequisite: ENGL 105 or 110 or 111 or 250.

244. Sociology of Mental Illness

Either semester. Three credits. *Broadhead, Oates*

Madness in human societies; its history, incipience, epidemiology, etiology, institutionalization, and other issues.

244W. Sociology of Mental Illness

Prerequisite: ENGL 105 or 110 or 111 or 250.

246. Human Sexuality

Either semester. Three credits. Open to sophomores or higher. *Bernstein*

How sexual behavior is molded by culture and social structure. Among the topics are premarital sex, homosexuality, pornography, and rape.

246W. Human Sexuality

Prerequisite: ENGL 105 or 110 or 111 or 250. Open to sophomores or higher.

247. Sociology of Health

Either semester. Three credits. *Ratcliff*

Social factors related to health, illness, and health-care systems.

247W. Sociology of Health

Prerequisite: ENGL 105 or 110 or 111 or 250.

248. Aging in American Society

(Also offered as HDFS 248.) Either semester. Three credits. This course may be used only once to meet the distribution requirements. *Eisenhandler, Sheehan*

Social gerontology: the role and status of older people in a changing society.

248W. Aging in American Society

(Also offered as HDFS 248W.) Prerequisite: ENGL 105 or 110 or 111 or 250.

249. Sociological Perspectives on Poverty

Either semester. Three credits. *Cazenave, Neubeck, Villemez*

Poverty in the U.S. and abroad, its roots, and strategies to deal with it.

249W. Sociological Perspectives on Poverty

Prerequisite: ENGL 105 or 110 or 111 or 250.

250. Sociology of the Family

Either semester. Three credits. Open to sophomores or higher. *Macdonald*

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.

250W. Sociology of the Family

Prerequisite: ENGL 105 or 110 or 111 or 250. Open to sophomores or higher.

252. Sociological Perspectives on Women

Either semester. Three credits. *Macdonald, Naples, Tuchman*

The status of women in American society.

252W. Sociological Perspectives on Women

Prerequisite: ENGL 105 or 110 or 111 or 250.

253. Sociology of Religion

Either semester. Three credits. *Eisenhandler*

Religion in social context: differences of church, denomination, sect, and cult; religious culture, organization, and ideology.

253W. Sociology of Religion

Prerequisite: ENGL 105 or 110 or 111 or 250.

255. Population

Either semester. Three credits. *Hadden*

Size, growth, composition and distribution of population; social factors in population change.

255W. Population

Prerequisite: ENGL 105 or 110 or 111 or 250.

258. The Developing World

Either semester. Three credits. *Gugler*

Social and economic conditions in Asia, Africa, and Latin America and attempts to improve them.

258W. The Developing World

Prerequisite: ENGL 105 or 110 or 111 or 250.

259. Energy, Environment, and Society

Either semester. Three credits.

Sociological perspectives on energy production, distribution and consumption, environmental, and social organization.

259W. Energy, Environment, and Society

Prerequisite: ENGL 105 or 110 or 111 or 250.

260. Social Organization

Either semester. Three credits. Prerequisite: SOCI 107. *Villemez, Wallace, Weakliem*

Social organization and structure in modern society. Sociology majors should take this required course in their junior year.

260W. Social Organization

Prerequisite: SOCI 107; ENGL 105 or 110 or 111 or 250.

265. Complex Organizations

Either semester. Three credits. *Villemez, Wallace*

Theories and research on complex organizations in society; relationship between organizations and their environments; varieties of organizational forms, structures, and processes.

265W. Complex Organizations

Prerequisite: ENGL 105 or 110 or 111 or 250.

266. Topics in the Sociology of Culture

Either semester. Three credits. 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.

267. Public Opinion and Mass Communication

Either semester. Three credits. *Tuchman*

Contemporary public opinion and ideology, the process and effects of mass communication, and the measurement of public opinion.

267W. Public Opinion and Mass Communication

Prerequisite: ENGL 105 or 110 or 111 or 250.

268. Class, Power, and Inequality

Either semester. Three credits. *Bernstein, Glasberg, Neubeck, Villemez, Wallace*

Inequality and its consequences in contemporary societies.

268W. Class, Power, and Inequality

Prerequisite: ENGL 105 or 110 or 111 or 250.

269. Political Sociology

Either semester. Three credits. *Glasberg, Neubeck*

Social analysis of power, democracy and voting, society and the state, and political economy.

269W. Political Sociology

Prerequisite: ENGL 105 or 110 or 111 or 250.

270. Social Theory

Either semester. Three credits. Prerequisite: SOCI 107. *Macdonald, Tuchman*

Sociological theory for advanced undergraduates.

270W. Social Theory

Prerequisite: SOCI 107; ENGL 105 or 110 or 111 or 250.

274. Work and Occupations

Either semester. Three credits. *Macdonald, Villemez, Wallace*

Occupations, jobs, careers, and the professions, and their effects on the division of labor, on the workplace, and on individuals in the labor force.

280. Urban Sociology

(Also offered as URBN 280.) Either semester. Three credits. Open to sophomores or higher. *Abrahamson, Gugler*

Social and physical organization of cities and suburbs.

280W. Urban Sociology

(Also offered as URBN 280W.) Open to sophomores or higher. Prerequisite: ENGL 105 or 110 or 111 or 250.

281. Urban Problems

(Also offered as URBN 281.) Either semester. Three credits.

Social problems of American cities and suburbs, with emphasis on policy issues.

281W. Urban Problems

(Also offered as URBN 281W.) Prerequisite: ENGL 105 or 110 or 111 or 250.

282. Urbanization

Either semester. Three credits. *Gugler*

The rapid urbanization of the world's population: its causes, characteristics and consequences.

282W. Urbanization

Prerequisite: ENGL 105 or 110 or 111 or 250.

283. City Life

Either semester. Three credits.

Ways of life in large cities and suburbs and the culture of modernism.

283W. City Life

Prerequisite: ENGL 105 or 110 or 111 or 250.

284. Communities

Second semester. Three credits. Three class periods. Prerequisite: One introductory level sociology course or instructor consent. *Eisenhandler*

Sociological analysis of processes and structures of various kinds of communities.

285. Social Welfare and Social Work

Either semester. Three credits. Open to seniors in the social sciences; to others only with consent of instructor.

Social welfare needs and programs; introduction to social work as a professional service.

288. Sociology of Education

Either semester. Three credits. *McNeal*

Education and society: primary schools through

universities as agencies for social selection and socialization.

288W. Sociology of Education

Prerequisite: ENGL 105 or 110 or 111 or 250.

290. Social Movements and Social Change

Either semester. Three credits. *Bernstein*

Revolutionary, reform, reactionary, religious, communal, and escapist movements.

290W. Social Movements and Social Change

Prerequisite: ENGL 105 or 110 or 111 or 250.

293. Foreign Study

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 in a foreign-study program.

294W. Senior Thesis in Sociology

Either semester. Three credits. Prerequisite: Fifteen credits in sociology and consent of instructor and Department Head; ENGL 105 or 110 or 111 or 250.

296. Field Experience

Either semester. Variable (1-9) credits, by arrangement. Class and field work by arrangement with instructor and field agency. May be repeated for credit, not to exceed 9 credits total for 296 and 296W. Prerequisite: SOCI 107. *Logan, Neubeck, Ratcliff*

Internship in a social-welfare agency or institution.

296W. Field Experience

Prerequisite SOCI 107; ENGL 105 or 110 or 111 or 250. Three credits may be taken for W credit.

297. Variable Topics

Either semester. Three credits. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary.

298. Special Topics

Either semester. Credits and hours by arrangement. With a change in content, may be repeated for credit. A lecture course. Topics vary by semester.

299. Independent Study

Either semester. Credits and hours by arrangement. Open only with consent of instructor. With a change in content, may be repeated.

Spanish (SPAN)

Head of Department: David Herzberger

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.

181-182. Elementary Spanish I and II

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.

183-184. Intermediate Spanish I and II

Both semesters. Four credits each semester. Four class periods and additional laboratory practice. Prerequisite: SPAN 182 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.

185-186. Spanish for Reading Knowledge

Both semesters. Three credits each semester. Open only to seniors and graduate students. Not open for credit to undergraduates who have had SPAN 181-182. 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.

187. Major Works of Hispanic Literature in Translation

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.

190. Language, Culture, and Health in Spanish-Speaking Societies

Four credits. Semester and hours by arrangement. Prerequisite: Two years of high school Spanish or equivalent and consent of instructor. Open to graduate and undergraduate students in the health professions as well as practicing health professionals. May be repeated once for credit with a change in topic. May not be used to meet the undergraduate foreign language requirement.

Content-based language instruction with a focus on the cultural construct and context of "health" in Spanish-speaking environments. Development of Spanish language skills through intensive work with authentic materials drawn from technical literature, fiction, print media, video, radio, and other sources.

193. Foreign Study

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.

200. Spanish Civilization to the Modern Period

Either semester. Three credits. Recommended preparation: SPAN 278 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.

201. Ibero-American Civilization and Culture

Either semester. Three credits. Recommended preparation: SPAN 278 or instructor consent.

History of the major social, intellectual, and artistic trends of Spanish-speaking America.

202. Studies in Spanish-American Literature

Either semester. Three credits. Recommended preparation: SPAN 201.

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.

204. Language and Culture of U.S. Hispanics

Either semester. Three credits. Prerequisite: SPAN 184.

Comparison of linguistic, historical and cultural backgrounds of various Hispanic groups in the U.S. through fiction, non-fiction, films, music, and guest speakers.

205. Contemporary Spanish America

Either semester. Three credits. Recommended preparation: SPAN 278 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.

206. Contemporary Spain

Either semester. Three credits. Recommended preparation: SPAN 278 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.

207. Women's Studies in Spanish

Either semester. Three credits. Recommended preparation: SPAN 278 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.

208. Issues in Hispanic Thought

Either semester. Three credits. Recommended preparation: SPAN 278 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.

209. Latin American Film

Either semester. Three credits. One 3-hour class period. Recommended preparation: SPAN 278 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.

210. Spanish for Social Workers

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.

214. Topics in Hispanic Cultures

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.

219. Spanish Film

Either semester. Three credits. One 3-hour class period. Recommended preparation: SPAN 278 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.

220. Introduction to Literary Study

Either semester. Three credits. Recommended preparation: SPAN 278 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.

223. Old Spanish Language and Literature

Either semester. Three credits. Prerequisite: SPAN 281.

Linguistic and literary analysis of Medieval and Renaissance Spanish texts.

224. Studies in Spanish Golden Age Literature

Either semester. Three credits. Recommended preparation: SPAN 200. 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.

225. Studies in Spanish Literature of the Eighteenth and Nineteenth Centuries

Either semester. Three credits. Recommended preparation: SPAN 200. 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.

226. Studies in Spanish Literature of the Twentieth Century

Either semester. Three credits. Recommended preparation: SPAN 200. 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.

270. Business Spanish

Either semester. Three credits. Prerequisite: SPAN 184 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.

278. Intermediate Spanish Composition

Either semester. Three credits. Prerequisite: SPAN 184 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.

279. Spanish Conversation: Cultural Topics

Either semester. Three credits. Recommended preparation: SPAN 278 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.

280. Composition and Reading for Speakers of Spanish

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.

281. Great Works of Spanish Literature from its Origins to the Golden Age

Either semester. Three credits. Recommended preparation: SPAN 278 or instructor consent.

The study of selected poems, plays, fables and novels reflecting the development of Spanish society from feudalism to world empire.

282. Literature of Crisis in Modern Spain

Either semester. Three credits. Recommended preparation: SPAN 278 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.

289. Variable Topics

Either semester. Three credits. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary.

290. Spanish Phonetics

Either semester. Three credits. Recommended preparation: SPAN 278.

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.

291. Advanced Spanish Composition

Either semester. Three credits. Recommended preparation: SPAN 278.

Treatment of the finer points of Spanish grammar. Exercises in translation and free composition. Stylistic analysis of texts chosen from Spanish authors, newspapers and magazines.

292. Selected Topics in Hispanic Literature

Either semester. Three credits. May be repeated for credit once with a change of topic. Consult department for particulars each year.

293. Foreign Study

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.

294. Literature of Puerto Rico and the Spanish Caribbean

Either semester. Three credits. Recommended preparation: SPAN 278 or instructor consent.

Readings and discussions of major authors and works of the Spanish Caribbean with special emphasis on Puerto Rico.

295. Spanish-American Literature: The Formative Years

Either semester. Three credits. Recommended preparation: SPAN 278 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."

296. Great Works of Modern Spanish-American Literature

Either semester. Three credits. Recommended preparation: SPAN 278 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.

297. Spanish-American Fiction

Either semester. Three credits. Recommended preparation: SPAN 201.

Lectures, readings and reports on the development of the Spanish-American novel and short story.

298. Special Topics

Either semester. Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary.

299. Independent Study

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 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 428, Mathematical Sciences Building

For major requirements, see the College of Liberal Arts and Sciences section of this *Catalog*.

Credit restrictions: 100 level statistics courses are not open for credit to students who have passed a 200 level statistics course or who are taking such a course concurrently. Students can receive no more than four credits from Statistics 100 and 110.

100V. Introduction to Statistics I (Q, C)

Either semester. Four credits. Prerequisite: MATH 101 or passed Q Readiness Test or passed a Q course. 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.

110V. Elementary Concepts of Statistics (Q, C)

Either semester. Four credits. Prerequisite: MATH 101 or passed Q Readiness Test or passed a Q course. 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.

210Q. Introduction to Statistics II

Either semester. Three credits. Prerequisite: STAT 100 or 110. Open to sophomores or higher.

Analysis of variance, multiple regression, chi-square tests, and non-parametric procedures.

220Q-221Q. Statistical Methods (Calculus Level)

Either semester. Three credits each semester. Prerequisite: MATH 114 or 116 or 121.

Basic probability distributions, point and interval estimation, tests of hypotheses, correlation and regression, analysis of variance, experimental design, non-parametric procedures.

224Q. Probability Models for Engineers

Either semester. Three credits. Prerequisite: MATH 210Q or 220Q. Students may not receive more than three credits from STAT 224 and STAT 220 or from STAT 224 and STAT 230.

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.

230Q-231Q. Introduction to Mathematical Statistics

Both semesters. Three credits each semester. Prerequisite: MATH 210 or 220. Students may not receive credit for both STAT 230 and 315, or both STAT 231 and 316.

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.

235Q. Elementary Stochastic Processes

(Also offered as MATH 232Q.) Either semester. Three credits. Prerequisite: STAT 220 or 224 or 230 or MATH 231. Not open for credit to students who have passed MATH 232Q.

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.

242Q. Analysis of Experiments

Either semester. Three credits. Prerequisite: STAT 201 or 220 or instructor consent. Credit may not be received for both STAT 242 and 342.

Straight-line regression, multiple regression, regression diagnostics, transformations, dummy variables, one-way and two-way analysis of variance, analysis of covariance, stepwise regression.

243Q. Design of Experiments

Second semester. Three credits. Prerequisite: STAT 201 or 220 or instructor consent. Credit may not be received for both STAT 243 and 343.

Methods of designing experiments utilizing regression analysis and the analysis of variance.

252Q. Sampling Theory

Either semester. Three credits. Prerequisite: STAT 231 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.

253Q. Nonparametric Methods

First semester. Three credits. Prerequisite: STAT 231 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.

261V. Statistical Computing

Second semester. Four credits. Prerequisite: STAT 220 or STAT 230. 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.

271V. Statistical Quality Control and Reliability

Either semester. Three credits. Prerequisite: STAT 231.

Development of control charts, acceptance sampling and process capability indices, reliability modeling, regression models for reliability data, and proportional hazards models for survival data.

272Q. Introduction to Biostatistics

Either semester. Three credits. Prerequisite: STAT 220 or an applied statistics course along with either STAT 230 or MATH 231 or instructor consent.

Rates and proportions, sensitivity, specificity, analysis of two-way tables, odd ratios, relative risk, ordered and nonordered classifications, trends, case-control studies, review of basic regression, logistic regression, additivity and interaction, Poisson regression, survival analysis, combining studies and meta-analysis.

280V. Applied Time Series

Either semester. Three credits. Prerequisite: STAT 231 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.

284Q. Probability and Statistics Problems

Either semester. One or two credits. Hours by arrangement. Prerequisite: MATH 231 and STAT 230. Not open for credit to students who have passed MATH 284Q.

Designed to help students prepare for the second actuarial examination.

286Q. Introduction to Operations Research

(Also offered as MATH 286Q and STAT 356.) Either semester. Three credits. Prerequisite: MATH 231 or STAT 220 or 230. Not open for credit to students who have passed MATH 286 or STAT 356.

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.

294. Field Study Internship

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 220 or STAT 230 and STAT 242 or STAT 243. 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).

295. Variable Topics

Either semester. Three credits. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary.

296. Undergraduate Research

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.

298. Special Topics

Either semester. Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary.

299. Independent Study

Either semester. Credits and hours by arrangement. Open only with consent of instructor. May be repeated for credit.

Urban and Community Studies (URBN)

Director, Urban and Community Studies Program (for the TriCampus): Robert Fisher
Office: Room 220, Undergraduate Building,
West Hartford

Director, Urban and Community Studies Program (for Storrs): Peter L. Halvorson
Office: Room 442, College of Liberal Arts and Sciences Building

For major requirements, see the College of Liberal Arts and Sciences section of this *Catalog*.

130. The City in the Western Tradition

(Also offered as GEOG 130.) Either semester. Three credits.

A broad discussion of the role and structure of the city in the western tradition from ancient Mesopotamia 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.

230. Introduction to Urban Studies

Second semester. Three credits. Open to sophomores or higher.

Introduction to the analysis of urban development with particular stress on those problems pertinent to the American central city. This course is also listed under Anthropology, Geography, and Sociology.

231. Internship in Urban Studies: Field Study

Either semester. Credits, not to exceed three, by arrangement. Hours by arrangement with hosting agency. To be elected concurrently with URBN 232. 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.

232. Internship in Urban Studies: Seminar

Either semester. Credits, not to exceed three, by arrangement. To be elected concurrently with URBN 231. Prerequisite: Consent of instructor. *Cooke*

Description, analysis, and evaluation of the fieldwork portion (URBN 231) of the internship. Written reports are required.

233. Urban Geography

(Formerly offered as URBN 212.) (Also offered as GEOG 233.) Either semester. Three credits.

Analysis of the growth, distribution, and functional patterns within and among Western cities. Particular attention is placed on applying urban geographical concepts to city planning problems.

241. The History of Urban America

(Also offered as HIST 241.) Second semester. Three credits.

The development of urban America with emphasis on social, political, physical, and environmental change in the industrial city.

241W. The History of Urban America

(Also offered as HIST 241W.) Prerequisite: ENGL 105 or 110 or 111 or 250.

248. Urban Anthropology

First semester. Three credits.

A general course on urbanization, emphasizing contrasts between "developed" and "developing" countries.

259. Urban and Regional Economics

(Also offered as ECON 259.) Second semester. Three credits. Prerequisite: ECON 218 or 218Q. Recommended preparation: ECON 111, 102 or 113 and One of: MATH 106Q, 113Q, 115Q, 118Q, or 120Q.

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.

263W. Urban Politics

(Also offered as POLS 263W.) Either semester. Three credits. Prerequisite: ENGL 105 or 110 or 111 or 250. Political systems and problems confronting urban governments.

280. Urban Sociology

(Also offered as SOCI 280.) Either semester. Three credits. Open to sophomores or higher. Social and physical organization of cities and suburbs.

280W. Urban Sociology

(Also offered as SOCI 280W.) Prerequisite: ENGL 105 or 110 or 111 or 250. Open to sophomores or higher.

281. Urban Problems

(Also offered as SOCI 281.) Either semester. Three credits.

Social problems of American cities and suburbs with emphasis on policy issues.

281W. Urban Problems

(Also offered as SOCI 281W.) Prerequisite: ENGL 105 or 110 or 111 or 250.

295. Variable Topics

Either semester. Three credits. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary.

298. Special Topics

Either semester. Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary.

299. Independent Study

Either or both semesters. Credits and hours by arrangement. Prerequisite: Consent of instructor. May be repeated for credit.

Vietnamese (VIET)

Head of Department: Professor David K. Herzberger
Department Office: Room 228, J.H. Arjona Building

101-102. Elementary Levels I and II**103-104. Intermediate Levels I and II**

101 and 103 are offered in the first semester, and 102 and 104 in the second. Please refer to the Critical Languages course descriptions in this publication. Consult the Program Director in Arjona 128 or at Ed.Benson@UConn.edu for more information.

Women's Studies (WS)

Director, Women's Studies Program: Mary Crawford
Office: Room 426 Beach Hall

For major requirements, see the College of Liberal Arts and Sciences section of this *Catalog*.

103. Introduction to Women's Studies in the Social Sciences

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.

104. Feminisms and the Arts

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.

105. Gender in Everyday Life

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.

124. Gender in Global Perspective

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.

193. Foreign Study

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.

203W. Women in Political Development

(Also offered as POLS 203W.) Second semester. Three credits. Prerequisite: ENGL 105 or 110 or 111 or 250. *Creevey*

Analysis of the role of women in the process of 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.

204. Women and Politics

(Also offered as POLS 204.) Either semester. Three credits.

An introduction to feminist thought, the study of women as political actors, the feminist movement and several public policy issues affecting women.

210. History of Women and Gender in Early America

(Also offered as HIST 210.) Either semester. Three credits. Not open to students who have taken HIST 202 or WS 202 before fall 1998.

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.

215. History of Women and Gender in the United States, 1790-Present

(Also offered as HIST 215.) Either semester. Three credits. Not open to students who have taken HIST 202 or WS 202. *Porter-Benson*

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.

217. Women and Film

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.

231. Anthropological Perspectives on Women

(Also offered as ANTH 231.) First semester. Three credits. Open to sophomores or higher.

Major conceptual and historical problems in the anthropological study of gender. Women's roles in

different historical and contemporary settings, the emergence of new concepts of family, kinship, power, and cultural ideology.

241. Women and Health

(Also offered as SOCI 241.) Either semester. Three credits. *Ratcliffe*

Social factors shaping women's health, health care, and their roles as health-care providers.

250. Feminisms

Three credits. Prerequisite: WS 103, 104, or 124.

Current feminist theories and related social and political issues.

251. Women and Body Art

Either semesters. 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.

252. Genders and Sexualities

First semester. Three credits.

Overview of lesbian, gay, bisexual, and transgender issues.

260. Latinas and Media

(Also offered as PRLS 264 and COMM 233.) Second semester. Three credits. *Rios*

The role of ethnicity and race in women's lives. Special attention to communication research on ethnic and racial minority women.

261. Women's Studies Internship Program

Either semester. Three to nine credits. Hours by arrangement. Prerequisite: One Women's Studies course. To be taken concurrently with WS 262. 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 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.

262. Women's Studies Internship Seminar

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.

263. Women and Violence

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.

264. Gender in the Workplace

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.

265. Women's Studies Research Methodology

First semester. Three credits. Prerequisite: WS 103 or WS 104 or WS 124 or HIST 121. Women's Studies majors are strongly urged to take this course as early as possible and before PHIL 218.

Analyses 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.

266. Women and Ethnicity: Changing Roles in a Changing Society

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.

267. Women and Poverty

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.

268. Gender and Communication

Second semester. Three credits. Not open for credit to students who have passed WS 278.

An examination of the cultural assumptions about gender in our major communication processes. We will draw from the new scholarship on women to critically analyze the theory and practice of communication in contemporary U.S. society.

269. The Women's Movement

Either semester. Three credits. Not open for credit to students who have passed WS 278.

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.

270. Women and Religion

(Also offered as ANTH 274.) Second semester. Three credits. Not open for credit to students who have passed WS 278.

Religion has been a source of personal empowerment and social change for women throughout history. This course will examine the various roles women have assumed in religion and its effects on their position in their personal lives and in society.

271. Seminar on Rape Education and Awareness I

First semester. One credit.

This course 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.

272. Seminar on Rape Education and Awareness II

Second semester. One credit. Prerequisite: WS 271.

This course 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.

273. Women in the Bible

(Also offered as ANTH 273.) Either semester. Three credits. Prerequisite: INTD 294.

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.

289W. Senior Seminar in Women's Studies

Second semester. Three credits. Prerequisite: ENGL 105 or 110 or 111 or 250. Recommended preparation: WS 265 and PHIL 218 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.

290. Ethnicities, Sexualities, Modernisms

(Also offered as ARTH 290.) Either semester. Three credits.

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.

293. Foreign Study

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.

295. Variable Topics

Either semester. Three credits. With a change of topic, may be repeated for credit. Prerequisites and recommended preparation vary.

298. Special Topics

Either semester. Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary.

299. Independent Study

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.

Ratcliffe Hicks School of Agriculture

Director: Professor Suman Singha

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)

050. Principles of Agricultural and Resource Economics

Either semester. Three credits. Taught concurrently with ARE 150.

An introduction to agricultural economics, the role of agriculture in today's United States economic system, and relationships that regulate the entire economic environment.

060. Agribusiness Management

Either semester. Three credits. Prerequisite: SARE 050.

Covers concepts and techniques essential in managing an agribusiness firm. Topics include: finance, production planning, marketing, and personnel management.

098. Special Topics

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.

099. Independent Study

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)

001. Introduction to Computer Use

(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.

016. Introduction to Agricultural Mechanics

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.

050. Freshman Seminar

First semester. One credit.

A course designed to assist 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.

090. Applied Mathematics

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.

091. Tech Prep

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).

Topics and credits are established through pre-approved articulation agreements.

098. Special Topics

Either semester. Credits and hours by arrangement. Open only with consent of instructor. May be repeated for credit with a change of topic.

099. Independent Study

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)

004-005. Anatomy and Physiology of Domestic Animals

Both semesters. Three credits. Two class periods and one 2-hour laboratory period. *Dinger, Riesen*

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.

006. Nutrition and Feeding of Livestock

Second semester. Three credits. Two class periods and one 2-hour laboratory period. *Andrew*

This course 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.

007. Animal Breeding and Genetics

Second semester. Three credits. Two 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.

020. Introduction to Animal Science

First semester. Three credits. Two class periods and one 2-hour discussion or laboratory period. Taught concurrently with ANSC 120. *Darre*

The biological, physical and social factors that influence animal production and utilization.

025. Behavior and Training of Domestic Animals

Second semester. Three credits. Two class periods and one 2-hour laboratory. Taught concurrently with ANSC 125. *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.

027. Introduction to Companion Animals

Second semester. Three credits. Taught concurrently with ANSC 127.

Basic concepts of the nutrition, physiology, health and management of companion animals.

035. Horse Production

Second semester. Three credits. Two class periods and one 2-hour laboratory period. *Dinger*

This course entails the appraisal, structure, use, and management of light horses.

036. Light Horse Training and Management

First semester. Two credits. One class period and one 3-hour laboratory period. Prerequisite: SAAS 035. *Callahan*

The course includes instruction in the breaking and training of young horses.

037. Methods of Equitation Instruction

Second semester. Two credits. One class period and one 2-hour laboratory or discussion period. Taught concurrently with ANSC 237. Consent of instructor required. *Callahan*

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.

038. Management of the Horse Breeding Farm

Second semester. Three credits. One class period and two 2-hour laboratory or discussion periods. Recommended preparation: SAAS 035. *Dinger*

This course is 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.

040. Animal Products

First semester. Three credits. Two class periods and one 3-hour laboratory period. *Faustman*

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. Field trips may be required.

052. Introduction to Poultry Industry

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.

064. Management Skills and Practices – Beef Cattle

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).

Practical experience in common management practices is offered by working in the University facilities under supervision.

065. Management Skills and Practices – Dairy Cattle

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.

066. Management Skills and Practices – Horses

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.

067. Management Skills and Practices – Poultry

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.

068. Management Skills and Practices – Sheep

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.

069. Management Skills and Practices – Swine

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.

070. Livestock Production

First semester. Four credits. Three class periods and one 2-hour laboratory period. Taught concurrently with ANSC 277S. Offered in odd-numbered years. *Hoagland*

Biological and economic aspects of beef, sheep, and swine production. Field trips required.

076. Dairy Herd Management

First semester. Three credits. Two class periods and one 2-hour laboratory period. Taught concurrently with ANSC 275. *Kazmer*

This course is concerned with the biological and economical aspects of commercial milk production, including: milking, sanitation, nutrition, record keeping, and the physiology and anatomy of milk secretion.

077. Applied Dairy Herd Management

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.

081. Horse Selection and Evaluation

Second semester. Two credits. One 4-hour laboratory or discussion period. Taught concurrently with ANSC 281. 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.

083. Livestock and Carcass Evaluation

Second semester. Two credits. Two 2-hour laboratory periods. Taught concurrently with ANSC 283.

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.

088. Advanced Animal and Product Evaluation

First semester. One credit. Hours by arrangement. Taught concurrently with ANSC 288. 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.

094. Seminar

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.

096. Professional Internship

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. *Andrew, Darre*

098. Special Topics

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 out-

lined in Ratcliffe Hicks section. Contact Department Main Office for list of current topics and instructors.

099. Independent Study

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.

Natural Resources Management and Engineering (SAME)

098. Special Topics

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.

099. Independent Study

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)

015. Health and Disease Management of Animals

Second semester, alternate years (even). 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.

098. Special Topics

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.

099. Independent Study

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)

003. Introduction to Plant Science

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.

017. Vegetable Production

First semester. Four credits. Three class periods and one 2-hour laboratory period. *Bible*

A general course dealing with the fundamentals of vegetable gardening and production. Lectures cover modern methods of culture and their influence on food quality. Selected vegetable crops are grown by students.

019. Principles of Turfgrass Irrigation Systems

First semester. Three credits. Two class periods and one 2-hour laboratory. Taught jointly with PLSC 219. *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.

022. Introduction to Soil Science

First semester. Three credits. Two class periods and one 2-hour laboratory exercise or field trip. *Schulthess*

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.

023. Turfgrass Pests and Control

First semester. Three credits. Two class periods and one 2-hour laboratory. Taught jointly with PLSC 223. *Rackliffe*

Turfgrass weed, insect, disease and vertebrate identification and control. Emphasis on biological controls and IPM. Field trips required.

024. Turfgrass Management

First semester. Three credits. Two class periods and one 2-hour laboratory period. Taught concurrently with PLSC 124. *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.

025. Greenhouse Operations

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 crop production.

026. Greenhouse Crop Production I

Second semester. Three credits. Two class periods and one 2-hour laboratory period. Field trips required. Prerequisite: SAPL 025. Taught jointly with PLSC 226. *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.

029. Forage Crops

First semester. Three credits. Two class periods and one 2-hour laboratory period.

A course on the principles of producing and utilizing pasture, hay and silage crops for forage. Emphasis will be placed on environmental, soil and economic factors in forage production. Details of varietal selection, seeding methods, fertilization, cutting management, pest control, and storage will be discussed for each of the major grass and legume species used in the northeast.

030. Floral Art

Either semester. Two credits. One class period and one 2-hour studio period. Taught concurrently with PLSC 230.

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.

031. Herbaceous Ornamental Plants

Second semester. Three credits. Taught jointly with PLSC 231.

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.

035. Advanced Floral Design

Second semester. Two credits. One class period and one 2-hour studio period. Prerequisite SAPL 030. Taught concurrently with PLSC 235.

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.

041. Plant Pest Control

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.

042. Integrated Pest Management

Second semester. Three credits. Three class periods. Prerequisite: SAPL 041. *Gauthier*

An overview of integrated pest management (IPM) techniques, from development to implementation, with horticultural crops.

045. Landscape Plant Maintenance

Second semester. Three credits. Two class periods and one 2-hour field laboratory. Field trips required. Taught jointly with PLSC 245. *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.

046. Fruit Production

Second semester. Three credits.

A practical course in fruit production, including information for home fruit growing. Particular emphasis is directed toward the culture of apples, peaches, pears, blueberries, grapes, raspberries and strawberries.

047. Fruit Production – Laboratory

Second semester. Two credits. Two 2-hour laboratory periods. Prerequisite: SAPL 046, which may be taken concurrently.

A practical laboratory in the techniques and methods of fruit production and pruning of fruit crops. Emphasis is directed towards apples, peaches, pears, blueberries, grapes and raspberries. Field trips are required.

059. Evaluating and Staging Horticultural Materials

First semester. One credit. Hours by arrangement. Open only with consent of instructor. This course may be repeated once for credit.

Organization and staging of horticultural exhibits

and contests suitable for fairs, garden clubs, and community projects.

060. Nursery Maintenance

First semester. Three credits. Two class periods and one 2-hour laboratory period. *Corbett*

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.

062. Plant Propagation

Second semester. Three credits. Two class periods and one 2-hour laboratory period.

The study of methods used to reproduce agricultural and horticultural crops. Discussion will emphasize sexual and asexual propagation techniques. Field trips are required.

066. Plant Materials, Evergreen Plants

Second semester. Three credits. Two class periods and one 2-hour laboratory period. *Corbett*

Trees, shrubs and vines will be studied. Lectures will be devoted to the characteristics, ornamental value and selection of evergreen plants. Laboratory periods will be devoted to identification.

067. Plant Materials, Non-Evergreen Plants

First semester. Three credits. One class period and two 2-hour laboratory periods. Prerequisite: SAPL 066. *Corbett*

Trees, shrubs and vines will be studied. Lectures will be devoted to the characteristics, ornamental value and selection of non-evergreen plants. Laboratory periods will be devoted to identification.

069. Landscape and Planting Design

Second semester. Four credits. Two class periods and two 2-hour laboratory periods. Prerequisite: SAPL 031, 066, and 067. *Corbett*

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.

071. Horticultural Retailing

First semester. Three credits. Taught concurrently with PLSC 244. *Ashley*

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.

074. Horticulture Production Practicum – Nursery

Second semester. Credits and hours by arrangement. Prerequisite: SAPL 060. Consent of instructor. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory). *Corbett*

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.

075. Horticulture Production Practicum – Vegetables

Second semester. Credits and hours by arrangement. Prerequisite: SAPL 017. Consent of instructor. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory). *Ashley*

Students will be responsible for planning, producing, and marketing a vegetable crop on a commercial scale. Requires the availability of private production facilities.

083. Golf Course Management

Second semester. Three credits. Three class periods. Taught jointly with PLSC 283. *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.

084. Golf Course Design

First semester. Two credits. Two class periods. Taught jointly with PLSC 284. *Guillard, Miniutti*

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.

086. Pesticide Safety and Management

Second semester. Two credits. Two class periods. Taught jointly with PLSC 286. *Gauthier*

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.

087. Internship

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.

098. Special Topics

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.

099. Independent Study

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.

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