

Introduction

The University of Connecticut is a resource for the future, both for the State of Connecticut and for the students who enroll in its programs. The emphasis at this University is on choice: The University of Connecticut can be anything students want it to be – it's a matter of taking advantage of the wealth of opportunities made available. The many programs described in this Catalog reflect a dynamic University, that is both constant and constantly growing. The University grows by responding to challenges, opportunities, and needs. What remains constant at the University's core is its steady commitment to high quality teaching, research, and public service.

Each year, a new class of competitively selected undergraduate and graduate students brings to the University the promise and potential for their futures. They are the vital natural resource from which greater resources grow; as they progress, the University gains strength. Each year, courses are added, dropped, and improved as the faculty of more than 1,500 teacher-scholars strives to build a stronger curriculum that will challenge these students to think logically and creatively while they gain insight, experience, and skills to realize their academic objectives. Each year, the University develops new approaches to enlarge and enhance growth experiences outside the classroom and laboratories. Each year, this *Catalog* records the growth in one of the nation's major public research universities.

Today's University – with 22,736 students, over 148,000 alumni, about 120 major buildings and 3,100 acres in and around Storrs, three professional schools and five regional campuses in other parts of the State, and a library of more than two million volumes – is a far cry from the institution in its first days.

In April 1881, the Connecticut General Assembly established the Storrs Agricultural School after accepting a gift of 170 acres of land, several frame buildings, and money from Charles and Augustus Storrs. The Storrs brothers were natives of Mansfield, the eastern Connecticut town in which the University is located. The School opened on September 28, 1881, with twelve students in the first class. Growth and change came fast in the early years. Before the turn of the century there were two name changes, to Storrs Agricultural College in 1893 and to Connecticut Agricultural College in 1899. In 1933, two years after the institution celebrated its fiftieth anniversary, it became Connecticut State College, a name more in keeping with its steady advances and broadened mission. Six years later, in 1939, the General Assembly designated the institution the University of Connecticut, an acknowledgement of the institution's developing importance to the State in graduate and professional education, research, and public service.

Since the historic legislative act of 1881, the University has grown steadily and dramatically to fulfill its mandated objectives as a provider of high quality education and public service and as a contributor to society through research. The University has reached out with services to all parts of the State, and it has promoted cultural enrichment by making the main campus a center for the arts in Connecticut.

Jorgensen Auditorium on the Storrs campus regularly schedules internationally prominent symphony orchestras, musical soloists and chamber groups, dance companies, and touring dramatic productions. This is complemented by Department of Music recitals in von der Mehden Hall and by Department of Dramatic Arts productions. The William Benton Museum of Art has been acclaimed as one of Connecticut's finest art museums; the diversity and quality of its exhibitions contribute to the vitality of the arts at the University.

The University stands with the leading institutions of the nation in the size, scope, and contributions of its research involvement. In the last ten years, University researchers at Storrs and at the Health Center in Farmington have attracted more than one-quarter billion dollars in support of their work.

For more than a million Connecticut citizens each year, the University is more than classroom and laboratories, cultural presentations and athletic contests; it is direct contact with University people working through institutes, centers, extension services, and extended and continuing education programs in all 169 cities and towns in Connecticut.

The University's public service mission, which has grown apace with academic offering and research endeavors in both scope and importance, reaches out into local government offices and schools, into pharmacies and medical offices, into corporate laboratories and small business showrooms, onto farm lands and fishing boats. Each year, new programs evolve to meet newly identified needs in Connecticut.

The pages of this *Catalog* contain many of the elements of a university mission that remains constant, of an academic program that is dynamic, and of a commitment to excellence by a university and its faculty, staff and students.

Admission

Address all inquiries regarding admission to the Office of Undergraduate Admissions, 2131 Hillside Road, U-88, University of Connecticut, Storrs, CT 06269-3088.

Wayne A. Locust, *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 I (SAT I) 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)

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 next page.

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, U-171, Storrs, CT 06269-2171, Telephone (860) 486-1045.

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 (Upper Division) ^e	4	3 ^a	2 ^b	2 ^d	2	3	16
School of Business Administration	4	3 ^a	2 ^b	2	2	3	16
School of Education (Upper Division)	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	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	5	3	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 Professions, Education, and Pharmacy for information about Upper Division Admission requirements and application procedures.

Guidelines for Evaluation of CB Advanced Placement Examinations

AP Exam	Score	UConn Course Equivalent Granted	Credits Granted
Art History	4, 5	ARTH 137, 138	6
Biology	4, 5	BIOL 107, 108	8
Chemistry	4, 5	CHEM 127Q, 128Q	8
Computer Science	4, 5	CSE 110C	3
Economics			
Macroeconomics	4, 5	ECON 111	3
Microeconomics	4, 5	ECON 112	3
English (Either Comp. Lit or Lang./Comp.)	3* 4, 5	ENGL 105 ENGL 105, 109	3 6
German	3 4, 5	Placement into 200's level course GERM 233, 234	No credit 6
American History	4, 5	U.S. History 100 level	3
European History	4 5	European History 100 level HIST 101	3 3
Math AB	4, 5	MATH 115Q	4
Math BC	3	MATH 115Q	4
Math BC	4, 5	MATH 115Q, 116Q	8
Music	3 4, 5	Music History 100 level Music History 100 level	3 6
Physics B**	4, 5	PHYS 121Q, 122Q	8
Physics C**	4, 5	PHYS 151Q, 152Q	8
Psychology	4, 5	PSYC 132, 133	6
Romance & *** Classical Languages	4, 5	Language 200 level	6
Statistics	4, 5	Statistics Q 100 level	3

* Students receiving a 3 in English must consult with a designated department member to determine if credit will be allowed.

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

*** Students who have already earned course credit in Romance Languages through the UConn Coop Program will not receive AP credit in this category.

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.

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 Lower Division consideration 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 Allied Health, Business Administration, 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

Minority 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. The closing date for **completed applications** is March 1st for the fall semester and October 15 for the spring semester. However, international students who are interested in transferring from another institution can only apply for the fall semester. Prospective students may submit correspondence to University of Connecticut, Undergraduate Admissions Office, 3121 Hillside Road, U-88, 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 *Appendix*.

Services for Students with Disabilities

The Center for Students with Disabilities (CSD) assists students to maximize their potential while helping them develop and maintain independence. Our philosophy is one that promotes self-awareness, self-determination, and self-advocacy in a comprehensively accessible environment. 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.
- Transportation and parking services.
- Referral and liaison services to state agencies.
- Information and referral source to all University and community programs and services.

For more information, contact Donna M. Korbel, Director, CSD, Wilbur Cross Building, Room 161, U-174, Storrs, Connecticut 06268-4174; Voice/TDD (860) 486-2020, 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 in the *Policies and Procedures Regarding Students with Disabilities*.

For information, contact Dr. Joan McGuire, Director, University Program for College Students with Learning Disabilities, University of Connecticut, 249 Glenbrook Road, U-64, 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.

See tables regarding New England Regional Student Programs on next page.

Extended and Continuing Education

Bachelor of General Studies

The Bachelor of General Studies (BGS) program is a junior-senior year university degree program administered by Continuing Education. Applicants to the program

New England Regional Student Program

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

Programs	Eligible State Residents
College of Agriculture & Natural Resources	
Landscape Architecture	NH, VT
Pathobiology	MA, ME, RI, VT
* School of Allied Health	
Cytotechnology	RI, VT
Diagnostic Genetic Sciences	ME, MA, NH, RI, VT
Dietetics	ME, RI, VT
School of Business Administration	
Health Systems 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
Geophysics	ME, MA, RI
Italian	ME, NH, VT
Latin	RI
Latin American Studies	ME, NH
Middle Eastern Studies	ME, NH, RI, VT
Portuguese	ME, NH, RI, VT
Physiology and Neurobiology	ME, MA, NH, RI
Statistics	MA, RI
School of Engineering	
Chemical Engineering	VT
Management and Engineering for Manufacturing	ME, MA, NH
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 Upper Division only, i.e., students enter these programs at the Junior level. Freshman and Sophomore years are not offered at reduced tuition.

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.

Associate Degree Programs

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

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 petition for degree seeking status must be made to and approved by the dean of the school or college in which the undergraduate degree is to be earned. Students are urged to check with the dean to determine appropriate courses to take within the 24 credits. If fewer than 24 credits have been completed, a non-degree student must apply for admission as would any other prospective student for an undergraduate degree. 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, U-56-C, Storrs, CT 06269-4056, Telephone: (860) 486-3832, Fax: (860) 486-3845, E-mail: conted3@uconnvm.uconn.edu

Guide to Admissions Information on the Internet

Undergraduate Admissions:

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

Extended and Continuing Education:

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

Fees and Expenses

The schedule of fees which follows is comprehensive and is expected to prevail during the 2000-2001 academic year, but the Board of Trustees and the Board of Governors for Higher Education reserve the right, at any time, to authorize 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 April 1 for any continuing resident student at Storrs. Students at the University regional campuses who transfer to Storrs must pay a \$140 deposit when filing a room application. Payment (or deferment) of the deposit secures this contract and presumes acceptance of same. Failure to remit this payment by the due date will result in loss of housing.

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

The act of paying (or obtaining deferment of) the deposit incurs liability for at least \$60 of the Room Fee. The \$60 payment is due regardless of subsequent cancellation or failure to remit by due date.

\$80 of the room deposit will be refunded if written cancellation is received prior to August 1 (or January 1 for a new spring semester assignment). The entire \$140 becomes nonrefundable from those dates forward.

General University Fee

Students on the Storrs campus pay a general University fee of \$479 each semester. Students at the regional campuses pay a general University fee each semester of \$30 at Avery Point, Hartford, Stamford, and Waterbury; students at Torrington pay a general University fee of \$19 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 \$2,141 per semester. Students classified as full-time out-of-State students pay tuition of \$6,528 per semester. Full-time students eligible for the New England Regional Student Program pay tuition of \$3,212 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 \$13 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 \$15 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, \$15; Hartford, \$10; Stamford, \$15; Torrington, \$20; Waterbury, \$35.

Student Transit Fee

All undergraduate students at Storrs pay a nonrefundable fee of \$6 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 Univer-

* Revisions in the State budget may force fee changes.

sity residence hall is \$1,486 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 \$1,438 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 \$125.00 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; the spring semester is payable prior to January 2. 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 contracted for a room assignment for the fall or the spring semester and gives notice of cancellation to the Department of Residential Life prior to August 1 and January 1 respectively, is responsible for payment of \$60 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 2 (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.

Cancellations and Refunds

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.

All Storrs campus 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.

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 ¹
Late Payment fee	Continuous Registration fee

¹ See Room Deposit for explanation.

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.

Thereafter withdrawal adjustments are made only on refundable fees according to the following schedule:

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

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.

Applied Music Fee

A fee of \$75 for one half-hour lesson per week or \$145 for a one-hour lesson per week per semester is charged all students receiving private instrumental or vocal instruction.

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 insurance waiver card 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 Service. Please call 486-0745 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. The conditions under which students are permitted the use of cars on campus and information about how to contact Parking Services are described in this *Catalog* under "General Information," Use of Cars by Students.

Summer Sessions Fees and Expenses

The University fee for each summer session is equal to the preceding academic year in-state tuition. Please see the summer catalog for further details. 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*.

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

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 1999-2000 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 are a **transfer student** and you attended another college or university in the semester just prior to enrolling at UConn, please submit a paper **Financial Aid Transcript** from that school to the UConn Office of Student Financial Aid Services. FAT forms are available at any college financial aid office and must be submitted whether or not a student received financial aid at the previous institution.

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. 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, U-116, Wilbur Cross Building, Room 25, 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>

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 FPLUS are made copayable to the student/parent and the University of Connecticut and disbursed in at least two payments. 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 University of Connecticut Foundation and Alumni Office also offer numerous scholarships. Applications can be obtained by contacting their offices directly.

Please 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 campus, 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 through a job referral system. Students identify their job choices and are given a list of supervisors seeking candidates for those jobs. Students then arrange interviews with prospective employers to discuss the details of the job.

For more information about part-time employment contact the University of Connecticut Student Employment Staff, 233 Glenbrook Road, U-141, Wilbur Cross Building, Room 25, Storrs, CT 06269-4141, (860) 486-3474. For a complete listing of on campus jobs, you can access our web site at: www.ucc.uconn.edu/~wwwjobs

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 31 (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, U-116, Wilbur Cross Building, Room 25, Storrs, CT 06269-4116, (860) 486-2819.

These University of Connecticut websites make policies available.

Student Conduct Code: <http://www.dosa.uconn.edu/contents.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/~wwwsa/vets.html>

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.

Many laboratory courses involve instruction in and the use of various types of power equipment and laboratory apparatus. The University takes every precaution to provide competent instruction and supervision of such courses. It is expected that students will cooperate by following instructions and exercising precautions. In the case an accident does occur resulting in personal injury the University can assume no responsibility except for medical care that is provided by the Department of Health Services.

The University offers a variety of special services, facilities, and extracurricular programs designed to assist students and to enrich their educational experience. Like academic courses, however, these programs and services are viewed as resources available to students at their own option. Providing a wealth of opportunities is a responsibility accepted by the University; taking advantage of these opportunities is the student's responsibility. The University reserves the right to withhold privileges or to impose appropriate penalties in the event that students fail to meet their responsibilities.

Student Affairs

The role of the Division of Student Affairs is to create a campus environment for students, which enriches and contributes to personal development and academic growth. In fulfilling this responsibility, the Division seeks to provide a cohesive campus community where the atmosphere is responsive to the needs of a diverse student population and is conducive to learning both in and out of the classroom.

The programs offered through the Division of Student Affairs are integral components in a student's total education and experience. Our mission is accomplished through the following departments: Campus Activities, Career Services, Counseling Services, the Dean of Students Office, Dining Services, Health Services, and Residential Life. This dynamic team is led by the Vice Chancellor for Student Affairs. The division offers a wealth of services and resources including, but not limited to: student activities and organizations; student volunteerism; leadership development; career development; resume and interview referral services; internship and cooperative education programs; academic, personal, and vocational counseling; University placement testing; tutoring and study skills programs; scholastic standards and regulations; student conduct; student advocacy; conflict resolution; services for students with disabilities; dining, catering, and food services; health education; student housing; residential living/learning opportunities; community building initiatives; and services for nontraditional students.

Student Activities

The University recognizes the fact that one's college education extends beyond the classroom. To this end, the Department of Student Activities and Union Programs complements the academic program of studies and enhances the overall educational experience of students through development of, exposure to, and participation in social, multicultural, intellectual, recreational, and governance programs. The Department attempts to educate students to become intellectual leaders in a global community, responsible leaders in a diverse community, and ethical leaders in a challenging and changing world.

The Department of Student Activities and Union Programs is the unifying force of community at UConn and maintains facilities and services that are supportive of student development and the needs of the campus community. There are over 240 registered clubs and organizations on campus, reflecting the diversity of our student body and their interests. Advisement and support are provided to student organizations in the areas of programming, finance, and organizational development. Leadership development opportunities for student leaders are also provided to enhance the growth of both the students and the student organizations.

Major programming on campus is provided by the Student Union Board of Governors (SUBOG) and other student organizations. Weeks of Welcome (WOW), Family Weekend, Festival of Lights, Homecoming, Winter Weekend, University Weekend, Senior Week, and multicultural awareness celebrations all contribute to a very dynamic student activities program at the University of

Connecticut.

The Director of Student Activities and Union Programs has the responsibility for six focuses that comprise the Department: Business Services; Greek Life, Operations and Student Organizations, OUR Center (Gay, Lesbian, Bisexual, Transgender Services and Programs), Student Development, and Student Activities/SUBOG. The Director also has the general supervision over student sponsored activities. A listing of student organizations may be found in the *Student Handbook* and on the University of Connecticut web page.

Athletics

Intercollegiate teams are maintained in the following sports: Men – baseball, basketball, cross country, football, golf, hockey, soccer, swimming, tennis, and track and field; Women – basketball, cross country, field hockey, lacrosse, rowing, soccer, softball, swimming, tennis, track and field, and volleyball.

The University of Connecticut is a member of the following conferences: Big East Conference, Eastern College Athletic Conference, Metro Atlantic Athletic Conference Hockey League, and National Collegiate Athletic Association.

The University of Connecticut is a member of the National Intramural Recreational Sports Association. Recreational Services offers intramural sports in the following team and individual sports – badminton singles and doubles, basketball, basketball free throw, 2 on 2 basketball, summer 3 on 3 basketball, summer 5 on 5 basketball, midnight basketball tournament, innertube water basketball, cross country, flag football, outdoor handball, indoor soccer, outdoor soccer, softball, summer softball, innertube water polo, squash, swim meet, table tennis singles and doubles, tennis singles and doubles, tug-o-war, track and field meet, volleyball, 2 on 2 sand volleyball, summer 2 on 2 volleyball, 4 on 4 volleyball, ultimate frisbee, and whiffleball. All individual sports teams earn championship points toward their respective team sport. Special events include backgammon, billiards, bowling, chess, darts, table tennis, and table soccer, Billiards Leagues, Bowling Leagues, Campus Concepts, Fun Run program, Golf Leagues, Great Pie Race, Ice Hockey Leagues, International Shootout, Mountain Laurel Road Race, and Personal Awareness Weeks (P.A.W. Program). Outdoor Adventure programs include rock climbing, mountain biking, whitewater rafting, scuba diving, ice climbing, and sea kayaking.

New Student Orientation Programs

Students new to the University are required to participate in an orientation program designed to facilitate their transition to the Storrs campus. Small group orientation programs are conducted for freshmen and transfer students during the month of June. Freshmen attend one two-day, overnight session, while transfer students attend one day-long session. The orientation program is designed to introduce new students to the Storrs campus community. The program is conducted by undergraduate student leaders. During the orientation program, new students become familiar with campus, learn about student life and support services in addition to University policies and regulations. New students discuss their academic schedule with a faculty advisor, select and register for classes for the fall semester. Tours through University buildings and I.D. photos are also done at this time.

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.

Usually students have to wait until they are in a particular major and have spent several years at UConn to take a seminar. 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.

Course offerings for First Year Experiences are listed in the interdepartmental (INTD) section of the *Directory of Classes*. For more information, please contact David Ouimette, Director of the First Year Experience, at 486-5019.

Advising

Freshmen and sophomores may be assigned to a particular advisor or to a central office of academic advising in a school or college. Juniors and seniors are advised by faculty members in the department of their major. (See "Academic Advising and Registration" within the Academic Regulations and Procedures section of this *Catalog*.)

The advisor helps the student to develop a program of courses for registration and to formulate a plan of study leading to a degree. Although the advisor is responsible for providing direction to a student in making appropriate academic decisions, it is the responsibility of the student to become familiar with the academic regulations and degree requirements of the University as well as special requirements of his or her major.

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 Educational Rights and Privacy Act Office (FERPA) concerning alleged failures of the institution to comply with this Act. In compliance with this Act, the University of Connecticut publishes its policy statement in the *Directory of Classes* and *Student Handbook*.

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 1993 entering freshmen, the graduation rates by the summer of 1999 were: entered at Storrs 68.3%; entered at a regional campus 38.4%. Non-graduates may have completed degrees at other institutions.

University Library System

There is an inseparable relationship between the quality of the University library system and the quality of the University – one can rise no higher than the other. In support of this relationship, library staff select, acquire, organize, and provide access to those books, journals, electronic resources, government documents, newspapers, maps, audio/visual materials archives, manuscripts, and other items required to support the teaching, research and public service mission of the University.

The University of Connecticut Libraries System holds the largest public collection of research materials in the State of Connecticut. On the Storrs campus, the University Libraries includes the central library, Homer Babbidge Library, the Music and Dramatic Arts Library, the Pharmacy Library, and the Thomas J. Dodd Research Center, which houses Archives and Special Collections. Regional campus libraries include the Trecker Library in West Hartford, the Richard Library in Stamford, and libraries in Waterbury, Torrington, and Avery Point. Specialized collections in law are held in the School of Law Library in Hartford; and in medicine and dentistry by the Stowe Library at the UConn Health Center in Farmington. The Trecker Library houses a major collection in the field of social work; strong business collections are maintained at Trecker, Richard, and Babbidge Libraries; and the Avery Point Library houses an important collection in marine sciences. The Dodd Center houses significant archival collections in a number of fields; many are of national importance. All collections are available to students of the university and together are capable of supporting advanced research in all fields of study offered by the university.

The Homer Babbidge Library at Storrs provides seating for 3,000 readers and space for more than 2 million volumes. Current journal subscriptions total approximately 7,900 at the Homer Babbidge Library and 18,600 for the entire University library system. An extensive array of electronic resources in all subject areas is available in the libraries and distributed via the World Wide Web to faculty and students in their dorm rooms or offices.

Access to the Collections: HOMER UCAT, the online catalog, provides bibliographic information for collections in the libraries at Storrs, Avery Point, Hartford, Stamford, and Torrington. The database includes books, federal and

Connecticut state documents, microforms, maps, electronic files, music scores, and audiovisual materials, and may be accessed at: www.lib.uconn.edu

Reference and Electronic Information: The Libraries invest heavily in the provision of access to electronic information resources and in teaching students to use those resources, providing scores of classes and electronic workshops each year. The Babbidge Library houses 1,300 computer databases, and current UConn students, faculty and staff have access to major fulltext online services such as LEXIS/NEXIS, Dow Jones, FirstSearch, and Infotrac. The Library also provides Internet access to global information resources through its information server at: www.lib.uconn.edu

The Babbidge reference collection contains more than 30,000 printed volumes – indexes, bibliographies, dictionaries, encyclopedias, and other sources – that enable researchers to locate information.

Government Publications: These collections of printed and electronic publications, numbering more than 575,000 items, are printed, paid for, or authorized by the governments of the United States and the State of Connecticut. The libraries also hold selected publications from other governments and states, and from nongovernmental organizations such as the United Nations.

Special Purpose Collections and Services

Archives & Special Collections: Staff in this area, housed in the Thomas J. Dodd Research Center, collect, preserve, organize, and provide access to original source materials for research, primarily in the humanities and social sciences; and maintain archival records of the University. The operation is concerned with materials that require special handling and preservation, including manuscripts, early printed books, broadsides, pamphlets, photographs, and prints; as well as special subject collections kept together for research purposes. Materials in Archives & Special Collections must be used in the John P. McDonald Reading Room. Bibliographic access is provided through a combination of sources including special files maintained in the department, HOMER UCAT, and the Libraries' information server. Curators are available for individual consultation and can also arrange presentations for classes and seminars.

Art and Design Library: This collection contains the Libraries' major collection of visual arts resources, including materials relating to art history, studio arts, design, landscape architecture, and garden history.

Culpeper Library, Audio/Video/Computer Cafe: This collection of audio-cassettes and videotapes covers a wide range of topics in support of the teaching program at the University. The Computer Cafe located on level 1 contains 40 IBM-compatible personal computers. Printers and a variety of software are available.

Library Services for Persons with Disabilities: The Library provides personal assistance as needed for people with permanent or temporary disabilities who may require help in using the facilities, collections, and services. At the Homer Babbidge Library, a member of Research and Information Services serves as coordinator for this program. The Babbidge Library also maintains a variety of specialized equipment for the use of persons with disabilities.

Map and Geographic Information Center (MAGIC): This collection of over 160,000 maps, specialized and general atlases, aerial photographs, privately published maps, and other research materials is the largest public collection of cartographic materials in the state. Access to cartographic information in electronic format is also available. MAGIC is an affiliate of the National Cartographic Information Center, a federal agency that accesses aerial photography nationally and satellite imagery world-wide, and is the federal depository library for maps in Connecticut and Rhode Island.

Microtext: This collection contains nearly two million items in a variety of photographically-reduced formats, including domestic and international newspapers, journals, U.S. government publications and specialized research collections in areas of historical, social, political and literary interest.

Music Library: The Music and Dramatic Arts Library houses books, reference materials, scores, journals, and microforms relating to the study of music, and a non-lending collection of 16,500 sound recordings. A listening system is available.

Pharmacy Library: This library supports the information and research needs of the School of Pharmacy. Included in the collection are books, journals, audiovisual materials and electronic services that focus on pharmacy, pharmacology, pharmacognosy, medicinal chemistry, pharmacy administration, pharmacy technology, toxicology, natural products chemistry, and immunology.

Health Services

The Department of Health Services, located in the Hilda M. Williams Building

on Glenbrook Road, provides primary level health care (medical and mental health). The Department of Health Services is a fully accredited ambulatory health care facility. The student population is offered both in- and outpatient services. Health care treatment for non-life-threatening conditions is available. Because of certain limitations some medical problems may be referred to the private sector for diagnosis and/or treatment.

The Department of Health Services offers a wide range of services including in- and outpatient medical service, outpatient nurse practitioner service, outpatient gynecological service and outpatient mental health service. Supportive services include laboratory, x-ray, pharmacy and physical therapy. Nutritional counseling is also available on an appointment basis. Health promotion and outreach programs are offered through the Health Education Office and the Substance Abuse Education Program (HEART). Confidential HIV testing is also available.

The Department of Health Services is open continuously (24 hours a day) from 8 a.m. Monday through 4 p.m. Saturday. Hours on Sunday are 8 a.m.-4 p.m. There is an on-call telephone advice nurse service on Saturday and Sunday nights. There is reduced coverage during semester breaks and summer sessions. Services are available through appointment clinics and through daily walk-in clinics. The Women's Health Clinic specializes in all aspects of female sexuality and health care. The Women's Clinic also sponsors assault crisis intervention for sexual and physical abuse. Certain supportive services may be restricted when the University is not in full session.

Students who enter the University for the first time must furnish a detailed health history form for medical records purposes as well as documented proof of adequate immunization against Measles and Rubella in order to register for classes. Additionally, students must provide evidence of TB testing and appropriate medical intervention. All medical records are held in strict confidence and can only be released with a signed consent form.

Services are available to all properly registered Storrs students who present the required validated student identification card. Most primary care services are rendered without any additional charge to a student as the Health Service is supported by the General University fee. There are additional charges for services including lab tests, x-rays, physical therapy, certain special procedures, annual gynecological exams, and prescriptions. These charges may be placed on the student's University fee bill. Such bills may be submitted to insurance companies for reimbursement, but remain the financial responsibility of the student. The Health Service is a participating provider with several major insurance plans. 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 insurance waiver card 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 for further information.

The Speech and Hearing Clinic

The Speech and Hearing Clinic, located in the David C. Phillips Building, offers diagnostic and remedial services to students and to the public with problems in speech, language or hearing. Hearing aids and other assistive listening devices are dispensed. Both adults and children are eligible for services, which address problems such as articulation, stuttering, language disorders, and voice disorders. Hearing testing and aural rehabilitation also are provided. Special programs are available for improving English pronunciation. A fee is charged and third-party funding is accepted. Information and appointments are available by contacting the clinic: 486-2629.

Services for Students with Disabilities

For complete information regarding the *University's Policies and Procedures Regarding Students with Disabilities*, please refer to *Appendix*.

Center for Students with Disabilities

The Center for Students with Disabilities (CSD) assists students to maximize their potential while helping them develop and maintain independence. Our philosophy is one that promotes self-awareness, self-determination, and self-advocacy in a comprehensively accessible environment. 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.
- Transportation and parking services.
- Referral and liaison services to state agencies.
- Information and referral source to all University and community programs and services.

For more information, contact Donna M. Korbel, Director, CSD, Wilbur Cross Building, Room 161, U-174, Storrs, Connecticut 06268-4174; Voice/TDD (860) 486-2020, Fax: (860) 486-4412.

Program for College Students with Learning Disabilities (UPLD)

The University's 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). Please refer to the Appendix for specific information regarding *Guidelines for Documentation and Policies and Procedures from Students with Disabilities*.

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. 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.

For information, contact Dr. Joan McGuire, Director, University Program for College Students with Learning Disabilities, University of Connecticut, 249 Glenbrook Road, U-64, Storrs, CT 06269-2064; Voice (860) 486-0178.

Library Services for Individuals with Disabilities

Individuals with permanent or temporary disabilities may require assistance in using the facilities, collections, and services. The library provides such assistance on an individual basis. On the Storrs campus, at the Homer Babbidge Library, a member of the Research and Information Services Department of the Homer Babbidge Library acts as coordinator for services offered to library users with disabilities.

Services include, but are not limited to: assistance with bibliographic sources; orientation to the library building; assistance with long-term research projects; recording of materials; space for studying and taking examinations; assistance when ordering materials in alternative formats; access to volunteer student and community leaders; and retrieval of materials.

The Homer Babbidge Library has the following assistive equipment available: 4-track cassette tape recorders/players; close-circuit television; voice dictation software; scan and read software; large print software; screenreading software; and accessible workstations for the library's electronic services.

Residence Halls

The University of Connecticut at Storrs is committed to the concept of a residential campus. Close interaction with peers contributes to the education and development of the whole person. It is also believed to be in the best educational interests of students to provide living arrangements in close proximity to the many educational, cultural, and social facilities on campus.

The majority of undergraduates are housed on campus in University-operated residence halls. These residence units are supervised by paraprofessional and

professional staff. Staff work with students to create an environment which supports and compliments the academic mission of the University.

All housing arrangements for on-campus students are made by the Department of Residential Life. Availability of on-campus housing for new students is determined by the offices which have processed their admissions to the University. Contract offers for continuing students will be governed by official University policies and are dependent upon the availability of space. Priority for housing assignments is given to full-time degree-seeking students.

Students are required to sign contracts for the entire academic year or portion remaining if the academic year is already in progress. Procedures have been established to allow room changes during specified periods.

During Thanksgiving, mid-year and spring vacations, most undergraduate residence halls are closed.

At present, the University does not have residence hall space for married undergraduate couples. An Off-Campus Housing Office has been established within Residential Life to help students obtain listings as well as to provide related services. More information about residence hall life is available at the following web site: www.drl.uconn.edu/

Residence Hall Computer Services

Computer labs are provided in Buckley Hall, Hilltop, North Campus, Alumni Quad, McMahon Hall, South Campus, Sprague, Northwest, and Towers. Students may use personal computers in their rooms. (Surge protectors are advised.) Direct internet/mainframe connections are available from all rooms. Students need to sign up through ResNet for service although there is no installation charge or monthly fee. (See the ResNet homepage at www.resnet.uconn.edu/ for more information.)

Residence Hall Telephone Service

All student rooms have been provided with local telephone service and voicemail. Students are encouraged to bring touch tone telephones to campus. Residents who desire long distance services must register with UConnect, the University Telephone Service. UConnect will bill each student directly for toll calls.

Also, coin telephones and campus restricted phones are scattered throughout the residential facilities.

Huskyvision provides SMATV programming to all residence halls. This includes all network channels, educational programming, ESPN, MTV, the Comedy Channel, etc. Contact Huskyvision at 486-2288 or www.huskyvision.uconn.edu for more information.

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, Room 167, Wilbur Cross Building. Name changes require official documentation.

Student Parking

Parking on campus is in high demand and it is suggested that students who can avoid bringing a vehicle to campus should do so. The number of parking spaces available makes it impossible to give all students permission to register motor vehicles at the University. It is therefore necessary to establish guidelines for the allotment of motor vehicle permits. Those guidelines are as follows:

Commuter students may purchase parking, regardless of semester standing.

Students living on campus must have successfully completed 54 or more credits to be eligible for parking.

Qualified individuals are required to register their vehicles with Parking Services, pay a registration fee, and display their valid permit. Photo identification or a valid UConn I.D. must be presented when purchasing a permit.

In order to purchase a parking permit, the applicant and the vehicle to be registered must meet all legal requirements for operation within the State of Connecticut. The vehicle must be owned (or operated) by the applicant or a member of his/her immediate family and must carry insurance or other form of security as established under Connecticut Motor Vehicle Laws (Title 14). **Students may not register vehicles belonging to other students.** Applicants must provide proof of vehicle registration when registering and all outstanding University fee bill charges must be paid prior to obtaining a parking permit.

To obtain further information about parking on the Storrs campus, you may call Parking Services at (860) 486-4930, stop by the Parking Services Office at 1501 Storrs Road (Route 195), or visit their website at: <http://www.park.uconn.edu>

Concessions, Solicitations, and Use of Name

Residents are not permitted to use their room or facilities of the building for any commercial purposes. Permission for concessions or solicitations is required.

The University places no restrictions as to purpose, on the solicitation of funds by registered organizations within or without the University community. The time, place, and method of solicitation within the University by registered organizations shall be governed by regulations established in the interest of avoiding over-crowding and interference with those using an area for other purposes.

The Board of Trustees has ruled that "The name of the University shall not be used by any group not duly authorized as a part of the University nor by any individual, without the approval of the President."

STUDENT IDENTIFICATION NUMBER

A student's identification number is the student's social security number. If this 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, Room 167, Wilbur Cross Building.

The University of Connecticut has websites offering information:

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

Students with Disabilities: <http://www.csd.uconn.edu/>

Residential Life: www.drl.uconn.edu

Parking Services: <http://www.park.uconn.edu>

International Affairs

The Office of International Affairs is the focal point for international activities across the campus. These activities include technical assistance and training projects, especially in developing countries, international exchange of faculty, advising of international students, and coordination of research and training in the areas of development administration and intensive English, to name a few.

International Studies Minor

The minor is described in the section of this *Catalog* entitled *Minors*. Further information on the International Studies minor can be obtained from the International Studies Minor Advisor, Elizabeth Mahan, U-1161, email lamsadm@uconnvm.uconn.edu

Center for European Studies

The Center for European Studies (CES) was established in 1993 and succeeds the former Center for Slavic and East European Studies, which was established in 1976 with support from Federal Title VI funds. The CES has been formed in an effort to both coordinate and encourage interdisciplinary study and research on Europe at the University.

The CES coordinates an undergraduate degree program in European Studies and M.A. and dual M.A./M.B.A. degree programs in International Studies with concentration in European Studies.

The Center's primary objectives are: (1) to offer challenging, rewarding, interdisciplinary B.A., M.A. and M.A./M.B.A. degree programs; (2) to organize and support colloquia series which enrich the curriculum and stimulate interest in European based topics; (3) to work with other units of the University to expand the University's formal and informal ties with European universities and institutions; (4) to serve as an information source and catalyst for study and research on Europe at the University; and (5) to organize and support interdisciplinary research projects focussing on Europe.

Over one hundred University faculty have ties to the Center, which also works cooperatively with a number of other European-oriented programs at the University, such as the Study Abroad Program, the Center for International Business Programs, the Noether Chair in Modern Italian History, the Eurotech Project (an integrated study program in German language and Engineering), Linkage Through Language (integration of language and social science courses), and European focussed activities and degree programs in a variety of University departments, schools, and colleges.

Faculty advisors for undergraduate majors in European Studies are: William Berentsen, Geography; Jennifer Sterling-Folker, Political Science; and Lawrence Langer, History. The Program Advisor is Ms. Ludmilla Burns, Room 5, Human Development Building.

For further information, contact the Center for European Studies, Human Development Building, Room 5; Phone: (860) 486-5888; Fax (860) 486-2963.

Center for Latin American and Caribbean Studies

The Center for Latin American and Caribbean Studies coordinates both undergraduate and graduate programs in Latin American Studies.

Eighteen faculty members teach primarily Latin American subjects (language, literature, history, anthropology, etc.). Sixteen other professors teach courses that have some Latin American content. Approximately thirty courses each semester cover Latin American topics. Among the University's resources particularly relevant to Latin American Studies are a strong Latin American collection in the Homer Babbidge Library and a unique collection of Latin American public opinion polls and survey research data sets in the archives of the Roper Center for Public Opinion Research.

The Center offers an undergraduate major, a minor, an M.A. and a dual M.A./M.B.A. degree in Latin American Studies. Title VI Fellowships from the U.S. Department of Education and University of Connecticut Pre-Doctoral Graduate Fellowships are available for graduate students.

The Center sponsors a wide range of seminars, public lectures, conferences, films and colloquia on Latin American subjects. The Center also serves as a clearing house for information about such events on and off campus, employment opportunities, new avenues for research, and research funding for those interested in all aspects of Latin America.

For further information, contact the Center for Latin American and Caribbean Studies, Human Development Building, Room 3, (860) 486-4964; Fax: (860) 486-2963; e-mail: lamsadm2@uconnvm.uconn.edu

Center for Contemporary African Studies

The Center for Contemporary African Studies was established as a Center by the Board of Trustees in 1991. This recognition followed years in which the impressive core of Africanists at the University had informally constituted itself as an area studies group.

The Center joins together faculty and students in an interdisciplinary setting where they can focus on issues and problems arising from the African continent. The Center regularly sponsors talks and performances embracing a wide range of issues.

The scope of the Center spans a spectrum of activities, including increased public access and the broad goals of expanding knowledge about and understanding of Africa throughout Connecticut and the New England region. Service is provided to the public schools, to the business community, and to others who seek information on Africa. To support the dissemination of news, the Center publishes a weekly Newsletter, which is widely distributed both on campus and throughout New England; it provides a constantly updated source of information about African-related activities.

Within the M.A. Program in International Studies, faculty associated with the Center offer an M.A. concentration in African Studies. Prospective students can choose among the many courses offered about Africa throughout the University and select a Committee chair from the discipline most closely related to their own interest.

Institute of Public Service International

The Institute of Public Service International (IPSI) began operations in April 1961 with a mission to provide education and training to managers and senior staff members of public, private and non-profit organizations from developing countries.

IPSI offers programs in Connecticut and abroad. The Connecticut-based program emphasizes classroom work with both University and visiting or adjunct faculty, combined with social-cultural activities, contacts with American host families, professional field visits to Hartford and other cities such as New York, Boston or Washington, D.C. and, frequently, internships or other professional attachments. IPSI also offers custom-designed training programs both in Connecticut and abroad, including recent training programs in Senegal, Mali, Jamaica, Belize, Estonia, Indonesia, Thailand and Tanzania. IPSI's programs normally are conducted in English and French, but IPSI has run special programs in Spanish, Chinese, Indonesian, Russian, Romanian and Ukrainian. To be admitted to IPSI, participants must have a minimum of a bachelor's degree and some work experience.

IPSI, as presently constituted within the Office of International Affairs, offers a five-month Public Management Diploma Program, which begins in October of each year, and several different four-week and eight-week Certificate Programs scheduled throughout the year.

A formal arrangement between IPSI and the University of Connecticut's Master of Public Affairs degree program exists allowing participants who complete one of the Institute's diploma or certificate programs to earn credit toward a Master of Public Affairs.

Further information about IPSI programs may be obtained from IPSI, (860) 570-9092.

International Center - Department of International Services and Programs

The International Center has as its purpose to establish friendship and understanding among people of diverse cultures and backgrounds, while also providing an array of services to the international community.

The Center's facilities provide a focal place for a wide variety of intercultural programming. The Center is open every day for use by individuals and student groups.

In addition, the International Center is responsible for the daily advisory services and program interests of international students, faculty and staff. Full-time advisory staff are available to consult for the following:

- U.S. immigration concerns
- Personal, cultural and academic adjustment
- Orientation and cross-cultural programming
- Special events for the campus community

The Center provides an ideal meeting place for U.S. and foreign students as well as for faculty and community members. For further information, contact Mark Wetzel, Director, Alsop B, West Campus, U-0083, 450 Whitney Road Extension, 486-3855.

Coordinator for International Proposal Development/Fulbright Program Advisor

The Fulbright Program Advisor recruits and counsels student and faculty applicants for the various Fulbright programs. The advisor serves as Project Manager for Fulbright-Hays Training Grants (Doctoral Dissertation Research Abroad Program and Faculty Research Abroad Programs) and evaluates and rates applications for Fulbright Grants for Graduate Study Abroad. The Advisor is Chair of the Fulbright Scholarship Committee, a standing committee of the University.

The Coordinator for International Proposal Development seeks sources for funding to enhance area- and topical-studies programs and assists faculty, staff, and students in developing internationally-oriented research proposals.

University of Connecticut American English Language Institute

The UConn American English Language Institute (UCAELI) offers a full service intensive English program for students of English as a second language. Course work involves students in the UConn community while emphasizing the development of essential language skills. Courses are designed to prepare undergraduate and graduate students for academic work and professional pursuits. Six and eight week programs are offered year round. Conditional Admission and transition programs may be arranged for qualified students. A TOEFL Preparation course is offered each session. An English Proficiency Certificate, accepted by the Admissions Office in lieu of the TOEFL score, is issued for eligible students who have completed UCAELI's program. For further information, contact UCAELI, 28 North Eagleville Road, U-198, (860) 486-2127; Fax (860) 486-3834; E-mail: ucaeli@www.sp.uconn.edu; Website: <http://www.ucaeli.uconn.edu>

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. UCONN 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.

Further information on programs **abroad** can be obtained from the Study Abroad /Study Away office, 843 Bolton Road. Contact Denise Ferreri, Study Abroad Advisor, or Sally Innis-Klitz, Director, at 860-486-5022. Contact Lisa McAdam Donegan at 486-3705 for Information about the **National Student Exchange and other domestic programs**.

The Office of International Affairs offers more information at these websites :

Office of International Affairs, Center for Contemporary African Studies, Department of International Services and Program, Institute of Peace, and International Proposal Development/Fulbright Program

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

American English Institute

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

Center for European Studies

<http://vm.uconn.edu/www~europ/>

Center for Latin American and Caribbean Studies

<http://www.sp.uconn.edu/~wwwlams>

The Study Abroad/Study Away Office has additional information available at their website :

<http://www.ucc.uconn.edu/%7Ewwwsab/>

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. (See “Credit Restrictions.”) Some schools require more than 120 degree credits for graduation.

Required DGPA. The University requires that all students have an Upper Division cumulative grade point average (DGPA) 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 DGPA required. The undergraduate grade point system is two-tiered. The Lower Division ends after the semester in which the student has earned 60 credits. The Upper Division commences from that point. Graduation is based on the Upper Division cumulative grade point average.

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-President for Academic Affairs. (See “Residence Requirement.”)

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.

General Education Requirements. The University requires of all schools and colleges that their students take courses from a range of disciplines. The Appendix lists the courses (Groups 1 – 8) from which the schools and colleges must make their selection.

The Types of Courses and the Disciplines

1. The University requires skill in a **foreign language** to help students understand a culture other than their own and the relation between language and culture,

2. Introductory and advanced courses in expository writing and subject-matter courses emphasizing **writing** skills,

3. **Mathematics** courses and other quantitative courses,

4. Introductory or advanced survey courses in **literature and the arts** to help students understand how artists and writers communicate their unique experience of the world,

5. Introductory or advanced survey courses on **culture and modern society** to help students understand the origins and development of their culture and stimulate a feeling for human differences,

6. Introductory or advanced survey courses in **philosophical and ethical analysis** to introduce students to philosophic problems and develop the ability to think clearly and critically,

7. Introductory or advanced courses in **social scientific and comparative analysis** to help students understand society,

8. Introductory courses in **science and technology** to acquaint students with scientific thought, laboratory experimentation, and formal hypothesis testing.

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

Applicability of Requirement

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.

Residence Requirement

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. Unless students meet one of the conditions below, credits earned during the last two semesters must be 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 Provost).

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.

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.

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. 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. All available minors are described in the *Minors* section of this *Catalog*.

Lower and Upper Division Status

Students are in the Lower Division until they have earned at least 60 credits. Students are in the Upper Division the semester after they have earned 60 or more credits. Note that the graduation grade-point requirement is based on Upper Division credits.

Change of Major within a School or College

All students except those enrolled in the College of Liberal Arts and Sciences (CLAS) wanting to change majors should consult their academic dean. Students in CLAS wanting to change majors should consult the head of the department offering the preferred major.

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 Campus

Students wanting to change from Storrs to a regional campus must obtain information and approval from the Dean of Students Office. Regional campus students wanting to change to Storrs or another regional campus should consult their regional campus registrar or office of Student Affairs.

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*, the *Student Handbook*, the *Directory of Classes* 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.

The deans of the schools and college distribute individual academic evaluations to the students to help them plan their academic careers. The evaluations show which requirements have, and have not, been fulfilled. The academic dean keeps a copy and student advisors receive a copy.

Registration

All students must register on the dates announced and pay the succeeding semester fee bills as due. Before registering, students must consult their academic advisors.

Entering Students

Entering Freshmen and Transfers register in the summer for the following Fall semester and in January for the following Spring semester. 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.

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") when 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.

Continuing Students

Continuing students register for the next semester during the preceding semester, e.g., in the Fall semester for the Spring. The Registrar mails to each continuing student a notice listing the dates and times for student registration. The Registrar publishes a *Directory of Classes* listing the course offerings and other relevant information for the semester. Students should also read the description of the course content in the *Catalog* before registering for courses.

Before classes begin, the Registrar mails to each student a list of the courses in which the student successfully enrolled. Students can adjust their schedules or complete them during add/drop periods. Students who have not paid their fee bills or do not have deferrals will have their class schedules cancelled.

Late Registration

Late registration is held each semester just prior to the beginning of classes to register students who were unable to register previously, such as late admitted or readmitted students.

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.

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.

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.

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

Unless the *Catalog* course description states that students may repeat the course for credit, no student shall receive credit toward the degree from the same course more than once.

With the written consent of the instructor and the student's academic dean,

Undergraduate Schedule Revision Regulations

Semester Period	Add	Semester Period	Single Drop	Two or More Drops
First and Second Weeks of Classes	*Touchtone Telephone Registration	First and Second Weeks of Classes	*Touchtone Telephone Registration with NO "W" Grade	*Touchtone Telephone Registration with NO "W" Grade
Third and Fourth Weeks of Classes	Advisor, Instructor, and Department Head offering Course	Third through Ninth Weeks of Classes	Advisor with "W" Grade	Advisor and Dean with "W" Grade
After the Fourth Week	All of the above and Dean	After the Ninth Week	DEAN Exceptions made for extenuating circumstances	

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

students may repeat a course already passed to improve their grasp of the subject. The student will earn no additional credits toward the degree. However, the credits count as part of the student's course load and the student record will include both marks. Also, the grade-point average will include the credits and grade points for both marks.

The parenthetical cross-references:

(Formerly offered as . . .),

(Also offered as . . .),

following a course title indicate that a student may not count the credits for both courses toward a degree.

The same 3 digit numerics are not repeatable, i.e. 107, 107W.

Adding or Dropping Courses

Detailed instructions for adding and dropping courses appear in the *Directory of Classes*. 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 Registrar's Office 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.

Registration for fewer than 12 credits. See section on Full-time/Part-time Registration.

Section Changes. During the first two weeks of the semester, students need not consult their advisors to change sections. After the second week of the semester, section changes require the same authorization as other add/drop transactions.

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

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

Summer sessions. Students attending summer classes should consult the University's summer bulletin for information on procedures and approvals needed for adding or dropping courses.

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.

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.

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 and Pharmacy	19	21 if 5th semester or above and earned 2.6 SGPA or above the previous semester
All other schools and colleges	17	18 If earned 2.6 SGPA or above the previous semester or taking National Defense courses
For a six-week Summer Session, the maximum is 8 credits.		

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)

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.

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.

Study Abroad

Students wanting to study abroad in a University of Connecticut program should consult the Study Abroad advisor for current information about programs and procedures. Students wanting to study abroad in another program must follow the procedure described above for transferring credits.

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 <i>not</i> register for these courses.
100-199	courses primarily intended for Lower Division students.
200-299	courses primarily intended for Upper Division students.
300 and above	courses primarily intended for Graduate students.

Lower Division students 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" 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" 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 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* and *Directory of Classes* specify the required signatures.

Prerequisites, Required Preparation, Recommended Preparation

Prerequisites: 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. 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.

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.

Required Preparation: Students must satisfy *required preparation(s)* before registering for the course, unless exempted by the instructor. However, students may subsequently receive credit towards graduation for courses so listed, regardless of the order in which they are taken.

Recommended Preparation: *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

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 all cases of credit-restricted courses, the transcript will show full credit earned because the restricted credits still count toward full-time status determination and in calculation of grade point averages. Only degree credits, credits used to meet degree requirements, will be reduced.

Satisfying Course and Credit Requirements by Examination

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 and take it 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 Bureau of Educational Research 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.

The limitations are: Students may not earn credits by examination for English 011, 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.

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

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.

Grading System

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 semester GPA (SGPA) includes all courses graded A-F in a semester or a summer session. The division GPA (DGPA) averages all courses graded A-F in the Lower or Upper Division. The total GPA (TGPA) averages all courses graded A-F in Lower and Upper Divisions. Lower Division students have fewer than 60 credits; Upper Division students have 60 or more credits.

If a student fails a course and then repeats it successfully, the Registrar records the grades and the grade-points for both attempts. Note that given an F for a 3-credit course, the points for the course are 0 (0 x 3). Thus, for any grade point average, when a student fails a course, while the point-total does not increase, the credit-total dividing the point-total does increase.

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.

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

Grades, Grade Points, Credits, and Skills				
Explanation	Final Grades	Grade Points	Course Credit	Skill
Excellent	A	4.0	yes	yes
	A-	3.7	yes	yes
Very Good	B+	3.3	yes	yes
Good	B	3.0	yes	yes
	B-	2.7	yes	yes
	C+	2.3	yes	yes
Average	C	2.0	yes	yes
Fair	C-	1.7	yes	yes
Poor	D+	1.3	yes	yes
	D	1.0	yes	yes
Merely Passing	D-	0.7	yes	yes
Failure	F	0	no	no
Pass/Fail Pass	P@	na	yes	no
Pass/Fail Failure	F@	na	no	no
Satisfactory	S	na	yes	no
Unsatisfactory	U	na	no	no
Audit	Aud	na	no	no
Withdrawal	W	na	no	no
Continuing Registration	na	na	na	na

Undergraduate Marks: Relation of marks, points, course credits, and Fulfillment of skill requirement.

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 I F or I U.

X (absent from the final examination). The instructor reports an X only when a student missed the final examination and when passing it with a high mark could have given the student a passing grade for the course. If the student would have failed the course regardless of the grade on the final examination, the student will receive an F. If the instructor reports an X and the Dean of Students Office excuses the absence, the instructor will give the student another opportunity to take the examination. The absence must be due to sickness or other unavoidable causes. The instructor must give the examination before the end of the third week of the next, registered semester. If by the end of the third week of the next, 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.

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 26 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, despite the number of summer sessions attended.

Students place courses on Pass/Fail, or remove them from Pass/Fail, at the Office of the Registrar without informing the instructor. Since the instructor does not know whether a student has placed a course on Pass/Fail, 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 Extended and Continuing Education 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 College of Agriculture and Natural Resources, students may not elect the Pass/Fail option for any course used to meet the English requirement, the group distribution requirements, the course requirements for a major, any course specifically required for a given major, or any other course declared by the College of Agriculture and Natural Resources to not be appropriate for Pass/Fail grading.

2. In the Ratcliffe Hicks School of Agriculture students may not use the Pass/Fail option.

3. In the School of Allied Health Professions, courses taken on Pass/Fail cannot be used to fulfill specified course requirements.

4. In the School of Business Administration, 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.

5. 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.

6. 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.

7. 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.

8. 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).

9. 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).

10. 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.

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.

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 Registrar does not receive the marks and they do not become a part of the permanent record.

At the end of each semester, the instructor sends course grades to the Registrar, and the Registrar sends the students their final grades.

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.

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:

- four examinations in two consecutive calendar days,
- three examinations in one calendar day, or
- 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.

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.

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

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.

Graduation

Application for Degrees

Based on the Registrar's records, in October the Registrar will mail applications for degrees to all probable Spring candidates and in March to all probable summer and fall candidates. Candidates who do not receive applications at these times should consult the Office of the Registrar, Room 167, Wilbur Cross Building, by the beginning of the semester in which they expect the degree.

To graduate, candidates must return the completed application by the due date on the application to the Registrar's Office. 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.

Commencement

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

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 (May), August 31 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, Room 167, Wilbur Cross Building.

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, Room 167, Wilbur Cross Building.

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.

For students who apply for an additional degree: (1) the total GPA combines all A-F credits and grade points of both degrees, and (2) the Upper Division Cumulative GPA combines all A-F credits and grade points in the Upper Divisions. All credits earned after completing the semester in which the student earned 60 credits are Upper Division credits.

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, Wilbur Cross Building, Room 167.

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, U-77T, 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, 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 Registrar's Office in the Wilbur Cross Building and submitted for processing in Room 167. 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 by appropriate University officials if some financial or other obligation to the University remains unmet. Since official transcripts are issued on security bank paper they **CANNOT BE FAXED**. Requests are processed in the order in which they are received in one to five business days. The University does not honor telephone or e-mail requests for transcripts.

THERE IS NO SERVICE FEE FOR OFFICIAL TRANSCRIPTS

Students can obtain an unofficial transcript by presenting a photo I.D. in person at the Registrar's Office 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.

Scholastic Standards

Scholastic Probation and Dismissal

Scholastic probation and dismissal from the University for scholastic reasons shall be administered by the Dean of Students in accordance with the regulations that follow.

Scholastic Probation. Scholastic probation is an identification of students whose scholastic performance is below University standards. The student and the student's counselor or advisor 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 completed their first Lower Division¹ semester and who have earned less than a 1.6 semester grade point average.
2. Students who have completed their second Lower Division semester and who have earned less than a 1.8 semester grade point average for that semester.
3. Students who have completed their third Lower Division semester and who have earned less than a 1.9 semester grade point average for that semester.
4. Students who have completed their fourth Lower Division semester or more and who have earned less than a 2.0 semester grade point average for that semester.

¹ Students shall be considered in the Lower Division until they have earned at least 60 credits. Division semester standing is determined by the number of calendar semesters completed.

5. Students who have completed their first Upper Division² semester or more and who have earned less than a 2.0 semester grade point average or Upper Division cumulative grade point average.

6. All full-time students as determined by initial registration, who have earned fewer than 9 credits during the last semester for which they were enrolled unless they fall below 9 credits because they were granted permission to drop courses.

All part-time students who at the end of the semester have earned less than 60% of the credits for which they were initially registered unless they fall below the 60% minimum because they were granted permission to drop courses.

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.

Warning letters will be sent to students who have completed their first, second, or third Lower Division semesters with less than a 2.0 semester grade point average.

Except for students who have been dismissed at the end of the spring semester, credits and grade points earned in a **summer session** of the same calendar year will be counted as part of that spring semester.

Dismissal. Students who fail to meet the minimum scholastic standards for two consecutively registered semesters, or for three in the same division, or for a total of four in their academic career, are 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.

A student who attains less than one-half of the stated scholastic probation minimum standards at the close of any semester is subject to dismissal.

The scholastic records of those students subject to dismissal are reviewed by an Assistant to the Dean of Students and the Assistant/Associate Dean of the School/College. For extraordinary reasons, students may be allowed to continue at the University on restricted scholastic probation.

A student who has been dismissed from the University for academic reasons may not register for courses as a non-degree student without the approval of the dean of Extended and Continuing Education, who will inform the dean of the student's previous school or college about the decision made.

Students who are subject to dismissal but who are permitted to continue may not hold office in any University registered club or organization or serve on any University committee, and they may not take part in any activity related to extracurricular public musical or dramatic performances or public athletic contests and may be subjected by the Dean of Students to other conditions for their continuance.

No students who have earned the minimum number of credits required for graduation, but who have earned fewer than 2.0 times as many grade points as the number of calculable credits for which they have been registered in the Upper Division, may continue in the University without the consent of the Dean of Students on the recommendation of the major department heads and academic deans.

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

Dismissed students are not permitted to live in residence halls the semester following their dismissal.

Students who have been dismissed may, during a later semester, request an evaluation for readmission to the University by applying to the Dean of Students Office. Any dismissed student planning readmission to the University should contact an Assistant to the Dean, at the Dean of Students Office, to discuss their individual academic situation. Readmission will be considered favorably only when the evaluation indicates a strong probability for academic success. Readmission can occur only after one regular semester has elapsed since the student was dismissed. In their first regular semester after readmission, dismissed students may not hold office in any University registered club or organization or serve on any University committee, and they may not take part in any activity related to extra-curricular public musical or dramatic performances or public athletic contests and may be subjected by the Dean of Students to other conditions

for their continuance.

Supplementary Scholastic Standards

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

1. The School of Allied Health Professions requires a division grade point average of not less than 2.2 in order to gain admission to the junior year program course sequence and/or Upper Division. Thereafter students will be dismissed if there is a semester in which they earn a grade point average below 2.2; their division grade point average drops below 2.2 at any time.

2. Students admitted to the School of Business Administration must earn a minimum 2.2 grade point average by the end of the semester in which they earn a minimum of 24 credits of graded coursework at the University of Connecticut to be guaranteed continuation in the School. Students must also earn a minimum 2.6 grade point average in all of their Lower Division courses, including having made substantial progress toward completing those courses which are prerequisites to the entry level business courses, in order to be guaranteed continuation to the Upper Division/ Junior Year in the School of Business Administration. Students accepted to the School of Business Administration must maintain a minimum grade point average of at least 2.0 in their semester grade point average, their divisional grade point average and in all calculable credits in the School of Business Administration 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 Administration.

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, division, and business courses or be subject to having their acceptance rescinded.

3. To be admitted to the Upper Division in programs in Sport, Leisure and Exercise Sciences (School of Education), a student must complete the Lower Division with at least a 2.0 cumulative grade point average.

Sport, Leisure and Exercise Sciences students are required to enroll in a minimum of nine credits of course work required by the program guidelines each semester of full-time study, unless upon the recommendation of their advisor and the department head, an exception is granted by the dean of the school.

4. 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.

5. 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 must maintain at least a 2.3 cumulative grade point average in all major department courses (Art, Dramatic Arts or Music) until completion of degree requirements. Students who fail to comply with the minimum credit requirement or maintain the minimum grade point average are subject to dismissal from the school.

6. A student in the School of Nursing must have a cumulative grade point average of at least 2.5 in those courses listed in the Lower Division course sequence, and a grade of C+ (2.3) or better in the following courses: Chemistry 127, 128; Philosophy 212; Science 240, or Nursing 202; Physics 101; and Biology: PNB 264, 265 in order to gain admission to the junior year.

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 is a prerequisite unless that student has earned a grade of C (2.0) or better in that prerequisite course. No student may progress to the 2nd semester junior year until all required 1st semester junior year courses have been completed. No student may progress to the senior year until all courses in the junior year sequence have been completed. No nursing course may be repeated more than once (for a total of two times).

Students will 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.

7. Admission to the School of Pharmacy professional program is competitive, with strong emphasis on the cumulative grade point average in Biology 107, Biology: MCB 203 and 229; Chemistry 127, 128, 243 and 244; Math 115, and Physics 121, or their equivalent, with no grade less than C.

² Students shall be considered in their first semester in Upper Division after they have earned 60 or more credits unless an exception is made by the dean of their school or college on recommendations of their academic counselors. Division semester standing is determined by the number of calendar semesters completed.

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.

8. Students in the Ratcliffe Hicks School of Agriculture are eligible for dismissal if their first semester grade point average is less than 1.2.

Interruption of Studies

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. (For refund information, see Undergraduate Fees and Expenses.)

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) and is entered on the student's official transcript. 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 Vice President for Academic Affairs; (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 Expulsion or Suspension

Disciplinary expulsion or suspension may be incurred as a result of unsatisfactory conduct. This action is recorded on the permanent academic record of the student. For complete rules, regulations and procedures, consult the Student Conduct Code.

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.

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. In such a case, the procedures for Eligibility for Financial Aid must be followed every semester. The disability Contact Person will notify Certifications each semester regarding students who are eligible.

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.

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. The Honors Scholar Program, especially at the Upper Division level, is more flexible than the Distinction Program. Each department is responsible for an Upper Division program which is meaningful for that discipline.

Admission and Retention. Qualified entering freshmen at Storrs are invited 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 in Pharmacy). Exceptions are sometimes made by the Honors staff with consent of the Standing Honors Committee. To remain in good standing, students in the Honors Scholars Program must have a TGPA of at least 3.0 during their first and second semesters and, thereafter, a TGPA 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 unusual 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.

The University of Connecticut will award Sophomore Honors Certificates to students who, during their freshman and sophomore years, earn a minimum of 18 credits of honors course work, have a TGPA of at least 3.2 at the end of their sophomore year, and attend at least two mini-courses or journeys seminars.

Upper Division Program. Before the junior year (fifth year 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. Honors credit for Upper Division 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. Students who have GPAs of at least 3.2 at the conclusion of the undergraduate programs and who complete satisfactorily their departments' Upper Division honors requirements will graduate with the designation of Honors Scholar in their major field.

University Scholar Program

Each year the Associate Directors of the University's Honors Programs select 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.

Once selected, a University Scholar candidate is allowed to pursue an academic program tailored to his or her unique intellectual interests and abilities. The program can be interdisciplinary within a single college; it can be a mixture of courses from different colleges, which could lead to a dual degree; it can include graduate studies in addition to undergraduate courses. A three-person faculty committee supervises a University Scholar candidate's program. The

Associate Directors, in consultation with the student's committee and, under exceptional circumstances, sometimes can waive certain college and departmental requirements for a University Scholar candidate, in order to give the student sufficient flexibility in scheduling to explore unique interests in depth. The University waives the General University Fee for every University Scholar candidate for the remainder of his or her undergraduate program.

Every summer, the Director of the Honors Program invites fifth-semester (ninth-semester in the School of Pharmacy) students with outstanding scholastic records to apply for this program. The Associate Directors determine 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, and (2) the set of courses that would enable the student to explore his or her interests in depth. In October, a committee of the Associate Directors selects recipients for the award according to the creativity, clarity, detail, and thoughtfulness of the applicants' proposed research projects and programs of study.

Participation in the University Scholar Program is noted on students' permanent records.

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, and
2. a total grade point average of at least 3.2.

Finally, every candidate must complete a project, defined by the Department, that demonstrates a high level of competence within the discipline. 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.

Nomination. Students interested in the Degree with Distinction Program should discuss their options with their Departments' Honors Advisors, and may obtain applications at the Honors Programs Office. Applications are due at the Honors Programs Office by the fourth week of the semester before the candidate is to graduate. Enrollment in the Honors Scholars Program is not required for participation in the Degree with Distinction Program.

Office of the Registrar Website

Students can find information about courses, registration, certification, examinations, transcripts, and graduation at
<http://www.registrar.uconn.edu/>

Honors Programs Website

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

College of Agriculture and Natural Resources

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

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 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 for the Baccalaureate 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 grade point average for the total number of calculable credits for which they have been registered; (3) earned at least a 2.0 grade average for all calculable Upper Division course work; (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 Appendix of this *Catalog*. Students must select approved courses to meet requirements.

36 Credit 200-Level Requirement for All Majors

Students in all majors in 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 at least 2.0
7. not include more than 6 credits 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:

- Biology 110
- Chemistry 122 or 127
- Plant Science 213 or MCB 259
- Plant Science 250

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

Group A. (All of the following): ANSC 120, 216, 217, 219, 295, PATH 200, BIOL 107, CHEM 122 or 127Q

All students must pass 4 courses from Groups B and C. This must include at least one course from Group B and at least 2 courses from Group C.

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

Group C: ANSC 222, 224, 226, 229, 253 or 253W. Either MCB 203 or 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 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, 108 or 110 CHEM 127, 128
ECON 112 or ARE 150 GEOL 102
MARN 170 MATH 115, 116 or 112, 113, 114
PHYS 131, 132 or 121, 122, 123 STAT 100, 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

GEOL 251 - Earth Surface Processes

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, 244 (Organic Chemistry)
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 (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, PATH 200, PATH 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, 239P, 242, 260Q/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 260Q/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:

Biology 110 Chemistry 122 or 127Q
Plant Science 250 Plant Science 238
Plant Science 213 or Biology (MCB 259)

One of the following:

Agricultural and Resource Economics 150 or 215C
Economics 112 or 113 Accounting 131

One of the following:

Plant Science 260, 261, or 231 Biology (EEB 272)
Natural Resources Management and Engineering 214

Two of the following:

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

Two of the following:

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

In addition, horticulture majors must earn a minimum of 9 credits from the following departments: Biology², Chemistry, Computer Science, Geology and Geophysics, Mathematics³, Physics, Statistics⁴.

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.

Landscape Architecture majors must pass the following courses:

Biology 110

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.

Chemistry 122 or 127Q
 Plant Science 250
 Plant Science 213 or MCB 259
 Plant Science 252, 255, 256, 260, 261, 262, 263C, 265, 266, 267, 271, 275, 276, 277, 280, 281, 290W, 293

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 TGPA, 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 such as air, fisheries, forest, water, or wildlife resources, or geographic information science and remote sensing. (For detailed information, please refer to: www.canr.uconn.edu/nrme)

Natural Resources majors must pass the following courses:

Natural Resources Management and Engineering 100, 239P, 242, 252, 256, 295

Plant Science 250
 Biology (EEB) 244 or 244W
 Mathematics 113 or 115
 One course in Chemistry
 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

Options in this major are: Dietetics, Preprofessional Program in Nutritional Biochemistry, Nutrition for Exercise and Sport, Food Science, and Nutrition Fundamentals. The American Dietetics Association has granted Developmental Accreditation to the Didactic Program in Dietetics in Nutritional Sciences for students preparing to become registered dietitians. Other areas where Nutritional Sciences graduates may be employed include nutrition education in the community and in schools, sport nutrition centers, cooperative extension, food companies, and food service management. (For detailed information, please refer to: www.canr.uconn.edu/nusci)

Nutritional Sciences majors must successfully complete the following courses:

Nutritional Sciences 165
 Nutritional Sciences 200
 Chemistry 127 and 128, or Chemistry 122
 Chemistry 141, or 243 and 244
 Biology (PNB) 264 and 265, or Biology 107, 108 and (PNB) 250
 Biology (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.

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:

PATH 297
 One course in Microbiology: MCB 229
 One course in Biochemistry: MCB 203 or MCB 204
 One course in Genetics: 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: PATH 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. Options in this major are: Agribusiness Management and Environmental Economics and Policy. These prepare students for a wide variety of careers in the business and government sectors, or to pursue graduate studies.

Resource Economics majors earn a minimum of 15 credits, numbered 200 or above, from courses in the Department of Agricultural and Resource Economics, and a minimum of 9 credits, numbered 200 or above, from recommended courses outside the Department. (For detailed information, please refer to: www.are.uconn.edu/)

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 form 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 and record 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 not less than 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 Aquaculture, Dairy Management, Food Science, Landscape Design, and Nutrition for Exercise and Sport. 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 unassigned 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 President for Academic Affairs.

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*
 Cynthia H. Adams, Ph.D., *Associate Dean, School of Allied Health*
 Ellen Darrow, B.A., *Director, Academic Advisory Center*

Major Programs of Study

Cytotechnology
 Diagnostic Genetic Sciences
 Dietetics
 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

A current certificate in cardio-pulmonary resuscitation (professional level) is a prerequisite for entry into the Upper Division for all programs and 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. See Undergraduate Fees and Expenses. 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 Upper Division 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 and/or Upper Division. 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 Upper Division 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.

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 grade point average for all calculable Upper Division course work, (3) 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

The School of Allied Health is an upper division professional school. Admission is competitive. 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 their admission. The Physical Therapy program **DOES NOT** admit transfer students.

University General Education Requirements

The University General Education requirements are listed in detail in the appendix 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. Allied Health 241W - Research for the Health Professional
- B. Medical Laboratory Sciences 208(W) - Immunology for the Medical Laboratory Sciences

Group 3. Mathematics

- C. Required Q courses:
 1. Math 109Q - Algebra & Trigonometry
 2. Chemistry 127Q-128Q - General Chemistry
 3. Statistics 110V - Elementary Concepts of Statistics
- D. Required C course: Statistics 110V - Elementary Concepts of Statistics

Group 8. Science and Technology

- A. Chemistry 127Q-128Q - General Chemistry
- B. Biology 107 - Principles of Biology

Major Requirements**Related Science Courses**

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

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. **Cytotechnology**
 - 220 - Cancer and Your Health
 - 221 - Introduction to Cancer and 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. Allied Health 241W - Research for the Health Professional
- B. Medical Laboratory Sciences 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. Chemistry 127Q-128Q - General Chemistry
 3. Statistics 110V - Elementary Concepts of Statistics
- B. Required C course: Statistics 110V - Elementary Concepts of Statistics

Group 8. Science and Technology

- A. Chemistry 127Q-128Q - General Chemistry
- B. Biology 107 - Principles of Biology

Major Requirements**Related Science Courses**

- A. Chemistry 141 - 142 - Organic Chemistry *or* 243 & 244 - Organic Chemistry
- B. Biology Option: Biology 103 - The Biology of Human Health & Disease *or* a course in Anatomy and Physiology *or* Biology 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
 - 234 - Diagnostic Molecular Technologies
 - 235 - Laboratory in Molecular Diagnostics
 - 242 - Chromosome Imaging
 - 246 - Contemporary Issues in Human Genetics
 - 280 - Bone Marrow Cytogenetics
 - 281 - Peripheral Blood Cytogenetics
 - 282 - Practicum in Staining and Karyotyping
 - 283 - Practicum in Photomicroscopy/Imaging
 - 284 - Variable Topics in Cytogenetics
 - 285 - Research in Cytogenetics
 - 286 - Prenatal Cytogenetics

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. Allied Health 241W - Research for the Health Professional
- B. Dietetics 210S - Community Nutrition

Group 3. Mathematics

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

Group 7. Social Science and Comparative Analysis

- A. Sociology 107 - Introduction to Sociology *or* Sociology 115 - Contemporary Social Problems *or* Psychology 135 - General Psychology II

Group 8. Science and Technology

- A. Chemistry 127Q-128Q - General Chemistry
- B. Nutritional Sciences 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. Chemistry 141 - 142 - Organic Chemistry
- E. Nutritional Sciences 200 - Nutrition and Human Development
- F. Nutritional Sciences 212 - Principles of Food Science
- G. Nutritional Sciences 233 - Food Composition & Preparation
- H. Nutritional Sciences 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
- 208 - 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

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

Group 3. Mathematics

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

Group 8. Science and Technology

- A. Chemistry 127Q-128Q - General Chemistry
- B. Biology 107 - Principles of Biology

Major Requirements**Related Science Courses**

- A. Chemistry 141 - 142 - Organic Chemistry *or* 243, 244, 245 - Organic Chemistry
- B. Biology Option: Biology 103 - The Biology of Human Health & Disease *or* a course in Anatomy and Physiology *or* Biology 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* Physics 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

- 210 - Infectious Disease Process I
- 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. Allied Health 241W - Research for the Health Professional
- B. Physical Therapy 308W - Integrative Seminar II

Group 3. Mathematics

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

Group 7. Social Scientific and Comparative Analysis

- A. Psychology 135 - General Psychology II

Group 8. Science and Technology

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

Major Requirements**Related Science Courses**

- A. Biology: PNB 264 - 265 Human Anatomy and Physiology

Professional Courses**A. Allied Health**

- 241W - Research for the Health Professional
- 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
- 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 Administration

Thomas G. Gutteridge, Ph.D., *Dean, School of Business Administration*
 Robert E. Hoskin, Ph.D., *Associate Dean, School of Business Administration*
 Janice E. Clark, M.A., *Assistant Dean for Undergraduate Programs*
 Judy Nilson, M.B.A., *Assistant Dean for Administration*

Undergraduate education in business administration is designed to impart general knowledge and, in particular, knowledge of 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*.

Regional Plan. In conformity with plans approved by the Board of Trustees of the six New England land grant universities for regionalization of certain fields of specialized education, three majors in the School of Business Administration 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 a regional program for students from all other New England states except Rhode Island; the Health Systems Management major is designated a regional program for all other New England states except New Hampshire and Vermont. To implement this policy, first priority in admission to the school is given to qualified applicants who are residents of Connecticut. Second priority is given to qualified applicants from those New England states which are members of the compact. Regional students will pay a reduced tuition.

Accreditation. The School of Business Administration is fully accredited by the AACSB - International Association for Management Education, 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 Administration admits qualified students into the School directly as freshmen. Students not admitted into the School of Business Administration at the time of entry to the University may apply for admission through School of Business Administration procedures. Decisions will be based on several criteria including the applicant's academic record, courses completed, and space availability.

School of Business Administration majors will have to present either three years of one foreign language (high school) or two years of one foreign language (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, U-88, Storrs, CT 06269-3088. Students wishing to transfer directly into the School of Business Administration should have made substantial progress toward completing the Lower Division requirements, particularly those courses which are prerequisites for the Common Body of Knowledge/Entry Level Business courses. Number of credits earned, grade point average and space availability will also be considered in the admissions decision.

Transfer applicants not accepted directly into the School of Business Administration at the time of entry to the University may apply for admission through the School of Business Administration 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 Administration 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 Administration must earn a minimum 2.2 grade point average by the end of the semester in which they earn a minimum of 24 credits of graded coursework at the University of Connecticut to be guaranteed continuation in the School. Students must also earn a minimum 2.6 grade point average in all lower division courses, including having substantial progress toward completing those courses which are prerequisites to the entry level business courses, in order to be guaranteed continuation to the Upper Division/Junior Year in the School of Business Administration. Students must maintain a minimum of 2.0 for their semester grade point average, a 2.0 for their divisional grade point average, and a 2.0 grade point average in all calculable credits in School of Business Administration 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 Administration.

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 grade point average for all calculable Upper Division course work; (3) earned at least a 2.0 grade point average for all calculable credits in School of Business Administration courses for which they have been registered; (4) earned at least 50 percent of the business credit hours required for the business degree at the University of Connecticut; (5) earned at least 24 credits in 200-level courses in the School of Business Administration 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; (6) met all the requirements of the School of Business Administration.

The degree in business administration 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 administration, 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.

Stamford Campus Program. Students at the Stamford campus have the opportunity to complete all of the Lower Division requirements and most of the Common Body of Knowledge courses of the Upper Division requirements before transferring to the Storrs campus. However, all curricular options require additional work at 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 dean of the school. Such exemptions or substitutions must be approved by the dean of the school.

Transfer Credits. The transfer of credits for 200-level (Upper Division) courses offered in the School of Business Administration on the basis of work done at schools that do not offer the baccalaureate or schools not accredited by the AACSB - International Association for Management Education, 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 Administration, 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 Administration, whichever is later.

Curricula in Business Administration

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 Appendix of this catalog.¹

¹ Courses required for the School of Business, listed in section II on this page, which may also meet a University General Education requirement are noted with an *.

II. School of Business Administration 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.

Note: Please refer to page 42 to find the Curricula in Management and Engineering.

Accounting

ACCT 131

Foreign Language

All students must have (1) passed the third year level in high school in a single foreign language, ancient or modern,² 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 105* and ENGL 109*

Quantitative Analysis

MATH 105Q* and MATH 106Q*³ (*Preferred Sequence*)
STAT 100V* or 110V*

Culture and Modern Society

HIST 101*
ANTH 100* or GEOG 160*

Philosophical or Ethical Analysis

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

Social Scientific and Comparative Analysis/Practice

ECON 111* and 112*
COMS 102* or 105⁴

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

Mathematics 105³
English 105
Psychology 132
Group 4 (Arts)
Elective

Freshman Year Second Semester

Mathematics 106³
English 109
Philosophy 101 or 102 or 103 or 104 or 105 or 106 or SCI 240
Communication Science 102 or 105
Elective

Sophomore Year Third Semester

Economics 111
Accounting 131
Statistics 100 or 110
Geography 160 or Anthropology 100
W Course

² When the years of study have been split between high school and earlier grades, the requirement is met if the student has passed the third year level course.

³ May also take one of the following combinations: MATH 115Q* and 116Q* or MATH 112Q* and 113Q* and 114Q*, or MATH 120Q* and 121Q* or MATH 115Q* and 105*, or MATH 112Q* and 113Q* and 105, or MATH 112 and 105 and 106.

⁴ COMS 105 is **required** for Accounting majors.

Sophomore Year Fourth Semester

Economics 112
History 101
Group 4 (Literature)
Group 8 (Laboratory Science in Chemistry or Biology or Geology or Physics)
Elective

Upper Division Requirements

No School of Business Administration students should enroll in any 200-level, Upper Division business courses until they have passed the Lower Division 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, except for Management 290

ACCT 200 - Principles of Managerial Accounting (to be taken no later than fifth semester)

BLAW 271 - Business Law or BLAW 275⁵ - Business, Law and Society

FNCE 201 - Financial Management

MGMT 201 - Introduction to Management and Organization

MGMT 272⁶ - Career Development in Business

MGMT 290 - Strategy, Policy and Planning

MKTG 201 - Introduction to Marketing Management

OPIM 203 - Business Information Systems

OPIM 204 - Operations Management

Computer Equipment. By Fall 2001, the School of Business anticipates requiring its undergraduate majors to have laptop computers and appropriate software to utilize technology in the new School of Business building. Laptops will be required in upper division courses starting in the student's junior year.

Accounting

The undergraduate (four year) program consists of the Bachelor of Science (B.S.) degree in Business Administration 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,

⁵ BLAW 275 is **required** for Accounting majors.

⁶ Not required for Accounting majors.

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.

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, real estate, and insurance.

FNCE 203 - Applications in Financial Management

Any two from the following:

FNCE 202 - Investment and Security Analysis

FNCE 204 - Financial Risk Management

FNCE 205 - Global Financial Management

FNCE 206 - Financial Services

Any two additional 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

Health Systems Management

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

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

FNCE 221 - Risk Management and Insurance

HSMG 280 - Introduction to Health Systems

HSMG 281 - Health Systems Analysis

HSMG 282 - Health Systems Planning and Design

HSMG 283 - Advanced Topics in Health Systems Analysis

HSMG 290 - Internship in Health Systems

OPIM 210 - Operations Research for Information Systems Analysis

Internships in Health Systems. Students usually schedule their Health Systems Management 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 Systems Management 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. Students can select from one of three related areas: Entrepreneurship, International Business, or General Management

Entrepreneurship requires two Management courses, MGMT 234 (Management of Small Businesses and Venture Enterprises) and MGMT 291 (Small Business Consulting). In addition, it requires three Management, or School of Business Administration, or Economics Electives (nine credits, 200 level).

International Business requires one Management course, MGMT 225 (International Business). In addition it requires at least twelve 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 293 (Foreign Study - 6 credits maximum), or MKTG 293 (Foreign Study - 6 credits maximum). Up to six of these credits may be a School of Business Administration or Economics Elective that is internationally oriented and approved by a faculty advisor.

General Management requires two Management Electives plus three Management or School of Business Administration or Economics Electives (nine credits, 200 level).

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.

OPIM 211 - Systems Analysis and Design

OPIM 220 - Business Software Development

OPIM 221 - Business Data Base Systems

OPIM 222 - Network Design and Applications

One 3-hour OPIM elective, from the following list:

OPIM 212, OPIM 223, OPIM 298

plus six additional credits, 200 level, beyond the Common Body of Knowledge from Accounting, Finance, Health Systems, Marketing, Operations and Information Management, Real Estate and Urban Economics, or Management; or from other subject areas approved by the Student's Academic Advisor.

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 Psychology 133 or Sociology 107 as part of their Lower Division course work, and are strongly encouraged to take Business Law (BLAW) 275 to fulfill the upper division 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 Administration or Economics electives (200-level). A maximum of three (3) credits of Marketing 289 or 299 can be counted toward this requirement.

No Marketing major may count more than nineteen Marketing credits beyond Marketing 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 Administration 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 Appendix of this catalog.¹

II. School of Business Administration 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.

Management and Engineering for Manufacturing

(jointly offered by the School of Business Administration 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 105* and ENGL 109*

Quantitative Analysis

MATH 115Q and MATH 116Q or MATH 112Q, 113Q, and 114Q - MATH 210 and 211⁷
 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 113*

Laboratory Science

CHEM 127* or 129Q*

PHYS 151Q* and 152Q*

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

ACCT 210

BLAW 271

CE 211⁷, 212, and 287

CSE 123⁷

EE 220

ENGR 100⁷

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 203C, and 252

Technical Electives courses (6 credits)

The Technical Electives course must be 200-level or higher listed in the departments listed in the School of Business Administration 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.

Other Educational Opportunities

Field Study Internships. Internship experiences provide Upper Division 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 Administration; 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 Administration 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 Administration-Center for European Studies program. For detailed program description see the College of Liberal Arts and Sciences section.

Pre-Law Studies. Business Administration 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 Administration.

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

¹ Courses required for the School of Business, listed in section II on this page, which may also meet a University General Education requirement are noted with an *.

⁷School of Engineering requirements. See *School of Engineering* section.

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 Administration, 368 Fairfield Road, U-41, 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 Administration, 368 Fairfield Road, U-41A, 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 Administration, 368 Fairfield Road., U-41, 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 Systems Management (CHSM)

The Center for Health Systems Management 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.

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 Betty Wolff Family Program and Entrepreneurship follow.

Family Business Program

This program was created as a result of a business community-University of Connecticut School of Business Administration 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 an entrepreneur. 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 Administration, 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.

School of Business Administration Website

<http://www.sba.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 & Accreditation

The School of Engineering offers four-year programs leading to

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

Chemical Engineering*

Civil Engineering*

Computer Science & Engineering*

Computer Engineering

Electrical Engineering*

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 Administration)

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 in Computer Science & Engineering is also accredited by the Computer Science Accreditation Board (CSAB). 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 next evaluation. The BS program in Computer Science will be submitted for CSAB accreditation at the next evaluation.

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.

The School of Engineering also offers Minors in Biomedical Engineering, in Environmental Engineering, and in Metallurgy & Materials Engineering

Admission Requirements. See *Admission to the University*. All students admitted to the School of Engineering are required to take a placement examination in mathematics 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 select their major by 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 & Engineering for Manufacturing courses. Students need the approval of the Director of Advising to change majors.

School Academic Requirements.

All majors are required to complete:

- A *Plan of Study* form submitted in the first semester of their junior year
- University General Education requirements (see *Appendix*)
- MATH 115Q and 116Q (or MATH 112Q, 113Q, and 114Q), ENGR 100, and CSE 123C
- PHIL 104
- 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)

MATH 210Q and 211Q

PHYS 151Q and 152Q

CE 211

- 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 *Appendix*). 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 110 and below; MATH 112, and 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.

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 Chemical Engineering

Chemical Engineering majors are required to complete the following:

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

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 212, 222P or 262P, 234 or 260, 236, 240P, 254, 263, 271, 280W, 281, 287, 291, and 297

EE 220 and ME 233

ENGR 166

Professional Requirements courses (18 credits)

Elective courses (9 credits)

CE 291 must be taken twice before CE 280W. Professional Requirements include *one* course each from *two* of these four technical areas:

Environmental and Water Resources Engineering - CE 260, 262, 265, 266, 267, 268 and 279

Geotechnical Engineering - CE 241 and 242

Structural Engineering - CE 222, 234, 237, 238, and 239

Transportation Engineering - CE 251, 256, 274, 275 and 276

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

(jointly offered by the Departments of Computer Science & Engineering and Electrical & Systems Engineering)

Computer Engineering majors are required to complete the following:

CSE 124C, 207, 208W, 221, 233, 243, 254, and 258

EE 201, 202, 204, 209W, and 242

Cross-listed courses CSE/EE 252, 257, 290, and 291

MATH 227Q

STAT 224Q

Professional Requirements courses (12 credits)

Design Laboratory courses (6 credits)

Elective courses (3 credits)

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, 233, 254, 258 and 259

MATH 227Q, and *either* 210Q *or* 211Q

One of MATH 231Q, STAT 220Q, 224Q, or 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

One course from each of the three following groups:

Computer Applications – CSE 255, 275, or 282

Computer Architecture – CSE 228, 240 or 245

Computer Languages – CSE 237 or 244

Two courses from CSE 261, 262, 263, 265, 268, and 269

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:

CSE 124C, 207, 208W, 221, 228, 230, 240, 241, 244, 254, 258, and 259

Two CSE design laboratory courses

MATH 227Q

One of MATH 231, STAT 220Q, 224Q, *or* 230Q

EE 201, 202, and 209W

Professional Requirements courses (9 credits)

Elective courses (10 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:

CSE 207, and 208W

EE 201, 202, 204, 205, 209W, 232, 240, 241, 245, 261, and 262W

CSE/EE 290 and 291

ENGR 166 or CSE 124C

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 Environmental Engineering

Environmental Engineering majors are required to complete the following:

CE 211, 251, and 263 (*or* ENVE 263)

ANSC 226

CHEG 211, 212, 223, 224, and 285

EEB 244W

ENGR 166

ENVE 110, 260 (*or* CHEG 281), 262, 265 *or* 267, 270, 279, 290, 291, and 299

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 & Occupational Health, Environmental Chemistry, Environmental Systems Modeling, Hazardous Waste Management, Solid Waste Management, Water Supply & Resources, and Wastewater Management. The following course may be used to meet the Professional Requirements:

AERS 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

GEOG 205, 206, 215, 237, and 286

GEOL 206, 234C, and 245

IMGT 210

MARN 244, and 280W

ME 239

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

PHARM 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

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

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

ACCT 210

ANTH 100 *or* GEOG 160

BLAW 271

CE 212, and 287

ECON 113

EE 220

FNCE 201

HIST 101

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 203C, and 252

STAT 110V

Technical Electives courses (6 credits)

The Technical Electives course must be 200-level or higher listed in the departments listed in the School of Business Administration 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 212, and 287
EE 220
ENGR 166
ME 205, 220, 227, 233, 234, 242, 250, 253, 255, 260W, 262, 271P, 272P,
and 273P
MMAT 201, and 202
ME Requirement [6 credits]
Professional Requirements (6 credits)
Electives [4 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 & Material Engineering majors are required to complete the following:

CE 212, and 287
MMAT 243, 244, 255, 256, 265, 266, 267, 276, 277, 283, 284, 285W, 286W,
287, and 288
ME 233 or CHEM 263Q
ENGR 166
EE 220
CHEG 256
Professional Elective courses (9 credits from EE 246, ME 217, and 228, and
MMAT 206, 207, 217, 219, 229, 232, 234, 236, and 238)
Technical Elective courses (6 credits from BIOL 107; CHEM 243, 244, 263Q,
and 264Q; MCB 203; ME 218, 253, and 255; MATH 214Q, 215Q, 227Q,
and 231Q; PHYS 216Q, and 262Q; and STAT 220Q, 221Q, and 224Q)
Elective courses (2 credits)

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

School of Engineering Website

<http://www.eng2.uconn.edu/>

Extended and Continuing Education

Krista K. Rodin, Ph.D., *Dean*
 Jeetendra R. Joshee, Ed.D., *Assistant Dean*
 W. Matthew McLoughlin, Ph.D., *Assistant Dean*
 Kenneth A. Fuchsmann, Ed.D., *Director*

Bachelor of General Studies

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

Admission Requirements

The BGS program is an Upper Division or 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 special application forms and be interviewed by a program counselor. Once admitted, BGS students must maintain a divisional 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:

- At least 30 credits of course work taken at any campus of the University of Connecticut; and,
- 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 Upper Division course which may be applied to requirement A and B directly above. A BGS student may petition the Dean for a waiver of this summary project course and to substitute another course in its place.

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.

Extended and Continuing Education Departments

Continuing Studies

Bachelor of General Studies

Non-Degree Study

Special Sessions and International Studies

UConn Summer School

Winter Intersession

International Education Programs

Evening and Weekend College

Professional Studies and Public Affairs

Community Outreach - Avery Point

Corporate Relations - Stamford

Center for Learning and Advancement

Community School of the Arts

English Language Institute - Stamford

Distance Education and Technology Services

Extended and Continuing Education Website

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

Find information about Non-Degree Studies,
 Bachelor of General Studies, Winter Intersession,
 and Summer Sessions.

Access links to:

Center for Economic Education
 Center for Professional Development
 Institute of Public Service
 Center for Learning in Retirement
 Community School of the Arts

School of Family Studies

Charles M. Super, Ph.D., *Dean, School of Family Studies*
 Thomas O. Blank, 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 Relations 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) earned at least a 2.0 grade point average for all calculable Upper Division 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 requirements are listed in the Appendix of this *Catalog*.

College Requirements

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

Social Scientific and Comparative Analysis

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

Science and Technology

PSYC 132 - General Psychology I

Human Development and Family Relations Major

The major in Human Development and Family Relations requires 48 credits in courses at the 200 level including 36 HDFR credits and 12 credits in courses related to but outside the major. 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:

Credits

HDFR 201 – Diversity Issues in Human Dev. and Family Relations	3
HDFR 202 – Human Development: Infancy through Adolescence	3
HDFR 204 – Human Development: Adulthood and Aging	3
HDFR 273 – Family Interaction Processes	3
HDFR 290 – Research Methods in Human Dev. and Family Relations	3

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

HDFR 264 – Legal Aspects of the Family	3
HDFR 274 – Public Policy and the Family	3

HDFR 276 – Planning and Managing Human Service Programs	3
HDFR 281 – Comparative Family 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 (HDFR 264, 274, 276, 281). No more than 3 credits from the following group of courses may be used toward completion of these 18 credits: HDFR 221, 224, 227, 228, 288, 292, 299.

HDFR 218 – Observational Child Study	3
HDFR 220 – Introduction to Programs for Young Children	3
HDFR 221 – Programs for Young Children: Introductory Laboratory	1
HDFR 222 – Activities for Young Children: Play, Art, Music	3
HDFR 223 – Activities for Young Children: Language Arts, Math., Sci.	3
HDFR 224 – Child Development Laboratory: Practicum I	3
HDFR 225 – Analysis of Programs for Young Children	3
HDFR 227 – Supervised Practicum in Early Childhood Programs	9
HDFR 228 – Advanced Practicum in Early Childhood Programs	6
HDFR 230 – Current Topics in Early Childhood Education	3
HDFR 231 – Infancy	3
HDFR 234 – Social and Personality Development During Childhood	3
HDFR 240 – The Family-School Partnership	3
HDFR 245 – Parent-Child Relations in Cross-Cultural Perspective	3
HDFR 248 – Aging in American Society	3
HDFR 250 – Gender and Aging	3
HDFR 252 – Death, Dying, and Bereavement	3
HDFR 259 – Men and Masculinity: A Social Psychological Perspective	3
HDFR 260 – Woman: A Developmental Perspective	3
HDFR 264 – Legal Aspects of Family Life	3
HDFR 266 – Introduction to Counseling	3
HDFR 269 – Family Violence	3
HDFR 270 – Low Income Families	3
HDFR 271 – Black American Family Patterns	3
HDFR 272 – Family and Work	3
HDFR 274 – Public Policy and the Family	3
HDFR 275 – Family Pathology	3
HDFR 276 – Planning and Managing Human Services Programs	3
HDFR 277 – Issues in Human Sexuality	3
HDFR 278 – Family in Society	3
HDFR 279 – History of the Family	3
HDFR 280 – Material Culture in American Family Life	3
HDFR 281 – Comparative Family Policy	3
HDFR 284 – Adolescence: Youth and Society	3
HDFR 287 – Parenthood	3
HDFR 288 – Supervised Field Experience	Arr
HDFR 292 – Research Practicum in Human Dev. and Family Relations ..	Arr
HDFR 298 – Selected Topics in Human Dev. and Family Relations	Arr
HDFR 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 HDFR 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 HDFR. The student must follow the General Education Requirements of HDFR. 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 (DRM) 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://vm.uconn.edu/~wwwsfs/>

School of Fine Arts

Gary M. English, M.F.A., *Interim Dean, School of Fine Arts*
Mary Ellen Junda, Ed.D., *Associate 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 *Appendix* of this *Catalog*.

Selected art, 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, Dramatic Arts, or Music) each semester of full-time study unless an exception is granted by the dean of the school, and must maintain a 2.3 minimum cumulative grade point average in all major department courses (Art and Art History, Dramatic Arts or Music).

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 Upper Division course work;
3. met all the requirements listed above for the specific degree taken.

All major work in Fine Arts requires a 2.3 cumulative GPA.

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

BFA Areas of Concentration

Graphic Design	Illustration
Painting	Photography
Printmaking	Sculpture/Ceramics
Individualized	

Admissions

Portfolio Review

Common Curriculum

All B.F.A. Students share a common curriculum of 39 credits:

Drawing: ART 130, 152

Foundation Studio I: ART 110

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 a Lower Division 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

Areas of Concentration

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

Graphic Design – Required: Art 165, 260, 261C, 264, 269, 274 (as an art history course), 276, 278

Illustration – Required: Art 153, 204, 239, 240, 255, 261C, 271, 272 (repeated once), 274 (as an art history course).

Painting – Required: 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 – Required: Art 256, 262 (may be repeated once), 263 (may be repeated once), 265, 266 (may be repeated once); Art History 267, 268.

Printmaking – Required: Art 153, 204, 221, 222, 226 (may be repeated up to 18 credits).

Sculpture – Required: 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 upper division students with a minimum departmental average of 3.0 and no outstanding incompletes for any other 299. A maximum of 6 credits total.

Internships and Co-ops. Open to upper division students with a minimum DGPA 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.

Bachelor of Arts in Art History

A B.A. in Art History is offered jointly by the College of Liberal Arts and Sciences (in which the student must be enrolled and which grants the Bachelor of Arts Degree for the major) and the Department of Art and Art History (which provides the faculty and facilities for the program). Art History majors are assigned faculty advisors in the Department of Art and Art History. Majors must fulfill the College of Liberal Arts and Sciences requirements for the Bachelor of Arts degree as well as the requirements for Art History. Art History major requirements are listed in this *Catalog* under Bachelor of Arts Degree Requirements for the College of Liberal Arts and Sciences.

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 majors - interview

Prospective Puppetry Arts majors - audition and interview

Additional Requirements - BFA

All students must complete the following core courses: Dramatic Arts 107 (one registration for each of the first four semesters except for Acting majors who shall complete two semesters, one each in costume construction and lighting), 108, 130, 131, 143, 163, and any two from 230, 231, 235, or 282.

In addition, completion of the following courses:

Acting major:

Dramatic Arts 120, 141, 144, 149, 150, 153, 220, 222, 239, 240, 241, 243, 244, 249, 268, 269, 276, and 277. One credit of DRAM 259 in either set

construction or set running, and three credits of DRAM 259 chosen from acting, assistant stage managing, dance, or management. No more than two credits in any one area may be used to satisfy the 259 requirement.

Design/Technical major:

Dramatic Arts 200, 205, 207C, 209, 211, 213, 299 (6 credits), and any six additional courses from 201, 203, 206, 208, 212, 214, 215, 218C, 247, 248.

Puppetry major:

Dramatic Arts 120, 144, 200, 207C-208, 211, 212, 213, 214, 247-248, 278, 279. Four Dramatic Arts 259 credits to be selected from the following areas: acting, construction, costuming, lighting, painting, properties, puppetry performance, running crew.

Additional Requirements - B.A. - Theatre Studies

Completion of the following courses: Dramatic Arts 107 (4 credits), 108, 130, 131, 143, 163, and any two from 230, 231, 235, or 282.

Completion of 18 additional credits in Dramatic Arts 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 Performance, 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: non-professional curriculum with a concentration in music.

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 last three years in the School of Fine Arts and the last 2 years in the Neag School of Education. 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.

Common Curriculum

1. Completion of the following courses: Music 101, 122, 145, 146, 245, 246, 285, 286, 287 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. (exception for BA and BM 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 Music 123 Class Piano Level 4.
5. Students with a keyboard emphasis must complete Music 124 (BM and BS students must complete Music 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 200's level.
4. Four performances in recital or convocation, as a soloist, chamber musician, or accompanist.

Additional Requirements – BM

1. Completion of Music 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 soloist, chamber musician, or accompanist.

In addition, completion of the following courses:

1. **Performance emphasis: Instrumental**
 - a. Music 222 (4 semesters), Music 229, 232, 234, 297.
 - b. Two of the four following courses: Music 251, 275, 277 or 279.
 - c. Four semesters of 113, Small Ensemble.
 - d. A half recital during the junior year as a prerequisite for Music 297. Promotion to Music 222 is a prerequisite for the half recital.
 - e. A general total of 81 credits in music.
2. **Performance emphasis: Vocal**
 - a. Music 126, 127, 128, 129, 221 (4 credits), 222 (4 semesters), 223, 224, 232, 233, 281, 297, two courses from Music 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 Music 297. Promotion to Music 222 is a prerequisite for the half recital.
 - c. A general total of 82 credits in music.
3. **Theory emphasis**
 - a. Music 232, 251, 275, 277, 279Q, and one or two courses (minimum of 2 credits) from 138-238, 217, 239 or 292.
 - b. Music 299 Independent Study (Senior project/paper).
 - c. A general total of 77-82 credits in Music.
 - d. A grade average of at least a B+ in theory courses.

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

1. Completion of Music 125 (5 credits).
2. Completion of the Upper Division 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: Music 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*

Mark A. Swanson, 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-President, 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 General Education and concentration requirements.
4. have an Upper Division cumulative grade point average of at least 2.0.

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.

Foreign Language (Group 1)

All students must have either (1) passed the third year level in high school 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

Three "W" courses, two required at the 200 level.

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:

CLAS 103, 211*, 221*, 244

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

FREN 261*, 262*, 270W

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

ITAL 101, 243*, 244*

PORT 140

RUSS 231, 232

SPAN 187, 281*, 282*

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:

CLAS 101, 102, 243

ECON 201, 203

FREN 169, 210*, 211*

GEOG/URBN 130

GERM 251

HEB/JUDS 103

HIST 121, 206

INTD 294

ITAL 238*

JOUR 102

POLS 121

RUSS 241

SPAN 200*

Non-Western/Latin American Culture one course from:

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

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

COMS 102

ECON 100, 111, 112, 113

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 Path 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:

GEOG 205

GEOL 101, 111

MARN 170

PHYS 103Q

PSYC 132

SCI 110

* Indicates foreign language prerequisite

Bachelor of Science (BS) Only 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

Field of Concentration.

1. Major and related groups. At least 24 credits numbered 200 or above in one department make up the major group. Only courses taken at the University of Connecticut meet the requirement. Students must earn a grade point average of 2.0 or better in the 24 credits making up the major. At least 12 credits in courses closely related to the major, but outside the major department, make up the related group.

2. Double Major Program. Students may earn a double major by fulfilling all the major requirements of any two majors within the College. Candidates shall choose one major as their primary major and receive the degree appropriate to that major.

3. Individualized major. The major and related are combined to total 36 credits. Students must earn a g.p.a. of 2.5 or better in these 36 credits. At least 18 credits shall come from CLAS departments. To earn a Bachelor of Science degree, students must fulfill the corresponding general education requirements and 24 of the 36 credits must be from CLAS departments which offer the Bachelor of Science degree.

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, 243, 270).

In addition, majors must take at least three Upper Division 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.

Art History

The Department of Art and Art History in the School of Fine Arts offers a major in art history through the College of Liberal Arts and Sciences. In addition to satisfying the requirements of the College, majors must complete ARTH 137, 138, and eight 200-level courses in the history of art with at least one 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 Western, 19th and 20th century: ARTH 209, 252, 253, 254, 267, 268, 276****, 279***, 281, 282, 291, 292
- e. Non-Western: ARTH 256, 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. Students interested in this major should arrange for a counselor with the Art History Coordinator, Department of Art and Art History, School of Fine Arts.

* ARTH 280/280W may be used to fill either the Ancient (group a) or the Medieval (group b) requirement for the major, **but not both**.

** ARTH 278/278W may be used to fill either the Renaissance (group c) or the Non-Western (group e) requirement for the major, **but not both**.

*** ARTH 279/279W may be used to fill either the Modern art (group d) or the Non-Western (group e) requirement for the major, **but not both**.

**** ARTH 276/276W may be used to fill either the Modern art (group d) or the Non-Western (group e) requirement for the major, **but not both**.

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.

Majors in Biological Sciences must complete at least one course from each of the following three core groups: I: MCB 200, 210, 213, II: EEB 244, 245, III: PNB 250, MCB 259. Majors are urged to complete at least four courses in any of the three departments at the 200's level or above that include laboratory 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. A total of 24 credits above the 100's level is required for the major, plus 12 credits above the 100's level in a related field or fields).

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

Environmental Biology Concentration: Students interested in a career in Environmental Biology may wish to follow a program emphasizing ecology and environmental sciences leading to a B.S. or B.A. degree in Biological Sciences with a concentration in Environmental Biology. In addition to satisfying the minimum requirements for the B.S. or B.A. degree, students must take BIOL 107, 108 (or 110) and CHEM 127-128. Students are also urged to take STAT 110, CS 110, and CHEM 243, 244. In satisfying the requirements for a major in Biological Sciences, students are required to take EEB 244, 245 and 293S, either MCB 200 or 213, and either MCB 259 or PNB 250. In addition to these core courses, students must take at least two organism-oriented courses (list I) and two process-oriented courses (list II) from: List I: EEB 200, 201 (or 202), 252 (or 243W or 286), 271 (or 272 or 277), 275, 283, 281(W), 290, 465, MCB 229. List II: EEB 238, 247, 268, 294, 296, GEOG 215, GEOL 220,234, NRME 204, PLSC 250, MARN 280W, MARN 380. Interested students should also review the multidisciplinary Environmental Science major.

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 credit total)
CHEM 127 and 128 (8 credit total)

Requirements for the EEB Major (BS or BA)

- I. Both of the following core courses:
EEB 244 or 244W General Ecology (4 credits)
EEB 245 or 245W Evolutionary Biology (3-4 credits)
- II. At least one of the following animal diversity courses
EEB 214 Biology of the Vertebrates (3 credits)
EEB 273 Comparative Vertebrate Anatomy (4 credits)
EEB 275 Invertebrate Zoology (4 credits)
EEB 286 General Entomology (4 credits)
- III. At least one of the following plant diversity courses:
EEB 203 Developmental Plant Morphology (4 credits)
EEB 204 Aquatic Plant Biology (4 credits)
EEB 227 Concepts in Botany (3 credits)
EEB 271 Plant Systematics (4 credits)
EEB 280 Plant Morphology (4 credits)
- IV. A course in physiology
EEB 296 Physiological Ecology (students who take PNB 250 as a related course are not required to take EEB 296).
- V. In addition to II and III above, students are encouraged to take at least one course relating to fungi, protists, or bacteria.
- VI. It is recommended that students take at least four EEB courses that require extensive laboratory or field work.
- VII. Students are encouraged to complete a course in statistics.
- VIII. At least 24 credits of EEB courses at the 200-level or above, which may include courses in I - IV above.
- IX. Related Course Requirements
At least 12 credits of 200 level science courses outside EEB, which must include one semester of organic chemistry and either MCB 200 (Human Genetics) or 213 (Concepts of Genetic Analysis).

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 PHYSICS 131, 132 or 121, 122, 123. Molecular and Cell Biology majors must complete the following core courses: Biology: MCB 200, 204, 210 or 229, and CHEM 243, 244. (Biology: MCB 213 may be substituted for MCB 200; and Biology: MCB 203 and 226 may be substituted for MCB 204, with permission of the Department Head.) In addition, students must take at least two MCB laboratory courses to be chosen from the following: Biology: MCB 214, 215, 220(W), 224, 226, 229 (if not used as a core course in the above list), 233, 235, 240W, 299 (which may be repeated, but only 3 credits may count toward the 24 credits of required MCB courses). For breadth in biology, it is recommended that students take Biology: PNB 250 or Biology: MCB 259, and Biology: EEB 244 or 245. Majors must complete at least 24 credits in Biology: MCB courses.

A minor in Molecular and Cell Biology is described in the *Minors* section.

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. These must include all of the following core courses: PNB 250, 251, 262, 274-275. The remaining credits needed to fulfill this requirement should be selected from the available PNB courses, including PNB 225, 263W, 260, 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 204 and either 200 or 213.

In addition, students are urged to take:

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

A minor in Physiology and Neurobiology is described in the *Minors* section.

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 153 and 154 in their first year. Other prospective majors should take 127-128.

The Department strongly advises Chemistry majors to complete the required four semesters of required calculus including MATH 112, 115 or 120; 116 or 121; 210 or 220; and 211 or 221 by the end of the fourth semester. Failure to do so may delay completion of the degree. In addition, chemistry majors must complete a year of physics, usually Physics 131-132.

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.

Communication Sciences

The Department of Communication Sciences is concerned with the human communication process and its analysis. Courses are offered leading to an undergraduate major in the communication sciences and to 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.

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.

The undergraduate programs in Communication Sciences can be classified as follows:

Communication Disorders. The undergraduate major 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 to major in Communication Disorders must take: COMS 201, 202, 243, 247, 248, and 250.

In addition, students must take at least two (2) of the following courses: COMS 245, 246, 249, and 252.

Communication Processes. The program in Communication Processes 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 Processes program must take:

COMS 102	The Process of Communication
COMS 105	Principles of Public Speaking
COMS 231Q	Research Methods in Communication

In addition, students must take at least two (2) of the following Core courses:

COMS 205	Interpersonal Communication
COMS 210	Persuasion
COMS 235	Effects of Mass Media

Students who take only two (2) Core courses must take at least three (3) of the COMS courses listed below; those taking three Core courses must take at least two (2) courses from the following list:

206W, 207, 208, 209, 213W, 214W, 216W, 217, 218, 219, 222W, 236, 226, 230, 234, 237, 238, 239, 297*, 298*

*with advisor's permission

A minor in Communication Processes 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.

Twenty-four credits in 200's level economics courses are required including two intermediate theory courses (ECON 218 or 218Q, and ECON 219 or 219Q), and at least one of the following quantitative skill courses: empirical methods (ECON 212V), empirical methods II (ECON 213Z), mathematical economics (ECON 214Q), or operations research (ECON 216V). The intermediate theory courses are open to sophomores and should be taken early in the student's major program. Economics majors are also required to take twelve credits in 200's level courses in fields related to economics, plus STAT 100Q or 110Q and one of the following: MATH 106Q, 113Q, 115Q, 118Q or 120Q. Recommended courses for economics majors include ECON 212 and ENGL 249. The department has special requirements for economics majors in the University Honors and Degree with Distinction Programs and for majors who qualify for the department's Economics Scholars 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.

English

The English Department offers broad and intensive study of literature, language, and the art of writing. Some careers include graduate work in English. Students interested in public-school teaching should consult the English Education advisor in the Neag School of Education, and those who intend careers in business, law, medicine, or government service should consult the English Department Advisory Center.

Among the 24 credits of English courses numbered 200 or above needed for a major, courses must be selected to fill the following requirements:

1. 210 (poetry)
2. 230 (Shakespeare)
3. Two from among: 220, 221, 222, 223, 226, 227 (British period survey courses)
4. Either 270 or 271 (American period survey courses)
5. Either 204, 231, 232, or 264 (major authors courses)
6. One from among: 218 (Third World Literature); 233, 234 (Irish Literature courses); 266 (critical theory); 274 (Asian American Literature); 276, 277 (Black writers courses); 278 (Ethnic American Literature); 285, 286 (Women/Literature)
7. Any additional course

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

GEOL 251 - Earth Surface Processes

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

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, 244 (Organic Chemistry)

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.

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 Geography is described in the *Minors* section.

Geology and Geophysics

Geology is the science of the earth. Integrating principles from biology, chemistry and physics. Geology investigates the processes responsible for creating the Earth as we know it and for the co-evolution of earth and life. 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 technical or professional careers in the earth sciences. The Department strives to give students both an appreciation of the natural world and the analytical skills required to investigate environmental problems.

The Bachelor of Science degree program introduces students to fundamental geological principles and to basic research. The Bachelor of Arts degree program is designed to give students a broad understanding of the earth sciences. The Department recommends the Bachelor of Science degree program for students planning to attend graduate school and/or pursue professional careers in the earth sciences.

Bachelor of Arts Degree

Students intending to obtain a Bachelor of Arts degree must take at least 36 credits in courses numbered 200 or above. Twenty-four of these credits must be in courses offered by the Department and 12 must be in courses outside the Department but in closely related fields.

Bachelor of Science Degree

The Department offers two options for students deciding to pursue the Bachelor of Science degree: a geology option and a geophysics option.

Each option requires at least 48 credits in courses numbered 200 or above in science (including mathematics, engineering, agriculture, and natural resources management and engineering). Twelve of these credits must be from outside the Department.

Geology Option. Geology 102, 250, 251, 252, and 253, and at least 15 additional 200 level credits in Geology and Geophysics.

Geophysics Option: Geology 102, 250, 251, 252, 253, 264, and six additional 200 level credits in Geology and Geophysics; Physics 141-142 or 151-152, 143, and 209-210 or 242-246.

The Department recommends that majors elect courses in accordance with their area of specialization and career goals. Those interested in careers in environmental fields such as hydrogeology, engineering geology, and near surface geophysics can follow either option and select appropriate additional course work in consultation with their advisor.

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 History 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, 218, 219, 220, 250, 251, 255, 261, 266, 267, 271, 272, 273, 274, 293, 296, 297, 298, 299

Group B – Modern Europe

200, 203, 206, 208, 209, 210, 225, 226, 228, 229, 251, 252, 254, 256, 258, 259, 262, 264, 269, 279, 291, 293, 296, 297, 298, 299

Group C – United States

200, 207, 210, 215, 227, 231, 232, 233, 234, 235, 236, 237, 238, 239, 241, 242, 243, 244, 245, 246, 247, 248, 249, 293, 296, 297, 298, 299

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

200, 204, 205, 221, 222, 223, 224, 226, 275, 276, 277, 280, 281, 282, 283, 285, 286, 287, 288, 289, 290, 293, 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 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 LING 205Q, 206Q, 208W, and 244W; 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 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

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: 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 Administration), and Mathematical Statistics (in cooperation with the Department of Statistics).

Mathematics 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 Mathematics 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: Mathematics 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 Mathematics 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 Mathematics 220 (or 210 and 211), 213, 227, 272, 273, 281, and 282, and two courses to be selected from Mathematics 204, 221, 231, 237, 252, 255, 274, 277, 278, and approved sections of 297 and 298, and at least 3 additional credits from Mathematics 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 Mathematics 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 Mathematics 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 Mathematics 210 or 220), with at least 12 credits in each department. The required courses for the Mathematics-Statistics major are Mathematics 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 Mathematics 210 or 220). The required courses are Mathematics 227 or 215, 231, 232 (or STAT 235), 285, 286, 287-288, Statistics 230-231, and Finance 221 or 225. Students should include Economics 111 and 112, a Computer Science course, and Accounting 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, 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: CLAS 207, 208, 211, 212, 213, 214, 215, 221, 224, 225, 226, 227, 230, 231, 232, 293*, 295*, 298*, 299*.
- B. At least one writing course on Classical literature in English: CLAS 241W, 242W.
- C. At least two other courses dealing with the ancient world CLAS 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:

CLAS 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

Students majoring in French must complete the following courses: 210 and 211, 261 and 262, 268, 272 and two from 218, 220, 221, 222, 223, 224, 230, 231, 232, 233, 234, 235, 257, 280, 281, and 282. Each major is advised to complete a Senior Seminar. No more than 15 credits earned at Paris may count toward the major.

Study Abroad in France. 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 non-literary courses whenever 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 major 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 major 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

Students majoring in Italian must complete a minimum of 8 courses (the equivalent of 24 credits) to be chosen among the following: 237, 238, 239, 240, 243, 244, 245, 246, 247, 249, 250, 251, 252, 253, and 254. No more than 15 credits earned in Florence may count toward the major.

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 is described in the *Minors* section.

Portuguese

The Portuguese major consists of a minimum of 8 courses or 24 credits, all 200-level, in Portuguese, and an additional 4 courses or 12 credits, all 200-level, of related courses.

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

- A. At least 4 courses must be taken from the literature group: 236, 237, 240, 241, 242, 243, 244.
- B. At least 2 courses must be taken from the language culture group: 220, 221, 234, 251, 293 (Foreign Study) may be counted in either group, depending on course content.

2. The 12-credit related group requirement may be met by appropriate courses in other foreign languages as well as English, History, Political Science, Latin American Studies, and other departments.

Study Abroad in Portugal, Brazil, or other Portuguese-speaking countries. Students should seriously consider studying in a Portuguese speaking country, either for a summer, a semester, or a year, to improve their linguistic ability and gain exposure to the culture. Courses taken abroad, under the auspices of the Spanish-Portuguese Section of the Department of Modern Languages or under the auspices of UConn Study Abroad Program, will count toward the Portuguese major as follows:

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

A minor in Portuguese is described in the *Minors* section.

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 engi-

neering. 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.

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 Upper Division students to take laboratory courses, research seminars, and to participate in the research activities of the Department.

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 Biology 100, 102, or 107; Anthropology 106 or 220; and Sociology 107. If at all possible, majors should take Statistics 110 (or 100) by their third semester.

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

Group I. Foundation. Both courses: Psychology 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 Psychology 268.

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

A minor in Psychology is 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. Four courses are required of all majors: Sociology 205, 230, 270, and either 268, 269, or 260. The remaining 12 credits of 200-level sociology courses, with the guidance of a faculty advisor, may be chosen either freely or from 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.

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 Studies

The undergraduate major in Urban Studies is an interdisciplinary program in the College of Liberal Arts and Sciences with a focus on educating citizens on the multiple dimensions of life within an urban society. The major has three parts. First, students receive a broad education in the study of cities 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 Studies. Students interested in pursuing a program in Urban Studies are advised to complete the following 100-level courses as prerequisites to the courses in Urban Studies: URBN 130, ECON 112, SOCI 107, ARTH 191, and STAT 100V/110V. They should also plan on enrolling in URBN 230 as soon as possible.

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 Prerequisite Course: WS 103, WS 104, or WS 124
- WS 265 – Women’s Studies Research Methodology
- PHIL 218 – Feminist Theory
- 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.

Two courses must be taken from **Group One** which comprises courses on women and gender taught in other departments.

- COMS 226 or WS 268
- ECON 279
- ENGL 227 (specified sections), 264 (appropriate authors), 267 (appropriate themes), 268W (appropriate authors), 285, 286
- FREN 280
- HDFS 250, 259, 260, 270, 271, 272, 279
- HIST 209, 266
- POLS 204
- PSYC 246
- SOCI 241, 252 or 252W
- SPAN 207, 224 (appropriate sections)
- WS 217/ENGL217
- WS 231/ANTH 231

Three courses must be taken from **Group Two** which comprises courses with Women's Studies numbers and their cross-listed departmental equivalents.

WS 210 or History 210

WS 215 or History 215

WS 203W or Political Science 203W

WS 263, 264, 266, 267, 268, 269, 270, 278, 298, 299

WS 290 or ARTH 290

Note that special topics courses with Women's Studies content are offered from time to time in various departments and may be applied to the major with approval of the Program Director.

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

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.

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. For further information about current courses you are invited to contact the Center for Judaic Studies and Contemporary Jewish Life, U-205, 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://predator.pnb.uconn.edu/PreMedwww/PreMed.html>

or contact advisors at premed@oracle.pnb.uconn.edu 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. For further information contact Robert Bee or Kevin McBride, or write to Native American Studies at U-158.

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 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*
 Judith A. Meagher, Ed.D., *Associate Dean, Neag School of Education*
 Francis X. Archambault, Ph.D., *Associate Dean for Research and
 Development, Neag School of Education*
 Steven J. Smith, Ph.D., *Assistant Dean, Neag School of Education*

The Neag School of Education is organized to support the development of educational activities in Connecticut. The faculty of the Neag School of Education prepares students for teaching and education-related careers, and works with persons already connected with education who wish to improve their qualifications and broaden their learning experiences.

Integrated Bachelor's/Master's Teacher Education Program

As a land grant research university and a member of the Holmes Group, 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 subject area major prior to admission to the Neag School of Education, followed by at least two years of full-time course work in 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 subject knowledge testing requirements must also be successfully completed.

The University's general education requirements (See the Appendix) were approved by the University Senate to ensure that all undergraduates become verbally and quantitatively articulate, intellectually curious and versatile, and acquire critical judgement, moral sensitivity, and a working understanding of the process by which they can continue to acquire and use knowledge. They should develop consciousness of the diversity of human culture and experience, awareness of their era and society in the context of past eras, and an understanding of scientific thought, experimentation and formal hypothesis testing. Prospective educators attain the same quality of general education as do the graduates of any of the University's undergraduate programs. Graduates of teacher education programs additionally complete a course in United States History to satisfy Connecticut's certification regulations.

The subject area major requirements of the University's Integrated Bachelor's/Master's Teacher Education Program for each teaching or specialty field are intended to strengthen education in academic subjects.

The professional education requirements include core, subject specific pedagogy, clinic, and seminar. The core curriculum represents the common body of information critical to all who are preparing to teach including learning, foundations of education, assessment, exceptionality, integration of technology, and research. Subject specific pedagogy includes research based instructional practices for the translation of subject area major content to learners. Clinic is a series of increasingly demanding supervised clinical experiences in a variety of suburban, and urban settings in which prospective teachers are provided opportunities to translate theory and research into practice. Seminar provides opportunities to integrate core and subject specific pedagogy with clinical experience through reflection and analysis.

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

- Elementary Education (EDEL) - Grades one through six
- Elementary Special Education and Elementary (SPED) - Grades one through six

Secondary Education - Grades seven through twelve
 English (ENGL)
 Foreign Languages - French (FREN), German (GERM), or Spanish (SPAN)
 History and Social Studies - (HIST), (SOCI), (ECON), (GEOG), (ANTH), or (POLS)
 Mathematics (MATH)
 Sciences - Biological Sciences (BIOL), Chemistry (CHEM), Physics (PHYS), Earth Sciences (GEOL), or General Science (GESC)

All grade levels program
 Agricultural Education (EDAG)

Elementary Education

Students in Elementary Education are prepared to teach in grades one through six. Students complete general education requirements, a subject area major, and appropriate courses in professional education including the Master of Arts in Education.

Elementary Special Education and Elementary

The combined Elementary Special Education and Elementary Program prepares prospective teachers of elementary children with disabilities in grades one through six. The emphasis is on the child and his or her individual learning problems rather than on any "category" of children. Students typically find employment in public elementary schools. Students complete general education requirements, a subject area major, and appropriate courses in professional education including the Master of Arts in Education.

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 subject area major, and appropriate courses in professional education including the Master of Arts in Education.

Foreign Language Education

Majors in foreign language education are prepared to teach French, German, or Spanish in middle, junior high, and high schools. Students complete general education requirements; a subject area major in grammar, literature, culture, and civilization relevant to their foreign language; and appropriate courses in professional education including the Master of Arts in Education.

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 subject area major, and appropriate courses in professional education including the Master of Arts in Education.

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 subject area major in mathematics, and appropriate courses in professional education including the Master of Arts in Education.

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 subject area major, and appropriate courses in professional education including the Master of Arts in Education.

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 subject area major

in the teaching field, and appropriate courses in professional education including the Master of Arts in Education.

Music Education

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 subject area major, and appropriate undergraduate courses in professional education.

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 Human Performance Laboratory at the University provides a wide range of experiences including metabolic testing, environmental testing, anthropometric testing and evaluation, bone densitometry, biomechanics, exercise testing, strength evaluation, muscle tissue analysis, and exercise biochemistry. The University has superior computer capabilities, such as BMDP, SPSS, and SAS available for student use.

A Cooperative Education Program is available for students in a variety of academic areas. It is a way for students to apply their academic preparation in practical settings prior to graduation.

The Department of Kinesiology offers the following undergraduate programs:

Sport Science (SPSC)

- Biophysical Science of Sport - Biomechanics
- Biophysical Science of Sport - Exercise Physiology
- Sport Marketing
- Athletic Training

Leisure Science (LESC)

- Park and Recreational Management
- Therapeutic Recreational Services

Exercise Science (EXSC)

- Fitness Management

Athletic Training

The Athletic Training concentration prepares students to become certified athletic trainers by the NATA 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, supplies an excellent experience for students specializing in this field. The Students complete course work in general education, cognate areas, and kinesiology.

Biomechanics

The Biomechanics concentration prepares students to analyze sport and exercise performance from a biomechanical perspective. Students can use this subject matter in preparation for graduate study or further professional education. Students complete course work in general education, cognate areas, and kinesiology.

Exercise Physiology

The Exercise Physiology 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. A minor in Sport Nutrition, in conjunction with the Department of Nutritional Sciences, is available to selected students in this concentration. Please refer to the *Minors* section of this *Catalog* for a complete description.

Fitness Management

The Fitness Management concentration prepares students to assist with adult fitness programs in corporate, industrial, recreational, educational, commercial, and clinical settings. The Recreational Services program, in conjunction with the Division of Athletics, supplies an excellent applied venue for students in this concentration. Students complete course work in general education, cognate areas, and kinesiology.

Park and Recreational Management

The Park and Recreational Management concentration prepares specialists for work as supervisors and/or administrators in a variety of public and private recreational service agencies. Career opportunities include practitioner roles in municipal recreation and park departments, aquatic centers, YMCAs/YWCAs, camp directors, armed forces, federal programs and in positions having administrative responsibilities. Graduates are sought for positions in corporate and commercial programs as well as for the travel and tourism industry. Students complete course work in general education, cognate areas, and kinesiology.

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.

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.

Advisement Information

Because the Neag School of Education is an Upper Division 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 sport, leisure, or exercise science program declare a PRSL major.

Students should seek the most recent information at the earliest opportunity directly from the Academic Center for Entering Students (ACES) or the Neag School of Education. Admission applications including a list of faculty advisors, program guidelines, sample semester sequences, and information on Connecticut's essential skills testing requirement are available in the Academic Center for Exploratory Students (ACES) in the Design and Resource Management Building (DRM Building) third floor and the Neag School of Education 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 with a pre-education advisor 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. Students who transfer out of the Neag School of Education or who withdraw (except those on an official leave of absence) or are dismissed from the University must satisfy requirements effective during the semester for which they are readmitted or any subsequent time.

Students prepare a preliminary plan of study in consultation with their assigned faculty advisor as soon as possible after admission to the Neag School of Education. Students additionally complete a final plan of study at the beginning of their final undergraduate semester. Students complete an additional plan of study while enrolled for the Master of Arts in Education.

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 an Upper Division professional school. Students begin their Upper Division 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.

Available resources have necessitated limited enrollment in all programs. The maximum enrollment in each program is determined by the Dean in consultation with the head of the department offering the program. Required course sequences and limited enrollments have resulted in annual consideration for fall admission to most programs. 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 sport, leisure, or exercise science in which the annual enrollment limit was not met the previous fall. Application forms for admission to the Neag School of Education are available from the Academic Center for Entering Students (ACES) Design and Resource Management Building (DRM), third floor, 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, U-64C, 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, U-88, 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. Educational Testing Service's (ETS's) Praxis I Computer-Based Tests (CBTs) fulfill Connecticut's essential skills testing requirement. The Praxis I Computer-Based Tests (CBTs) are three discrete tests of reading, writing, and mathematics administered via computer delivered questions.

A passing score on the Connecticut Competency Examination for Prospective Teachers (CONNCEPT), a paper and pencil test administered by National Evaluation Systems, Inc. (NES) 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 Aptitude 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.

Praxis Series Registration Bulletins and Praxis I Tests at a Glance booklets are available in the Neag School of Education (Gentry Building) Room 119. The forms and instructions for applying for a waiver are available in Room 231.

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 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 Sport, Leisure, and Exercise Sciences generally have completed sufficient credits to be eligible for consideration, have applied by the annual deadline of February 1, 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.

Generally, acceptance into the teacher education program is concurrent with admission to the Neag School of Education. However, in cases where students do not meet the admission requirements for the teacher education program, the Neag School of Education Admissions Committee, at their option, may admit students to the Neag School of Education and withhold acceptance into the teacher education program.

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.

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 subject area major prior to admission to the Neag School of Education, followed by at least two years of full-time course work in 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 subject knowledge testing requirements must also be successfully completed.

Teacher Certification Programs for College Graduates (TCPCG)

Those individuals who already have a baccalaureate who wish to qualify for teacher certification should apply for admission before February 1 to both the Teacher Certification Program for College Graduates (TCPCG) and to the Graduate School to earn the Master of Arts in Education.

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 a summer and two years of full-time course work in professional education. Prospective applicants to the Neag School of Education must have previously completed, prior to admission, an appropriate undergraduate degree including prerequisite course work in general education, subject area major, and other areas listed on the program guidelines. Admission to both the Teacher Certification Program for College Graduates and to the Graduate School to earn the Master of Arts in Education is required. Connecticut's subject knowledge testing requirements must also be successfully completed.

Application forms and other descriptive program materials are available in the Neag School of Education, or may be requested by writing: Neag School of Education Admissions Office, 249 Glenbrook Road, U-64C, Room 225, Storrs, CT 06269-2064, Telephone: (860) 486-3065.

Speech and Language Pathologist Education

In conjunction with the Department of Communication Sciences, the Teacher Certification Program for College Graduates (TCPCG) enables college graduates to obtain certification as Speech and Language Pathologists in the public schools of Connecticut. Students must be enrolled in a Masters of Arts program in speech-language pathology.

Accreditation

The Neag School of Education is a member of the American Association of Colleges for Teacher Education and is accredited by 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 National Council for the Accreditation of Teacher Education approved program.

State Certification 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 (CONNTENT). No graduate may be recommended for a teaching certificate until successfully completing Connecticut's subject knowledge testing requirements. Praxis Registration Bulletins describing the approved Praxis II Subject Assessments are available in the Neag School of Education (Gentry Building) Room 119.

3. Beginning teachers issued initial educator certificates must successfully complete the Beginning Educator Support and Training Program (BEST).

Special Services

The Neag School of Education includes special services areas. These special services and the persons responsible for their operation are listed below:

Bureau of Education Research and Services

Scott W. Brown, Ph.D., *Professor of Educational Psychology, Director*

Learning Disabled College Program

Joseph Madaus, Ph.D., *Director*

MicroComputer Lab

John Toman, M.S., *Coordinator*

Reading-Language Arts Center

Mary Anne Doyle, Ph.D., *Associate Professor of Education, Director*

A.J. Papanikou Center on Special Education and Rehabilitation: A
University Affiliated Program

Lee K. McLean, Ph.D., *Professor of Educational Psychology*

School of Nursing

Kathleen A. Bruttomesso, D.N.Sc., *Interim Dean*
 Helen S. Shah, D.N.Sc., *Interim Associate Dean*
 Eva Gorbants, M.A., *Director, Academic Advisory Center*

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 Accrediting Commission 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.

Insurance. It is mandatory that all students carry comprehensive health insurance and Student Malpractice Liability Insurance when they are involved in practice in the clinical areas. Faculty reserve the right to recommend withdrawal from the program for reasons of health.

Transportation. Students must furnish their own transportation and cover costs of travel and parking to the clinical agencies.

Books, Uniforms and Professional Equipment. Students are expected to cover the cost of uniforms and the professional equipment required before the beginning of the junior year.

CPR. A current certificate in cardio pulmonary resuscitation (professional level) is a prerequisite for entry into the Upper Division nursing major 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 have the responsibility 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 in a variety of curricula areas which must be satisfied as part of every bachelor's degree program. These requirements are listed in the *Appendix* of this *Catalog*.

I. College Requirements

Nursing students must complete the following lower division courses. Students should note that some of these courses may also fulfill University General Education requirements.

CHEM 127Q - General Chemistry
 CHEM 128Q - General Chemistry
 HDFR 190 - Individual and Family Development
 NURS 202 - Basis of Scientific Inquiry or PHIL 212 - Philosophy of Science or
 SCI 240 - Nature of Scientific Thought
 NURS 204 - Clinical Science I
 PHIL 104 - Philosophy and Social Ethics

PHYS 101Q - Elements of Physics
 PNB 264 - Human Physiology and Anatomy
 PNB 265 - Human Physiology and Anatomy
 PSYC 132 - General Psychology I
 PSYC 133 - General Psychology II or equivalent
 SOCI 107 - Introduction to Sociology
 STAT 100V - Introduction to Statistics I or STAT 110V - Elementary Concepts in Statistics
 One 200-level course in Sociology or Anthropology

III. Program Requirements: Traditional Students

Nursing students must complete the following upper division courses:

Junior Year First Semester

	Credits
NURS 205 - Theoretical Foundations of Nursing I (empirical)	2
NURS 213 or 213W - Nursing Research	3
NURS 214 - Clinical Science II	3
NURS 216 - Adult Health I	3
NURS 217 - Practicum: Adult Health I	5

Junior Year Second Semester

	Credits
NURS 206 - Theoretical Foundations of Nursing II (existential)	2
NURS 220 or 220W - Historical and Contemporary Topics in Nursing	3
NURS 224 - Clinical Science III	4
NURS 226 - Adult Health II	2
NURS 227 - Practicum: Adult Health II	5

Senior Year First Semester

	Credits
NURS 225 - Theoretical Foundations of Nursing III (ethics)	3
NURS 234 - Clinical Science IV	2
NURS 236 - Parent-Child Nursing	4
NURS 237 - Practicum: Parent-Child Nursing	5
Elective	3

Senior Year Second Semester

	Credits
NURS 235 - Theoretical Foundations of Nursing IV (esthetics)	3
NURS 240 - Clinical Science V: Epidemiology	1
NURS 241 - Community Health Nursing	2
NURS 248 - Community Nursing Practicum	VV
NURS 242 - Clinical Science V: Pharmacodynamics of Psychiatric-Mental Health Nursing	1
NURS 243 - Psychiatric-Mental Health Nursing	2
NURS 249 - Psychiatric-Mental Health Practicum	3
NURS 253 - Professional Nursing Practice: Leadership, Management and Financial Issues	2

Program Requirements: Registered Nurses

Registered nurses who graduated from an approved Connecticut associate degree or diploma program in nursing after June, 1986, 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 30 advanced placement credits in nursing 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 35 credit sequence of Upper Division and graduate courses to earn the bachelor's degree:

	Credits
NURS 206 - Theoretical Foundations of Nursing II	2
NURS 213 <i>or</i> 213W - Nursing Research	3
NURS 225 - Theoretical Foundations of Nursing III	3
NURS 235 - Theoretical Foundations of Nursing IV	3
NURS 253 - Professional Nursing Practice: Leadership, Management and Financial Issues	2
NURS 240 - Clinical Science V: Epidemiology	1
NURS 241 - Community Health Nursing	2
NURS 248 - Community Nursing Practicum	VV
NURS 350 - Nursing Science	3
NURS 352 - Policy Aspects of Advanced Nursing Practice	3
Electives	9

Scholastic Standing Requirement. A student in the School of Nursing must have a cumulative grade point average of at least 2.5 in those courses listed below in the Lower Division course sequence, and a grade of C+ (2.3) or better in the following courses: CHEM 127, 128; PHIL 212; SCI 240, or NURS 202; PHYS 101; and PNB 264, 265 in order to gain admission to the junior year.

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 is a prerequisite unless that student has earned a grade of C (2.0) or better in that prerequisite course. No student may progress to the 2nd semester junior year until all required 1st semester junior year courses have been completed. No student may progress to the senior year until all courses in the junior year sequence have been completed. No nursing course may be repeated more than once (for a total of two times).

Students will 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 131 credits, (2) earned at least a 2.0 grade point average for all calculable Upper Division course work, (3) met all the requirements of the School of Nursing. (See Scholastic Standing Requirement.)

School of Pharmacy

Michael C. Gerald, Ph.D., *Dean, School of Pharmacy*

Donna J. Fournier, Ph.D., *Associate Dean for Academic Affairs,*

School of Pharmacy

Irene C. Burke, M.S., *Assistant Dean for Student Services,*

School of Pharmacy

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 two years of pre-Pharmacy requirements and two years in the professional program leading to a Bachelor of Science with a major in Pharmacy Studies (BS Pharmacy Studies). Students who are in good standing at the end of the first two professional years will be immediately admitted into the 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 in the 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 \$5000 per year (based on 1999-2000 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 candidate status 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, and is scheduled to be evaluated for accreditation during the 2000-2001 academic year. The granting of candidate status denotes a developmental program, which has taken into account ACPE accreditation standards. Graduates of a class designated as having candidate status have the same rights and privileges as graduates of a program which has accreditation status, including eligibility for licensure.

The School of Pharmacy also offers a number of courses leading to the degrees of Master of Science and Doctor of Philosophy. Students holding the degree of Bachelor of Science may prepare for the Doctor of Philosophy degree with a major in pharmaceuticals, medicinal and natural products chemistry, pharmacology, or toxicology. The Master of Science degree in pharmaceutical sciences may be awarded in the above subject areas and pharmacy administration (see the *Graduate School Catalog*).

Regional Plan. In conformity with plans approved by the Boards of Trustees of the six New England land grant universities for regionalization of certain fields of specialized education, the University of Connecticut School of Pharmacy has been designated as a regional New England school for all other New England states except Rhode Island. Regional students receive a significant tuition savings over out-of-state tuition rates. Regional status is granted for studies during the pre-pharmacy and pharmacy phases.

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 fall. All required math and science courses must be completed by May for entry into the professional program 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 I, II, IVa, IVb, V, and VI) before they enter the professional program will have to complete those courses by May of the second professional year. The Pharmacy program is upper division. Interested students entering as freshman or sophomores should identify themselves as pre-Pharmacy majors in the College of Liberal Arts and Sciences. Pre-Pharmacy students will be advised through the Academic Center for Entering Students (ACES).

Those students who have met all the following criteria will be admitted: 1) completed 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 GPA of 2.5 in English 105 and 109 or a grade of 2.5 in English 250; 4) Earned a grade no less than 2.0 in any of the above classes, 5) Completed a School of Pharmacy Professional Program application.

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 math and science GPA of 2.5 or better. All required prerequisite science courses

should have been passed with a grade of 2.0 or better.

Application deadline is **March 1** for September admission. Application review will begin in February and the review process continued on a space available basis. Highly qualified students may be considered for early admission.

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 will be interviewed.

For admission to the pharmacy program, completion of a Test of Spoken English (TSE) with a minimum score of 50 is required of all international applicants and U.S. citizens or permanent residents for whom English has not been the primary language.

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 *Prescription Processing Lab* (PHRM 210) 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.

Physical Examination Requirements. By the beginning of the first semester in the professional program, all students are required to have an initial physical examination including CBC and urinalysis. Additionally, all students are required to have Rubella 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 compliance with the Occupation Safety and Health Administration (OSHA) requirements, the School of Pharmacy will hold a mandatory annual educational sessions on the Blood Borne Pathogen standards.

Transportation. Students must provide their own transportation to clerkship or externship sites during the professional program. They should allow for transportation expenses and parking fees where necessary.

Health Insurance. All students in the School of Pharmacy 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 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 the curriculum are required to carry specific professional liability (malpractice) coverage. The student will automatically be billed for this on their 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 requires 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, 06106. Students seeking licensure in other states should contact the Boards of Pharmacy in those states.

Degree Requirements for the Pharm.D. (B.S.) 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 (125) credits; (2) completed all requirements for 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 Upper Division course work; and (6) earned a 2.0 grade point average for all calculable required Pharmacy courses.

Curricula in Pharmacy

I. General Education Requirements

The University Senate has adopted University 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 Appendix of this *Catalog*.

II. College Requirements

Pharmacy students must complete the following requirements as preparation for the professional program. Students should note that these courses may also fulfill University General Education requirements.

Mathematics

Math 115Q - Calculus I or MATH 112Q and Math 113Q - Introductory Calculus 1 and 2, (counts toward Group III of the University General Education requirements)

Science and Technology

BIOL 107 - Principles of Biology
CHEM 127Q - General Chemistry
CHEM 128Q - General Chemistry
CHEM 243 - Organic Chemistry
CHEM 244 - Organic Chemistry
MCB 203 - Biochemistry
MCB 229 - Microbiology
PHYS 121Q - Elements of Physics

(Counts toward Group VIII of the University General Education requirements.)

Communication Theory/Practice

COMS 105 - Principles of Public Speaking

Social Organization

Any 100's level Sociology course (counts toward Group VII of the University General Education requirements)

Economic Theory

ECON 111 - Principles of Macroeconomics (counts toward Group VII of the University General Education requirements)

Students will be admitted to the Pharmacy Studies degree program after completion of the required two-year pre-Pharmacy program (64 credits)

III. Program Requirements

First Professional Year - 30 Credits

Fall Semester

	Credits
219 General Principles and Organ System Overview	3
233 Bio-Organic Chemistry I	3
202 Health Care Organization	1
203 Social Behavioral Aspects of Pharmacy	2
201 Pharmaceutical Care	
204 Administrative Aspects of Pharmacy	4
Practice and Principles of Pharmacoeconomics Electives	2
	15

Spring Semester

	Credits
220 Nervous System	5
234 Bio-Organic Chemistry II	3
235 Bio-Organic Lab	1
206 Interpersonal Skills Development	2
201 Pharmaceutical Care	1
Electives	3
	15

Second Professional Year - 31 credits

Fall Semester

	Credits
221 Cardiovascular/Renal/Respiratory	4
242 Solution & Solid Dosage Forms	4
244 Dosage Forms Prep Lab I	1
245C Pharmacokinetics	3
253 Therapeutics I	2
207 Pharmaceutical Care	
	14

Spring Semester

	Credits
222 Endocrine/GI Systems	3
246 Dispersed Systems	3
208 Pharmacy Law and Ethics	3
254 Therapeutics II	3
247 Dosage Forms Preparation Laboratory II	1
207 Pharmaceutical Care	1
PATH 297 Pathobiology	3
	17

Total Credits for Bachelor of Science in Pharmacy Studies - 125 credits

Doctor of Pharmacy - 71 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 - 35 credits

Fall Semester

	Credits
225 Toxicology	2
224 Chemotherapy	2
255 Therapeutics III	2
257 Clinical Pharmacokinetics	3
223 Pharmacology Discussion/Lab	1
209 Pharmaceutical Care	
200 Evaluation Skills	3
Electives	3
	16

Spring Semester

	Credits
226 Immunology	3
256 Therapeutics IV	3
211 Introduction to Clinical practice	2
212 Prescription Processing (Lab)	3
210 Non-Prescription Medication	3
209 Pharmaceutical Care	1
Electives	4
	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 credit = 40 hours)

Required (one month each) 16 credits

	Credits
262 Professional Experience in Community Pharmacy	4
263 Professional Experience in Hospital Pharmacy	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, Group 1, minimum of 3 (one month each) 12 credits

	Credits
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

Electives, Group 2, minimum of 2 (8 credits)

	Credits
272 Professional Experience in Community Practice II	2 - 4
273 Professional Experience in Critical Care	2 - 4
274 Professional Experience in Dermatology	2 - 4
275 Professional Experience in Drug Control	2 - 4
276 Professional Experience in Emergency Medicine	2 - 4
277 Professional Experience in Home Health Care	2 - 4
278 Professional Experience in Hospital Pharmacy II	2 - 4
279 Professional Experience in Industry	2 - 4
280 Professional Experience in Managed Care	2 - 4
281 Professional Experience in Nuclear Pharmacy	2 - 4
282 Professional Experience in Nutrition	2 - 4
283 Professional Experience in Obstetrics/Gynecology	2 - 4
284 Professional Experience in a Skilled Care Nursing Facility	2 - 4
285 Professional Experience Surgery	2 - 4
PHAR 298 Special Topics in Pharmacy	2 - 4
PHAR 299 Research Experience (GPA 2.8)	2 - 4

Total credits for Doctor of Pharmacy - 196

Exemptions 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. The Curriculum Committee must also approve waivers and substitutions for professional courses, including those for University Scholars.

Ratcliffe Hicks School of Agriculture

Suman Singha, Ph.D., *Associate Dean, College of Agriculture and Natural Resources and Director, Ratcliffe Hicks School of Agriculture*
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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 up to ten 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, U-90, Storrs, CT 06269-4090.

Many other scholarships in Agriculture and Natural Resources are available to Ratcliffe Hicks students.

Associate Degree Curricula

Majors. RHSA students major in Horticulture or Animal Science. Horticulture majors in RHSA may concentrate on 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
- One of the following for the Literature/Arts Requirement: ART 135, DRAM 101, DRAM 110, FREN 171, MUSI 191, or WS 104
- One of the following for the Natural Science Requirement: BIOL 100 or 102

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). Inappropriate registration may result in administrative changes to a student's schedule or credit restrictions toward graduation requirements.

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 Agricultural Calculations¹
- SAAG 001 Computers in Agriculture

Humanities and Social Science

- POLS 173 Introduction to American Political Process
- 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 100 General Biology
- 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.

Horticulture Core

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

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 011-099 and must be approved by their 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 for Lower Division students as all other schools and colleges of the University with the following exceptions: The Pass/Fail option is not authorized for students in the school and first semester students are subject to dismissal from the University as deficient in scholarship 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. Admissions 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, Agricultural Calculations.

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. 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 by their titles.

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 ice 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 two required courses: INTD 276 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 upper division 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 235Q, ARE 215C, PATH 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.

Biological Sciences

Students wishing to complete this minor must take at least 15 credits of 200's level courses from Biology: EEB, Biology: MCB, and Biology: PNB. It is strongly recommended that at least one course include laboratory or field work. Courses chosen for the minor must include at least one course or course sequence from

each of the following three groups:

A. Biology: MCB 200, MCB 203, MCB 204, MCB 210, MCB 213, or MCB 229.

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

C. Biology: 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 by the Biology Department.

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 283, CE 297, CSE 245, ME 250, EE 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.

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):

CLAS 241W, 242W; INTD 294

B. At least one course dealing with the ancient world:

CLAS 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:

CLAS 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 Processes

Students wishing to complete this minor must take at least 15 200-level credits in COMS courses. Selected courses must include:

1. COMS 231Q or an equivalent course in research methods

2. At least two from COMS 205, 210, and 235

3. At least one from COMS 206, 207, 208, 209, 213W, 214W, 216W, 217, 218, 219, 222W, 226, 230, 234, 236, 237, 238, 239, and, with COMS advisor's permission, 297 and 298

4. Not more than one from COMS 211, 212, 215, 220, and 233

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:

1. Three required courses (Nine credits):
POLS 255, SOCI 216, PSYC 245
2. One Course (Three credits) from the following:
POLS 297 Supervised Field Work (in a criminal justice agency or program), SOCI 296 Field Experience (in a criminal justice agency or program), SOCI 340 Seminar in Criminal Justice (for GPA qualified seniors), HDFR 288 Supervised Field Experience, PSYC 294 Field Experience
Students who are employed full time within a criminal justice setting may have the Group II requirement waived by their Criminal Justice Advisor when employment is documented by their supervisor.
3. Two courses (Six credits) from the following list: HDFR 266, 276, 284; PHIL 226; POLS 252, 254, 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 (GPA qualified students); WS 263.

The minor is offered by the College of Liberal Arts and Sciences.

Dairy Management

This minor provides interested students with an in-depth exposure to all aspects of dairy farm management. Students will have the opportunity to manage a portion of the UConn dairy herd and be responsible for daily activities and short and long-term decision-making. The requirements for this minor are: ANSC 275, ANSC 277S, ANSC 278, PATH 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.

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*
CE 260, 263, 279
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.

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: History 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.

French

This minor will offer to students who arrive at UConn with no background in French the opportunity to pursue advanced studies in language, literature, and culture of the French-speaking world. Fifteen credits of French will be required for the minor. These are the courses a student pursuing the minor in French must complete:

- A. One of the following: FREN 210, 211
- B. One of the following: FREN 268, 269
- C. Both of the following: FREN 261, 262
- D. One of the following: FREN 217, 218, 221, 223, 224, 280, 281.

The minor is offered by the Modern and Classical Languages 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

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 264Q, 3 Credits
- GEOL 266Q, 3 Credits
- GEOL 267Z, 3 Credits
- GEOL 268Z, 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 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)
HDFR 204, HDFR 248, HDFR 250
2. One course (three credits) from the following:
HDFR 252, HDFR 274, HDFR 276, AH 203
3. Six credits in HDFR 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, U-58, 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, 218, 219, 220, 250, 251, 255, 261, 263, 266, 267, 271, 272, 273, 274, 278, 293, 296, 297W, 298, 299, any graduate level History course

Group B - Modern Europe: 203, 206 (SCI 206), 207, 208, 209 (HDFR 279), 225, 226, 228, 229, 252, 254, 256, 258, 259, 262, 264, 269, 279, 291, 293, 296, 297W, 298, 299, any graduate level History course

Group C - United States: 210, 215, 227, 230 (JOUR 217), 231, 232, 233, 234, 235, 236, 237, 238, 239, 241, 242, 243, 244, 245, 246, 248, 249, 284, 292, 293, 296, 297W, 298, 299, any graduate level History course

Group D - Africa, Asia, Latin America, and Middle East: 204, 205, 222, 223, 224, 275, 277, 280, 281, 282, 283, 285, 286, 287, 288, 289, 290, 293, 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.

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

This minor requires at least 18 credits in 200 level Italian courses as specified in the *Catalog*. All of the courses listed below require ITAL 145, 146, 147, 148, or the equivalent, as prerequisites, but these courses do not count towards the minor. The following are the courses that must be completed:

- A. One course in composition and conversation: ITAL 239 or 240.
- B. Both of the following: ITAL 243 and 244.
- C. Two courses from the following: ITAL 245, 246, 250, 251, 253, 254.
- D. One course from the following: ITAL 237, 238, 260.

The minor is offered by the Modern and Classical Languages 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 255, PLSC 275, PLSC 202

And three of the following courses: PLSC 231, PLSC 261, PLSC 247, PLSC 277, PLSC 260, PLSC 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 283, 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.

Linguistics

This minor requires 15 credits of 200-level course work in linguistics and a related area. 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
LING 208W, LING 215C, LING 244W, or LING 299

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, COMS 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. Cores 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 and the properties of these materials that are critical to science and engineering. It requires completion of 16 credits including the following:

- An approved *Plan of Study*
MMAT 201, 202, and 203

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 & Materials Engineering Department.

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.

Nutrition for Exercise and Sport

This minor has been established in cooperation with the Department of Kinesiology, and space constraints restrict the minor to six Nutritional Sciences students annually. 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 261, NUSC 299 or NUSC 281

The minor is offered jointly by the College of Agriculture and Natural Resources and the Neag School of Education.

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 upper division 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 (10 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. PSYCH 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 294 and PSYC 297 combined 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.

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.

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 course (choose 2 of the following for a total of 6 credits.)*
NUSC 267, 236, 299 or 281

*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.

Statistics

This minor requires at least 15 credits at the 200-level. Students must choose one of three options:

Track I. STAT 201, 230, 231, 261, plus one course from the *Optional List* below.

Track II. STAT 201, 220, 261, plus two courses from the *Optional List* below.

Track III. STAT 201, 242, plus three courses from the *Optional List* below.
Optional List of Statistics Courses: STAT 235, 242, 243, 252, 253, 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 are strongly advised to take Track II. Students whose mathematics background is below MATH 114 level or its equivalent should take Track III.

The minor is offered by the Statistics Department.

Theatre Performance

Additional Requirements. For students seeking this minor:

1. Completion of DRAM Arts 141 or 153, and 143
2. Completion of 12 credits of upper division course work from the following:
DRAM Arts 238, 241, 242, 243, 244, 247, 248, 249, 250, 257, 258, 272

The minor is offered by the Drama Department.

Theatre Production

Additional Requirements. For students seeking this minor:

1. Completion of DRAM 107 (one section) and 108
2. Completion of 12 credits of upper division 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 Drama Department.

Theatre Studies

Additional Requirements. For students seeking this minor:

1. Completion of DRAM 130 and 131
2. Completion of 12 credits of upper division course work from the following:
DRAM 230, 231, 235, 272, 282, 285

The minor is offered by the Drama Department.

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 Lower Division (Freshman-Sophomore) study in most baccalaureate programs, in all of the University's schools and colleges. Most students will anticipate moving to Storrs for Upper Division 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 better satisfied at Storrs. The Stamford program offers courses beyond the Lower Division; currently, students may complete majors in Economics, English, History, Political Science, Psychology, and Sociology, and a Bachelor of General Studies degree.

University standards for admission and student achievement are uniform for all campuses. Similarly, although the variety of Lower Division 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, computer terminals and other mechanisms link these campuses with the main campus.

Several local campuses offer evening courses, intended particularly to serve students who are employed or who wish to continue college study on a part-time basis. In addition, each campus serves as a local center where the Division of Extended and Continuing Education offers selected graduate courses and at Stamford ECE offers a wide range of non-credit programs, courses, and certificates, and manages a state-of-the-art Conference Center. Graduate programs in Business Administration, for example, are offered in Stamford. The Bachelor of General Studies Degree program administered by Extended and Continuing Education provides a means by which selected adult students may use local campus facilities to pursue Upper Division undergraduate study in individualized curricula. The Marine Sciences and Technology Center, housed at the Avery Point campus in Groton, is another example of how the local facilities are used to place elements of the University's total program where they will be most effective.

The University tries to offer at such locations courses and other programs which citizens in nearby communities need. 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 seamless transition to Storrs, usually at the end of the sophomore year.

In addition to offering Lower Division courses required for fulfilling all of the University's general education requirements, UConn Avery Point offers many Upper Division courses, including those of the multi-disciplinary coastal studies curriculum, offered almost exclusively at Avery Point.

The campus also offers a significant number of both Lower and Upper Division 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 undergraduate academic complex features newly renovated chemistry and coastal studies 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.

Hartford Campus

Glen Richardson, *Interim Director*

The Hartford Campus of the University of Connecticut, organized in 1946, moved in 1970 to its present location on the Greater Hartford Campus at 85 Lawler Road, West Hartford. The undergraduate building provides classrooms, including a new high-tech classroom, laboratories, the Gampel Student Center, food services, and a co-op bookstore as well as provision for athletic and extracurricular activities. Campus-wide facilities include a library, fully linked to the Storrs Babbidge Library, campus auditorium/theatre, and a computer center. A new building housing the Computer Center and Student Services is expected to be completed by the summer of 2001. Ample parking is available for authorized students.

The Hartford regional campus of the University serves a broad section of the population of the greater Hartford area. Freshmen-sophomore students who prefer to live and study in this area may begin a program leading to a degree from nearly all of the schools and colleges of the University. These programs, and the distinguished faculty who staff them, are fully integrated into the departments and colleges of the University. For those students who wish to continue their education in the evening, a number of undergraduate courses are offered, including some advanced courses which fulfill the requirements of the Bachelor of General Studies degree offered at the campus. In 1999, a new degree program in Urban Studies was approved for the undergraduate program. This new major represents the beginning of a planned expansion of three and four year course offerings which will enable students to complete most or all of their studies at the Hartford Campus. Courses on a graduate level are available in education, public administration, and in business administration.

The programs of the School of Social Work, (MSW), MBA, Cooperative Extension, and International Political Science Institute are also located on the campus.

Stamford Campus

Jaquelyn Joseph-Silverstein, Ph.D., *Associate Vice Chancellor and Director*

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. Every classroom is wired for computer accessibility and the computer center has more than 100 new computer stations for student use. Additionally, the distance learning classrooms link UConn Stamford

University of Connecticut Internet Sites

Health Center: <http://www.uchc.edu/>

School of Law: <http://www.law.uconn.edu/>

School of Social Work: <http://www.socialwork.uconn.edu/>

to Storrs for extended instructional activities.

Located in the center of Downtown Stamford, students may complete majors in Economics, English, History, Political Science, Psychology, and Sociology, and a Bachelor of General Studies degree at the new Campus. A new degree program in Business Administration will be added to the curriculum along with the establishment of the Connecticut Information Technology Institute (CITI). The institute will prepare individuals who wish to follow an information technology tract in their studies. At Stamford, the Division of Extended and Continuing Education offers a wide range of non-credit programs, courses and certificates and manages a state-of-the-art Conference Center.

The Bartlett Arboretum, under the direction of Stamford Campus, is a 68-acre wooded nature center surrounding the Campus. It houses the state's largest library on plant science, and its Visitor's Center features botanical illustrators. The Arboretum sponsors a wide variety of horticultural programs in its Educational Building, and the Campus holds several classes there during the year. The greenhouse, gardens, and trails are visited by over 20,000 people yearly.

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.

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 the corporate community, 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.

Torrington Campus

Adriane R. Lyon, M.A., *Director*

In the fall of 1957, the University of Connecticut began offering late afternoon classes at Torrington High School. The program grew rapidly, and as a result of a bequest from Julia Brooker Thompson, the present University Drive campus was established in 1965.

The 100-acre campus is located in a quiet, rural setting on the outskirts of the city of Torrington and consists of a large classroom building and ample parking. Well-equipped biology, chemistry, and physics laboratories, an art studio, computer rooms, a UConn Co-op bookstore, an auditorium, and a cafeteria are all part of the facility. An 18,000 volume library subscribes to more than 100 journals and newspapers, and provides access to more than 250 libraries in the State through the CD ROM database, reQuest, and interlibrary loan. Classes are usually small, with a ratio of students to instructors of about 20 to 1; accessibility of faculty and quality of instruction are special features of the Torrington Campus.

An extensive program of both day and evening classes is available. Freshman and sophomore students who prefer to live, work, and study in Litchfield County may begin a program leading to a degree in any of the schools and colleges of the University. Additionally, many junior and senior level classes are offered, primarily for those students in the Bachelor of General Studies Program, who are completing requirements for a UConn degree at the Torrington Campus.

Activities available to students include an Associated Student Government,

which sponsors a variety of social events. Membership at the Torrington YMCA is free to all UConn Torrington students.

The campus is actively involved in many aspects of the community including economic development and the arts. Poetry readings are frequently hosted by the Associated Student Government and local authors visit classrooms on a regular basis. The campus is the home of public radio station WAPJ which provides students with the opportunity to participate in live radio programming. The Torrington Campus is also home to the Litchfield County Writers' Project which, in addition to housing a collection of the published works of Litchfield County authors, includes programs and seminars by and about those authors.

Waterbury Campus

Francis G. Brennan, *Director*

The University of Connecticut at Waterbury, established in 1942 as an Extension Center to help answer the educational needs of students in the surrounding area, has responded to continued demand for its services by steady growth. Starting with its incorporation as a branch campus of the University of Connecticut system in 1946, and continuing with its current expansion into newly acquired premises, the University of Connecticut at Waterbury currently serves about 500 students, most of whom are freshmen, sophomores, and returning adults. Located in a residential and office neighborhood on the slopes of 32 Hillside Avenue, Waterbury, overlooking the city, the campus boasts at its heart two elegant Victorian dwellings. The Benedict-Miller mansion constructed in 1876, is one of the best examples of shingle-style Victorian in the country, and houses a combination of faculty and administrative offices while also providing meeting space for the campus and local community. The former Sperry Homestead or "White House," of a similar vintage, serves as the core of the administrative operation of the campus.

Other facilities include the modern classroom, library, and science and engineering buildings, and the recently acquired Victorian Hart House which will allow further space to be developed to accommodate student needs. In addition to library facilities, the Edward H. Kirschbaum Hall features an exhibition area, meeting room, group study rooms, audiovisual equipment and viewing rooms. The science and engineering building also includes a bookstore, snack bar, and student recreation facilities. Two computer laboratories are available, one containing terminals connected to the mainframe computer at Storrs and another containing both Macintosh and IBM compatible personal computers. A new student parking lot accommodates about 50 cars. The third floor of the Charles Ekstrom Hall at Central Naugatuck Valley Region Higher Education Center (HEC), a building equipped with excellent parking, cafeteria, and library facilities, is also used for classrooms and offices. Most night classes are offered at this location.

The groups served by the Waterbury campus of the University include a broad section of the population of the greater Waterbury area. For those students who wish to continue their education in the evenings, a large number of suitable courses are offered at all levels, including advanced courses toward the Bachelor of General Studies Degree. A selection of Upper Division courses in several majors, including mathematics, English, and history, are available year-round during the day and at night, as this urban campus continues to respond to the needs of its diverse community.

Regional Campus Information on the Web

Information about all regional campuses is located at:

<http://www2.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://www2.uconn.edu/ucdirect/torrdirect.html>

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 *Directory of Classes* published prior to each semester through the Office of the Registrar.

Courses to be offered through the Office of Credit Programs, Extended and Continuing Education, 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 from the *Directory of Classes* that is available before the opening of each semester through the Office of the Registrar.

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 329, Hall Building

For major requirements, see the School of Business Administration section of this *Catalog*.

Courses in this department, with the exception of Accounting 131, are open to juniors and seniors only.

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 (Accounting 299's) and internships (Accounting 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.

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 (formerly IMGT 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.) 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.

210. Management and Engineering for Manufacturing Accounting

First semester. Three credits. Prerequisite: Successful completion of ACCT 131 or Accounting Model Tutorial Module, with proficiency test in ACCT 210. Open only to MEM majors.

Understanding of cost management system concepts as applied to manufacturing enterprises. Designed for students with no prior accounting experience. Coverage of the interrelationships among product cost elements and the impact of accounting procedures on management decisions. Traditional and alternative cost accounting methods will be considered.

221. Cost Accounting

Either semester. Three credits. Prerequisite: ACCT 200 and OPIM 203 (formerly IMGT 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.) 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: Completion of Lower Division School of Business Administration Requirements and courses in Principles of Managerial Accounting. Cost Accounting and Intermediate Accounting, as well as consent of instructor and department head.

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. 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.

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 50.

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. Prerequisite: One of the following: ARE 150, ECON 112 or ARE 215C; or consent of instructor. Not open for credit to students who have passed AERS 230. *L. Lee*

Analysis of financial statements, credit, risk, and investment decision-making.

221. Organization and Strategies in Food Industries

Second semester. Three credits. Prerequisite: ARE 150 or ECON 112. *Cotterill*

Market structure and business strategies of firms, pricing, advertising, entry strategies, mergers, and the impact of public policies.

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 Price Analysis

Second semester. Three credits. Prerequisite: ARE 150 or ECON 112 or consent of instructor. *Lopez*

Principles and applications of marketing, with special reference to business, economics, and policies under which the food system operates. Price risk management via commodity futures markets, practical problems, computer exercises, and usually a field trip.

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**235. Environmental and Resource Economics**

Second semester. Three credits. Prerequisite: ARE 150 or ECON 112.

Natural resource use and environmental quality analysis using economic theory. Reviews of empirical research and relevant policy issues.

238. Economics of Outdoor Recreation

Second semester. Three credits. Prerequisite: ARE 150 or ECON 112 or consent of instructor. *L. Lee*

Analysis of applied outdoor recreation decision tools for public and private recreation resource managers.

255. The Role of Agriculture in Economic Development

First semester. Three credits. Prerequisite: ARE 150 or ECON 112 or consent of instructor. 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**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 and Agricultural Policy

First semester. Three credits. Prerequisite: ARE 150 or ECON 112 or consent of instructor. *Lopez*

Analysis of food and agricultural policies in the United States and abroad. Designed for students with diverse departmental affiliations.

260W. Food and Agricultural Policy**275. Principles of Agribusiness**

First semester. Three credits. Prerequisite: ARE 150 or ECON 112. *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. Prerequisite: ARE 150 or ECON 112.

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. Prerequisite: ARE 150 or ECON 112 or consent of instructor. *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. 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.

297. Resource Economics Internship

Either semester or summer. One to six credits (repeatable for a total of six credits). Open only to Upper Division 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. May be repeated for credit with a change of topic. Open only with consent of instructor. Requires Independent Study Authorization.

This course is designed primarily for major students.

† Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

Agriculture and Natural Resources (AGNR)

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 Upper Division 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.

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. Open only with consent of instructor.

A course designed for the student who wishes to pursue an investigation of specific problems related to domestic and foreign agriculture with particular emphasis upon current problems in instruction, extension education, and research.

Air Force Studies (AIRF)

Head of Department: Colonel Robert M. Gabor
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. *Gabor*

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. *Gabor*

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. *Gabor*

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. *Gabor*

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

One credit. One 2-hour class period per week for twelve weeks. Prerequisite: MATH 109 or permission of instructor. Open only with consent of instructor. *Gabor*

The principles of flight. Meets the course of study requirement for private pilot's written examination. (FAA)

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. *Anderson*

Management fundamentals, motivational processes, leadership, group dynamics, organizational power, managerial strategy. Development of communication skills.

235W-236W. Air Force Studies III

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. *Eggers*

American civil-military relations, defense policy formulation, role of the professional officer, military justice system, Air Force Commands.

245-246W. Air Force Studies IV

Allied Health Applied Health Sciences

Head of Department: Dean Joseph Smey
Department Office: Room 227A, Koons Hall

For major requirements, see the School of Allied Health section of this *Catalog*.

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*.

220. Cancer and Your Health

(Formerly offered as MLS 220.) First semester. Three credits. Three hours of lecture. Prerequisite: One course in Biology or concurrent enrollment in a Biology course.

This course introduces students to cancer risk education, causes, early detection, prevention and public education.

221. Introduction to Cancer and Diagnostic Cytology

(Formerly offered as MLS 221.) Second semester. Three credits. Three hours of lecture. Open only to Cytotechnology majors; others by consent.

This course introduces students to the microscopic study of cancer. The basic cytology and pathology of

the female genital tract will be presented from a Woman's Health Perspective.

243. Cytology of the Female Genital Tract

(Formerly offered as MLS 243.) First semester. Six credits. Prerequisite: All other degree requirements must be completed. 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

(Formerly offered as MLS 244.) First semester. Four credits. Prerequisite: All other degree requirements must be completed. 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

(Formerly offered as MLS 245.) First semester. Three credits. Prerequisite: All other degree requirements must be completed. 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

(Formerly offered as MLS 246.) Second semester. Three credits. Prerequisite: All other degree requirements must be completed. 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

(Formerly offered as MLS 247.) Second semester. Four credits. Prerequisite: All other degree requirements must be completed. 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

(Formerly offered as MLS 248.) Second semester. Three credits. Prerequisite: All other degree requirements must be completed. 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

(Formerly offered as MLS 249.) Second semester. Three credits. Prerequisite: All other degree requirements must be completed. 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

(Formerly offered as MLS 250.) Second semester. Four credits. Prerequisites: CYTO 243, 244, 245, 247 and 248. 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. Prerequisite: The completion of all Lower Division requirements in the Cytotechnology Program. 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

(Formerly offered as MLS 205.) Both semesters. Four credits. Two 2-hour lectures. Prerequisite: MCB 203; MCB 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

(Formerly MLS 203.) Both semesters. Three credits. One 3-hour laboratory period and 1-hour discussion. Four additional laboratory sessions are required during the first half of the semester. Prerequisite: DGS 222 (Formerly MLS 205.) 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.

234. Diagnostic Molecular Technologies

(Formerly MLS 217.) 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; others with instructor consent.

DNA and RNA diagnostic technologies used in clinical settings; clinical applications in prenatal diagnosis; cancer management, transplantation, paternity testing, forensic medicine and microbiology.

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; others by consent of instructor.

DNA isolation, blotting techniques, fluorescent in situ hybridization, polymerase chain reaction and Genprobe assay.

242. Chromosome Imaging

First semester and Summer Session I. Two credits. Two hours of lecture and 1 hour of discussion. Prerequisites: DGS 222 and 223. Open only to DGS majors; others with consent of instructor. Fall offering open only to DGS students with a Spring Clinical.

Theory and techniques of bright field microscopy, black and white film processing and printing, and computerized imaging for karyotype production.

246. Contemporary Issues in Human Genetics

Both semesters. Three credits. Prerequisite: DGS 223 (Formerly MLS 203) and DGS 222 (Formerly MLS 205). 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: 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: 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: DGS 234 and DGS 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: 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: DGS 234 and DGS 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: DGS 234 and DGS 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: DGS 234 and DGS 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 Regular Diagnostics

Both semesters. Two credits. Prerequisite: DGS 234 and DGS 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

(Formerly MLS 271.) Both semesters. Two credits. Prerequisite: In order to enroll in the course, the student must have earned a "C" or better in DGS 222 (Formerly MLS 205) and DGS 223 (Formerly MLS 203). Open only to Diagnostic Genetic Sciences majors. *Clinical Staff*

Culture, harvest, banding and analysis of leukemic bone marrow samples; chromosomal abnormalities associated with hematologic malignancies.

281. Peripheral Blood Cytogenetics

(Formerly MLS 271.) Both semesters. Four credits. Prerequisite: In order to enroll in this course, the student must have earned a "C" or better in DGS 222 (Formerly MLS 205) and DGS 223 (Formerly MLS 203). Open only to Diagnostic Genetic Sciences majors. *Clinical Staff*

Culture, harvest, banding and analysis of peripheral blood samples.

282. Practicum in Staining and Karyotyping

(Formerly MLS 272.) Both semesters. One credit. Prerequisite: In order to enroll in this course, the student must have earned a "C" or better in DGS 222 (Formerly MLS 205) and DGS 223 (Formerly MLS 203). Open only to Diagnostic Genetic Sciences majors. *Clinical Staff*

Utilization and application of special staining and banding techniques, karyotyping of normal and abnormal metaphases from all specimen types.

283. Practicum in Photomicroscopy/Imaging

(Formerly MLS 273.) Both semesters. One credit. Prerequisite: In order to enroll in this course, the student must have earned a "C" or better in DGS 222 (Formerly MLS 205), DGS 223 (Formerly MLS 203), and DGS 242. Open only to Diagnostic Genetic Sciences majors. *Clinical Staff*

Techniques of photomicroscopy, B/W film development, print enlargement, computer imaging.

284. Variable Topics in Cytogenetics

(Formerly MLS 275.) Both semesters. One credit. Prerequisite: In order to enroll in this course, the student must have earned a "C" or better in DGS 222 (Formerly MLS 205) and DGS 223 (Formerly MLS 203). Open only to Diagnostic Genetic Sciences majors. *Clinical Staff*

In-depth examination of a topic of the students' choosing in the field of human genetics.

285. Research in Cytogenetics

(Formerly MLS 276.) Both semesters. One credit. Prerequisite: In order to enroll in this course, the student must have earned a "C" or better in DGS 222 (Formerly MLS 205) and DGS 223 (Formerly MLS 203). Open only to Diagnostic Genetic Sciences majors. *Clinical Staff*

Design and implementation of a research project in clinical cytogenetics.

286. Prenatal Cytogenetics

(Formerly MLS 277.) Both semesters. Four credits. Prerequisite: In order to enroll in this course, the student must have earned a "C" or better in DGS 222

(Formerly MLS 205) and DGS 223 (Formerly MLS 203). Open only to Diagnostic Genetic Sciences majors. *Clinical Staff*

Culture, harvest, banding and analysis of amniotic fluids, products of conception, and other fetal samples.

298. Special Topics

Either semester. Credits and hours by arrangement. Prerequisite: The completion of all Lower Division requirements in the Diagnostic Genetic Sciences Program. 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)

Interim Dietetics Program Director: Martha Ludemann

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: DIET 208.

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: A course in nutrition, a course in biochemistry and course work in anatomy and physiology. 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: DIET 208. 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: DIET 208. 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

210S. Community Nutrition (W,C)

Second semester. Four credits. Hours by arrangement. Prerequisite: DIET 208. Open only with consent of the program director. Clinical experiences and hands-on computer experiences are required.

235. Applied Dietetics

First semester. Eight credits. Hours by arrangement. Prerequisite: DIET 204, 209, 210. 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: DIET 209 and 210.

Relationship of nutrients to each other and to body function.

244. Practicum in Foodservice Management

Second semester. Four credits. 160-hour practicum. Prerequisite: DIET 204 and 235.

Application and synthesis of performance requirements in the food service system.

247. Seminar in Dietetics

Second semester. Three credits. Hours by arrangement. Prerequisite: DIET 235. To be taken concurrently with DIET 248.

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: DIET 235.

Application and synthesis of performance requirements in clinical dietetics. Practicum.

250. Dietetic Practice

Second semester. Four credits. 160-hour self-planned supervised practice. Prerequisite: DIET 235.

Student defines objectives to extend knowledge in a specialized area of dietetics. Research project.

298. Special Topics

Either semester. Credits and hours by arrangement. Prerequisite: The student must have completed all other requirements in the Program in 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 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.

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: Elizabeth Epp
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 only to students in the Medical Laboratory Science Programs.

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 only to students in the Medical Laboratory Science Programs; 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 only to students in the Medical Laboratory Sciences Programs; others with consent of the 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

298. Special Topics

Either semester. Credits and hours by arrangement. Prerequisite: The completion of all Lower Division 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: Elizabeth Epp
Program Office: Room 318, Koons Hall

For major requirements, see the School of Allied Health section of this *Catalog*.

The following courses are open only to the students enrolled in the Medical Technology Program unless otherwise noted. Others must obtain the permission of the Director of the Medical Technology Program.

210. Infectious Disease Process I

(Formerly MLS 204.) First semester. Three credits. One 2-hour lecture, one 2-hour laboratory period and one 1-1/2-hour laboratory. Prerequisite: MCB 203 or MCB 204 which may be taken concurrently. 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: MLS 208(W) which may be taken concurrently.

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.

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: MT 250.

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: MT 210.

Isolation and identification of pathogenic and opportunistic fungi that infect humans, pathogenesis and identification of human parasites and correlation of organisms to disease states.

†260. Theory of Phlebotomy

(Formerly MLS 291.) Either semester. One credit. Prerequisite: MLS 200.

Venipuncture and special phlebotomy techniques, safety, ethics, and management of phlebotomy services.

†261. Phlebotomy Laboratory

(Formerly MLS 292.) Either semester. One credit. Prerequisite: MT 260 (Formerly MLS 291).

Application of the theory and techniques learned in MT 260 (Formerly MLS 291) to the clinical laboratory setting. Understanding work flow, scheduling, teamwork, and quality assurance in the general laboratory environment.

264. Hematology

(Formerly MLS 280.) Either semester. Three credits. Prerequisite: MLS 200.

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

(Formerly MLS 284.) First semester. Four credits. Prerequisite: MT 210 (Formerly MLS 204).

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

(Formerly MLS 285.) Second semester. Four credits. Prerequisite: MT 266 (Formerly MLS 284).

Application of the theory and techniques learned in MT 252 and MT 266 (Formerly MLS 284) 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

(Formerly MLS 289.) Second semester. One credit. Prerequisite: MT 213.

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

(Formerly MLS 286.) First semester. Two credits. Prerequisite: MLS 208(W).

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

(Formerly MLS 293.) First semester. One credit. Prerequisite: MLS 200.

Renal physiology, chemical and microscopic examination of urine, correlation of results with disease states, chemical analysis of feces.

273. Urinalysis Laboratory

(Formerly MLS 294.) Either semester. One credit. Prerequisite: MT 272 (Formerly MLS 293).

Application of the theory and techniques learned in MT 272 (Formerly MLS 293) 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: MT 264.

Application of the theory and techniques learned in MT 264 (formerly MLS 280) 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: MT 270.

Application of the theory and techniques learned in MT 270 (formerly MLS 286) 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

(Formerly MLS 253.) Second semester. Two credits. Prerequisite: AH 241W. *Hospital Staff*

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 Lower Division 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.

Allied Health Health Promotion and Allied Health Sciences

Allied Health (AH)

Head of Department: Dean Joseph Smey

Department Office: Room 227A, Koons Hall

For major requirements, see the School of Allied Health section of this *Catalog*.

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.

115. Introduction to the Health Professions

Semester and hours by arrangement. Three credits.

Introduction to the Allied Health professional curriculum through special topics.

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

† Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

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.

207. Peer Health Education

Either semester. Three credits. Three hours of lecture. Not open for credit for students who have passed AH 205 or AH 206.

This course will provide a foundation of knowledge, self awareness, and skills that will prepare the student to function effectively as a peer health educator.

215. Critical Health Issues of Asian Americans

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

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.

236. Issues for Women and Health

Semester and hours by arrangement. Two credits.

A study of current issues related to women as providers and consumers of health care.

241. Research for the Health Professional

Either semester. Three credits. Three hours of lecture. Prerequisite: A course in statistics or consent of the instructor. 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 and English 105 or consent of the 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. Not open for credit to students who have passed Allied Health 202.

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. Not open for credit to students who have passed Allied Health 240.

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.

Health Sciences (HESC)

Head of Department: Dean Joseph Smey

Department Office: Room 227A, 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.

Allied Health

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*.

The following courses are open only to the students enrolled in the Physical Therapy Program unless otherwise noted. Others must obtain the permission of the Director of the Physical Therapy Program.

210. Fundamentals of Assessment

Either semester. Five credits. Hours by arrangement. Clinical field experiences will be required. Open only to Physical Therapy students. Prerequisites: PT 213, PT 215, PT 217 and PT 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 Physical Therapy students. Prerequisites: PT 213, PT 215, PT 217, PT 210 and PT 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

(Formerly offered as HESC 213.) Either semester. Three credits. Three hours of lecture. Open to students in Physical Therapy, ESLE students second semester only; others with consent of instructor. Prerequisite: Biology: PNB 264; PT 215 and Biology: PNB 265, either of which may be taken concurrently.

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

(Formerly offered as HESC 215.) Either semester. Three credits. Laboratory and discussion. Open to students in Physical Therapy; ESLE students second semester only; others with consent of instructor. Prerequisite: Biology: PNB 264; PT 213 and Biology: PNB 265, either of which may be taken concurrently.

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

(Formerly offered as HESC 217.) Either semester. Three credits. Open to students in Physical Therapy

and EKIN students; others with consent of instructor. Prerequisite: PT 213 and 215 or the equivalent, which may be taken concurrently.

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

Either semester. Hours by arrangement. Open only to Physical Therapy students. Prerequisites: PT 213, PT 215; and PT 217 which may be taken concurrently.

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 Physical Therapy students. 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 Physical Therapy students. 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 Physical Therapy students. 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.

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.

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.

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.

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.

The course is designed primarily for students who wish to extend their knowledge in some specialized subject in the field of physical therapy.

Animal Science (ANSC)

Head of Department: Professor Ian C. Hart
Department Office: Room 107, White Building
(Animal Science)

For major requirements, see the College of Agriculture and Natural Resources section of this *Catalog*.

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. *Stake*

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. *Faustman, Zhao*

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.

216. Principles of Nutrition and Feeding of Animals

First semester. Three credits. Two class periods and one 2-hour discussion and demonstration period. *Andrew*

This course covers feed nutrients and their digestion and use. Nutrient requirements and feeding standards for various classes of livestock for reproduction, lactation, growth, work and maintenance are included. Attention also is given to characteristics of common feedstuffs and to formulating rations and nutritional programs for animal enterprises.

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. *Yonash*

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: PATH 200 or consent of instructor. *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.

224. Food Safety

Second semester. Three credits. Prerequisite: Biology 107. A one semester course in organic chemistry is recommended. *Faustman*

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.

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 100 or equivalent; CHEM 122 or 127; or consent of instructor. *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.

229. Animal Embryology and Biotechnology

First semester. Three credits. Required preparation: ANSC 219 or MCB 219, or consent of instructor. *Yang*

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.

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 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. *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 37. 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.

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, nutritive value and food safety concerns of these products. Field trips will be required.

253W. Animal Food Products

Four credits.

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 or consent of instructor. Open to sophomores. *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. *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: ENGL 105 and ANSC 275. *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 83. 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 88. 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*

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 Jocelyn Linnekin
Department Office: Room 311, Manchester 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.

212W. The Development of Anthropological Theory

Either semester. Three credits. Prerequisite: ANTH 220. Recommended for seniors.

Historical and contemporary theories in social and cultural anthropology.

214. Introduction to Archaeological Methods

First semester. Three credits. Open to sophomores. *Dewar, McBride*

The concepts, methods and practice of anthropological archaeology.

215. Migration

Second semester, alternate years. Three credits. Recommended preparation: ANTH 100 or ANTH 106.

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. Not open for credit to students who have passed ANTH 200.

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

(Formerly offered as Anthropology 200.) Open to sophomores.

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.

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. *Bee*

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.

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. *Berleant-Schiller, Martinez*

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

First semester. Three credits. Open to sophomores. *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. (Crosslisted with Women's Studies 231)

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. *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.

234W. Culture and Religion

Either semester. Three credits. Prerequisite: ANTH 106 or consent of instructor. *Dussart*

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.

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. *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. *Bee*

Interrelations among cultural, social and psychological factors influencing the process of cultural growth and change.

240. Cross-Cultural Perspectives in Education

First semester. Three credits.

Implications of anthropology for education, with emphasis on the relationship between the learning process and the cultural setting.

241. Latin American Minorities in the United States

Either semester. (Also offered as PRLS 241.) Three credits.

Emphasis on groups of Mexican and Puerto Rican origin, including treatment and image in various media, historical background, social stratification, informal social relations, ethnic perceptions and relations.

242W. African-American Culture

Either semester. Three credits.

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. 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 HDFR 245.) Offered every third semester. Three credits. Not open for credit to students who have passed HDFR 245.

Survey of theory and research on major dimensions of parenting in the U.S.A. and cross-culturally, including parental warmth, control and punishment.

246W. Illness and Curing

Either semester. Three credits. One 3-hour class period. *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.

Comparative and historical analysis of the sources and consequences of power in human populations.

248. Urban Anthropology

(Also offered as Urban Studies 248.) Either semester. Three credits. Not open for credit to students who have passed URBN 248.

A general course on urbanization, emphasizing contrasts between "developed" and "developing" countries.

249. Field Research in Social Settings

(Also offered as HDFR 249.) Either semester. Three credits. Not open to students who have passed HDFR 249.

Methods and techniques of field research in social

settings, including observational procedures, interviewing, and the construction and use of questionnaires.

251. The Status of Women in Evolutionary Perspective

Either semester. Three credits.

A cross-cultural analysis of the status of women from a biosocial and cultural evolutionary perspective.

252. Native American Arts

(Also offered as Art History 256.) Either semester. Three credits. Not open for credit to students who have passed Art History 256. One three-hour class period. *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. *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 consent of instructor. *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.

255. Archaeology of Mesoamerica

Either semester. Three credits.

An archaeological survey of the ancient cultures of Meso-America, from the earliest evidence through the emergence of agricultural village life, chiefly societies and the high civilizations, including the Zapotec, Teotihuacan, Toltec, Maya, and Aztec.

256. Archaeology of South America

Either semester. Three credits.

The prehistoric cultures of South America, including the Inca and other high civilizations of ancient Peru, as well as the complex chiefdoms of Colombia, Venezuela and the Caribbean.

257W. Near Eastern Pre-History

(Also offered as History 212W.) Either semester. Three credits. Not open for credit to students who have passed HIST 212.

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.

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. Three credits. *Boster; Handwerker; Linnekin*

The theoretical foundations and basic methods used to collect and analyze cultural data.

270. Contemporary Native Americans

Either semester. Three credits. *Bee*

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.

271. Social Change and Development

Second semester. Three credits. *Bee*

Developmental change in western and non-western societies, focusing on theories, processes, and sociocultural contexts of development.

274. Women and Religion

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.

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.

281. Sex and Gender

Either semester. Three credits.

Cross-cultural and interdisciplinary analysis of biological sex, gender, sex roles, and sexuality.

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 consent of instructor.

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.

Art and Art History

Head of Department: Professor Gina S. Werfel

Department Office: Room 100, Art Building

Art (ART)**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.

193. Foreign Study

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.

274. History of Graphic Design

Either semester. Three credits. Two 1-hour lecture periods. Required preparation: One Lower Division Art History course. Open to sophomores. Counts toward one Art History course credit in B.F.A. concentrations in Graphic Design and Illustration.

History of visual communication with emphasis on modern developments.

STUDIO COURSES**110. Foundation Studio I**

Either semester. Three credits. Two 3-hour or three 2-hour studio periods.

Introduction to perception and organization through two-dimensional problems.

112. Three-Dimensional Foundation

Either semester. Three credits. Two 3-hour or three 2-hour studio periods.

Introduction to the fundamentals of three-dimensional form.

113. Foundation: Criticism and Interpretation

Fall 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 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 112 or consent of instructor.

Introduction to principles and techniques of sculpture.

164. Basic Studio, Painting

Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 130.

Introduction to the principles and techniques of painting media.

165. Graphic Design I

Either semester. Three credits. Two 3-hour periods. Prerequisite: ART 110 and ART 130.

Introduction to visual communication design.

166. Basic Studio, Photography

Either semester. Three credits. Two 3-hour studio periods.

Introduction to techniques and aesthetics of photography, with emphasis on camera work.

195. Architectural Graphics I

First semester. Three credits. Two 3-hour studio periods.

Architectural graphics. Basic two- and three-dimensional delineation: axonometric, isometric and perspective drawing.

204. Life Drawing II

Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 153. Open to sophomores.

Drawing from the figure.

211. Pottery and the Vessel

Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 163 or consent of instructor. Open to sophomores. 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 or consent of instructor. Open to sophomores. 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. 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. 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 or consent of instructor. Open to sophomores. 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 or consent of instructor. Open to sophomores.

Investigation of black-and-white and color intaglio techniques.

222. Lithography

Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 160 or consent of instructor. Open to sophomores.

Investigation of lithographic techniques.

224. Intaglio II

Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 221. Open to sophomores.

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.

Continuation of ART 222 with emphasis on color printing.

226. Printmaking Workshop

Either semester. Variable credit. Two 3-hour studio periods. Required preparation: ART 221 or 222, or consent of instructor. Open to sophomores. 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 or consent of instructor. Open to sophomores.

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.

236. Intermediate Painting II

Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 235. Open to sophomores.

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.

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.

Continuing study in aqua media.

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. Graphic Design II

Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 276, portfolio review and consent of instructor.

Intermediate visual communication design.

261C. Introduction to Digital Media

Either semester. Three credits. Two 3-hour studio periods. Prerequisite: Art 110 and ART 130. Open to sophomores.

Introduction to digital media.

262. Alternative Processes (Photography)

Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 265. May be repeated once with a change of content. Open to sophomores.

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.

The processes and aesthetics of color photography.

264. Advanced Graphic Design

Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 260. May be repeated for credit with a change of instructor to a maximum of 9 credits.

Advanced visual communication design.

265. Intermediate Photography

Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 166 or consent of instructor. Open to sophomores.

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 or consent of instructor. May be repeated once with a change of content.

Advanced problems in the use of photography as an art medium.

267. Visual Identity Systems

Spring semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 264.

Introduction to identity system design.

269. Advanced Typography

Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 276, portfolio review, and consent of instructor.

Advanced typographic design.

270. Design Center

Either semester. Three or six credits. Two 3-hour studio periods. Prerequisite: 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, or consent of instructor. Open to sophomores.

Introduction to principles of illustration, media, and techniques.

272. Topics in Illustration

Three credits. Two 3-hour studio periods. Prerequisite: ART 204 and 271 or consent of instructor. 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. History of Graphic Design

First semester. Three credits. Two 1½-hour lecture periods. Counts toward one Art History course credit in graphic design and illustration BFA concentrations.

History of visual design.

276. Typography

Either semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 165 and ART 261C. Open to sophomores.

Introduction to typographic design.

277. Publication Design

Fall semester. Three credits. Two 3-hour studio periods. Prerequisite: ART 264.

Introduction to publication design.

278. Digital Multimedia

Spring 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.

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. See *Directory of Classes* for title. 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.

Special topics taken in a foreign study program.

295. Studio Internship

Either semester. Three credits. Hours by arrangement. Open only with consent of instructor.

Supervised practical experience in studio and studio related work.

Section one: *Graphic Design Studio Internship*

Supervised practical experience in a commercial design studio, agency or in related work. Prerequisite: B average in graphic design classes, ART 165, ART 260, one semester of ART 264 and consent of graphics coordinator.

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 Upper Division course work and consent of instructor from the major.

†296. **Cooperative Education in Art**

Either semester. Three credits. Hours by arrangement. Prerequisite: Upper Division standing. Open only with consent of Department Head.

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 students 5th semester or higher. Must have department grade point average (DGPA) of at least 3.0 and no outstanding incompletes for any other 299. Exceptions only by approval of the department head.

For advanced students to develop a special project in advanced studio art.

Art History (ARTH)

(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 Art History 137.

Discussion section for Art History 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 Art History 138.

Discussion section for Art History 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. **Latin American Art**

Either semester.

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.

243. **Greek Art**

(Also offered as Classics 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**

Open to art history and art majors; others with consent of instructor.

246. **Roman Art**

(Also offered as Classics 252.) Either semester, alternate years. Three credits.

History of Roman art and architecture.

246W. **Roman Art**

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**

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**

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**

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**

Open to art history and art majors; others with consent of instructor.

256. **Native American Arts**

(Also offered as Anthropology 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**

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**

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**

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**

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.

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**

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**

Open to Art History and Art majors; others with consent of instructor.

276. **Caribbean Art, 19th and 20th Centuries**

Either semester. Three credits. Open to Art History and Art majors, others with consent of instructor.

† Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

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
Open to ARTH 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
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
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
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
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
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. See *Directory of Classes* for title.

285. African Art
Either semester. Three credits.
A survey of African art from antiquity to present.

285W. African Art
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
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
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 Women's Studies 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
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
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, ARTH 137, ARTH 138 and two 200-level Art History courses and consent of instructor.

Supervised practical experience in museum and museum related work.

Section one: *Wadsworth Atheneum Internship*. Participation in Museum Studies Seminars, staff meetings and completion of individual project at the Atheneum. Application must be approved by Wadsworth Atheneum Education Department; deadlines are in April for first semester and in November for second semester.

†**296. Cooperative Education in Art**
Either semester. Three credits. Hours by arrangement. Prerequisite: Upper Division standing. Open only with consent of Department Head.

Practicum for students participating in the off-campus Cooperative Education Program.

297. Art Historical Methods
Either semester. Three credits. Required preparation: Two Upper Division courses in Art History or consent of instructor.

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

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.)

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.

274. Asian American Literature
(Also offered as ENGL 274.) Either semester. Three credits. Required preparation: ENGL 109. Open to sophomores. *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.)

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

† Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

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.)

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, required preparation, and recommended preparation vary.

Biology

For major requirements, see the College of Liberal Arts and Sciences section of this *Catalog*.

General Biology (BIOL)

Students with inquiries about an undergraduate major should go to Torrey Life Sciences Building, Room 165.

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 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*

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); plant biology, genetics, ecology and evolution (BIOL 108).

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.

196. Topics in Modern Biology

Either semester. One credit. One class period. Concurrent 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.

295. Introduction to Undergraduate Research

(Formerly offered as MCB 295.) Either or both semesters. One credit. Open to sophomores. 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.

Biology: Ecology and Evolutionary Biology (EEB)

Head of Department: Professor Gregory J. Anderson

Department Office: Room 312, 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. Two 1 1/2-hour class periods, one three-hour laboratory period. Prerequisite: BIOL 108. Not open for credit to students who have passed RNR/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. Laboratory periods will include field and laboratory exercises; 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 consent of instructor. *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 consent of instructor. *Les*

Field and laboratory-oriented study of the anatomy, morphology, ecology, physiology, systematics and evolution of vascular aquatic and wetland plants.

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. *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. Concepts in Botany

Second semester. Three credits. Prerequisite: BIOL 108 or 110. EEB 228 recommended concurrently. Open to sophomores.

Intermediate level coverage of ecology, evolution, function and structure of plants.

228. Concepts in Botany, Laboratory

Second semester. One credit. One 2-hour laboratory. Prerequisite: EEB 227, which may be taken concurrently. Open to sophomores.

Laboratory course to complement EEB 227.

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.

243. Insect Classification and Identification

Second semester, alternate years. Four credits. Two 1-hour lecture periods and one 4-hour laboratory. Prerequisite: EEB 286 or consent of instructor. Not open for credit to students who have passed EEB 253. *Henry*

Insect classification, evolution, and phylogeny.

243W. Insect Classification and Identification

(Formerly offered as EEB 253.) Second semester, alternate years. Four credits. Two 1-hour lecture periods plus individual tutorial. Prerequisite: Consent of instructor. *Henry*

Content as in EEB 243; field, museum, and library research; requires major writing assignment.

244. General Ecology

Either semester. Four credits. Prerequisite: Six credits of college biology. Open to sophomores. Not open for credit to students who have passed EEB 257. *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

(Formerly offered as EEB 257.) Four credits. *Adams, Cardon, Chazdon, Colwell, Silander, Turchin*

Content as in EEB 244; requires major writing assignment.

245. Evolutionary Biology

Either semester. Three credits. Prerequisite: Six credits of college biology and three credits of college chemistry. Open to sophomores. Not open for credit to students who have passed EEB 267. *Caira, Henry, Holsinger, Simon*

Introduction to evolutionary mechanisms, biogeography, and the history of major groups of plants and animals.

245W. Evolutionary Biology

(Formerly offered as EEB 267.) Four credits. Four class periods.

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 three or more credits in chemistry (CHEM 122, 127, or 129); three credits of introductory biology are recommended. Not open for credit to students who have passed CE 268. *Rich*

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.

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 over Christmas break. Consent of instructor required.

Collection, identification, and ecology of insects.

256. Plants and Civilization

First 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.

268. Ecological Plant Geography

Second semester, alternate years. Three credits. Three class periods and one weekend field trip. Prerequisite: EEB 244 and 245 or consent of instructor.

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. *Mehrhoff*

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. *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 or permission of instructor. *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 consent of instructor. *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. Plant Morphology

Second semester, alternate years. Four credits. Two class periods and two 2-hour laboratory periods. Prerequisite: BIOL 110 or 108. *Staff*

Evolution, relationships, reproduction and structure of flowering and non-flowering plants.

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

(Formerly offered as EEB 285.) Second semester. Three credits. Prerequisite: Consent of instructor. *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.

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. Prerequisite: 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, required preparation, and recommended preparation vary.

290. Introductory Phycology

First semester, alternate years. Four credits. Two class periods and two 2-hour laboratory periods. Prerequisite: Six credits of 200-level biology or consent of instructor. *L. Lewis*

Taxonomic survey of major algae groups.

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. 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 consent of instructor. Recommended: 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: Six credits of laboratory biology or consent of instructor. *Whitlatch*

Survey and distribution of marine organisms. Abiotic and biotic features of oceans, organism-habitat relationships, ecological influences on marine communities and populations. Field trips required.

296. Physiological Ecology

Second semester, alternate years. Three credits. Recommended preparation: PNB 250 or MCB 259. *Schultz*

Physiological adaptations and responses of plants and animals to different environments.

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, required preparation, 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.

Biology: 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. *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. *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 be taken concurrently.) Open to sophomores. Not open for credit to students who have passed MCB 204. May substitute for MCB 204 only if taken with MCB 226 and with permission of the Department Head to satisfy the biochemistry requirement of the molecular and cell biology major.

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. Recommended preparation: CHEM 244, which may be taken concurrently. Not open for credit to students who have passed MCB 203. *Teschke/Staff*

The structure and function of biological macromolecules. The metabolism of carbohydrates, lipids, amino acids, proteins and nucleic acids and its regulation. Energy metabolism. An in-depth introduction, designed for students planning to take advanced course work in biochemistry, biophysics, or other areas of molecular biology.

207Q. Introduction to Biophysical Chemistry

Second semester. Three credits. Prerequisite: CHEM 243; MATH 114 or 116; PHYS 122, 132 or 142; or consent of instructor.

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, radioimmuno 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 consent of instructor. *Braswell*

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: MCB 204, which may be taken concurrently; or consent of instructor. *Knox*

Correlation of 3D molecular structure with function and activity in proteins, nucleic acids, and a variety of macromolecular assemblies. Principles of x-ray

diffraction, electron microscopy, and other biophysical techniques.

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. *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

First semester. Three credits. Prerequisite: BIOL 107, CHEM 128. Recommended preparation: MCB 200 or 213 or 229; MCB 203 or 204. *O'Neill*

Methodology and applications of genetic engineering including gene manipulation and transfer techniques in prokaryotes and eukaryotes. Industrial, agricultural, pharmaceutical and biomedical applications of recombinant DNA technology and their related societal issues.

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. *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. Required preparation: MCB 200 and consent of instructor. *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. Required preparation: MCB 204, which may be taken concurrently. Recommended preparation: MCB 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, transformation, transduction, conjugation, genetic

mapping, mutagenesis, regulation of gene expression, genome organization.

218. Heredity and Society

First semester. Three credits. Open to sophomores. May not be counted toward the biology major. Not open for credit to students who have passed MCB 222.

The principles of heredity and their implications for society.

218W. Heredity and Society

(Formerly offered as MCB 222.) First semester. Four credits. Three class periods and library research. Open to sophomores. 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: MCB 219, which may be taken concurrently, or six credits of college biology and consent of instructor. Not open for credit to students who have passed Biology: MCB 221 or 223.

Analysis of principles of morphogenesis and differentiation.

220W. Laboratory in Developmental Biology

(Formerly offered as MCB 223.) 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. Not open for credit to students who have passed Biology: MCB 221.

224. Experiments in Bacterial Genetics

Second semester. Three credits. Two 3 1/2 hour laboratory/lecture periods. Prerequisite: MCB 213, and either MCB 217 or 229, which may be taken concurrently. 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. *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: CHEM 141 or 243 (either may be taken concurrently). Recommended preparation: BIOL 107 or equivalent. Open to sophomores. *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.

230. Laboratory in Biotechnology and Molecular Genetics

Summer session. Two credits. One 4-hour laboratory. Prerequisite: MCB 200 or 213, and 229, which may be taken concurrently. Not open for credit to students who have passed MCB 215.

Theory and application of techniques used in biotechnology and molecular genetics, including recombinant DNA procedures, gel electrophoresis and blot analysis.

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. *Braswell*

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

First 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 consent of instructor.

A general survey of the taxonomy, physiology, and ecology of marine microorganisms.

240W. Bacterial Diversity and Ecology

Second semester. Four credits. Two lecture periods and two 3-hour laboratory/discussion periods. Prerequisite: MCB 229 or consent of instructor. 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

First semester. Three credits. Open only with consent of instructor. Recommended preparation: one 200's course in MCB. With a change in content, may be repeated for credit. *Kendall, Leadbetter*

Discussion of current research in molecular and cell biology. Different sections address different topics: biomedical applications of genetic information, and 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.

258. Biotechnical Plant Culture

Summer session. Two credits. Prerequisite: MCB 259.

Recent advances in *in vitro*, hydroponic and controlled environment culture of plants.

259. Plant Physiology

First session. Three credits. Three 1-hour class periods. Recommended preparation: BIOL 108 (or 110) and CHEM 128. *Staff*

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.

261. Laboratory Techniques of Plant Physiology

Summer. Two credits. Consent of instructor. Recommended preparation: MCB 259.

289. Variable Topics

Either semester. Three credits. With a change of topic, may be repeated for credit. Prerequisites, required preparation, 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. 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, required preparation, 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.

Biology: 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, alternate years. Three credits. Prerequisite: PNB 250 or PNB 274-275 or MCB 259 or consent of instructor. *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, alternate years. Three credits. Prerequisite: PNB 250 or PNB 274 - 275 or consent of instructor. *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: EEB 200 (may be taken concurrently). *Chapple, Chen, Crivello, Laufer, Renfro, Tsai*

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. *Crivello, Renfro*

Physiological mechanisms and regulation in vertebrate animals.

250W. Animal Physiology**251. Biology of the Brain**

Second semester. Three credits. Two class periods. Prerequisites: PNB 250 or PNB 274-275 or consent of instructor. *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: PNB 250 or PNB 274-275 or consent of instructor. *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. *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. 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, Staff*

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. Five credits each semester. Three class periods, one 1-hour discussion, 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. *Chapple, Kimball, Moiseff, Staff*

Fundamentals of human physiology and anatomy enhanced through discussion sections and 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. 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, required preparation, 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, required preparation, 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.

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 Upper Division/major requirements of the School of Business Administration.

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.

Business Law (BLAW)

Courses are open to juniors and seniors only.

271. Business Law

Either semester. Three credits.

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.

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.

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. Prerequisite: BLAW 271 or BLAW 275.

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 Lower Division School of Business Administration Requirements and consent of instructor and Department Head.

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.

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.

† Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

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. Prerequisite: MATH 210 and 211, CHEM 128, and CHEG 203 (or consent of Chemical Engineering Department Head).

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. 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

(Formerly offered as CHEG 238.) Second semester. Three credits. Two 1-hour discussion periods. Two 3-hour laboratories. Recommended preparation: CHEG 237, 251 and 247 which may be taken concurrently.

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

(Formerly offered as CHEG 240.) First semester. Three credits. Recommended preparation: CHEG 212 and 224.

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.

242. Process Design

Second semester. Three credits. Recommended preparation: CHEG 241.

Design of process equipment; computer-aided design of equipment and flow sheets; design and analysis of complete process plants.

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 reaction rate; homogeneous, heterogeneous and catalytic systems. Analysis and design of batch and flow reaction systems; analysis of rate data; temperature and catalytic effects in reactor design; mass transport effects; non-ideal reactor design.

252. Chemical Processes

Either semester. Three credits. Recommended preparation: CHEG 211 and 223 and CHEM 244.

Engineering analysis of the principal industrial chemical processes; natural salts, sulfuric acid, chlorine, and soda ash production; petroleum, natural gas, coal, etc.; products from ethylene and propylene; butadiene, acetylene, chlorination, Oxo process, and oxidation processes; polymers and elastomers.

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.

270. Energy Process Technology

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.

271. Chemical Processing of Fossil Fuels

Semester by arrangement. Three credits. Three class periods. Recommended preparation: CHEG 211 and 223.

Chemical principles, unit operations, and chemical reactions underlying the manufacture of fuels and chemicals from petroleum, coal, shale oil, and tar sands.

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.

283. Introduction to Biochemical Engineering

(Also offered as ENVE 283.) Second semester. Three credits. Recommended preparation: CHEG 224 and 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.

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.

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*.

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 137 or 153 may take CHEM 128.) (Students who have passed CHEM 122 will receive only 2 credits for CHEM 127 but 4 credits will be used for calculating QPR scores. A student who has a very high standing in CHEM 122 may be permitted, with the consent of the instructor, to take CHEM 128 without 127.) CHEM 127 is not open for credit to students who have passed CHEM 129 or 137 or 153; and CHEM 128 is not open to students who have passed CHEM 130 or 138 or 154.

This course is designed to provide a foundation for more advanced courses in chemistry. The topics covered include the atomic theory, the laws and theories concerning the physical and chemical behavior of gases, liquids, solids, and solutions. The properties of some of the more familiar elements and their compounds are discussed. The laboratory work in the first semester involves quantitative measurements illustrating the laws of chemical combination. In the second semester particular attention is given to equilibrium in solutions and to the qualitative reactions of the common cations and anions.

129Q-130Q. General Chemistry

(Honors Course.) Both semesters. Four credits each semester. Three class periods and one 3-hour laboratory period. Prerequisite: High standing in high school chemistry and physics, MATH 112, which may be taken concurrently, and consent of instructor. Designed for exceptionally well prepared students not intending to be chemistry majors. This course can be used as an alternate wherever CHEM 127-128 is listed as a prerequisite. CHEM 130 is not open for credit to students who have passed CHEM 128 or 138 or 154.

Atomic-molecular theory and the properties of gases, liquids, solids, and solutions are presented as a background for the descriptive chemistry of the elements and their compounds. Emphasis is given to the structure of atoms, molecules, and crystals and to the nature of the chemical bond. The laboratory work is primarily quantitative in nature. Considerable personal initiative will be demanded of students in carrying out the laboratory assignments.

137Q. General Chemistry

(Formerly offered as Chemistry 153Q.) First semester. Four credits. Three class periods and one 3-hour laboratory period. Prerequisite: One year of high school chemistry, MATH 112 or 115, which may be taken concurrently, and a high pass on the Q Readiness Test. Primarily for majors in chemistry and related disciplines. Substitutes for CHEM 127 as a prerequisite. Not open for credit to students who have passed CHEM 127 or 129 or 153.

Atoms, molecules, ions, chemical bonding. Gases, liquids, solids, modern materials, metals and metallurgy, nonmetals, environmental chemistry.

138Q. General Chemistry

(Formerly offered as Chemistry 154Q.) Second semester. Four credits. Three class periods and one 3-hour laboratory period. Prerequisite: CHEM 137 or CHEM 153 or CHEM 127 with consent of instructor, MATH 113 or 116, which may be taken concurrently. Primarily for majors in chemistry and related disciplines. This course may be used as an alternate wherever CHEM 127-128 is listed as a prerequisite. Not open for credit to students who have passed CHEM 128 or 130 or 154.

Solutions, electrolytes, equilibrium, thermodynamics, nuclear chemistry, electrochemistry, kinetics, organic chemistry and biochemistry.

141. Organic Chemistry

First semester. Three credits. Required preparation: 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. Required preparation: CHEM 141, which may be taken concurrently. 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. Required preparation: 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. Required preparation: 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: CHEM 214, which may be taken concurrently.

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. Required preparation: 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.

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

First semester. One credit. One 4-hour laboratory period. CHEM 240 is not open for credit to students who have passed CHEM 245. Required preparation: CHEM 243 which may be taken concurrently. This course is open only to Chemical Engineering majors or by consent of instructor. Open to sophomores.

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.

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.) Required preparation: CHEM 128 or 130 or 138 or 152 or 154. Open to sophomores.

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.

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 pe-

riod. Required preparation: CHEM 244 may be taken concurrently. Open to sophomores.

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. Required preparation: CHEM 263 which may be taken concurrently. 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. Required preparation: CHEM 264, which may be taken concurrently.

270W. Technical Communications

First or second semester. Three credits. Required preparation: CHEM 243.

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. Required preparation: 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 with consent of instructor. With a change of subject, this course may be repeated once for credit.

Reports and discussions of topics relevant to further study 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. 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, required preparation, 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.

Civil & Environmental Engineering (CE)

Head of Department: Professor Erling Murtha-Smith
Department Office: Room 302, F.L. Castleman Building

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.

222. Civil Engineering Materials

Second semester. Three credits. Two lectures. One 3-hour Laboratory. Prerequisite: CE 287 which may be taken concurrently. *Accorsi, Frantz, Murtha-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

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 234 and CE 236, which may be taken concurrently, and CE 222. *Murtha-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, Murtha-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

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: CE 287 and CE 297, both of which may be taken concurrently. *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

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

Must be taken with another P course in Civil Engineering to equal one W course.

251. Civil Engineering Systems

(Also offered as ENVE 251.) First semester. Three credits. Open to sophomores. *Anagnostou, Garrick*

Application of statistical principles to the analysis of problems. Topics covered include normal, poisson, and binomial distributions, chi square, comparison of means and variances, least square and regression analysis.

254. Transportation Facilities Design

Second semester. Three credits. Recommended preparation: CE 271 or consent of instructor. Open to sophomores. *Davis, Ferguson, Garrick*

Design and horizontal and vertical curves, earthwork, runoff and simple drainage structures. Elements of traffic engineering and site development.

256. Advanced Civil Engineering Systems

Second semester. Three credits. Prerequisite: CE 251, or consent of instructor. *Davis*

Optimization, decision and risk analysis, and simulation in design of civil engineering systems. Network analysis and project scheduling.

iod. Required preparation: CHEM 244 may be taken concurrently. Open to sophomores.

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. Required preparation: CHEM 263 which may be taken concurrently. 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. Required preparation: CHEM 264, which may be taken concurrently.

270W. Technical Communications

First or second semester. Three credits. Required preparation: CHEM 243.

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. Required preparation: 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 with consent of instructor. With a change of subject, this course may be repeated once for credit.

Reports and discussions of topics relevant to further study 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. 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, required preparation, 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.

Civil & Environmental Engineering (CE)

Head of Department: Professor Erling Murtha-Smith
Department Office: Room 302, F.L. Castleman Building

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.

222. Civil Engineering Materials

Second semester. Three credits. Two lectures. One 3-hour Laboratory. Prerequisite: CE 287 which may be taken concurrently. *Accorsi, Frantz, Murtha-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

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 234 and CE 236, which may be taken concurrently, and CE 222. *Murtha-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 statically 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, Murtha-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

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: CE 287 and CE 297, both of which may be taken concurrently. *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

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

Must be taken with another P course in Civil Engineering to equal one W course.

251. Civil Engineering Systems

(Also offered as ENVE 251.) First semester. Three credits. Open to sophomores. *Anagnostou, Garrick*

Application of statistical principles to the analysis of problems. Topics covered include normal, poisson, and binomial distributions, chi square, comparison of means and variances, least square and regression analysis.

254. Transportation Facilities Design

Second semester. Three credits. Recommended preparation: CE 271 or consent of instructor. Open to sophomores. *Davis, Ferguson, Garrick*

Design and horizontal and vertical curves, earthwork, runoff and simple drainage structures. Elements of traffic engineering and site development.

256. Advanced Civil Engineering Systems

Second semester. Three credits. Prerequisite: CE 251, or consent of instructor. *Davis*

Optimization, decision and risk analysis, and simulation in design of civil engineering systems. Network analysis and project scheduling.

256P. Advanced Civil Engineering Systems

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 CE 297 or CHEG 223 (which may be taken concurrently). *Abboud, 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

Must be taken with another P course in Civil Engineering to equal one W course.

263. Environmental Engineering Fundamentals

(Also offered as ENVE 263.) Both semesters. Three credits. Prerequisite: CHEM 128 or 130 and MATH 211 (which may be taken concurrently). Open to sophomores. *Hoag, Nikolaidis, 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. *Anagostou, Nikolaidis, 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 and investigation of the flow of oils, water, and other fluids through orifices, nozzles, wires and pipes; calibration of measuring devices; experiments with turbines and pumps.

267. Engineering Hydrology

(Also offered as ENVE 267.) First semester. Three credits. Prerequisite: CE 297 or CHEG 223 and CHEG 224. *Anagnostou, Nikolaidis, 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

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 an introductory course in CHEM (CHEM 122, 127, or 129); an introductory course in Biology is recommended.

Physical, chemical, and biotic interrelationships of freshwater habitats.

269. Selected Environmental Problems

Second semester. Three credits. Open to sophomores. Ecological effects of pollution and despoilment. Organized and rational study of specific environmental problems, including social, economic, political and legislative aspects.

271. Elementary Surveying

First semester. Four credits. Three lecture periods and one 3-hour Laboratory. Prerequisite: MATH 107 or MATH 112 or 115, or consent of instructor. Open to sophomores. *Ferguson*

The theory and practice of plane surveying including: error analysis, measurement of horizontal distances, leveling, traverse and area computations, adjustments of traverses and level nets, adjustments of instruments, topographic mapping, state coordinate systems, and boundary surveys.

274. Photogrammetry

Second semester. Three credits. Two class periods. One 3-hour Laboratory. Prerequisite: CE 271. Offered in alternate years. *Ferguson*

The fundamentals of aerial photogrammetry, including: flight planning, the geometry of the aerial photograph, ground control, radial line plotting, tilt, stereoscopy and parallax, stereoscopic measurements, and topographic mapping.

275. Route Surveying

Second semester. Three credits. Two class periods. One 3-hour Laboratory. Prerequisite: CE 271. Offered in alternate years. *Ferguson*

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 Civil Engineering Design

Second semester. Three credits. One 3-hour class period. Prerequisite: CE 254, which may be taken concurrently, and CE 271. *Ferguson*

Design of Civil Engineering projects using computer software to analyze engineering problems and create design drawings.

279. Environmental Modeling

(Also offered as ENVE 279.) Second semester. Three credits. Prerequisite: CE 263 and CHEG 223 or CE 297 or consent of instructor. *Nikolaidis*

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. 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.

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. May be repeated. Satisfactory/Unsatisfactory (S/U) grading.

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: MATH 210, which may be taken concurrently, and ENGR 150 or CSE 110 or CSE 123C. Open to sophomores.

Fundamentals of statistics 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, MATH 210. This course and CE 213 may not both be taken for credit. Open to sophomores.

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 ENGR 150 or CSE 110, CE 211 or CE 214 and CE 215, which may be taken concurrently. Open to sophomores.

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: CE 212 or CE 215, which may be taken concurrently, and MATH 210 and 211. This course and ME 250 may not both be taken for credit.

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.

Communication Sciences (COMS)

Head of Department: Professor Harvey R. Gilbert
Department Office: Room 213, Communication Sciences Building.

For major requirements, see the College of Liberal Arts and Sciences section of this *Catalog*.

102. The Process of Communication

Either semester. Three credits. *Fridy*

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

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.

135. Mass Communication Systems

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.

201. Speech Science

First semester. Three credits. Three class periods.

Acoustic, anatomical, neurological and physiological principles fundamental to the understanding of voice and speech production.

202. Speech and Language Acquisition

Either semester. Three credits.

How children learn their first language; the effects of language on their thinking and behavior.

204. Methods and Issues in Child Language Research

Second semester. Three credits. Two class periods, and child observations and individual conferences by arrangement. Prerequisite: COMS 202. Open only with consent of instructor.

Critical discussion of recent research in child language, and supervised individual research projects.

205. Interpersonal Communications

Either semester. Three credits. Prerequisite: COMS 102 or consent of instructor. *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.

206W. Global Communication

Either semester. Three credits. Recommended preparation: COMS 135. *Mahan*

International communication patterns; globalization of media industries; new technologies; communication in war and peace; political, economic, social and cultural effects.

207. Nonverbal Communication

First semester. Three credits. Recommended preparation: COMS 231Q. *Buck*

Facial expression, body movement, spatial behavior and para-language, with a consideration of applications for information theory.

208. Communication and Change

First semester. Three credits. Recommended preparation: COMS 235 and 210. *Snyder*

The role of communication and communication technologies in social change, diffusion of new ideas, and education. Special application to third world development.

209. Cross-Cultural Communication

Either semester. Three credits. Recommended preparation: COMS 205.

Communication behavior within and across cultures and subcultures.

210. Persuasion

Either semester. Three credits. Three class periods or two class periods with one discussion period. Prerequisite: COMS 102 or consent of instructor. *Hamilton*

Introduction to theories of attitude formation, change and reinforcement. Research is used to evaluate past and present models of persuasion.

211. Research Practicum in Communication

Either semester. Credits and hours by arrangement, with a maximum of three credits per semester. Prerequisite: At least 12 credits of 200-level Communication Sciences courses which must include 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.

†212. Internship in Communication

Either semester. Credits and hours by arrangement, with a maximum of three credits per semester. Prerequisite: At least 12 credits of 200-level Communication Sciences courses 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 opportunity for supervised field work in a professional communication organization. Student's performance will be evaluated both by the field supervisor and course instructor.

213W. Media, State, and Society

Either semester. Three credits. Required preparation: COMS 135 and 235. *Mahan*

Forms of, rationales for, and effects of state involvement in mass media. The development of alternative media. Cultural implications of transnational media influences.

214W. Advanced Nonverbal Communication

Second semester. Three credits. Prerequisite: COMS 207 or consent of instructor. Recommended preparation: COMS 205. *Buck*

Selected issues and research techniques current in the literature. Research projects of kinetic proxomic,

and/or paralinguistic behaviors involved in communication.

215. Public Relations

Either semester. Three credits. Prerequisite: COMS 135. Required preparation: COMS 231Q, and 235 or consent of instructor.

Practical applications of major theories of communication and mass media to public relations practiced by organizations. Based on readings, student research, and case histories.

216W. Small Group Communication

Either semester. Three credits. Required preparation: COMS 205 or consent of instructor. Recommended preparation: 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.

217. Organizational Communication

Second semester. Three credits. Prerequisite: COMS 205 and 231Q or consent of instructor. *van den Berg*

Communication in formal organizations; horizontal and vertical communication; effectiveness of different organizational structures and channels; feedback; networks; norms and roles.

218. Communication Campaigns and Applied Research

Second semester. Three credits. Prerequisite: COMS 231Q, or STAT 100V or 110V. Recommended preparation: COMS 135, 235, and 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.

219. Advanced Persuasion and Communication

Either semester. Three credits. Prerequisite: COMS 210 or consent of instructor. Recommended preparation: COMS 231Q and COMS 235.

Advanced consideration and criticism of selected modern persuasion theories and research in communications.

220. Communication Processes in Advertising

Either semester. Three credits. Prerequisite: COMS 135. Required preparation: COMS 235 and 210 or consent of instructor.

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.

222W. Government Communication

Either semester. Three credits. Prerequisite: COMS 102. *Fridy*

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.

224. Introduction to Semantics

Either semester. Three credits. Prerequisite: COMS 102 or consent of instructor.

The relationship among people, words, and meaning.

226. Gender and Communication

Either semester. Three credits. Prerequisite: COMS 102.

Differences in male/female communication, and the role of discourse in the production of those differences. The politics of gender and communication.

† Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

230. Introduction to Research Literature in Communication

First semester. Three credits. Required preparation: COMS 205, 231Q, 235, and 210 or consent of instructor.

A survey of research in major sub-areas of communication.

231Q. Research Methods in Communication

Either semester. Three credits. Prerequisite: COMS 102 or consent of instructor. *van den Berg*

The scientific approach as it specifically applies to communication.

233. Television Production

Either semester. Three credits. Prerequisite: COMS 102 and 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.

234. Information and Communication

Either semester. Three credits. Prerequisite: COMS 231Q or consent of instructor. *Watt*

Approaches to studying communication including cybernetics, general systems theory, information theory, and human information processing.

235. Effects of Mass Media

Either semester. Three credits. Prerequisite: COMS 102 or consent of instructor.

An analysis of the roles of the mass media and of the effects they exert on individuals and society.

236. Protest and Communication

Either semester. Three credits. Required preparation: COMS 235 or consent of instructor. 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.

237. Design of Human Communication Systems

Either semester. Credits and hours by arrangement. Required preparation: COMS 135, 235 or consent of instructor. 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.

238. Mass Media and Political Process

Either semester. Three credits. Required preparation: COMS 135, 235 and 210 or consent of instructor. *Gaztambide-Geigel*

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.

239. New Communication Technologies

Second semester. Three credits. Recommended preparation: COMS 135 and 235. *Watt*

An overview of new communication technologies, their operation, future potential, dangers, and effects on social structure.

241. Sign Language: Theory and Practice

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.

243. Introduction to Speech Pathology

First semester. Three credits.

A survey of the field of speech pathology and audiology.

245. Speech Pathology I

First semester. Three credits. Two class periods and one 2-hour laboratory period. Prerequisite: COMS 201, 243, and 247. *Coelho*

The nature, etiology, and assessment of communication disorders.

246. Speech Pathology II

Second semester. Three credits. Prerequisite: COMS 245.

Clinical approaches to the treatment of articulation disorders, the clinical process, and the public school speech and hearing program.

247. Introduction to Phonetic Principles

Second semester. Three credits. Prerequisite: COMS 201.

The analysis of speech through the application of phonetic theory.

248. Introduction to Audiology

Second semester. Three credits. Prerequisite: COMS 250. *Cienkowski*

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

First semester. Three credits. Prerequisite: COMS 248. *Maxon*

An introduction to the effects of hearing impairment on communication. Communication strategies for adults and children with impaired hearing are discussed.

250. Audition

First semester. Three credits. *Cohen*

The response to acoustic stimuli including methodology and instrumentation.

252. Introduction to Language Pathologies

First semester. Three credits. Prerequisite: COMS 202. *Grela*

A review of the development, measurement, and function of language and a survey of language disorders and their causes.

260. Media and Special Audiences

(Also offered as PRLS 260.) Either semester. Three credits. Recommended preparation: 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.

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 foreign study program.

296W. Senior Thesis

Either semester. Credits and hours by arrangement. Open only with consent of instructor.

Preparation of a thesis and its presentation to the department.

297. Variable Topics

Either semester. Three credits. With a change in topic, may be repeated for credit. Prerequisites, recommended preparation, 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, recommended preparation, 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 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 McNeece

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).

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 & 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. Required preparation: MATH 110Q or MATH 113Q or MATH 115Q, which may be taken concurrently. Not open for credit to students who have passed CSE 123C 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 or consent of instructor. 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: Passed Q test. 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.

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. Required preparation: CSE 110C or 123C or 130C. Open to sophomores. *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. Open to sophomores. *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: Either CSE 111 or 124C or 130C, and either CSE 241 or CSE 243, and one of STAT 220Q, 224Q, 230Q or MATH 231Q, and MATH 227Q. *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 254 and CSE 241. Not open for credit to students who have passed CSE 252. *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 111 or 124C or 130C. Open to sophomores. *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 111, or 124C or 130C.

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 259 and either CSE 254 or MATH 214.

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 254 or MATH 214Q and CSE 230. *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 EE 252.) Either semester. Three credits. Prerequisite: CSE 243 or both CSE 240 and CSE 241. Not open to students who have credit for EE 252. *Greenshields*

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. *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 254 or MATH 214. Required preparation: CSE 230. *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 EE 257.) Either semester. Three credits. Prerequisite: Either CSE 110C, 123C or 130C or ENGR 150C, and MATH 210Q and 211Q. Not open for credit to students who have passed EE 257. *Peters, Roulier*

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: CSE 230 and either CSE 201 or 241 or 243. Required preparation: CSE. *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. Two class periods and two hours laboratory. Prerequisite: CSE 111, or 124C or 130C. Recommended preparation: CSE 254 or MATH 214. *Peters, Selfridge*

Theoretical aspects of computer science. Equivalent models of computation, the role of mathematical induction, graph algorithms, complexity theory, computability, use of standard algorithmic techniques – such as divide-and-conquer. Investigation of novel examples from fields such as graphics, computational geometry, and artificial intelligence. Emphasis in lab will be on analysis of supplied software examples, although some original software development will also occur.

261. Digital Hardware Laboratory

Second semester. Three credits. One 4-hour laboratory period. Prerequisite: CSE 208W, CSE 240, and CSE 241. Recommended preparation: CSE 252. *Barker*

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

Either semester. Three credits. Four hour laboratory. Prerequisite: CSE 228, CSE 243, CSE 245, and either CSE 230 or CSE 233. *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.

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 4-hour laboratory period. Prerequisite: CSE 208W, CSE 240, and CSE 241. Recommended preparation: CSE 252. *Shwartsman*

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 111 or 124C or 130C. *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 EE 280.) Either semester. Three credits. Four hours of laboratory. Prerequisite: CSE/EE 252 which may be taken concurrently. Not open for credit to students who have credit for EE 280.

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 254. Required preparation: CSE 230. *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. Computer and Electrical Engineering Design I

(Also offered as EE 290.) Either semester. Two credits. This course is taken by seniors in the semester before CSE/EE 291.

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/EE 291 is carried out. Written progress reports, a proposal, an interim report, a final report, and oral presentations are required.

291. Computer and Electrical Engineering Design II

(Also offered as EE 291.) Either semester. Three credits. Prerequisite: CSE/EE 291.

Design of a device, circuit, system, process, or algorithm. Team solution to an engineering design problem formulated in CSE/EE 290, from first concepts through evaluation and documentation. Written progress reports, a final report, and oral presentations 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.

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.

107. Theatre Production Studio

Either semester. Two credits. Two 2-hour studio periods. May be repeated to a maximum of eight 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.

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.

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. Required 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. *Krasser*

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. Required preparation: DRAM 153.

Continuation of Dramatic Arts 153.

163-164. Introduction to Directing

Both semesters. Three credits each semester. Required preparation: 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. *Krasser*

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. *McDonald*

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; required preparation: ENGL 109, which may be taken concurrently.

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. Required preparation: DRAM 107 (Stagecraft). *McCaw*

Basic techniques of constructing two dimensional and three dimensional scenery.

201. Rigging

Second semester. Three credits. Required 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. Required preparation: DRAM 107, 108, 143, 163 and consent of instructor. *McCaw*

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. Required preparation: DRAM 107 (Stagecraft), 108, and consent of instructor. *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. Required preparation: DRAM 205 and consent of instructor.

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. Required 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. Required preparation: Dram 108 or consent of instructor. *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. Required preparation: DRAM 108 and consent of instructor. *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 History and Design

Either semester. Three credits. Two class periods and one 2-hour studio period. Recommended preparation: DRAM 108 or consent of instructor. *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. Required preparation: DRAM 108 or consent of instructor. *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. Required preparation: 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

Required preparation: 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.

226. Creative Dramatics

Either semester. Three credits. Offered at the Avery Point Campus. *Janney*

Principles and procedures of dramatic play, characterization and improvisation. Participation in program development for elementary and secondary school children.

230. Women in Theatre

Either semester. Three credits. Open to sophomores. *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**231. African-American Theatre**

Either semester. Three credits. Open to sophomores. *Mollette*

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**235. Period Studies in Theatre**

Either or both semesters. Three credits. Required preparation: DRAM 131 or consent of instructor. 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**238. Theatre Jazz Dance III**

Second semester. Three credits. Three 2-hour studio periods. Required preparation: 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. Required preparation: DRAM 149, 150 and consent of instructor. *Sabatine*

Stage movement and dances from Greek to Renaissance.

240. Theatre Dance II

Second semester. Three credits. Required preparation: DRAM 149, 150, 239 and consent of instructor. *Sabatine*

Stage movement and dances from the Renaissance through the Restoration.

241. Oral Interpretation of the Drama

Second semester. Three credits. Required preparation: DRAM 141, 143. *Krasser*

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. *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. Required preparation: DRAM 243 and consent of instructor. Open to sophomores. *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. Required preparation: DRAM 108 or consent of instructor. Open to sophomores. *Rocoberton*

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. *Krasser*

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. Required preparation: DRAM 154 or consent of instructor. 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. 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. Two class periods and one 2-hour laboratory period. May be repeated for credit with a change in course content to a maximum of 6 credits.

A critical analysis of representative world films.

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. Required preparation: DRAM 257 and consent of instructor.

†259. Practicum in Dramatic Arts

Either or both semesters. Credits and hours by arrangement. Open only with consent of instructor. Open to sophomores.

Practical work in all areas of dramatic arts.

265. Stage Dialects

Either semester. Two credits. One class period and one 2-hour lab. Required preparation: DRAM 220 or consent of instructor. *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. Required preparation: DRAM 244 and consent of instructor. Concurrent enrollment in DRAM 220 and DRAM 239 required. *Krasser, McDonald*

† Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

Poetic voices of world theatre: Greek, Elizabethan, and others.

269. Acting Technique IV

(Formerly offered as DRAM 267.) Second semester. Three credits. Three 2-hour studio periods. Required preparation: DRAM 268 and consent of instructor. Concurrent enrollment in DRAM 222 and DRAM 240 required. *Krasser, McDonald*

The study and practice of acting techniques utilized in the performance of Shakespeare's plays.

272. Playwriting

(Formerly offered as DRAM 270-271.) 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. Required preparation: 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. Required preparation: 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. Required preparation: DRAM 248 or 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. Required preparation: DRAM 248 or 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.

A study of the major trends in drama and theatrical production of the western world today.

282W. Trends in Contemporary Theatre

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. Not offered in 1999/00.

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.

Economics (ECON)

Head of Department: Professor Stephen M. Miller
Department Office: Room 328, Monteith Building

For major requirements, see the College of Liberal Arts and Sciences section of this *Catalog*.

100. Critical Issues in Economics

First semester. Three credits. Not open for credit to students who have passed ECON 111, 112, or 113. *Carstensen*

Economic questions vital to our individual lives and national welfare today and in the future. Tools for evaluating current events and political claims about the workings of our economic system.

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 113. May not be taken concurrently with ECON 113.

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 113. May not be taken concurrently with ECON 113.

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).

113. Principles of Economics (Intensive)

Either semester. Four credits. Four class periods. Not open for credit to students who have passed ECON 111 or 112. May not be taken concurrently with ECON 111 or 112. *Wright*

Same core of principles as ECON 111 or 112. One-half macroeconomics and one-half microeconomics. More demanding than ECON 111 or 112, substitutes for ECON 111 and 112 as a Prerequisite for all Upper Division economics courses. May or may not substitute for ECON 111 and 112 outside economics; check *Catalog*.

201. Economic History of Europe

Second semester. Three credits. Required preparation: Either ECON 111 and 112, or 113. (112 may be taken concurrently). Open to sophomores. *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

Open to sophomores.

202. Topics in Economic History and Thought

Either semester. Three credits. Prerequisite: ECON 111 and 112, or 113, or consent of the instructor. May be repeated for credit, with change of topic. *Carstensen, Cosgel, Langlois, Minkler, Szazama*

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.

203. Economic History of the United States

Either semester. Three credits. Recommended preparation: Either ECON 111 and 112, or 113. (112 may be taken concurrently). Open to sophomores. *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

204. Economic History of the Middle East

Either semester. Three credits. Required preparation: Either ECON 111 and 112, or 113. (ECON 112 may be taken concurrently). Open to sophomores. *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

205. History of Economic Thought

First semester. Three credits. Required preparation: ECON 111 and 112, 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

206. Philosophy and Economics

(Also offered as Philosophy 245.) Either semester. Three credits. Required preparation: ECON 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

Either semester. Three credits. Required preparation: ECON 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**208. Political Economy of Capitalism**

Either semester. Three credits. Recommended preparation: ECON 111 or 112, or 113. *Sazama*

Application of socialist economic theory to structural issues of capitalist societies: distribution of power; causes of poverty and discrimination; military spending; stagnation and growth.

212V. Empirical Methods in Economics I (Q,C)

Either semester. Three credits. Two class periods and one 2-hour laboratory period. Required preparation: ECON 111 and 112, or 113; MATH 106Q or 110Q or 113Q or 115Q or 118Q; and STAT 100V. Open to sophomores. A course advised for all major students 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. *Lott, Ray*

Analysis of economic time series, estimation of single- and simultaneous-equation economic models, and statistical decision theory.

214Q. Mathematical Economics

Either semester. Three credits. Required preparation: ECON 111 and 112, or 113; MATH 106Q or 110Q or 113Q or 115Q or 118Q. *Heffley, 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. Required preparation: ECON 111 and 112 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.

218. Intermediate Microeconomic Theory

Either semester. Three credits. Prerequisite: ECON 112 or 113. Recommended preparation: ECON 111. Open to sophomores. ECON 218 or 218Q is required of all economics majors. *Cosgel, Heffley, Kimenyi, 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 112 or 113. Required preparation: MATH 106Q or 110Q or 113Q or 115Q or 118Q. Recommended preparation: ECON 111. Open to sophomores. ECON 218 or 218Q is required for all economics majors. *Randolph, Segerson*

Applies mathematical techniques to intermediate microeconomic theory.

219. Intermediate Macroeconomic Theory

Either semester. Three credits. Prerequisite: ECON 111 or 113. Recommended preparation: ECON 112. Open to sophomores. ECON 219 or 219Q is required of all economics majors. Not open for credit to students who have passed ECON 229 or 219Q. *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 111 or 113. Required preparation: MATH 106Q or 110Q or 113Q or 115Q or 118Q. Recommended preparation: ECON 112. Open to sophomores. ECON 219 or 219Q is required for all economics majors. *Ahking, Cunningham, Morand*

Applies mathematical techniques to macroeconomic theory.

230. Money and Banking

Either semester. Three credits. Required preparation: ECON 111 and 112, or 113. (112 may be taken concurrently.) Open to sophomores. *Ahking, Cunningham, Lott, Miller*

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.

231. Special Problems in Money and Banking

Second semester. Three credits. Prerequisite: ECON 230. *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. Required preparation: ECON 112 or 113. Recommended preparation: ECON 111 and 218. *Allen, Chisik*

Economic basis of international trade, trade policies, and international economic organizations.

242W. International Trade**243. International Finance**

Either semester. Three credits. Required preparation: ECON 111 or 113. Recommended preparation: ECON 112 and 219. *Ahking, Allen, Miller*

Payments and financing of international trade: foreign exchange markets, the balance of payments, capital flows, and international monetary arrangements.

244. Transitional Economies of Russia and East Europe

Either semester. Three credits. Required preparation: ECON 111 and 112, or 113. *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.

247. Economic Development

First semester. Three credits. Required preparation: ECON 111 and 112, or 113. *Randolph, Sazama*

Economics of problems facing developing nations: theories of development, and strategies and policies to promote economic development.

247W. Economic Development**253. Public Finance**

Either semester. Three credits. Required preparation: ECON 112 or 113. Recommended preparation: ECON 111. *Kimenyi, McEachern, Miceli, Sacks, Sazama, 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**257. Economics of Poverty**

First semester. Three credits. Required preparation: ECON 111 and 112, or 113. *Kimenyi*

Analysis of poverty and income maintenance programs: theories of income distribution and comparison of public policies in the U.S. and other countries.

258. Contemporary Problems in Economics

Either semester. Three credits. Required preparation: ECON 218 and 219 (one of which may be taken concurrently). *Wright*

Current issues of government economic policy, primarily microeconomic: energy, income maintenance, labor markets for minorities and women, government regulation, health care, and others.

258W. Contemporary Problems in Economics**259. Urban and Regional Economics**

(Also offered as Urban Studies 259.) Second semester. Three credits. Required preparation: ECON 112 or 113. Recommended preparation: ECON 111. Not open for credit to students who have passed URBN 259. *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**261. Health Economics**

Either semester. Three credits. Required preparation: ECON 112 or 113. *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.

264. Government and Industry

Second semester. Three credits. Required preparation: ECON 112 or 113. *Langlois, Sacks*

Relations between government and business. Public policies enforcing, supplementing, or replacing competition in particular markets, studies of selected industries and legal cases.

267. Organization of Industry

First semester. Three credits. Required preparation: ECON 112 or 113. Recommended preparation: ECON 218. *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

Second semester. Three credits. Required preparation: ECON 112 or 113. Recommended preparation: ECON 111 and 218. *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.

274. Labor Economics

Either semester. Three credits. Required preparation: ECON 112 or 113. *Barth*

Economics of labor: human capital theory, discrimination, unemployment, manpower policy, and trade unions.

274W. Labor Economics**275. Theory of Labor Markets**

Either semester. Three credits. Required preparation: ECON 112 or 113. Recommended preparation: ECON 218. *Barth, Couch, Kimenyi*

Theoretical analysis of labor markets: labor supply and demand; wage differentials; human capital; and the inflation-unemployment tradeoff.

276. Labor Legislation

Second semester. Three credits. Required preparation: ECON 112 or 113. *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.

279. Women and Minorities in the Labor Market

Either semester. Three credits. Required preparation: ECON 111 and 112, or 113. *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.

286W. Honors Seminar

Second semester. Three credits. Consent of instructor required, with preference given to Honors and Distinction students and Economics Scholars. Required preparation: ECON 218 and 219 or 308 and 309 (one may be concurrent). *Segerson, Wright*

Preparation for (1) senior thesis, or for (2) Distinction comprehensive exam. 50%: 5-6 presentations of faculty research, with short papers by students. 50%: (a) major term project (Honors or Economics Scholars), or (b) extensive annotated bibliography for comprehensive exam (Distinction). Intensive drill on expository writing, especially organization, clarity, and accuracy.

289W. Senior Thesis in Economics

Either semester. Three credits. Hours by arrangement. Open only with consent of instructor. Required preparation: ECON 286W or consent of the Department Honors Advisor.

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 de-

parture. 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. Required preparation: nine credits of 200-level economics courses (six of which may be concurrent). Consent of instructor is required. Students must be at least 6th-semester and have a minimum TGPA of 2.25 or a minimum of 2.5 in 200-level economic courses. Students must secure a satisfactory intern position before the end of the second week of the semester enrolled in the course. They should begin consultation with the instructor several months in advance. Grade of S (satisfactory) or U (unsatisfactory). Does not count toward the economic major. Must be taken concurrently with ECON 295; no credit will be given for one course without the other. *Sazama*

Supervised field work, of six-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. Required preparation: nine credits of 200-level economic courses (six of which may be concurrent). Consent of instructor is required. Students must be at least 6th-semester and have a minimum TGPA of 2.25 or a minimum of 2.5 in 200-level ECON 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, required preparation, 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, required preparation, 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. Three credits. Required of undergraduate students in the teacher preparation program leading to teacher certification who are concurrently enrolled in EPSY 250, EDCI 230 and EPSY 207. Open only to students in the Integrated Bachelor's/Master's Teacher Preparation Program.

Integration of the concepts of learning, cultural and special learning needs with clinical experiences.

295. Seminar/Clinic: The Student in the School Context

Second semester. Three credits. Prerequisite: EGEN 294. Required of undergraduate students in the teacher preparation program leading to teacher certification

who are concurrently enrolled in EPSY 251, EPSY 252, and EDCI 231. Open only to students in the Integrated Bachelor's/Master's Teacher Preparation Program.

Integration of advanced concepts of learning, assessment of learning and the social nature of schools.

296. Seminar/Clinic: Methods of Teaching

First semester. Three credits. Required of undergraduate students in the teacher preparation program leading to teacher certification who are concurrently enrolled in EPSY 253, EDCI 232 and EPSY 208. Prerequisite: EGEN 295. Open only to students in the Integrated Bachelor's/Master's Teacher Preparation Program.

Integration of advanced concepts of learning measurement and assessment, social and personal health issues and philosophical tools for teachers with area specific methods.

296W. Seminar/Clinic: Methods of Teaching**297. Seminar/Clinic: Analysis of Teaching**

Second semester. Three credits. Required of undergraduate students in the teacher preparation program leading to teacher certification who are concurrently enrolled in either EDCI 276, EDCI 277, EPSY 277, or ESLE 277. Prerequisite: EGEN 296. 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 Thomas P. Weinland
Department Office: Room 336, Gentry Building

For major requirements, see the School of Education section of this *Catalog*.

204. Introduction to Bilingual-Bicultural Education

Semester by arrangement. Three credits. *Diaz, Leach, Minaya-Rowe, Reagan*

This course deals with cultural-historical background and processes of establishment and implementation of bilingual-bicultural education programs.

211. Curriculum and Teaching of Reading

Semester and hours by arrangement. Variable credits, not to exceed three. Prerequisite: EGEN 294 and EGEN 295 or consent of instructor. *Doyle, Irwin, Meagher, M. Weinland*

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*

Both semesters. Three credits. Open to undergraduate elementary education majors and elementary education certification students. *Doyle, Irwin, Meagher*

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*

Both semesters. Three credits. Open to elementary education majors and elementary education certification students. *Doyle, Irwin, Meagher, M. Weinland*

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*

Both semesters. One credit. Open to undergraduate elementary education majors and elementary education certification students. *DeFranco*

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 (NCTM, 1990).

223. Curriculum and Teaching of Elementary School Science*

First semester. One credit. Open only to Elementary Education majors. *Lonning*

A study of curriculum materials, laboratory experiences and teaching techniques in science.

224. Curriculum and Teaching of Elementary School Social Studies*

Either semester. One credit. Open only to Elementary Education majors. *T. Weinland*

A study of the organization of learning experiences and teaching methods emphasizing the social sciences as the foundation of the social studies.

225. Teaching in the Kindergarten

Semester and hours by arrangement. Three credits. Prerequisite: EPSY 221 which may be taken concurrently, and HDFS 190. Open only with consent of instructor.

The organization of learning experience in kindergarten. Field experience may be included.

230. Foundations of Education: Multiculturalism, Equity, and Excellence

(Formerly EDLR 230.) First semester. One credit. Prerequisite: Admission to the School of Education. Open only to students in the Integrated Bachelor's/Master's Teacher Preparation Program. *Fowlkes, Weibust*

Legal and Sociocultural concepts and issues related to multiculturalism and American schools.

231. Foundations of Education: Social Context of Schooling

(Formerly EDLR 231.) Second semester. One credit. Prerequisite: Admission to the School of Education. Open only to students in the Integrated Bachelor's/Master's Teacher Preparation Program. *Fowlkes, Weibust*

Social nature of schools: standards, values, socialization, social function of schooling.

232. Foundations of Education: Philosophical Tools for Teachers

(Formerly EDLR 232.) First semester. One credit. Prerequisite: Admission to the School of Education. Open only to students in the Integrated Bachelor's/Master's Teacher Preparation Program. *Reagan*

Philosophical trends in schooling, and applications of philosophy for prospective teachers.

233. Social and Community Issues in Education

(Formerly EDLR 233.) First semesters. One credit. Required of students in the teacher preparation program leading to teacher certification. Open only to School of Education students. *Mannebach*

Social and community issues, including the effect of alcohol, drugs and tobacco, confronting teachers in contemporary society.

240. Uses of Microcomputers

One credit.

This course will provide an introduction to the use of microcomputers.

258. Methods in Elementary School Music

Semester by arrangement. Three credits. Prerequisite: Satisfactory progress in applied music, and consent of instructor.

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.

265. General Teaching Methods

First semester. One credit. Open to undergraduate and TCPCG education majors only.

An introduction and overview of teaching roles and responsibilities. Topics include setting goals and objectives; planning lessons and units; teaching inductively, deductively and interactively; selecting appropriate instructional media; organizing time, space, materials and learners in groups of varying sizes; assigning homework, practice and review; and evaluation techniques.

266-267. Instruction and Curriculum in the Secondary School**

Semester and hours by arrangement. Variable credit not to exceed 6. Prerequisite: EGEN 294, EGEN 295 and consent of instructor.

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.

English	<i>Spaulding</i>
Foreign Languages	
French	<i>Staff</i>
German	<i>Staff</i>
Spanish	<i>Staff</i>
Mathematics	<i>DeFranco</i>

Music
Natural Sciences
Social Studies – History
Speech Correction

*Junda
Lonning
T. Weinland
Bartlett*

272. The Teaching of Reading in Middle and High Schools***

Semester and hours by arrangement. Variable credit. Prerequisite: EGEN 294 and EGEN 295. *Irwin*

Methods of teaching reading to middle and high school students.

273. Teaching Reading and Writing in the Content Areas

Second semester. Two credits. Secondary Education majors may take this course during their student teaching semester only. *Irwin, Meagher, Spaulding, M. Weinland*

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: EGEN 296, EDCI 265, and consent of instructor. Open only to students in the School of Education. 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**

Semester, credits and hours by arrangement. Prerequisite: EGEN 296, EDCI 265, an appropriate section of EDCI 266 and consent of instructor. Open only to students in the School of Education. 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 School of Education or consent of instructor.

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.

* Required for elementary teaching certification.

** Required for secondary teaching certification.

***Required for secondary English certification.

Education: Educational Leadership (EDLR)

Head of Department: Associate Professor Patrick B. Mullarney

Department Office: Room 406, Gentry Building

For major requirements, see the 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.

Education: Educational Psychology (EPSY)

Head of Department: Professor Scott W. Brown

Department Office: Room 210, Gentry Building

For major requirements, see the School of Education section of this *Catalog*.

206. Introduction to Exceptionality

Either semester. Three credits. Prerequisite: PSYC 132; PSYC 133 is strongly recommended. *Cherkes-Julkowski, McLean*

This course considers the nature of exceptionalities as well as current policy and programs in the schools and community.

207. Exceptionality I

First semester. One credit. Open only to students in the Integrated Bachelor's/Master's Teacher Preparation Program. *Karan, Norlander-Case*

Characteristics of students with exceptionalities.

208. Exceptionality II

Second semester. One credit. Open only to students in the Integrated Bachelor's/Master's Teacher Preparation Program. *Campbell, O. Karan, S. Shaw*

Educational programming for learners with special needs.

210. Collaborative Program Planning in Special Education

First semester. Three credits. Prerequisite: Open to juniors accepted into the IB/M Teacher Preparation Program and majoring in Special Education/Elementary Education or Early Childhood Education. Other students by permission of instructor. *Campbell, Karan, McLean, 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.

211. Instruction of Students with Disabilities

Second semester. Two credits. Prerequisite: EPSY 212. *S. Shaw*

Practical approaches for instructing students with disabilities.

212. Diagnosis, Assessment, and Program Planning

First semester. Three credits. Prerequisite: Consent of instructor. *Madaus, McGuire, Norlander-Case*

Diagnosis of students with special needs, use of test data in planning instruction and report writing.

221. Educational Psychology

Either semester. Three credits. Prerequisite: PSYC 132; PSYC 133 is recommended. *Brown, Kulikowich, Young*

The psychology of learning and teaching, and the

study of the nature and development of children and adolescents.

222. Principles of Rehabilitation

Second semester. Three credits.

History, philosophy, development, and implementation of rehabilitation processes.

223. Orientation to Rehabilitation Resources

Either semester. Three credits. Prerequisite: EPSY 222 which may be taken concurrently and consent of instructor.

Survey, directed observation, and evaluation of facilities and services in the rehabilitation of the disabled.

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.

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. Required of undergraduate students in the teacher preparation program leading to teacher certification. Open only to students in the Integrated Bachelor's/Master's Teacher Preparation Program. *Brown, Reis, Westberg*

Theory and practices of learning.

251. Learning II

Second semester. One credit. Required of undergraduate students in the teacher preparation program leading to teacher certification. Open only to students in the Integrated Bachelor's/Master's Teacher Preparation Program. *Brown, Reis, Westberg*

Theory and practices of learning.

252. Assessment of Learning I

Second semester. One credit. Required of undergraduate students in the teacher preparation program leading to teacher certification. 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. Required of undergraduate students in the teacher preparation program leading to teacher certification. 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, stu-

dents 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.

266. Curriculum and Methods for Teaching Students with Disabilities

First semester. Variable credits. May be repeated for up to a total of three credits. Prerequisite: EPSY 212 is taken concurrently. *Campbell*

Emphasis is placed upon the selection and organization of learning experiences and on teaching procedures in special education.

277. Directed Student Teaching: Special Education

Either semester. Credits and hours by arrangement. Prerequisite: An appropriate section of EPSY 266 and consent of instructor. Open to students in the special education program of the School of Education. 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. *Campbell, Norlander-Case*

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.

Education: Kinesiology (EKIN)

Head of Department: Professor Carl M. Maresh
Department Office: Room 223, Sports Center

For major requirements, see the 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 1-hour laboratory periods. This course may be repeated once for credit. Students majoring in Kinesiology may repeat five times for a total of six credits in six different topics.

A variety of lifetime sports and skills are offered. The teaching of each activity will be geared to individual, dual, and team sport activities.

161. Introduction to Athletic Injuries I

Fall semester. First seven weeks. One credit. Open to all students. Pre-athletic Training students enroll as sophomores. *Mansell*

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

Fall semester. Second seven weeks. One credit. Open to all students. Pre-athletic Training students enroll as

sophomores. *Mansell*

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

Spring semester. First seven weeks. One credit. Open to all students. Pre-athletic Training students enroll as sophomores. *Mansell*

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

Spring semester. Second seven weeks. One credit. Open to all students. Pre-athletic Training students enroll as sophomores. *Mansell*

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. Camping and Counseling

(Formerly offered as ESLE 201.) Second semester. Three credits. *Morrone*

The camper, counselor, and cabin group; understanding problems of discipline and morale; maintaining physical and mental health; program organization; camping leadership; camp administration.

203. History, Trends, and Professional Orientation of Recreational Service

(Formerly offered as ESLE 203.) Second semester. Three credits. *Shivers*

Historical background of the recreational service movement; the significance of recreational service in society; and professional opportunities in the field of recreational service.

204. Principles of Recreational Service

(Formerly offered as ESLE 204.) First semester. Three credits. *Servadio*

The evolvement of present day recreational service, and basic concepts.

205. Introduction to Therapeutic Recreational Service

(Formerly offered as ESLE 205.) First semester. Three credits. *Shivers*

Recreational Rehabilitation for special populations. The practice of therapeutic recreational service for clients in treatment centers or communities.

226. Advanced Specialization in Sport Techniques

(Formerly offered as ESLE 226.) Either semester. One credit for each sport form. Must be taken for two credits, not to exceed four credits. Open to EKIN majors only. *Staff*

Specialization in several individual, dual and team sport forms. Appropriate apparel required.

227. Psychomotor Development Activities

(Formerly offered as ESLE 227.) First semester. Three credits. Open to sophomores.

Selection and implementation of physical activities, guided by motor skill development of children.

228. Motor Learning

(Formerly offered as ESLE 228.) First semester. Three credits. *Garrett*

Learning of motor skills: practice, feedback, motor programs, transfer, memory, retention.

230. Nature and History of Sport

(Formerly offered as ESLE 230.) First semester. Three credits. *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: PNB 264 and 265. Open only to Athletic Training Concentration first year students. Consent of program director required. *Casa*

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.

235. Emergency Medical Care in Sport and Leisure Activity

(Formerly offered as ESLE 235.) Either semester. Three credits. Open to EKIN majors only.

Identification and evaluation of injuries and illnesses, and appropriate care. Immediate care, follow up procedures, and common medical emergencies.

236. Sport and Society

(Formerly offered as ESLE 236.) First semester. Three credits. Prerequisite: SOCI 107 or 107W, or SOCI 115 or 115W. *Yiannakis*

Sport as an institution. Sociological issues involving gender, race, and intercollegiate, professional, and children's sports.

236W. Sport and Society

238. Sport and the Individual

(Formerly offered as ESLE 238.) Second semester. Three credits. *Tomporowski*

Psychological perspectives of sport participation. Motivation, self-confidence, attentional focus, anxiety/arousal levels.

239. Therapeutic Modalities for Athletic Injuries

Second semester. Three credits. Prerequisite: PHYS 101Q or 121Q, PNB 264 and PNB 265. Open only to Athletic Training Concentration first year students. Consent of program director required.

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 and PNB 265. *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.

250. Clinical Instruction for Athletic Trainers I

First semester. Three credits. Prerequisite: PNB 264 and PNB 265. Open only to Athletic Training Concentration first year students. Consent of program director required.

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

Second semester. Three credits. Prerequisite: PNB 264 and PNB 265. Open only to Athletic Training Concentration first year students. Consent of program director required.

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: PNB 264 and PNB 265. Open only to Athletic Training Concentration first year students. Consent of program director required.

Hands on instruction/demonstration/practice/ implementing of basic evaluation and treatment procedures of specific body regions. Also, the third of four practical field experiences.

253. Current Research in Athletic Training
First semester. Three credits. Prerequisite: PNB 264 and PNB 265. Open only to Athletic Training Concentration second year students. Consent of program director required. *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.

254. Athletic Training Administration
Second semester, even years. Three credits. Prerequisite: PNB 264 and PNB 265. Open only to Athletic Training Concentration students. Consent of program director required. *Casa*

Administrative/Management concerns for the athletic trainer. Insurance, budgeting, counseling, facility design, hiring, record keeping, and other issues will be covered.

256. Physical Activity and Health
(Formerly offered as ESLE 256.) First semester. One credit. Required of undergraduate students in the teacher preparation program leading to teacher certification.

Physical fitness concepts that relate to health.

257. Strength and Conditioning for Athletic Trainers
(Formerly offered as ESLE 257.) Second semester. Three credits. Prerequisite: PNB 264 and PNB 265. Open to any EKin major. Consent of program director required. *Casa*

The focus of this class is the prevention of athletic injuries via the proper implementation of strength and conditioning principles. To include frequency, intensity, recovery, periodization, components of a fitness program, ergogenic aids, and protective bracing.

258. Mechanisms and Adaptations in Sport and Exercise
(Formerly offered as ESLE 258.) Second semester. Four credits. Prerequisite: PNB 264, PNB 265, and either EKin 248 or consent of instructor. *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.

259. Fitness Management
(Formerly offered as ESLE 259.) Second semester. Three credits. Prerequisite: ESLE 258 or consent of instructor. *Van Heest*

Health fitness programming; a management perspective.

259W. Fitness Management

260. Assessment of Athletic Injuries
(Formerly offered as ESLE 260.) Second semester. Three credits. Prerequisite: PNB 264 and PNB 265.

Open only to Athletic Training Concentration first year students. Consent of program director required. *Casa*

Techniques and procedures that athletic trainers use to evaluate injuries to the extremities. Includes history, observation, palpation, special tests, manual muscle testing, blood flow, nerve function, and other injury specific skills.

261. Fitness Testing and Programming
(Formerly offered as ESLE 261.) First semester. Three credits. Prerequisite: EKin 263.

Physical fitness assessment and individualized fitness programs.

262. Directed Observation and Participation
(Formerly offered as ESLE 262.) Credits by arrangement. Open only with consent of instructor. 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.) Spring semester. Three credits. Prerequisite: EKin 258.

Human anatomy and its application to physical activity, exercise and sport. *Van Heest*

266-267. Instruction and Curriculum in the Secondary School

(Formerly offered as ESLE 266 and ESLE 267.) Either or both semesters. Three or six credits.

Teaching procedures for physical education in secondary schools.

272. Sport Biomechanics
(Formerly offered as ESLE 272.) First semester. Three credits. Prerequisite: Biology: PNB 264-265. *Garrett*

Qualitative analysis of linear and angular motion, force and torque, momentum, energy, equilibrium, projectiles, aerodynamics.

273. Special Physical Education: Adapted, Corrective, Developmental
(Formerly offered as ESLE 273.) First semester. Four credits. Three class periods and laboratory/clinic periods by arrangement. Prerequisite: Biology: PNB 265. *Castagno*

Physical activity for persons with disabilities.

277. Directed Student Teaching
(Formerly offered as ESLE 277.) Either semester. Credits and hours by arrangement. Prerequisite: EKin 266. Open only to students in the School of Education. 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.

280. Recreational Services for the Mentally III
(Formerly offered as ESLE 280.) First semester. Three credits. *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. Prerequisites: ECON 111, 112. Open to EKin majors or with consent of instructor.

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. *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: EKin 204. *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: EKin 204. *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: EKin 203, EKin 205. *Shivers*

Adaptive programming for clients with permanent disabilities.

286. Issues in Sport
(Formerly offered as ESLE 286.) Either semester. Three credits. Open to EKin majors only. *Morrone*

Contemporary issues in sport and physical education: leadership, communication, time management, future trends.

289. Leadership in Recreational Services
(Formerly offered as ESLE 289.) Second semester. Three credits. *Shivers*

Group dynamics and interpersonal behavior theories with leadership techniques for field application.

289W. Leadership in Recreational Services

290. Internship
(Formerly offered as ESLE 290.) Either semester or summer. Variable. Prerequisite: In accordance with departmental policy, students will have completed all academic course work in their concentration excluding Sport Medicine/Athletic Training prior to undertaking the internship. May be repeated for credit. Open to EKin majors only.

Field service or experiences in cooperating agencies.

292. Emergency Procedures in Athletic Training

(Formerly offered as ESLE 292.) First semester. Three credits. Prerequisite: PNB 264 and PNB 265. Open only to Athletic Training Concentration first year students. Consent of program director required. *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. Open only to EKin Honors Students.

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: EKin 295 or consent of instructor. Open only to EKin Honors Students.

The student will identify specific Honors Thesis research questions and will write a library research paper that will serve as the thesis Literature Review.

297. Honors Thesis

Both semesters. Three credits. Prerequisite: EKin 295 and EKin 296 or consent of instructor. Open only to EKin Honors Students.

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.

Electrical and Systems Engineering (EE)

Note: The name of this department will change to Electrical and Computer Engineering in the spring semester of 2001.

Head of Department: Professor A.F.M. Anwar
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

Either semester. Three credits. Three class periods and one discussion period. Prerequisite: MATH 211 and PHYS 152, both of which may be taken concurrently. Open to sophomores. This course and EE 220 may not both be taken for credit. *Enderle, Jordan*

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

Either semester. Three credits. Three class periods and one discussion period. Prerequisite: EE 201 or EE 220. *Bar-Shalom, Luh, Pattipati*

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

Either semester. Three credits. Prerequisite: EE 201. This course and EE 239 may not both be taken for credit. *Anwar, Donkor*

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

Either semester. Three credits. Prerequisite: PHYS 152 and MATH 210 and 211. Not open for credit to students who have received credit for EE 206. *Bansal*

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.

206. Electromagnetic Fields and Applications

First semester. Three credits. Prerequisite: EE 201. This course and EE 205 cannot both be taken for credit. *Bansal*

Electrostatics and the behavior of charged particles in an electric field; capacitance and energy storage. Magnetostatics, magnetic materials and circuits; Ampere's law and the Biot-Savart law. Maxwell's equations. Behavior of transformers and their applications in circuits. Principles of electromechanical devices.

207. Electromagnetic Waves and Applications

Second semester. Three credits. Prerequisite: EE 205 or EE 206. *Bansal*

Time- and space-varying solutions to Maxwell's equations. Plane wave propagation; reflection and refraction. Transmission lines in steady-state and with transients; impedance matching. Principles of propagation in waveguides, both metal (microwave) and dielectric (optical). Radiation and antennas.

209W. Electrical Circuit Design Laboratory

Either semester. Two credits. One 2-hour laboratory period and one 1-hour discussion period. Prerequisite: EE 201, which may be taken concurrently. Open to sophomores. *Donkor*

Design and evaluation of analog electrical and electronic circuits. Emphasizes out-of-laboratory preparation and troubleshooting. Introduction to laboratory instruments including oscilloscopes, signal sources and meters.

215. Digital Integrated Circuits

Semester by arrangement. Three credits. Prerequisite: EE 204 and CSE 207. *Ayers, Fox*

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 Engineering Principles

First semester. Three credits. Prerequisite: MATH 210 and 211, which may be taken concurrently, and PHYS 152. This course and EE 201 may not both be taken for credit.

Basic concepts of circuit analysis as applied to electronic circuits and electromechanical devices, including measuring instruments.

224. Electromechanical Energy Conversion

Semester by arrangement. Three credits. Prerequisite: EE 202 and EE 206 or consent of instructor.

Equivalent circuits and characteristics of multiphase transformers. Per-unit system. Analysis of balanced conditions on multiphase power systems. Principles of a-c and d-c machinery and other electromechanical devices, emphasizing dynamic characteristics. Applications to power and control systems.

226. Physical Electronics

Second semester. Three credits. Prerequisite: EE 204, which may be taken concurrently. *Anwar*

Fundamental physical processes underlying the operation of modern electronic devices. P-n junctions, bipolar and field-effect transistors, and solar cells. Electrical conduction in solidstate and gaseous electronic devices.

228. Fiber Optics

First semester. Three credits. Prerequisite: EE 205 or EE 207 or PHYS 255. *Bansal, Cheo*

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

Second semester. Three credits. One four-hour laboratory period. Prerequisite: EE 228. *Bansal, Cheo*

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

First semester. Three credits. Prerequisite: EE 202, EE 204 and CSE 207. *Fox*

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

Either semester. Three credits. Prerequisite: EE 202. *Pattipati, Soulsby*

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.

233. Basic Feedback Control Theory

First semester. Three credits. Prerequisite: EE 232. *Pattipati*

Design of linear feedback control systems emphasizing stability, accuracy, dynamic response, and sensitivity to parameter variations. Frequency domain compensation methods. State variable design techniques and use of observers. Lyapunov stability theory. Linear optimum control. Use of computer for simulation and design.

234. Digital Control Systems

Second semester. Three credits. Prerequisite: EE 232. *Jordan, Pattipati*

Analysis and design of control systems incorporating digital computers. Building blocks of digital control. Methods of control algorithm design. Alternate control strategies. System integration. Experimental design project.

239. Electronic and Electromechanical Components and Circuits

Second semester. Three credits. Prerequisite: EE 201 or 220. This course and EE 204 may not both be taken for credit.

Analysis of basic electronic and electromechanical components and circuits with design applications in instrumentation, communications and control.

240. Electronic Circuits and Applications

Second semester. Three credits. Prerequisite: EE 204 and 232. *Fox*

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

First semester. Three credits. Prerequisite: EE 202, and STAT 224Q or consent of instructor. *Tong, Willett*

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

Second semester. Three credits. Prerequisite: EE 202 and STAT 224Q or consent of instructor. *Willett*

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

Second semester. Three credits. Prerequisite: EE 204 or consent of instructor. *Anwar, Jain*

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

Semester by arrangement. Three credits. Prerequisite: EE 205 or EE 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

Second semester. Three credits. Prerequisite: EE 202. *Javidi, Willett*

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

First semester. Four credits. Two-hour lecture and three-hour laboratory period. Prerequisite: EE 215 or consent of instructor, and EE 245. Not open for credit to students who have passed EE 248 or EE 269. *Jain*

Design of MOS transistors, including short channel effects in sub-micron devices; scaling laws; fabrication technologies. Layout of NMOS and CMOS logic gates; power-delay calculations. Design of static and/or dynamic memories. Laboratory emphasizes schematic capture, simulation, timing analysis; layout of custom IC's; use of VHDL; scaling laws and design of 0.25 micro circuits.

252. Digital Systems Design

(Also offered as CSE 252.) Either semester. Three credits. Prerequisite: CSE 243 or both CSE 240 and CSE 241. Not open for credit to students who have passed CSE 252.

Design and evaluation of control and data structures for digital systems. Hardware design languages are used to describe and design alternative

register transfer level architectures and control units with a microprogramming emphasis. Consideration of computer architecture, memories, digital interfacing, timing and synchronization, and microprocessor systems.

257. Numerical Methods in Scientific Computation

(Also offered as CSE 257.) Either semester. Three credits. Prerequisite: Either CSE 110C or CSE 130C or ENGR 150C and MATH 210Q and 211Q or consent of instructor. *Soulsby*

An 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 computation. Extensive digital computer usage for algorithm verification.

261. Electrical Engineering Laboratory A

Either semester. Three credits. One class period and one 4-hour laboratory period. Prerequisite: CSE 208W, EE 209W, EE 202 and EE 204, which may be taken concurrently or consent of instructor. *Anwar, Ayers*

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. Electrical Engineering Laboratory B

Either semester. Three credits. One class period and one 4-hour laboratory period. Prerequisite: EE 261. *Ayers*

Intermediate design laboratory. Solution of practical design problems in electronic circuits, control systems, digital systems, physical electronics, biomedical electronics and power systems.

263. Electrical Engineering Laboratory C

Either semester. Three credits. One 4-hour laboratory. Prerequisite: EE 207 and EE 262, which may be taken concurrently. *Donkor*

Design and experimental evaluation of circuits and systems useful in control, communication, and other applications. Rotating machines, servomechanisms, transducers, transmission lines, antennas, oscillators, modulation and detection, wave shaping and switching circuits.

265. Independent Design Laboratory

Either or both semesters. Three credits. Prerequisite: EE 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 & Systems Engineering.

266. Microprocessor Applications Laboratory

First semester. Three credits. One class period and one 4-hour laboratory. Prerequisite: EE 262, and EE 232 which may be taken concurrently. *Fox*

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

Second semester. Three credits. One 4-hour laboratory period. Prerequisite: EE 232 and EE 262. *Jordan, Willett*

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

Second semester. Three credits. One class period, and one 4-hour laboratory period. Prerequisite: EE 245, EE 215 or consent of instructor. *Anwar, Jain*

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

Semester by arrangement. Three credits. Prerequisite: EE 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

First semester. Three credits. Prerequisite: BIOL 107. Co-requisite: PHYS 151Q and MATH 210Q. Open to sophomores. *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.

280. Digital Design Laboratory

(Also offered as CSE 280.) Either semester. Three credits. Four hour laboratory period. Prerequisite: CSE/EE 252 which may be taken concurrently.

Digital designing with PLA and FPGA, A/D and D/A conversion, floating pt, processing, ALU design, synchronous and asynchronous controllers, control path; bus master; bus slave; memory interface; I/O interface, Logic circuits analysis, testing, and trouble shooting, PCB; design and manufacturing.

281. Digital Hardware Laboratory

(Also offered as CSE 261.) Second semester. Three credits. One 4-hour laboratory period. Prerequisite: CSE 208W, CSE 240 and CSE 241, or CSE 243, and CSE/EE 280. Recommended preparation: CSE/EE 252. *Barker*

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. Computer and Electrical Engineering Design I

(Also offered as CSE 290.) Either semester. Two credits. Prerequisite: This course is taken by seniors in the semester before EE 291. (Formerly offered as EE

297.) *Enderle, Jordan*

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/EE 291 is carried out. Written progress reports, a proposal, an interim project report, a final report, and oral presentations are required.

291. Computer and Electrical Engineering Design II

(Also offered as CSE 291.) Either semester. Three credits. Prerequisite: EE 290. Hours to be arranged. (Formerly offered as EE 270.) *Enderle, Jordan*

Design of a device, circuit, system, process, or algorithm. Team solution to an engineering design problem as formulated in CSE/EE 290, from first concepts through evaluation and documentation. Written progress reports, a final report, and oral presentation are required.

295. Special Topics in Electrical Engineering

Semester by arrangement. Credits by arrangement. Prerequisite: 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.

299. Independent Study in Electrical Engineering

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

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 for credit to upper division students in the School of Engineering. Not open for credit for students who have passed ENGR 150.

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 for credit to upper division 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 for credit to upper division 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 upper division 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. 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. 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.

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 332, Arjona Building

For major requirements, see the College of Liberal Arts and Sciences section of this *Catalog*.

Registration restrictions: In addition to the courses listed as required preparation, students must have satisfied the English 109 requirement before taking any 200-level English course, except English 250.

103. English for Foreign Students

Either semester. Three credits. Course may be repeated for credit. Graduate students may elect this course. *English and Linguistics Staffs*

Instruction in English for non-native speakers of the language.

104. Basic Writing

Either semester. Three credits. *English and Linguistics Staffs*

Development of essential skills in writing sentences. Based on test scores, students may be required to pass ENGL 104 before taking ENGL 105. This course may not be used to fulfill the Group III Distribution requirement and may not be taken for credit if the student has passed ENGL 105.

105. English Composition

Either semester. Three credits.

Instruction in composition through critical reading and frequent short essays.

109. Literature and Composition

Either semester. Three credits. Required preparation: ENGL 105. Not open for credit to students who have passed ENGL 250.

Continued training in writing expository prose through the study of selections from prose, poetry, and drama.

112. Classical and Medieval Western Literature

First semester. Three credits. Required preparation: ENGL 105. Not open for credit to students who have passed ENGL 114 at the regional campuses.

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

(Formerly offered as English 114 at the regional campuses.) Required preparation: ENGL 105 and 109; the latter may be taken concurrently.

113. Renaissance and Modern Western Literature

Second semester. Three credits. Required preparation: ENGL 105. Not open for credit to students who have passed ENGL 115 at the regional campuses.

Literature in the European tradition from the Renaissance through the modern periods.

#113W. Renaissance and Modern Western Literature

(Formerly offered as English 115 at the regional campuses.) Required preparation: ENGL 105 and 109; the latter may be taken concurrently.

120. Major Works of Eastern Literature

Either semester. Three credits. Required preparation: ENGL 105.

Important works of poetry, drama, and literary prose

† Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

English 112W, 113W, 127W, and 230W are offered at regional campuses only.

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. Required preparation: ENGL 105. Not open for credit to students who have passed ENGL 128 at the regional campuses.

Includes important works from the major genres and historical periods since Beowulf.

#127W. Major Works of English and American Literature

(Formerly offered as English 128 at the regional campuses.) Required preparation: ENGL 105 and 109; the latter may be taken concurrently.

146. Creative Writing I

Either semester. Three credits. Required preparation: ENGL 105.

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.

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. 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.

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. Required preparation: English 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. Required preparation: English 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. Open to sophomores. 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. Open to sophomores.

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.

Poetry of the 20th century, from the major modernist innovators to significant contemporaries.

212. The Modern Novel

Either semester. Three credits. Open to sophomores.

Major twentieth-century novels.

216. The Short Story

Either semester. Three credits. Open to sophomores.

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. May be repeated for credit with a change in topic. Open to sophomores.

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. May be repeated for credit with a change in topic. Open to sophomores.

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. Open to sophomores.

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. Open to sophomores.

Readings in the literature of the English Middle Ages — lyrics, narratives, dramas, and didactic forms.

220W. Medieval English Literature

Either semester. Three credits. Open to sophomores.

Writers studied include More, Spenser, Shakespeare, Donne, Jonson, and Milton.

221W. Renaissance English Literature

Either semester. Three credits. Open to sophomores.

Includes such writers as Dryden, Pope, Swift, Johnson, Burney, and Austen.

222W. Restoration and 18th-Century English Literature

Either semester. Three credits. Open to sophomores.

Includes such writers as Austen, Wordsworth, Coleridge, Keats, Tennyson, Browning, the Brontes, G. Eliot, and Arnold.

223W. Romantic and Victorian English Literature

Either semester. Three credits. Open to sophomores.

Modern literature from the British Isles, including such writers as Yeats, Eliot, Joyce, Woolf, Lawrence, Lessing, and Shaw.

226W. Modern English Literature

Either semester. Three credits. Open to sophomores.

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, 279.

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

230. Shakespeare I

Either semester. Three credits. Open to sophomores. Not open for credit to students who have passed ENGL 229 at the regional campuses.

Romantic comedies and principal tragedies.

#230W. Shakespeare I

(Formerly offered as English 229 at the regional campuses.) Open to sophomores.

231. Shakespeare II

Second semester. Three credits. Recommended preparation: ENGL 230.

The early plays, problem plays, and late plays.

232. Chaucer

Either semester. Three credits.

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.

Irish literature in English to 1939: fiction, drama, and verse, including such early Irish myth as the *Tain bo Cuailnge* and such writers as Mangan, Somerville & Ross, Yeats, Gregory, Synge, Joyce, and O'Connor.

234. Contemporary Irish Literature

Either semester. Three credits.

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.

Modern British, American, and Continental drama, with the reading and discussion of some 25 representative plays.

242. The English Language

First semester. Three credits.

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.

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. 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. 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. 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.

Writing on topics related, usually, to students' individual interests and needs.

249W. Advanced Expository Writing

Honors Course Sequence

The Honors course sequence, English 250 through English 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 105 and 109 requirements. Not open for credit to students who have passed ENGL 109. 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.

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.

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.

Medieval through Jacobean literature.

254W. Honors V: English Literature

First semester, alternate years. Three credits. Hours by arrangement. Open only with consent of instructor.

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.

Nineteenth century literature.

256W. Honors VII: English Literature

Second semester, alternate years. Three credits. Hours by arrangement. Open only with consent of instructor.

Twentieth century literature.

258. Honors VIII: Honors Thesis

Either semester. Credits and hours by arrangement. 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.

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.

Studies in the history and theories of literary criticism.

267. Studies in Literature

Either semester. Three credits. 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. 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. Open to sophomores.

American literature from the beginnings: Poe, Emerson, Thoreau, Hawthorne, Melville, Whitman, Douglass, Stowe, Dickinson, Twain, and others.

270W. American Literature to 1880

271. American Literature Since 1880

Either semester. Three credits. Open to sophomores.

Modern and contemporary American literature: James, Wharton, Dreiser, Cather, Frost, Hemingway, Fitzgerald, Faulkner, Morrison, and others.

271W. American Literature Since 1880

272. Native American Literature

Either semester. Three credits. Open to sophomores. *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. Open to sophomores. *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.

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.

Extensive readings in the works of four or five contemporary black American writers.

278W. Ethnic Literatures of the United States

Either semester. Three credits.

The literatures of ethnic American authors. Writers may include Natachee Scott Momaday, Maxine Hong Kingston, Zora Neale Hurston, Rolando Hinojosa, Bernard Malamud, Nicholasa Mohr, John Fante, among others.

285. Women in Literature Before 1900

First semester. Three credits.

Analysis of the representation of women in a variety of works from different countries.

286. Women in Twentieth-Century Literature

First semester. Three credits.

Analysis of the representation of women in a variety of works from different countries.

291. Literature and Other Disciplines

Either semester. Three credits. 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. Hours by arrangement. Open only with consent of instructor.

Studies in the British Isles during the intercession, 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. 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. Required preparation: ENGL 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. Prerequisites, required preparation, and recommended preparation vary.

296. Writing Practicum

Either semester. Credits and hours by arrangement. May be repeated for credit with a change in topic.

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. 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.

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. Prerequisites, required preparation, and recommended preparation vary.

299. Independent Study

Either semester. Credits and hours by arrangement. 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.)

† Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

Environmental Engineering (ENVE)

Program Coordinator: Nikolaos P. Nikolaidis
Office: Room 302, F.L. Castleman Building

110. The Environmental Debate I

Second semester. One credit. May be repeated for credit (maximum of 3 credits). Open only with consent of instructor.

Structured review of environmental issues and active debate during class time. Presentation of current environmental issues by environmental professionals and experts.

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. Civil Engineering Systems

(Also offered as CE 251.) First semester. Three credits. Open to sophomores. *Anagnostou, Garrick*

Application of statistical principles to the analysis of problems. Topics covered include normal, poisson, and binomial distributions, chi square, comparison of means and variances, least square and regression analysis.

260. Water Quality Engineering

(Also offered as CE 260.) Second semester. Three credits. Prerequisites: CE 263 and 297. *Abboud, 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 297 or CHEG 223 (which may be taken concurrently). *Abboud, Smets*

Aqueous analytical chemical techniques, absorption, coagulation/flocculation, fluidization, gas stripping, biokinetics, interpretation of analytical results, bench-scale design projects, written and oral reports.

263. Environmental Engineering Fundamentals

(Also offered as CE 263.) Both semesters. Three credits. Prerequisites: CHEM 128 or 130 and MATH 211 (which may be taken concurrently). Open to sophomores. *Hoag, Nikolaidis, 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, Nikolaidis, 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. Prerequisites: CE 297.

Tests and investigation of the flow of oils, water, and other fluids through orifices, nozzles, wires, and pipes; calibration of measuring devices; experiments with turbines and pumps.

267. Engineering Hydrology

(Also offered as CE 267.) First semester. Three credits. Prerequisites: CE 297 or CHEG 223 and CHEG 224. *Anagnostou, Nikolaidis, 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 an introductory course in CHEM (CHEM 122, 127, or 129); an introductory course in Biology is recommended.

Physical, chemical, and biotic interrelationships of freshwater habitats.

270. Environmental Engineering Chemistry

First semester. Three credits. Prerequisite: CHEM 128 or 130, MATH 211 or consent of instructor. Open only with consent of instructor.

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 or consent of instructor. *Nikolaidis*

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 CHEG 283.) Second semester. Three credits. Recommended preparation: CHEG 224 and 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.

285. Introduction to Air Pollution

(Also offered as CHEG 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.

290. Environmental Engineering Design I

First semester. Three credits. To be taken during the senior year.

Basic aspects of environmental engineering design from data acquisition through preliminary design, cost estimating and final specifications. Report writing will be integral parts of the course.

291. Environmental Engineering Design II

Second semester. Three credits. Prerequisite: ENVE 290. To be taken during the senior year.

Implementations of protocols and techniques covered in Course I to a specific environmental scenario. Instructors will supply initial conditions and performance expectations. Reporting writing will be an integral part of the course.

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.

European Studies (ES)

Program Advisor for Center for European Studies:

Ludmilla Burns

Office: Room 306, Wood Hall

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 402, School of Business Administration

For major requirements, see the School of Business Administration section of this *Catalog*.

Courses in the department are open to juniors and seniors only with the exception of FNCE 198.

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 upper division/major requirements in the School of Business Administration.

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, (may be taken concurrently), ECON 111 and 112, ENGL 105 and 109, MATH 106 or 114 or 116, STAT 100 or 110.

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

203. Applications in Financial Management

First and/or second semester. Three credits. Prerequisite: FNCE 201. Completion of OPIM 203C is strongly recommended.

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

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

Must be taken with FNCE 203P to equal one W requirement.

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 or permission of instructor.

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 incentive conflicts and meeting cost-containment objectives. Evaluation of insurance company financial strength and the impact of regulation on company management and behavior are considered in detail.

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 or permission of instructor.

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

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 (may be taken concurrently).

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

233. Real Estate Finance

First or second semester. Three credits. Prerequisite: FNCE 201 (may be taken concurrently).

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.

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.

† Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

296W. Senior Thesis in Finance

Either semester. Three credits. Hours by arrangement. 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.

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.

General Studies (GS)

Bachelor of General Studies and Non-Degree:

Room 114, Merlin Bishop Center

For major requirements, see the Extended and Continuing Education 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.

240. Marketing Concepts and Practices into the 21st Century

Either semester. Three credits. Not applicable to SBA degree requirements.

Discussion of marketing concepts, processes, strat-

egies 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 SBA requirements.

Concepts and principles to enable non-financial managers to intelligently read and analyze financial reports.

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 Dean Hanink

Department Office: Room 437, Beach Hall

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 Urban Studies 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.

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. Not open for credit to students who have passed GEOG 170.

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 Geography 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

(Formerly offered as Geography 211.)

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.

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. Required preparation: GEOG 170 or 205 or 215 or consent of instructor. 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

(Formerly offered as GEOG 212.) (Also offered as Urban Studies 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

(Formerly offered as GEOG 206.) 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. Required preparation: GEOG 104 (Formerly 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 ethnoburb. Diversity among Asian Americans, and comparison with other ethnic groups.

240C. Cartographic Techniques

First semester. Four credits. One 2-hour lecture and two 2-hour laboratory periods. Open to sophomores.

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. 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. 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 or consent of the instructor. 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

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

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

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 consent of instructor. 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. 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. 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 consent of instructor.

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 consent of instructor.

Problems involving the application of physical processes in our changing environment.

286W. Environmental Evaluation and Assessment

First semester. Three credits. 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.

288W. Regional Development and Policy

First semester. Three credits. Prerequisite: GEOG 200 or consent of instructor.

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. To be elected concurrently with GEOG 295. Prerequisite: Consent of instructor. *Hanink*

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. To be elected concurrently with GEOG 294. Prerequisite: Consent of instructor. May not be repeated for credit.

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. Not open for credit to students who have passed GEOG 297.

296W. Senior Thesis

(Formerly offered as Geography 297.)

297. Variable Topics

Either semester. Three credits. With a change in topic, may be repeated for credit. Prerequisites, required preparation, 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.

212. Field Geology

Second semester. Six credits. Four weeks intensive study following final examination period. Prerequisite: GEOL 102. *Gray, Philpotts, Steinen*

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)

First semester. Four credits. Three class periods and one 3-hour laboratory. Prerequisite: GEOL 253. Recommended preparation: MATH 114 or 116. Open only for 3 credits to those students who have passed GEOL 210. *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. Three credits. Two class periods and one 3-hour laboratory. Prerequisite: GEOL 253. Recommended preparation: MATH 114 or 116. *Joesten*

Mineralogical, chemical and textural features of metamorphic rocks in 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

First semester. Three credits. Two class periods and one 3-hour laboratory period. Prerequisite: GEOL 252. Recommended preparation: first year physics, MATH 227. *Crespi*

Mechanics of rock deformation. Material behavior of rocks and their geometry during orogenesis, with applications of finite strain analysis, and advanced geometric techniques.

219. Invertebrate Paleontology

Second semester. 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. Required preparation: GEOL 253, and PHYS 123Q or 132Q or 142Q or 152Q. *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. *Robbins*

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 consent of instructor. *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. Required preparation: 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; occasional field trips. Prerequisite: GEOL 251. *Steinen*

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.

245. Introduction to Geochemistry

Second semester. Three credits. Prerequisite: GEOL 253, CHEM 127 and 128 or equivalent. Recommended preparation: MATH 114 or 116, or equivalent. *Gray*

† Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

Origin and distribution of the elements and their isotopes. Chemical reactions among naturally occurring solids, liquids, and gases. Geochemical transport. Global cycles of selected elements. Applications of geochemistry to environmental problems.

250. Earth History

First 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. Includes an integrated survey of earth history.

251. Earth Surface Processes

Second semester. 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.

252. Earth Structure

Second 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.

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.

261. Plate Tectonics

First semester. Three credits. Prerequisite: GEOL 250 and 252. *Byrne*

Plate tectonics: geomagnetic reversals; sea-floor spreading; description of plates, their motions, generation, destruction, and collisions; possible driving forces; evidence for ancient plates.

†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. Required preparation: 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.

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. Required preparation: 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, required preparation, 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. 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

264Q. Physics of the Earth's Interior

First semester. Three credits. Prerequisite: PHYS 132 or 142, CHEM 128, MATH 114 or 116. *Cormier*

The composition, structure, and dynamics of the earth's core, mantle, and crust; seismic waves, earthquakes, the earth's magnetic field, geochronology; radioactive heating, and the earth's internal heat.

266Q. The Earth, Moon, and Planets

Second semester. Three credits. Prerequisite: PHYS 132 or 142, CHEM 128, and MATH 210 (or 211 or 221), or consent of instructor. *Cormier*

The earth's gravity field and figure of the earth; wobbles of the earth's axis, the earth-moon system and tidal friction; orbital paths of planets, moons, and artificial satellites; compositions of planets and moons; development of the solar system.

267Z. Geophysical Methods I (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 and MATH 114 or 116.

Principles and applications of seismic methods of exploring the interior of the earth; principles of heat flow in the earth.

268Z. Geophysical Methods II (Q, W, C)

Second semester. Three credits. Two class periods and one 3-hour laboratory period. Prerequisite: PHYS 123 or 132 or 142 or 152 and MATH 114 or 116.

Principles and applications of electric, gravimetric and magnetic methods of exploring the interior of the earth.

Health Systems Management (HSMG)

Director: Jeffrey A. Kramer

Center Office: Room 315, School of Business Administration

For major requirements, see the School of Business Administration section of this *Catalog*.

Health Systems courses are open to juniors and seniors only.

280. Introduction to Health Systems

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 Systems Analysis

Second semester. Three credits. Prerequisite: OPIM 210 and HSMG 280, or consent of instructor.

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 Systems Planning and Design

First semester. Three credits. Prerequisite: HSMG 281 and 290, or consent of instructor.

This course is designed to develop skills and understanding of the strategic planning process and the design of health care organizations. This integrative course will cover topics in the areas of environmental analysis, strategic responses to change in the health care environment, and plan evaluation. In addition, this course will focus on the application of strategic planning concepts and principles to the design and development of health care information systems and technologies.

283. Advanced Topics in Health Systems Analysis

Second semester. Three credits. Preparation: HSMG 280 and HSMG 281.

Discussion and empirical analysis of current issues, trends, and techniques related to the field of health systems management. Emphases on international comparisons of health care markets and institutions, efficiency of the U.S. health care system, and evaluation of public and private health care initiatives.

† Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

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 Systems

Either or both semesters. Six credits. Hours by arrangement. Prerequisite: OPIM 203 and 204, senior standing, and consent of instructor. It is recommended that students complete OPIM 210 prior to the internship.

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.

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. *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.

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.

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. *Cox, 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. *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. *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. 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. *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.

208W. Darwinism in the Modern World

First semester. Three credits. *Roe*

Interaction of science, ideology, and world view in the development of evolutionary biology from Darwin to the present, including interrelations of genetics, eugenics, ecology, and sociobiology.

209. History of the Family

(Also offered as HDFR 279.) Either semester. Three credits. Not open for credit to students who have passed HDFR 279. *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 before fall 1998. *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 History 215.

211. The Historian's Craft

Either semester. Three credits. Open to sophomores. Learning critical reading, thinking and writing skills by interpreting a variety of primary sources.

212W. Near Eastern Pre-History

(Also offered as Anthropology 257W.) Second semester. Three credits. Not open for credit to students who have passed ANTH 257.

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 CLAS 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 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.

214W. Ancient Greece**215. History of Women and Gender in the United States, 1790-Present**

(Also offered as Women's Studies 215.) Either semester. Three credits. Not open for credit to students who 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 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.

216W. Ancient Rome**217. World of Late Antiquity**

(Also offered as CLAS 243.) Either semester. Three credits.

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 Hebrew 218 and Classics 256.) 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. *Omar-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. *Omar-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. *Omar-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.

Selected topics analyzing the interactions of warfare, military theories and practice with social, economic and technological developments since 1815.

226. Contemporary World Issues
Either semester. Three credits. Open to sophomores.

The historical background of, and approach to, a number of the most critical problems confronting the world since World War II.

227. Social History of Connecticut
First semester, even-numbered years. Three credits. Either 239 or 227, but not both, may be counted for credit toward the History major.

Everyday life from the Colonial Period to the recent past. Topography, Indians, settlement patterns, agriculture, industry, immigration and ethnic patterns, urbanization and suburbanization. Especially recommended to students planning to teach elementary grades.

228. Europe in the Nineteenth Century
First semester. Three credits. Open to sophomores. Recommended preparation: HIST 101. *Coons*

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

229. Europe in the Twentieth Century
Either semester. Three credits. Open to sophomores. 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

231. American History to 1877: A Survey
Either semester. Three credits. Open to sophomores.

Political, social, and economic development of the American people through post-Civil War Reconstruction.

231W. American History to 1877: A Survey

232. American History Since 1877: A Survey
Either semester. Three credits. Open to sophomores.

Political, social, and economic development of the American people from Reconstruction to the present.

232W. American History Since 1877: A Survey

233. Social and Intellectual History of the United States through the Civil War
First semester. Three credits. Prerequisite: HIST 231 or consent of instructor. *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 worldwide 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. *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. The Indian in American History
Either semester. Three credits. Recommended preparation: HIST 231. *Shoemaker*

Examination of the cultural and political/military interaction of Indians and Europeans in America from the early colonial period.

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

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. 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 Urban Studies 241.) Either semester. Three credits. Not open for credit to students who have passed URBN 241. *Stave*

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 Urban Studies 241W.)

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.

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.

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

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."

248W. Main Currents in American Law

Second semester. Three credits. Consent of instructor required. *Dayton*

Seminar, limited to fifteen, emphasizing class participation. Themes from 18th to 20th century include: the Americanization of English common law; developments in legal education and law practice; legal ideology from sociological jurisprudence to legal realism to critical legal studies.

249. History of American Foreign Relations

Either semester. Three credits. Recommended preparation: HIST 231 or 232. *Costigliola*

The United States in the world since the eighteenth century, with emphasis on twentieth-century events, doctrines, and leaders, expansion and decline of the American empire, world wars, Cold War, and Third World intervention.

250. Byzantium

Second 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.

254W. The Habsburg Monarchy and Its Peoples, 1740-1918

Second semester. Three credits. Recommended preparation: HIST 101. *Coons*

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

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.

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

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

261. English History to 1603

First semester. Three credits. Open to sophomores. *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. *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.

266. Gender and Sexuality in Pre-Modern Europe (300-1800)

Either semester. Three credits.

The medieval, renaissance and early modern formulation of gender roles will be examined in the context of changing sexual values, practice, and methods of disciplining sexuality.

267. Italy 1250-1600

Either semester. Three credits.

Italy from the triumph of the city-state and the *popolo grosso* to the end of the Renaissance. The complex interrelationship between society and culture will be the focus of study. Not open to those who have taken HIST 268.

269. The Modernization of Italy from 1815 to Present

Second semester. Three credits. Open to sophomores. *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, required preparation, 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

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.

279. France Since 1715

Second semester. Three credits. *Cox*

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. 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.

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. *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. 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.

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

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**288. East Asia Since the Mid-Nineteenth Century**

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**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. Open to sophomores.

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

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. Open to sophomores. Recommended preparation: History 231 or 232 (if American perspective) or History 228 or 229 (if European perspective). *Phillips*

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. Required preparation: HIST 211. 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, required preparation, 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 Relations (HDFR)

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

Either semester. Three credits.

Development of patterns of interaction in premarital and marital relationships.

190. Individual and Family Development

Either semester. Three credits.

Human development throughout the life span, with emphasis upon the family as a primary context.

201. Diversity Issues in Human Development and Family Relations

Either semester. Three credits. Open to sophomores. Required preparation: HDFR 190.

Critical issues in diversity and multiculturalism in human development, family relations, and professional practice.

202. Human Development: Infancy Through Adolescence

Either semester. Three credits. Open to sophomores.

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

Either semester. Three credits. Open to sophomores.

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.

218. Observational Child Study

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

Either semester. Three credits. Open only with consent of instructor. Must be taken concurrently with HDFR 221 or HDFR 288 with a placement in a child care setting.

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**221. Programs for Young Children: Introduction Laboratory**

Either semester. One credit. One 2-hour laboratory by arrangement. Open only to students concurrently enrolled in HDFR 220 or HDFR 220W, and open only with consent of instructor.

Guided observation and participation in a program for young children.

222. Activities for Young Children: Play, Art, Music

First semester. Three credits. Two class periods and one 2-hour laboratory period.

Play, art and music activities for infants and young children; planning activities which will stimulate the creative development of young children. Students will be actively involved with young children.

223. Activities for Young Children: Language Arts, Mathematics, Science

Second semester. Three credits. Two class periods and one 2-hour laboratory period.

Activities designed to promote language and cognitive development of infants and young children: children's books, storytelling techniques, math and science activities and social studies activities.

224. Child Development Laboratory: Practicum I

Either semester. Three credits. Open only with the consent of instructor. Concurrent enrollment in HDFR 220 highly recommended. Recommended preparation in HDFR 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

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

Either semester. Nine credits. Two class periods and laboratory by arrangement. Prerequisites: HDFR 202, HDFR 220, HDFR 222, HDFR 223, HDFR 224, GPA of 2.5 in major, and consent of instructor. Not open to students on academic probation.

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

Either semester. Six credits. Two class periods and laboratory by arrangement. Prerequisite: HDFR 227, GPA of 2.5 in major, and consent of instructor.

Continuation of HDFR 227. Experience in early childhood program implementation, administration, staff supervising, policy making, and curriculum planning.

230. Current Topics in Early Childhood Education

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

Either semester. Three credits. Prerequisite: HDFR 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

Either semester. Three credits. Prerequisite: HDFR 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

240. The Family-School Partnership

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 Anthropology 245.) Offered every third semester. Three credits. Not open for credit to students who have passed ANTH 245.

Theory and research on major dimensions of parenting in U.S.A. and cross-culturally: parental warmth, control and punishment.

248. Aging in American Society

(Also offered as Sociology 248.) Either semester. Three credits. Not open for credit to students who have passed SOCI 248.

Social gerontology: the role and status of older people in a changing society.

248W. Aging in American Society

(Also offered as Sociology 248W.)

250. Gender and Aging

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

252. Death, Dying, and Bereavement

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

259. Men and Masculinity: A Social Psychological Perspective

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

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

First semester. Three credits. Not open for credit to students who have passed DRM 264.

Law in family life.

266. Introduction to Counseling

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.

269. Family Violence

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

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

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

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

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

Either semester. Three credits. Not open for credit to students who have passed DRM 274.

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

Either semester. Three credits. Prerequisite: HDFR 273.

Theory, research and intervention in families under stress.

276. Planning and Managing Human Service Programs

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

277. Issues in Human Sexuality

Either semester. Three credits.

Contemporary issues concerning human sexuality; impact upon individuals and family units.

278. Family in Society

Either semester. Three credits. Not open for credit to students who have passed DRM 280.

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

279. History of the Family

(Also offered as History 209.) 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

Either semester. Three credits. Not open for credit to students who have passed DRM 236.

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

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.

284. Adolescence: Youth and Society

Either semester. Three credits. Prerequisite: HDFR 202 or HDFR 203 or PSYC 236.

Contemporary adolescence, the multiple forces and behavioral characteristics of this period of development.

287. Parenthood

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.

288. Supervised Field Experience

Either semester. Three or six credits. May be repeated up to a maximum of six credits. Prerequisites: HDFR 201, Major GPA 2.5; Upper Division GPA 2.5; 15 credits of 200 level HDFR courses completed; and consent of the field worker coordinator. 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

Either semester. Three credits. Prerequisite: HDFR 288; Major GPA 2.5; Upper Division GPA 2.5; and consent of fieldwork instructor. Cannot be repeated for credit. Cannot be used towards meeting major requirements in HDFR nor towards meeting GPA requirements in HDFR. 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 Relations

Either semester. Three credits. Prerequisite: HDFR 190 and PSYC 132 and 133. Open only to Human Development and Family Relations majors.

Research methods used in human development and family relations.

290W. Research Methods in Human Development and Family Relations

292. Research Practicum in Human Development and Family Relations

Either semester. Credits and hours by arrangement. Prerequisites: Division GPA of 2.5 and consent of the instructor. May be taken more than one semester.

Supervised experience conducting research in human development and family relations.

294. Foreign Study

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.

298. Selected Topics in Human Development and Family Relations

Either semester. Three credits. Open only with consent of instructor. With a change in content this course may be repeated for credit.

299. Independent Study for Undergraduates

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)

100. The Social Consequences of Engineering in the Modern World

Either semester. Three credits. Not open to students in the School of Engineering.

This course offers non-engineering students desiring an understanding of the role of engineering in the world today opportunities to get acquainted with various engineering disciplines and significant issues. These include mechanical and solar energy, nuclear power, computers, genetics and urbanization taught by a team of interdisciplinary specialists relating engineering to problems of the real world in an understandable, non-technical manner.

130. Africa and Latin America: The Challenge of Poverty, Violence, and Development

Either semester. Three credits.

A study of poverty, violence, and development in

two major Third World regions, and the causes and consequence of these interrelated factors. Strategies for change and their effects on jobs, income distribution, modernization, indigenous and external relations, food, agriculture, industrialization, urbanization, inflation, political and military structures, and human rights will be examined.

132. World Studies and Human Resource Development

Either semester. Three credits.

A comparative exploration of three major world cultures (Chinese, Latin American, and Middle Eastern) which relates to the themes of authority, legitimacy, and loyalty in each. Third World perspectives and development issues will be emphasized.

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. Interdisciplinary 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.

196. Interdisciplinary 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. Interdisciplinary 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.

200. An Interdisciplinary Approach to Health Care

First semester. Three credits. Open only with consent of instructors. This course is also listed under Nursing and Pharmacy. *Gillespie, Infante, and Staff*

An interdisciplinary approach to health care which focuses on the role of the health team in the health care delivery system. Emphasis is placed on the preparation and roles of the health team members, both independent and interdependent, the system of health care delivery in the nation, modes of communication and collaboration, and the role of the consumer of health care.

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. Sponsored by the Urban Semester Program. *Director of the Urban Semester Program*

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. Sponsored by the Urban Semester Program. *Director of the Urban Semester Program*

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. Sponsored by the Urban Semester Program. *Director of the Urban Semester Program*

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

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.

Supervised participation in settings where purposes and functions are related to the development and welfare of individuals and families.

289. Fieldwork in Community Settings

Either semester. Three credits. Prerequisite: HDFR 288; Major GPA 2.5; Upper Division GPA 2.5; and consent of fieldwork instructor. Cannot be repeated for credit. Cannot be used towards meeting major requirements in HDFR nor towards meeting GPA requirements in HDFR. 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 Relations

Either semester. Three credits. Prerequisite: HDFR 190 and PSYC 132 and 133. Open only to Human Development and Family Relations majors.

Research methods used in human development and family relations.

290W. Research Methods in Human Development and Family Relations

292. Research Practicum in Human Development and Family Relations

Either semester. Credits and hours by arrangement. Prerequisites: Division GPA of 2.5 and consent of the instructor. May be taken more than one semester.

Supervised experience conducting research in human development and family relations.

294. Foreign Study

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.

298. Selected Topics in Human Development and Family Relations

Either semester. Three credits. Open only with consent of instructor. With a change in content this course may be repeated for credit.

299. Independent Study for Undergraduates

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)

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Either semester. Three credits. Not open to students in the School of Engineering.

This course offers non-engineering students desiring an understanding of the role of engineering in the world today opportunities to get acquainted with various engineering disciplines and significant issues. These include mechanical and solar energy, nuclear power, computers, genetics and urbanization taught by a team of interdisciplinary specialists relating engineering to problems of the real world in an understandable, non-technical manner.

130. Africa and Latin America: The Challenge of Poverty, Violence, and Development

Either semester. Three credits.

A study of poverty, violence, and development in two major Third World regions, and the causes and consequence of these interrelated factors. Strategies for change and their effects on jobs, income distribution, modernization, indigenous and external relations, food, agriculture, industrialization, urbanization, inflation, political and military structures, and human rights will be examined.

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Either semester. One credit. One class period. Open to freshman and sophomore students only.

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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. Interdisciplinary 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.

196. Interdisciplinary 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. Interdisciplinary 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.

An overview of some aspects of university education. Designed to help students set learning goals to be achieved during the baccalaureate experience.

200. An Interdisciplinary Approach to Health Care

First semester. Three credits. Open only with consent of instructors. This course is also listed under Nursing and Pharmacy. *Gillespie, Infante, and Staff*

An interdisciplinary approach to health care which focuses on the role of the health team in the health care delivery system. Emphasis is placed on the preparation and roles of the health team members, both independent and interdependent, the system of health care delivery in the nation, modes of communication and collaboration, and the role of the consumer of health care.

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. Sponsored by the Urban Semester Program. *Director of the Urban Semester Program*

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. Sponsored by the Urban Semester Program. *Director of the Urban Semester Program*

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. Sponsored by the Urban Semester Program. *Director of the Urban Semester Program*

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

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.

230. Special Topics in Slavic and East European Studies

Either semester. Three credits. Open only with consent of instructor to junior and senior undergraduates and graduate students. With a change in content this course may be repeated for credit. Sponsored by the Center for Slavic and East European Studies.

Discussion and analysis of selected problems from an interdisciplinary perspective.

240. 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. *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.

#240C. Social Science Data Utilization**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.

257. The Poor Countries of the World

Either semester. Three credits. This course is also listed under Economics and Sociology. This course may not be counted toward the major in Economics. Sponsored by the Economics and Sociology Departments. *Gugler*

Multidisciplinary approach to key issues in development in the "Third World" today. Special emphasis on either a topic, e.g., urbanization in developing countries, or a region, e.g., Sub-Saharan Africa.

Offered only at the Avery Point campus.

276. Introduction to American Studies

Either semester. Three credits. Open to sophomores.

Tilton

A multi-disciplinary survey of American societies and cultures.

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, required preparation, 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.

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

(Formerly offered as Journalism 211.) Either semester. Three credits. One 75-minute lecture and one 2-hour laboratory plus field work. Open to sophomores. *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

(Formerly offered as Journalism 221.) Either semester. Three credits. One 75-minute lecture and one 2-hour laboratory plus field work. Prerequisite: JOUR 200 or 211. Open to sophomores. *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 or 211. Open to sophomores.

Emphasis on finding, developing and writing feature stories. Outside stories will be assigned weekly.

213W. Magazine Journalism

Either semester. Three credits. Prerequisite: JOUR 201. 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

(Formerly offered as Journalism 214.) Either semester. Three credits. Prerequisite: JOUR 211 or 201.

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

Three credits. Either semester. Prerequisite: JOUR 200 or 211. Two 75-minute lab-lecture sessions plus a field trip.

Application of newswriting techniques to the broadcast media.

245. Specialized Journalism

Either semester. Three credits. Prerequisite: JOUR 200 or 211.

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 211 or 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, required preparation, 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, required preparation, 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 minor and individualized major requirements, see *Center for Judaic Studies and Contemporary Jewish Life* in the Special Facilities and Programs section of this *Catalog*.

101. The Land of Israel from Biblical Times to the Present

(Also offered as Hebrew 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 Hebrew 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 Hebrew 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 Hebrew 201.) Either semester. Three credits. Prerequisite: INTD 294 or HIST 213 or HEB 103, which may be taken concurrently, or consent of instructor. 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 Hebrew 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 Hebrew 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 Classics 256, Hebrew 218, and History 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 Sociology 242.) Three credits. Either semester. *Dashefsky*

Historical, demographic, organizational, and sociopsychological perspectives.

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**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, required preparation, 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 230, Monteith 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.

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.

202. Principles of Linguistics

Either semester. Three credits. Open to sophomores.

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. *Calabrese*

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. Required preparation: LING 101 or 202. *Beck, Boskovic, Lasnik*

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. Open to sophomores.

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 required preparation: 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, or consent of instructor. *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. 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, required preparation, 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, required preparation, 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 212, School of Business Administration

For major requirements, see the School of Business Administration section of this *Catalog*.

Courses in this department are open to juniors and seniors only with the exception of MGMT 198.

198. Contemporary Issues in the World of Management

Semester by arrangement. One credit. May be repeated in different sections, in combination with MGMT 198, up to a maximum of three credits. May not be used to satisfy Upper Division/major requirements of the School of Business Administration.

201. Managerial and Interpersonal Behavior

Either semester. Three credits. Prerequisites: ACCT 131, ECON 111 and 112, ENGL 105 and 109, MATH 106 or 114 or 116, STAT 100 or 110.

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.

203. Development of American Business

Semester by arrangement. Three credits.

Historical development of business and business leadership, concentrating on changes in formulating and implementing top management policies. The total environment is considered as it affects business behavior. Case studies based on a variety of historical situations are used.

225. International Business

Semester by arrangement. Three credits. Prerequisite: FNCE 201, OPIM 204, MGMT 201, MKTG 201, or consent of instructor.

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. 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

271. Human Resources Management

Semester by arrangement. Three credits. Prerequisite: MGMT 201 or consent of instructor.

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 Administration.

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.

276. Compensation Analysis and Administration

Semester by arrangement. Three credits. Prerequisite: MGMT 271.

Provides a systematic study of compensation theory and practice including wage theory, job analysis, job design, job evaluation, wage survey, pricing of the job structure, wage incentives, profit sharing and fringe benefits.

276W. Compensation Analysis and Administration

278. Purchasing and Materials Management

Semester by arrangement. Three credits. Prerequisite: MGMT 201, MKTG 201, ACCT 131, FNCE 201, OPIM 203C and BLAW 271 or 275.

Purchasing and Materials (Strategic Supply) Management is concerned with the management of materials and control of material costs in business and institutional enterprises. It emphasizes purchasing as the primary materials activity. At the same time, it integrates the purchasing activity in the context of a total business operation, including marketing, engineering, production control, inventory management finance, information management, strategic management and operations management.

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

†289. Field Study Internship

Either or both semesters. One to six credits. Hours by arrangement. Prerequisite: Completion of Lower Division School of Business Administration Requirements and consent of instructor and Department Head.

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: ACCT 200, FNCE 201, OPIM 203 and 204, MGMT 201, MKTG 201, and either BLAW 271 or 275, or consent of instructor. Open only to School of Business Administration students with senior class standing.

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 standing in the School of Business Administration plus a minimum of one course from each of the following areas: ACCT, BLAW, FNCE, MGMT, MKTG and

† Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

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.

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. 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 Administration:

Professor James R. Marsden

School of Engineering: Associate Professor Robert G. Jeffers

151. Introduction to Management and Engineering for Manufacturing Program

Second semester. Three credits. Prerequisite: ENGR 150C or consent of instructor.

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.

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.

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 or consent of instructor.

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 or consent of instructor.

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 or consent of instructor.

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, MEM 211, and OPIM 203C, 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.

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)

Head of Department: Professor R.B. Whitlatch
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.

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.

196. Oceanography Laboratory
Fall semester (Avery Point). One credit. Concurrent

or past enrollment in MARN 170 (or equivalent) required. May be repeated for credit.

This course is complementary to but independent from Marine Sciences 170. This course will emphasize experiential learning of fundamental oceanographic concepts using hands-on exercises. Laboratory sessions will include a variety of observations, measurements and experiments that teach principles of oceanography.

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. *J. Kremer and Staff*
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
Either semester (Avery Point). Four credits. Three hours lecture and three hours laboratory. Prerequisites: MARN 170 and any two (2) of the following: BIOL 107, 108; CHEM 127Q, 128Q; PHYS 121Q, 122Q, 131Q, 132Q. *J. Kremer and Staff*

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. Prerequisites: 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. Three 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). Open to sophomores. *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. Required preparation: 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. Required 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 Biology: 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: Biology: MCB 229, or the consent of instructor. *Buck, 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. Prerequisite: BIOL 107, 108; Required preparation: MARN 170 or consent of instructor. *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. Prerequisite: BIOL 107, 108; Required preparation: MARN 170 or consent of instructor.

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. Required preparation: MARN 210, 211, and 212, or consent of instructor.

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. Required preparation: 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

† Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

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 consent of instructor. Open only with permission of department head. *Dam, Visscher, Whitlatch*

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.

270. Descriptive Physical Oceanography

First semester. Three credits. Prerequisite: PHYS 122, 142 or 152; MATH 114 or 116. *Bohlen*

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 consent of instructor. *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. *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 consent of instructor. *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 Biology: EEB 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. Variable Topics

Either semester. Three credits. With a change in topic, may be repeated for credit. Prerequisites, required preparation, 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. Required preparation: Nine credits of MARN courses at the upper division level. Consent of Instructor.

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, required preparation, 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 417, School of Business Administration

For major requirements, see the School of Business Administration section of this *Catalog*.

201. Introduction to Marketing Management

Either semester. Three credits. Prerequisite: ACCT 131, ECON 111 and 112, ENGL 105 and 109, MATH 106, or 114 or 116, STAT 100 or 110.

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 and either PSYC 133 or SOCI 107, or consent of instructor. Not open for credit to students who have passed, or are currently enrolled in, Marketing 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

Open to Marketing majors only.

209. Industrial Buyer Behavior

Either semester. Three credits. Prerequisite: MKTG 201 and either PSYC 133 or SOCI 107, or consent of instructor. Not open for credit to students who have passed, or are currently enrolled in, Marketing 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. MKTG 201 or its equivalent is strongly recommended as preparation.

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

Open to Marketing majors only.

227. Product and Price Policies

First or second semester. Three credits. Prerequisite: MATH 106 or 111, or 114, or 116; STAT 100V or 110V; MKTG 201.

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.

A study of the management of retail operations, including buying, pricing, inventory control and selling.

252. Professional Selling and Sales Management

Either semester. Three credits. Prerequisite: MKTG 201.

This course focuses on the selling process as well as the activities and problems of sales force management. In the selling component, emphasis is placed on the tactical and strategic aspects of the professional selling process. It includes such topics as: account strategy, prospecting, objection handling, buyer behavior, and negotiation skills. In the sales management component, 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, workgroups, case studies, and outside business interactions.

265. Marketing on the Internet

First and/or second semester. Three credits. Prerequisite: MKTG 201.

Topics include comparisons of business models in physical space and cyberspace and integration of marketing efforts among the world-wide-web, and other menas 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

† Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

research methods, and analyzing and interpreting market research data. Students gain hands on, computer based experience in analyzing market data.

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

†289. Professional Practice in Marketing

Either or both semesters. One to three credits. Hours by arrangement. Prerequisite: completion of Lower Division School of Business Administration requirements and consent of instructor and Department Head.

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. 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.

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*.

Students must pass the Q-course Readiness Test or Mathematics 101 before taking any "Q" courses.

101. Basic Algebra with Applications

Either semester. Three credits. This course does not meet distribution requirements or count toward the minimum credit requirement for graduation. 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. 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, 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. Not open for credit to students who have passed any MATH course other than MATH 101, 102, 105, 107, 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.

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.) 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.

109Q. Algebra and Trigonometry

Either semester. Three credits. Not open for credit to students who have passed MATH 107, 112, 115, or 120.

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. Not open for credit to students who have passed MATH 115 or 120. Students who have not passed the Calculus Readiness Test take this course rather than MATH 115 or MATH 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. Not open for credit to students who have passed MATH 115 or 120. May be used in place of MATH 107, 115 or 120 to fulfill any requirement satisfied by MATH 107, 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. 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, or the former MATH 107. Not open to students who have passed MATH 112 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 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). 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. 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, or the former MATH 107. Not open for credit to students who have passed 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) or consent of instructor. 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.

† Students taking this course will be assigned a final grade

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. Not open for credit to students who have passed MATH 220 or 221. Open to sophomores.

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. Not open for credit to students who have passed MATH 221. Open to sophomores.

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 consent of instructor. Open to sophomores. Not open for credit to students who have passed MATH 214 or CS 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: CS 111 or 130 or consent of the instructor. Open to sophomores. Not open for credit to students who have passed MATH 213 or CS 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.) Required preparation: 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. 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. 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.

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. Not open for credit to students who have passed MATH 215. Open to sophomores.

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. Required preparation: 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 CS 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 CS 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. 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 Mathematics 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: CS 111 or 130, MATH 227 or 215, MATH 210, and consent of instructor. Not open for credit to students who have passed CS 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 Mathematics 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 111, 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 Statistics 286Q and Statistics 356.) Either semester. Three credits. Required preparation: 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, queuing theory, decision analysis. Recommended for mathematics-actuarial science majors.

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 lower division requisite courses in the major.

292W. Senior Thesis in Mathematics

Either semester. Three credits. 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, required preparation, and recommended preparation vary.

296. Problem Seminar

Either semester. One credit. One class period. Prerequisite: MATH 114, 116, or 121. Open to sophomores. 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, required preparation, 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. 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 MTGY 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.

† Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

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 or consent of instructor. 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.

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.

Introduction to the analysis of cycles. Investigation of properties of real gases, mixtures, and psychrometry. Fundamentals of combustion thermodynamics. Cycle design with considerations of specific applications, alternative cycles, and equipment operation and maintenance are emphasized.

238. Thermal Science

Second semester. Three credits. Prerequisite: MATH 210 and 211, which may be taken concurrently. This course and ME 233, or CHEG 211 may not both be taken for credit.

The basic laws of thermodynamics and the thermodynamic properties of perfect and real gases, vapors, solids and liquids. Analysis of fundamental processes and cycles together with an introduction to heat transfer.

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.

A study of the fundamental laws of conduction, convection and radiation of thermal energy and of mass transfer. Application of the general laws of heat transfer, and heat exchange to heat exchangers and insulation. 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.

247. Flight Mechanics

Semester by arrangement. Three credits. Prerequisite: ME 220 or EE 232 or consent of instructor.

Static and dynamic behavior of flight vehicles with primary emphasis on conventional aircraft. Application of small-disturbance methods in classical dynamic stability. Illustrative examples for aircraft motion calculations require familiarity with computer programming.

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.

The laws of conservation of mass, momentum, and energy in fluid systems. Potential flow, boundary layers, introduction of compressible flow.

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.

256. Introduction to Nuclear Power Engineering

Semester by arrangement. Three credits. Prerequisite: MATH 210 and 211 and ME 234, or consent of instructor.

Atomic and nuclear physics for reactor technology. Study of neutrons and chain reactions. Elements of reactor technology. Nuclear power and economics.

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: EE 220.

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: ME 231 or 233, which may be taken concurrently.

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.

Analyses of basic engineering problems with subsequent verification of the analyses.

265. Experimental Mechanical Engineering II
Second semester. Four credits. One 4-hour laboratory period. Prerequisite: ME 263 or 264.

Analyses of advanced engineering problems with subsequent verification of the analyses. Qualified students are encouraged to undertake term projects of their own choosing. A written report and oral presentation of the design project are required. Shop safety qualification is required.

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.

271P. Experimental Mechanical Engineering
First semester. Two credits. Prerequisite: ME 242, which may be taken concurrently, and ME 260W.

This course treats primarily the modeling of physical systems and experimental verification. Nonlinearities, simplifying assumptions are covered. Written reports are required.

272P. Senior Design Project I
First semester. Three credits. Prerequisite: ME 271P, which may be taken concurrently.

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. Prerequisite: ME 272P. 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.

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 and PHYS 122, 132, or 152.

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.

Illustrative experiments on microstructure, phase equilibria, heat treatment and mechanical properties.

203. Materials Science & Engineering II
Semester by arrangement. Three credits. Prerequisite: MMAT 201.

Structures, properties and processing of ceramics, polymers, and composites. Further development of the properties of these materials and of metals, including electrical, thermal, magnetic and optical behaviors. Case studies in materials selection.

204. Chemical Metallurgy
Semester by arrangement. Three credits. Prerequisite: CHEM 128, PHYS 151. *Devereux*

Principles of chemical thermodynamics, reaction kinetics, and electrochemistry. Applications to interfacial phenomena, extraction and refining, and corrosion and electro-deposition.

205. Introduction to Mechanical Metallurgy
Semester and hours by arrangement. Three credits. Prerequisite: MMAT 201 or 203.

Elements of plastic deformation of metals and the role of crystal structure. Strengthening mechanisms. Fracture; including fatigue, stress corrosion and creep rupture. Test methods. Forming of metals.

206. Defects in Metals and Semiconductors
Semester by arrangement. Three credits. Prerequisite: MMAT 201 or 203. *Galligan*

Equilibrium and non-equilibrium defects in crystals, their influence on various metallurgical and semiconducting properties of materials. Interrelationship of equilibrium defects to non-equilibrium defects and the influence on various properties of materials.

207. Failure Analysis
Second semester. Three credits. Prerequisite: MMAT 201.

Methods for determining the nature and cause of materials failure in structures and other mechanical devices. Analysis of case histories.

211. Structure and Properties of Alloys
Semester by arrangement. Three credits. Prerequisite: MMAT 201 or 203. *Clapp*

Microstructures of alloys and relationships between microstructure and properties.

217. Extractive Metallurgy
Semester by arrangement. Three credits. Prerequisite: CHEM 128 or 130. *Devereux*

Pertinent engineering principles. General introduction to important extractive processes. Overall concepts of separation.

219. The Metallurgy of Welding
Either semester. Three credits. Prerequisite: MMAT 201 or 203. *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.

222. Materials Processing – Metals
First semester. Three credits. Prerequisite: MMAT 201 or 203.

Achievement of desired dimensional, physical and chemical properties with manufacturing economy. Solidification, powder methods, joining, deformation, and surface treatments. Field trips.

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 on 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. Prerequisites: MMAT 205 or MMAT 266.

Principals 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 203, or consent of the instructor.

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 for credit to students who have passed MTGY 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 that listed in *Directory of Classes* will be arranged.

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.

238. Alloy Casting Processes
Second semester by arrangement. Three credits. Prerequisites: MMAT 203 or MMAT 265 and MMAT 255 or equivalent.

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. Two credits. Co-requisites: CHEM 128 and MATH 116. Not open for credit to students who have passed MMAT 201. Open to sophomores.

Principles underlying the selection of materials and the characterization of micro- and atomic structure will be introduced, with emphasis on atomic and molecular structure, crystallography, solid solutions, binary phase diagrams, mass transport, cross linking, entanglement, and the relation of microstructure to properties.

244. Introduction to Structure, Properties, and Processing of Materials II

Second semester. Three credits. Prerequisites: MMAT 243 or MMAT 201. Open to sophomores.

Principles underlying the selection of materials and the control of microstructure through processing will be introduced, with emphasis on injection molding, extrusion, casting, particulate processing, electrochemistry, corrosion, refining, vapor processing, processing-property relations.

255. Transport Phenomena in Materials Processing

First semester. Four credits. Three hours lecture and two hours laboratory. Co-requisites: MMAT 265 and MATH 210Q.

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. ME 233 or CHEG 263 and MMAT 265. Thermodynamic principles will be applied to the behavior and processing of materials. Topics covered will include solution thermodynamics: activity and activity coefficients; phase equilibrium; electrochemistry; slag metal and gas metal reactions.

265. Structure-Property Relations I: Phase Transformation Kinetics and Applications

First semester. Three credits. Prerequisite: PHYS 152Q. Corequisite: MMAT 243 or MMAT 210.

Principles and applications of phase transformations to control microstructure and materials properties. In depth, quantitative coverage will include atomic and molecular arrangements; lattices; point, line, and surface defects; cross links, entanglements, glasses, diffusion; kinetics of nucleation and growth; and thermal treatments to control microstructure.

266. Structure-Property Relations II: Strengthening and Toughening Mechanisms

Second semester. Three credits. Prerequisite: MMAT 265.

Principles and applications of strengthening and toughening mechanisms will be treated quantitatively with emphasis on line defects, microplasticity, dislocation and diffusional transformations, fillers, sintering, creep, and creep rupture.

267. Structure-Property Relations III: Electromagnetic and Environmental

First semester. Three credits. Prerequisite: MMAT 266.

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. Materials Processing I: Thermal Mechanical

Second semester. Three credits. Prerequisite: MMAT 255 and MMAT 265. Co-requisite: 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. Materials Processing II: Thermal Fluid

First semester. Three credits. Prerequisites: MMAT 255 and MMAT 265. Co-requisite: MMAT 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.

283. Materials Characterization Laboratory I

First semester. Three credits. Co-requisite: MMAT 243. Not open for credit to students who have passed MMAT 202. One 3-hour laboratory period. Open to sophomores.

Principles of materials characterization and materials selection illustrated by hands-on experience with microscopy, testing, and analysis of design criteria for selection of materials for engineering systems (reverse engineering).

284. Materials Processing Laboratory

Second semester. Three credits. Co-requisite: MMAT 244. One 3-hour laboratory period. Open to sophomores.

Principles of materials processing will be illustrated by hands-on experience with qualitative and quantitative microscopy, testing, and reverse engineering, with experiments on polymer extrusion and injection molding, alloy casting, elutriation, particle compaction, sintering, forging, welding, and electrodeposition.

285. Mechanical Behavior Laboratory

First semester. One credit. Co-requisite: MMAT 265. Three hours 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 Characterization Laboratory II

Second semester. One credit. Prerequisite: MMAT 265. One 3-hour laboratory period.

Hands-on experience with materials characterization will be gained through work shops on X-ray fluorescence and diffraction, scanning electron microscopy, electronic and magnetic property measurement, and failure analysis.

287. Capstone Design Project I

First semester. Two credits. Four hours practicum. Prerequisites: 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. Prerequisites: 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 Metallurgy

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

For departmental description, see the College of Liberal Arts and Sciences section of this *Catalog*.

131. General Military Science I

Either semester. One credit. One class period. *Army Staff*

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. *Army Staff*

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. *Army Staff*

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. *Army Staff*

Map reading, mountaineering, principles of war.

146. General Military Science II

Either semester. One credit. One class period and leadership laboratory. *Army Staff*

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. *Army Staff*

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. *Army Staff*

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*

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. *Army Staff*

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 major requirements, see the College of Liberal Arts and Sciences section of this *Catalog*.

Consult the *Departmental Handbook* for courses being offered in the appropriate semesters and further description of these courses.

Classics (CLAS)

Classics and Ancient Mediterranean Studies

(*Taught in English*)

101. Greek Civilization

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

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

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
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

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.

*193. Foreign Study

241W. Greek and Roman Epic

Either semester, alternate years. Three credits. Required preparation: CLAS 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

Either semester, alternate years. Three credits. Required preparation: CLAS 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.) 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

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.

251. Greek Art

(Also offered as ARTH 243.) Either semester, alternate years. Three credits. *Givens*

Topics in Greek art and architecture from the emergence of Archaic culture in the ninth century B.C. to the first-century collapse of the Hellenistic empires.

252. Roman Art

(Also offered as ARTH 246.) Either semester, alternate years. Three credits. *Givens*

Topics in the history of Roman art and architecture, spanning the period from the Roman Republic through the late Empire.

253. Ancient Near East

(Also offered as HIST 213.) 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.) Either semester. Three credits.

* See description at end of Classics section.

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.) 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

(Also offered as 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 academics.

257. Ancient Philosophy

(Also offered as PHIL 221.) First semester. Three credits. Required preparation: At least one of PHIL 101, 102, 103, 104, 105, 106. Open to sophomores. *Wheeler*

An historical review of Greek philosophy from its origin in the Pre-Socratics through its influence on early Christianity. Lectures and discussions center on readings from the works of Plato and Aristotle.

* 293. Foreign Study.

* 295. Variable Topics

* 298. Special Topics.

Greek

171-172. Elementary Greek 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 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.

*193. Foreign Study

207. Greek Philosophical Writings

Either semester, alternate years. Three credits. Prerequisite: CLAS 172.

Selections from Plato and Aristotle.

208. Homer

Either semester, alternate years. Three credits. Prerequisite: CLAS 172.

Selections from the *Iliad* or *Odyssey*.

211. Greek Drama

Either semester, alternate years. Three credits. Prerequisite: CLAS 172.

Selected plays of Aeschylus, Sophocles, Euripides, and Aristophanes.

212. Greek Historical Writings

Either semester, alternate years. Three credits. Prerequisite: CLAS 172.

Selections from Herodotus and Thucydides.

214. Greek Lyric Poetry

Either semester, alternate years. Three credits. Prerequisite: CLAS 172.

Selections from the early Greek lyric, elegiac, and iambic poets, including but not limited to Archilochus,

Mimnermus, Solon, Sappho, Alcaeus, Anacreon, Xenophanes, Theognis, and Simonides.

215. The Greek New Testament

Either semester, alternate years. Three credits. Prerequisite: CLAS 172.

Selected readings, ordinarily including Acts of the Apostles and at least one Pauline letter.

* **293. Foreign Study**

* **295. Variable Topics**

* **298. Special Topics**

* **299. Independent Study**

Latin

121-122. Elementary Latin 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 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

Both semesters. Three credits each semester. Prerequisite: CLAS 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.

* **193. Foreign Study**

213. Ovid and Mythology

Either semester, alternate years. Three credits. Prerequisite: CLAS 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

Either semester, alternate years. Three credits. Prerequisite: CLAS 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

Either semester, alternate years. Three credits. Prerequisite: CLAS 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

Either semester, alternate years. Three credits. Prerequisite: CLAS 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

Either semester, alternate years. Three credits. Prerequisite: CLAS 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

Either semester, alternate years. Three credits. Prerequisite: CLAS 124, or three or more years of Latin in high school.

Selections from Sallust, Livy, and Tacitus.

230. Latin Philosophical Prose and Poetry

Either semester, alternate years. Three credits. Prerequisite: CLAS 124, or three or more years of Latin in high school.

Selections from Lucretius, Cicero, and Seneca.

231. Latin Elegiac Poetry

Either semester, alternate years. Three credits. Prerequisite: CLAS 124, or three or more years of Latin in high school.

Selections from Tibullus, Propertius, and Ovid's *Amores*.

232. Medieval Latin

Either semester, alternate years. Three credits. Prerequisite: CLAS 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.

* **293. Foreign Study**

* **295. Variable Topics**

* **298. Special Topics**

* **299. Independent Study**

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, required preparation, 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, required preparation, 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.

Critical Languages Program (CRLP)

101-102. Elementary Levels I and II

103-104. Intermediate Levels I and II

Either semester. Four credits each semester. Four 1-hour class periods and a 1-hour laboratory practice except for languages taught in the Self-Instructional mode which have two 1-hour sessions with a native-speaking tutor and five 1-hour laboratory periods. Open only with consent of the Director.

Languages with low enrollment may be offered through the Self-Instructional Language Program (SILP) method involving intensive, independent study

* See description at end of Classics section.

on the part of the student, supplemented by a native speaker who serves as a drill master or monitor during the period of study. The offering of a language course for any given semester will depend on a sufficient number of interested students (ordinarily at least five) and the availability of native speakers. Academic performance in the course will be evaluated by an outside examiner who is an instructor in the target language at another institution. When this is not feasible, an examiner with credentials equivalent to those of an outside examiner may be utilized. The capability of students to undertake a SILP course of study will be determined by the Program Director, who may utilize scores from the Modern Language Aptitude Test (MLAT). Students should plan to devote at least as much total time to a SILP course as to any other regular language course.

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, required preparation, 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, required preparation, 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.

The most frequently offered languages in CRLP are:

Arabic	Japanese
Chinese	Korean
Greek (Modern)	Polish
Hindi	Vietnamese
Hungarian	

If there is sufficient student interest, additional languages may be offered.

STUDY ABROAD

The University sponsors semester, academic year or summer programs in Tianjin, Beijing, Nanjing, Shanghai and Taipei. Courses are offered in Chinese language and area studies.

French (FREN)

Consult the Modern and Classical Languages Department listing in this *Catalog* for requirements for Majors in French.

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, except with Departmental consent.

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 for credit 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 consent of instructor.

Development of French history through the innovations of art; modern perspectives on historical and cultural events. Some lectures by and discussions with experts from Anthropology, Music, Political Science, History, and Art History. Strong audio-visual support.

211. Contemporary France

Second semester. Three credits. Recommended preparation: FREN 164 or 175 or three years of high school

French or consent of instructor.

An interdisciplinary course analyzing the politics, economics, social structures and cultural life of France today. France in relation to Western Europe as well as to a broader international framework. Some lectures by and discussions with experts from Anthropology, Music, Political Science, History, and Art History.

215. Practical Translation

Either semester. Three credits. Recommended preparation: FREN 267 or 268 or consent of instructor.

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.

217. Business French

Either semester. Three credits. Recommended preparation: FREN 164 or 175 or three years of high school French or consent of instructor.

Study of commercial French style and documents. Designed primarily for students aiming at careers in multinational business and foreign service. Prepares the student for the level I and level II examinations administered by the Paris Chamber of Commerce.

218. Francophone Studies

Either semester. Three credits. Recommended preparation: FREN 261 or 262 or 210 or 211 or consent of instructor.

The literature and cultural and social issues of French-speaking countries in North Africa, West Africa, the Caribbean, the Pacific and of Francophone communities in the U.S.

220. Theater Studies

Either semester. Three credits. Recommended preparation: FREN 261 or 262 or consent of instructor.

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 consent of instructor.

The study of a specific topic emerging from the French literary tradition. Questions of form, narrative and discourse in the novel, nouvelle and short story. Aesthetic categories such as realism, avant-garde, modernism.

222. Poetry

Either semester. Three credits. Recommended preparation: FREN 164 or 175 or three years of high school French or consent of instructor.

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 consent of instructor.

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 and the Social Sciences

Either semester. Three credits. Recommended preparation: FREN 211 or consent of instructor.

A selection of some of the most important world issues debated in France today in the writing of political figures, historians, sociologists, journalists, promoters of cultural activity.

230. The Middle Ages: Myths and Legends

Either semester. Three credits. Recommended preparation: FREN 261 or 262 or consent of instructor.

Founding myths and legends of Occidental culture, including a socio-cultural approach. Strong audio-visual component.

231. The Renaissance

Either semester. Three credits. Recommended preparation: FREN 261 or 262 or consent of instructor.

Important changes in France during the 16th century; parallel evolution in visual and performing arts.

232. French Classical Culture and Society

Either semester. Three credits. Recommended preparation: FREN 261 or 262 or consent of instructor.

Exploration of cultural and social issues through literature, performing arts, and paintings. Women, the Salons and social changes, discourses on love, Versailles and the Sun King, myths and tragedy, the birth of the modern subject.

233. The 18th Century: Travelers, Philosophers, and Libertines

Either semester. Three credits. Recommended preparation: FREN 261 or 262 or consent of instructor.

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 consent of instructor.

The literary and artistic innovations that made France the center of 19th-century culture. The Fantastic, Realism, Naturalism, and Decadence.

235. French Modernity: 20th-Century Literature

Either semester. Three credits. Recommended preparation: FREN 261 or 262 or consent of instructor.

The literary and artistic trends marking Modern period of the 20th century. Surrealism, the Absurd, Existentialism, OuLiPo, Francophone literature.

250. Communicating in French

Either semester. Three credits. Recommended preparation: FREN 164 or 175 or three years of high school French or consent of instructor.

Intense study of oral French. Learning of oral techniques of communication in conjunction with weekly topics of conversation. Rigorous and active oral practice through dialogues, interviews, roundtables, and oral reports.

251. Advanced French Conversation

Either semester. Three credits. Recommended preparation: Four years of high school French or French 250 or consent of instructor.

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 consent of instructor.

A systematic study of the sounds of French with exercises in pronunciation and phonetic transcription.

258. French Language: From Old French to

Modern Slang

Either semester. Three credits. Recommended preparation: FREN 261 or 262 or consent of instructor.

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 consent of instructor.

Texts from the Middle Ages to the 18th-Century, including Arthurian legend, Renaissance poetry, Classical theater, and philosophy of the Enlightenment.

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 consent of instructor.

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.

267. French Language and Culture I

Either semester. Three credits. Recommended preparation: FREN 164 or 175 or three years of high school French or consent of instructor.

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. Writing in French

Either semester. Three credits. Recommended preparation: FREN 164 or 175 or three years of high school French or consent of instructor.

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.

Representative works of French literature, on a particular theme. How literary forms articulate the ideas and values of different periods.

272. Introduction to Literary Theory and Critical Writing

Either semester. Three credits. Recommended preparation: FREN 268 or consent of instructor.

Oral and written approaches to the study of texts, from, for example, thematic, structural, semiotic, sociological and psychoanalytic perspectives. Emphasis is on analysis and synthesis as well as developing critical writing abilities.

280. Women's Studies in French

Either semester. Three credits. Recommended preparation: FREN 261 or 262 or 210 or 211 or consent of instructor.

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 consent of instructor.

Study of French-Canadian society and its literary and artistic production. Special attention will be given to current issues.

282. French Moral Thought

Either semester. Three credits. Recommended preparation: FREN 261 or 262 or consent of instructor.

Study of moral thought in French prose from Montaigne to Rousseau.

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.

298. Special Topics

Either semester. Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites, required preparation, 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.

German (GERM)

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. 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; German 113-114 (spring) covers same material as German 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, except with Departmental consent. 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.

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. Prereq-

quisite: 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 and PHYS 151Q 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. Commercial German

Both semesters. Three credits each semester. Prerequisite: GERM 134 or equivalent.

Practice in reading and writing using the specialized vocabulary and expressions of German business language. Preparation for the Goethe Institute's test of commercial German, the *Wirtschaftsprüfung Deutsch International*.

233-234. Advanced Language Skills 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.

Extensive practice in oral and written German, based on cultural materials. Emphasis on vocabulary expansion, active use of language for self-expression and communication, grammatical accuracy and reading strategies. Designed in relation to and preparation for upper-level German courses.

240W. German Literature in Translation

Either semester. Three credits. 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.

243-244. Advanced Conversation and Composition I and II

Both semesters. Three credits. Prerequisite: GERM 234 or the equivalent or consent of instructor.

Practice in perfecting both oral and written expression through discussions, presentations and compositions on assigned topics.

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 consent of instructor.

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 consent of instructor.

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 consent of instructor.

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 consent of instructor.

Study of a cohesive group of texts that mark the period. Attention will be given to the relevant socio-historical context and to the visual and performing arts.

260. Women's Studies in German

Either semester. Three credits. Prerequisite or corequisite: GERM 234 or consent of instructor.

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 consent of instructor. *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 consent of instructor. 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, required preparation, 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, required preparation, 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.

Hebrew (HEB)

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, except with Departmental consent.

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, except with Departmental consent.

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.

** 193. Foreign Study

251-252. Advanced Hebrew

Both semesters. Three credits each semester. Prerequisite: HEB 154 or consent of instructor.

Further grammar study. Practice in composition involving the use of everyday vocabulary and idiomatic expressions. Readings in Hebrew culture and history.

** 293. Foreign Study

** 295. Variable Topics

** 298. Special Topics

** 299. Independent Study for Undergraduates

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.

** 193. Foreign Study

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 consent of instructor. 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 CLAS 256 and 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 Feierberg, Bialik, Brenner, Berdichevsky, Tschernichowsky, Agnon, Greenberg, and Alterman.

** 293. Foreign Study

** 295. Variable Topics

** 298. Special Topics

** 299. Independent Study for Undergraduates

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.

** See description at end of Hebrew section.

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, required preparation, 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, required preparation, 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.

Italian (ITAL)

Consult the Modern and Classical Languages Departmental listing in this Catalog for requirements for Majors in Italian.

145-146. Elementary Italian 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 Italian in high school, except with Departmental consent.

Elementary Italian grammar. Drill in pronunciation. Reading of simple texts. Practice in easy conversation.

147-148. Intermediate Italian I and II

Both semesters. Four credits each semester. Four class periods and one 1-hour laboratory practice. Prerequisite: ITAL 146 or equivalent.

Review of elementary Italian grammar. Graded composition and translation. Intensive and extensive reading. Oral practice in the language.

*** 193. Foreign Study

213. Year Abroad in Italy: Preparation

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

First semester. Three credits. Prerequisite: ITAL 148.

A survey of contemporary Italian political, social, economic and cultural life.

238. Italian Civilization in the Renaissance

Either semester. Three credits. Prerequisite: ITAL 148 or equivalent.

A survey of social, cultural and artistic trends in Italy during the Renaissance.

*** See description at end of Italian section.

239. Italian Composition and Conversation I
First semester. Three credits. Prerequisite: ITAL 148 or equivalent.

Practice in written and oral composition. Syntax study.

240. Italian Composition and Conversation II
Second semester. Three credits. Prerequisite: ITAL 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

First semester. Three credits. Prerequisite: ITAL 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

Second semester. Three credits. Prerequisite: ITAL 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
Second semester. Three credits. Prerequisite: ITAL 237 or 239 or 243 or equivalent.

Readings from Metastasio, Goldoni, and Alfieri.

251-252. Machiavelli, Michelangelo and Renaissance Literature

Both semesters. Three credits each semester. Prerequisite: ITAL 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

Either semester. Three credits. Prerequisite: ITAL 237 or 239 or 243 or equivalent.

Selected readings from Dante, Petrarch, Compagni, Villani.

254. Boccaccio and His Time

Either semester. Three credits. Prerequisite: ITAL 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

Either semester. Three credits. Recommended preparation: ITAL 237 or 239 or 240 or consent of the instructor. *Bouchard*

Major trends in twentieth-century Italian Literature from the early modern period to contemporary times.

262. Nineteenth-Century Italian Literature

Either semester. Three credits. Recommended preparation: ITAL 237 or 239 or 240 or 243 or consent of the instructor. *Bouchard*

Nineteenth-century Italian drama, poetry, and narrative from the Napoleonic period to the years immediately following the conquest of Rome in 1870.

*** 293. Foreign Study

*** 295. Variable Topics

*** 298. Special Topics

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.

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

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

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.

*** 193. Foreign Study

255W. Dante's Divine Comedy in English Translation

First semester. Three credits. This course may not be counted in the Italian major group.

A literary and historical survey of Dante's major poem.

256W. The Literature of the Italian Renaissance

Second semester. Three credits. Not open to students who have passed ITAL 251-252. This course may not be counted in the Italian 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.

260W. Italian Cinema

Either semester. Three credits. 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.

*** 295. Variable Topics

*** 298. Special Topics

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, required preparation, and recommended preparation vary.

*** See description at end of Italian section.

298. Special Topics

Either semester. Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites, required preparation, and recommended preparation vary.

Portuguese (PORT)

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, except with Departmental consent.

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 consent of instructor.

An analysis of the social structures and cultural life of Portugal today.

221. Contemporary Brazil

Either semester. Three credits. Prerequisite: PORT 138 or consent of instructor.

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 consent of instructor.

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 232-233, or 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 232-233, or 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 consent of instructor.

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 consent of instructor.

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 consent of instructor.

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 consent of instructor.

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 consent of instructor.

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 or instructor's consent.

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 consent of instructor.

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, required preparation, 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, required preparation, 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.

Russian (RUSS)**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, except with Departmental consent. 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.

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, required preparation, 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, required preparation, 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.

Spanish (SPAN)

Consult the Modern and Classical Languages Departmental listing in this Catalog for requirements for Majors in Spanish.

181-182. Elementary Spanish 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 Spanish in high school, except with Departmental consent.

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 including one 1-hour lecture on Spanish and Spanish-American culture and social issues, and one hour of 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.

lent 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 consent of instructor.

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 consent of instructor.

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 or consent of instructor. Offered at the Hartford Campus.

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 consent of instructor.

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 consent of instructor.

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 consent of instructor.

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 consent of instructor. 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. Film and Literature
Either semester. Three credits. One three-hour class period. Recommended preparation: SPAN 278 or consent of instructor.

Films from the Spanish or Portuguese-speaking worlds are viewed and literature examined to show how literature is transformed into cinema.

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. required 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.

220. Introduction to Literary Study
Either semester. Three credits. Recommended preparation: SPAN 278 or consent of instructor.

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 consent of instructor.

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 consent of instructor.

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 consent of instructor.

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 consent of instructor.

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, required preparation, and recommended preparation vary.

290. Spanish Phonetics
Either semester. Three credits. Recommended preparation: SPAN 278.

A study of the sounds of the language and drill 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 consent of instructor.

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 consent of instructor.

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 consent of instructor.

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, required preparation, 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.

Music (MUSI)

Head of Department: Professor Robert W. Stephens
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. *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.

† Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

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.

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 Music 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 Music 221.) Either semester. One credit each semester. Three laboratory periods. Open only with consent of instructor. May be repeated for credit. *Pyle*

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.

Fees for this course are at the same rate as described for MUSI 122.

Basic performance techniques. Elementary and intermediate repertoire. Primarily for students majoring in another applied area.

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 \$70 for one half-hour lesson per week or \$135 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 score reading; 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. *Laszloffy, 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 or consent of instructor. *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. *Laszloffy*

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.

†201. Practicum in Music

Either or both semesters. Credits and hours by arrangement. Open only with consent of instructor. May be repeated for credit.

210W. Music, History, and Ideas

Either semester. Three credits. 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 or consent of instructor. 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

212. Music of the Church

First semester. Three credits. Prerequisite: MUSI 286 or consent of instructor.

Plainsong, mass, motet, cantata, oratorio, and other forms of church music.

212W. Music of the Church

213. Music of the Theater

Second semester. Three credits. Prerequisite: MUSI 286 or consent of instructor.

Opera, ballet, and other types of music for the theater.

213W. Music of the Theater

214. Orchestral Music

First semester. Three credits. Prerequisite: MUSI 286 or consent of instructor.

Concerto, symphony, symphonic poem, and other forms of music for orchestral ensembles.

214W. Orchestral Music

215. Chamber Music

Second semester. Three credits. Prerequisite: MUSI 286 or consent of instructor.

String quartet, trio sonata, and other forms of music for various small ensembles.

215W. Chamber Music

216. Solo Literature

Second semester. Three credits. Prerequisite: MUSI 286 or consent of instructor.

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. Required preparation: 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. Required preparation: MUSI 222 and consent of instructor.

Classical Period Songs; German Lied.

227. Vocal Literature III

First semester. Two credits. Two class periods. Required preparation: MUSI 222 and consent of instructor.

French melody; Songs of Nationalistic origin.

228. Vocal Literature IV

Second semester. Two credits. Two class periods. Required preparation: 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. Required preparation: 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, Junda, Vasil*

234. Conducting II: Instrumental

Either semester. Two credits. Prerequisite: MUSI 232. *Renshaw*

† Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

235. Honors Harmony III

First semester. Four credits. Three class periods and two 1-hour laboratory periods. Prerequisite: MUSI 136. Open to sophomores.

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. *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 or consent of instructor. 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.

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. 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. Not open for credit to students who have passed MUSI 236. *Bass*

250. Introduction to Electronic Composition

Either semester. Three credits. Prerequisite: MUSI 264 or consent of instructor.

Composition by synthesizer and computer.

251. Composition I

First semester. Three credits. Prerequisite: MUSI 246 or consent of instructor.

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**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**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: Pass Q-Course Readiness Test or MATH 101.

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. *Miller*

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. *Miller*

Uses of micro-computers in the school music program.

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, Miller, Vasil*

Theories and procedures for the organization of musical instruction.

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. *Somer*

Two- and three-voiced textures in the principal 16th-century styles: Josquin, Lassus, Palestrina.

278. Counterpoint II

Either semester. Three credits. Prerequisite: MUSI 277. *Somer*

279Q. Twentieth Century Theory and Analysis

Either semester. Three credits. Prerequisite: MUSI 246 and MUSI 257. 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. *Pyle, Vasil*

Vocabulary, methodology and practical application of pedagogical techniques.

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.

285. Music History and Literature 1700-1830

First semester. Three credits. Required preparation: MUSI 287. Open to sophomores.

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. Required preparation: MUSI 285. Open to sophomores.

The romantic period and the Twentieth Century.

287. Music History and Literature Before 1700

First semester. Three credits. Required preparation: MUSI 146. Open to sophomores.

Medieval, Renaissance, to High Baroque periods. Score study, development of notation, and relation to other artistic traditions.

290. Theory Review

First semester. Three credits.

An overview of traditional undergraduate theory. Intended for graduate students in Music.

292W. Music in World Cultures

Either semester. Three credits. Not open for credit to students who have passed MUSI 190. Required preparation: MUSI 286 and consent of instructor.

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. Required preparation: MUSI 287.

†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 lower division students or by consent.

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 or consent of instructor. *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: Biology: 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.

208. Introduction to Aquaculture

Either semester. Three credits. Two class periods, one 2-hour laboratory. Prerequisite: BIOL 107 or 108 or consent of instructor. *Staff*

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

Second semester. Three credits. Prerequisite: NRME 241 or consent of instructor. *Miller*

The meteorology, effects and controls of air

pollution.

211. Watershed Hydrology

Second semester, alternate years (even). Three credits. Recommended preparation: MATH 112 or higher, NRME 242 or ENGR 150, or consent of instructor. Open to sophomores. *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. Prerequisite: BIOL 108 or 110. Open to sophomores. *Schroeder*

The taxonomy, silvics, and distribution of trees and shrubs of the United States with emphasis upon Northeastern species. Field trips will be required.

216. Forest and Shade Tree Pathology

Second semester. Three credits. One class period, one discussion period, and one 2-hour laboratory period. Prerequisite: BIOL 108 or 110. *Schroeder*

A discussion of the nature, causes and control of forest and shade tree diseases and wood decay.

217. North American Wildlife

First semester. Three credits. Prerequisite: BIOL 107. Open to sophomores. *Barclay*

An introduction to wildlife conservation programs and resource values. The distribution, life history and status of those birds and mammals whose populations man is attempting to preserve, reestablish, or to control are examined.

220. Forest Recreation

Second semester. Three credits. Introduction to the principles of land management for recreational purposes.

232P. Wildlife Management

Second semester. Three credits. Prerequisite: NRME 217 or consent of instructor. Recommended preparation: Prior course work in ecology. Must be taken with another P course in NRME to equal one W course. *Barclay, 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. Four credits. Three class periods and one 2-hour laboratory period. Prerequisite: EEB 200 and one course in statistics, or consent of instructor. Must be taken with another P course in NRME to equal one W course. *Neumann*

Principles and practices of fisheries management with applications to biota, habitat, and human users to produce desirable fish populations and communities. Selected topics include harvest regulations, fish population dynamics, stocking concepts, age and growth, and habitat management.

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 or with consent of instructor. *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. 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.

239P. Natural Resources Planning and Management

Second semester. Three credits. Recommended preparation: EEB 244. Must be taken with another P course in NRME to equal one W course. *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. Open to sophomores. *Miller*

Principles and instrumentation used in the measurement of environmental conditions and processes, with emphasis on the interactions of biological organisms and populations with their environment.

243. Analyses of Natural Resource Systems

Second semester. Three credits. Two class periods and one 2-hour laboratory. Prerequisite: NRME 242 and a course in statistics. *Yang*

Fundamentals of applied statistics, sampling design, and integrated data analysis for natural resource and environmental systems. Applications include estimating animal and plant populations, sampling and experimental design, and model parameterization.

246. Water Quality Management

First semester, alternate years (odd). Three credits. Recommended preparation: NRME 211 or NRME 260P or consent of instructor. *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. 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.

250. Surveying Practice

First semester. Three credits. One class period and two 2-hour laboratory periods. Students should have experience or training in mechanical drawing and trigonometry preceding this course. Students who have passed AGEG 220 may not receive credit for NRME 250.

A course in elementary field surveying practices including the use of tape, level and transit in problems of horizontal and vertical land measurements and topographic description.

251C. Computer Utilization in Agriculture and Natural Resources

Second semester. Three credits. Two class periods and one two-hour laboratory. Students who have passed AGEG 201 may not receive credit for NRME 251C.

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. Required preparation: NRME 242, MATH 112. Recommended preparation: PHYS 121. 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. Required preparation: MATH 112 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. Two class periods and one 3-hour laboratory. Required preparation: NRME 211 or CE 265, or consent of instructor. 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 and laboratory reports, use of spreadsheets and field work required, some field trips.

262. Energy Conversion in Agriculture

Second semester. Four credits. Three class periods and one 2-hour discussion period. Prerequisite: ME 238. Students who have passed AGEG 262 may not receive credit for NRME 262.

Analysis of biological and physical energy conversion systems employed in agriculture including photosynthetic, internal combustion, electrical, wind and solar.

271. Environmental Meteorology

Second semester. 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. (Not open for credit to students who have passed NRME 230 and NRME 231.) 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 or consent of instructor.

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 Upper Division 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)

Interim Dean: Kathleen A. Bruttomesso
Office: Room 111, Storrs Hall

For major requirements, see the School of Nursing section of this *Catalog*.

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 Nightingale'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 or equivalent. Open to sophomores.

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

Second semester. Three credits. Open to Nursing majors only. Open to sophomores. Prerequisite: CHEM 127Q and 128Q, PNB 264. PNB 265 concurrent or prerequisite.

Concepts from microbiology and pharmacology as they relate to the health of individuals throughout the lifespan.

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.

211C. Information Systems in Health Care

Either semester. Three credits. Two class periods and two hours of laboratory. Open to sophomores.

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.

213. Nursing Research

Either semester. Three credits. Open to Nursing majors only. 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

214. Clinical Science II

First semester. Three credits. Prerequisite: CHEM 127Q, 128Q; Biology: PNB 264, 265; PHYS 101; NURS 204. Open to Nursing majors only.

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. Concurrent or recommended preparation: NURS 214, 217.

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. Concurrent or recommended preparation: 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.

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**224. Clinical Science III**

Second semester. Four credits. Recommended preparation: 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 206, 227, 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. Concurrent or recommended preparation: NURS 224, 227.

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, 217, 224, and 226.

Application of functional health patterns to the care of adults with life threatening health problems. Focus is on independent decision making.

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, 227 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. Concurrent or recommended preparation: NURS 224, 226, 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 NURS 213 or 213W. Concurrent or recommended preparation: NURS 234, 236.

Application of functional health patterns and clinical decision-making in care of the child bearing, child rearing family.

240. Epidemiology in Nursing Practice: Clinical Science V-A

Either semester. One credit. Prerequisite: A clinical nursing course or RN license.

An introduction to the principles of epidemiology used in nursing practice.

241. Community Health Nursing

Either semester. Two credits. Prerequisite: NURS 226, 206, and 224. Concurrent or recommended preparation: 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: A clinical course 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. Prerequisite: NURS 226, 206, and 224. Concurrent or recommended preparation: 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.

244. Clinical Science V

Either semester. Variable credits. Prerequisite: NURS 224; for RN students: consent of instructor.

Concepts from pharmacology, microbiology, pathophysiology, and nutrition as they relate to mental health. Introduction to principles of epidemiology.

246. Mental Health/Community Nursing

Either semester. Variable credits. Prerequisite: 224, 226. Prerequisite or concurrent: NURS 225. Recommended preparation: NURS 244.

Analysis of theory from nursing and related disciplines to provide the basis for mental health nursing and community health nursing. Focus is on the nursing process for clinical decision-making with individuals, families and groups.

247. Practicum: Mental Health/Community Nursing

Either semester. Variable credits. Fifteen laboratory hours. Prerequisite: NURS 220 or 220W and NURS 213 or 213W. Recommended preparation: NURS 244, 246.

Clinical application of theory from nursing and related disciplines to mental health nursing and community health nursing. Focus is on nursing care based upon clinical decision-making with individuals, families, and groups.

248. Community Health Nursing Practice

Either semester. Credits and hours by arrangement. Prerequisite: NURS 213 or 213W, 220 or 220W, 226 and 227. Required preparation: NURS 240 and NURS 241.

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. Variable credits. Prerequisite: NURS 213 or 213W, 220 or 220W, 224, 226 and 227. Recommended preparation: NURS 240 and NURS 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.

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.

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**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 Carol J. Lammi-Keefe
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. *Faustman, Zhao*

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.

216. Adult Health I

First semester. Three credits. Concurrent or recommended preparation: NURS 214, 217.

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. Concurrent or recommended preparation: 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.

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**224. Clinical Science III**

Second semester. Four credits. Recommended preparation: 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 206, 227, 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. Concurrent or recommended preparation: NURS 224, 227.

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, 217, 224, and 226.

Application of functional health patterns to the care of adults with life threatening health problems. Focus is on independent decision making.

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, 227 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. Concurrent or recommended preparation: NURS 224, 226, 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 NURS 213 or 213W. Concurrent or recommended preparation: NURS 234, 236.

Application of functional health patterns and clinical decision-making in care of the child bearing, child rearing family.

240. Epidemiology in Nursing Practice: Clinical Science V-A

Either semester. One credit. Prerequisite: A clinical nursing course or RN license.

An introduction to the principles of epidemiology used in nursing practice.

241. Community Health Nursing

Either semester. Two credits. Prerequisite: NURS 226, 206, and 224. Concurrent or recommended preparation: 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: A clinical course 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. Prerequisite: NURS 226, 206, and 224. Concurrent or recommended preparation: 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.

244. Clinical Science V

Either semester. Variable credits. Prerequisite: NURS 224; for RN students: consent of instructor.

Concepts from pharmacology, microbiology, pathophysiology, and nutrition as they relate to mental health. Introduction to principles of epidemiology.

246. Mental Health/Community Nursing

Either semester. Variable credits. Prerequisite: 224, 226. Prerequisite or concurrent: NURS 225. Recommended preparation: NURS 244.

Analysis of theory from nursing and related disciplines to provide the basis for mental health nursing and community health nursing. Focus is on the nursing process for clinical decision-making with individuals, families and groups.

247. Practicum: Mental Health/Community Nursing

Either semester. Variable credits. Fifteen laboratory hours. Prerequisite: NURS 220 or 220W and NURS 213 or 213W. Recommended preparation: NURS 244, 246.

Clinical application of theory from nursing and related disciplines to mental health nursing and community health nursing. Focus is on nursing care based upon clinical decision-making with individuals, families, and groups.

248. Community Health Nursing Practice

Either semester. Credits and hours by arrangement. Prerequisite: NURS 213 or 213W, 220 or 220W, 226 and 227. Required preparation: NURS 240 and NURS 241.

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. Variable credits. Prerequisite: NURS 213 or 213W, 220 or 220W, 224, 226 and 227. Recommended preparation: NURS 240 and NURS 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.

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.

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**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 Carol J. Lammi-Keefe
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. *Faustman, Zhao*

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. *Furr*

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.

200. Nutrition and Human Development

Either semester. Three credits. Prerequisite: NUSC 165. Open to sophomores. *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. Required preparation: Biology: MCB 229. Recommended preparation: Biology: MCB 203 or 204. *Zhao*

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 reaction, 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. Required preparation: Biology: MCB 203 or 204. Recommended preparation: Biology: PNB 250 or 265. *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 and Biology: PNB 250 or 265. Recommended preparation: Biology: MCB 203 or 204. Enrollment restricted to Nutritional Sciences and Education Sport, Leisure and Exercise Science 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 Biology: 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: Biology: 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: NUSC 234. Recommended preparation: AH 244 or MGMT 201. *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 adaption; 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 off-campus 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. Enrollment limited to Nutritional Sciences honors students. Consent of honors advisor and department head required.

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 of 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 302, School of Business Administration

For major requirements, see the School of Business Administration section of this *Catalog*.

Courses in this department are open to juniors and seniors only.

203C. Business Information Systems

Either semester. Three credits. Prerequisite: ACCT 131. Open only to School of Business Administration students; others with the consent of the Operations and Information Management Department Head.

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.

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

Offered only at the Stamford Regional Campus.

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.

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.

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.

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 (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 to MIS majors only.

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 to MIS majors only.

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 (may be taken concurrently). Open to MIS majors only.

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, 220, 221, and OPIM 222. 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 consent of instructor.

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 Lower Division School of Business Administration Requirements and consent of instructor and Department Head.

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. Open only to OPIM 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 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.

Individual study of special topics in operations management, operations research and information management as mutually arranged between a student and an instructor.

Pathobiology (PATH)

Head of Department: Professor Herbert E. Whiteley
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 Biology 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

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.

200. Anatomy and Physiology of Animals

First semester. Four credits. Three class periods and one 2-hour discussion/laboratory period. Open to sophomores. *Bushmich*

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

Second semester. Three credits. Prerequisite: PATH 200 or consent of instructor. Open to sophomores. *Bushmich*

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

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

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

252. Pathobiology of the Avian Species

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

Second semester. Three credits. Offered in odd-numbered years. Two class periods and one 2-hour laboratory. Prerequisites: required BIOL 107/108, PNB 250 or PATH 200/202; recommended MCB 203/204, MCB 229, EEB 200, NRME 298; or consent of instructor. *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.

295. Seminar

Either or both semesters. One credit. One class period. 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

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

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

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 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

200. Drugs and the Diseased State I

First semester. Three credits. Prerequisite: PHAR 212 and 229, Biology: 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

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: Biology: PNB 264, 265, Biology: 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

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: Biology: 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

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

Other Required Courses

241. Immunology

Second semester. Three credits. Prerequisite: Biology: 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 PATH 297. *Cardoni*

Basic pathophysiology, diagnosis, and pharmacotherapy of human disease.

280W. Therapeutics

281. Principles of Toxicology

First semester. Three credits. Prerequisite: PHAR 200 and Biology: 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 divisional 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: Biology: PNB 264, 265, Biology: 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 communications 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. 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. *Fournier*

299. Undergraduate Research

Either semester. Credits by arrangement. Open only with consent of instructor and Associate Dean. This course may be repeated for credit.

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 divisional and pharmacy cumulative grade point average of 2.8 or above is normally required for enrollment. A written summary of work performed is required at the end of each semester.

Pharmacy (PHRM)

Courses for the Doctor of Pharmacy (Pharm.D.)

Associate Dean for Academic Affairs: Associate Professor Donna J. Fournier

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 the 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. *Kelly*

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 COMS 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.

204. Administrative Aspects of Pharmacy Practice & Principles of Pharmacoeconomics

First semester. Four credits. Four class periods. Prerequisite: ECON 111. *Kelly*

Development of the basic financial and operational management knowledge and skills necessary to practice successfully in any practice setting. Further, to develop an understanding of the complexities,

intricacies and beneficial aspects of pharmacoeconomic studies. To gain understanding of the methodologies of pharmacoeconomic studies and comprehension of the economic forces impacting upon pharmacy practice in varying environments.

206. Interpersonal Skills Development in Pharmacy Practice

Second semester. Two credits. One class period and one two hour laboratory. Prerequisite: COMS 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. *Silk*

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**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. *Retman*

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. Prescription Processing (lab)

Second semester. Three credits. One two hour lecture and three hour laboratory period. Prerequisite: PHRM 255, concurrent with PHRM 256. *Kelly*

Practice oriented course focused on prescription processing, home diagnostic and monitoring devices, compliance enhancement programs, computer usage and relevant contemporary issues in pharmacy.

219. General Principles & Organ System Overview

First semester. Three credits. Three class periods. Prerequisite: Must have satisfied all science and math requirements of the first two years. *Nieforth*

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. *Gianutos*

Functions of the autonomic, somatic and central nervous systems; pharmacological effects and mechanism of action of drugs and biotechnologically-derived products used to treat diseases of the autonomic nervous system, sensory system disorders and 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**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 *Gianutos*

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; PATH 297 *Rosenberg*

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; PATH 297 *Cohen*

Development of an understanding of basic principles of toxicology which determine effects of therapeutic, occupational, or environmental chemicals on human health. Rational 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; PATH 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. *Rhodes*

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 foun-

dition 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. *Bouvier*
A continuation of PHRM 233.

234W. Pharmaceutical Bio-Organic Chemistry II

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. *Vigil-Cruz*

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 & 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 & Solid Dosage Forms

244. Dosage Forms Preparation Laboratory

First semester. One credit. One discussion period and one 3 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. *Kramer*

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. *Pikal*

Extemporaneous preparation of sterile and non-sterile dosage forms, with particular attention to solutions, solids and dispersed systems.

253. Therapeutics I

First semester. Two credits. One class period and one three hour conference. Prerequisite: PHRM 220 and concurrent with PHRM 221. *Cardoni*

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. Three credits. Two class periods and one three hour conference. Prerequisite: PHRM 253. *Wang*

A study of the etiology, clinical manifestations, and treatment regimens of cardiovascular diseases, acid peptic disease, inflammatory bowel diseases, and liver and respiratory diseases.

254W. Therapeutics II

255. Therapeutics III

First semester. Two credits. Two class periods. Prerequisite: PHRM 254 *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 the above clinical situations.

256. Therapeutics IV

Second semester. Three credits. Three class periods. Prerequisite: PHRM 255 *Aeschlimann*

Development of skills necessary to make meaningful therapeutic contributions to the investigation and management of patients with infectious diseases, cancers, and immunologically mediated diseases and further develop the student's ability to apply problem-solving strategies in the above clinical situations.

257. Clinical Pharmacokinetics

First semester. Three credits. Three class periods. Prerequisite: PHRM 245, 254 *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.

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

Either semester. Four credits. Prerequisite: PHRM 210, PHRM 211, PHRM 212, PHRM 256.

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.

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.

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, Group I, minimum of 3 (one month each)

266. Professional Experience in Cardiology

Either semester. Four credits. Prerequisite: PHRM 210, PHRM 211, PHRM 212, PHRM 256.

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.

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.

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.

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.

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.

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.

Electives, Group 2, minimum of 2 (8 credits)

272. Professional Experience in Community Practice II

Either semester. Four credits. Prerequisite: PHRM 210, PHRM 211, PHRM 212, PHRM 256.

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.

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.

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.

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.

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.

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 Hospital Pharmacy II

Either semester. Four credits. Prerequisite: PHRM 210, PHRM 211, PHRM 212, PHRM 256.

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.

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.

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.

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 radio-isotopes, 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.

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.

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. *Staff*

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.

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.

Elective Courses Pharmacy (PHAR)

*201. Pharmacy Research Seminar

*297W. Honors Thesis in Pharmacy

*298. Special Topics

*299. Undergraduate Research

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 Philosophy courses 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 Philosophy courses 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 Philosophy courses 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 Philosophy courses 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. (See *Directory of Classes* for relevant sections.)

105. Philosophy and Religion

Either semester. Three credits. No student may receive more than 6 credits for Philosophy courses 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 Philosophy 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 and 109; the latter may be taken concurrently.

Philosophical problems raised by, and illuminated in, major works of literature.

200. Philosophical Issues in Contemporary Life

Either semester. Three credits. Required preparation: 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. Required preparation: At least one of PHIL 101, 102, 103, 104, 105, 106. Open to sophomores. *Elias*

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**210. Metaphysics and Epistemology**

Either semester. Three credits. Required preparation: At least one of PHIL 101, 102, 103, 104, 105, 106. Open to sophomores.

Topics may include time, personal identity, free-will, the mind-body problem, skepticism, induction, perception, *a priori* knowledge.

210W. Metaphysics and Epistemology**211Q. Symbolic Logic I**

Either semester. Three credits. Required preparation: At least one of LING 101, POLS 106, PHIL 101, 102, 103, 104, 105, 106. Open to sophomores. *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)

Emphasis on computer-related material.

212. Philosophy of Science

Either semester. Three credits. Required preparation: At least one of PHIL 101, 102, 103, 104, 105, 106. Open to sophomores.

Issues concerning the nature and foundations of scientific knowledge, including, for example, issues about scientific objectivity and progress.

212W. Philosophy of Science**213. Philosophy of Social Science**

Either semester. Three credits. Required preparation: At least one of PHIL 101, 102, 103, 104, 105, 106. Open to sophomores.

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 Philosophy 211 applied to the study of philosophical issues in the foundations of mathematics.

215. Ethics

Either semester. Three credits. Required preparation: At least one of PHIL 101, 102, 103, 104, 105, 106. Open to sophomores.

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**217. Social and Political Philosophy**

Either semester. Three credits. Required preparation: At least one of PHIL 101, 102, 103, 104, 105, 106. Open to sophomores.

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**218. Feminist Theory**

Either semester. Three credits. Required preparation: 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 Classics 257.) Either semester. Three credits. Required preparation: At least one of PHIL 101, 102, 103, 104, 105, 106. Open to sophomores.

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**222. Seventeenth and Eighteenth-Century Philosophy**

Either semester. Three credits. Required preparation: At least one of PHIL 101, 102, 103, 104, 105, 106. Open to sophomores. *Troyer*

Central philosophical issues as discussed by philosophers such as Descartes, Locke, Berkeley, Hume and Kant.

222W. Seventeenth and Eighteenth-Century Philosophy**224. Nineteenth-Century Philosophy**

Either semester. Three credits. Required preparation: At least one of PHIL 101, 102, 103, 104, 105, 106. Open to sophomores.

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**225W. Analysis and Ordinary Language**

Either semester. Three credits. Required preparation: At least one of PHIL 210, 221, 222, 227.

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. Required preparation: 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.

227W. Twentieth-Century Philosophy

Either semester. Three credits. Required preparation: At least one of PHIL 101, 102, 103, 104, 105, 106. Open to sophomores.

Major schools of recent philosophy, including analytic philosophy, existentialism and pragmatism.

228. American Philosophy

Either semester. Three credits. Required preparation: 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. Required preparation: 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**231. Philosophy of Religion**

Either semester. Three credits. Required preparation: At least one of PHIL 101, 102, 103, 104, 105, 106. Open to sophomores.

Various religious absolutes, their meaning and

validity, existentialism and religion, the post-modern religious quest.

233W. Existential Philosophy

First semester. Three credits. Required preparation: At least one of PHIL 101, 102, 103, 104, 105, 106. *Elder*
The thesis of ‘radical freedom;’ attacks on the concept of a personal nature of character; what an ethics not grounded in any belief in human nature would look like. Kierkegaard, Sartre, and Heidegger.

234. Phenomenology

Second semester. Three credits. Required preparation: At least one of PHIL 101, 102, 103, 104, 105, 106. *Elder*
Husserl’s theory of meaning; its promise of silencing scepticism 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. Required preparation: 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. Required preparation: At least one of PHIL 101, 102, 103, 104, 105, 106.
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. Required preparation: ECON 112 or 113 or consent of instructor.
Examination of the normative assumptions and implications of modern economics (for example, the connections between Classical Utilitarianism and Welfare Economics). Methodological controversies in economic theory.

250. Philosophy of Mind

Either semester. Three credits. Required preparation: At least one 200-level, three-credit philosophy course or consent of instructor.
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. Required preparation: 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. Required preparation: 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. Required preparation: 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 De-

partment 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. 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, required preparation, 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, required preparation, 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.

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. 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. 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 1-hour lectures and one 2-hour laboratory. No previous knowledge of physics is assumed. Not open for credit to students who have passed Physics 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: Satisfactory performance on Q-readiness Test or equivalent. Physics 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. 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 exact 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.

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 151-152.

131Q-132Q. General Physics with Calculus

Either semester. Four credits. Three class periods and one 3-hour laboratory period. Prerequisite: PHYS 131 required for PHYS 132. 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 recitations, and one 3-hour laboratory. Recommended preparation: MATH 109, which may be taken concurrently, or a pass on the Calculus Readiness Test.

Quantitative exploration of the structure of matter, including gas laws, electric and magnetic forces, the electron, x-rays, waves and lights, relativity, radioactivity, and spectra. This course is recommended for prospective Physics majors.

141Q. Fundamentals of Physics I

Second semester. Four credits. Three class periods and one 3-hour laboratory period. Recommended preparation: MATH 120 or 113 or 115, 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. 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. Recommended preparation: PHYS 141, and MATH 114 or 116 or 120, 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. Basic concepts of calculus are used. This course is recommended for prospective Physics majors.

143Q. Fundamentals of Physics III

First semester. Four credits. Three class periods and one 3-hour laboratory period. Prerequisite: PHYS 132, or 142, or 152; and MATH 210 or 220, which may be taken concurrently.

Optics, wave propagation, statistical and thermal physics. This course is the third semester of a two year introductory physics sequence which begins with PHYS 141-142 in the first year.

151Q. Physics for Engineers I

Either semester. Four credits. Three class periods and one 3-hour laboratory period. 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: Satisfactory performance on Q-Readiness Test or equivalent mathematics.

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, 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, 142; or PHYS 152, which may be taken concurrently; or PHYS 122 with consent of instructor. Open to sophomores.

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 152 or 209; MATH 210 or 220, which may be taken concurrently. Open to sophomores.

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.

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 143; or, with consent of instructor, PHYS 123 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. Recommended preparation: PHYS 132 or 142 or 152, or consent of instructor.

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 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, which may be taken concurrently: First semester, PHYS 242 and PHYS 255; Second Semester, PHYS 246 and PHYS 257.

Experiments with electric and magnetic fields, direct and alternating currents, microwaves. Experiments with mechanical phenomena. The handling of experimental data.

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 consent of instructor. PHYS 281 is recommended.

The physics of lasers, including optical pumping and stimulated emission, laser rate equations, optical resonators, Gaussian beam propagation, Q-switching, mode-locking and non-linear 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. 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, 246, and 257; PHYS 261, which may be taken concurrently; and PHYS 258 or 259 or EE 262 or MTGY 236.

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, required preparation, 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, required preparation, 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.

Plant Science (PLSC)

Head of Department: Professor Gerald A. Berkowitz
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. *Allinson*

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 or consent of instructor. 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.

224. Turfgrass Physiology and Ecology

Second semester. Three credits. Three class periods. Prerequisite: PLSC 124 or PLSC 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.

250. Soils

Second semester. Three credits. Two class periods and

one 2-hour laboratory period. Prerequisite: CHEM 122, 127 or 129. Open to sophomores. *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 Plant Science 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

254. Forage Crops

First semester, alternate years (even). Three credits. Two class periods and one 2-hour laboratory period. *Allinson*

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 or consent of instructor.

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

First semester, alternate years (even). Three credits. Two class periods and one 2-hour laboratory period. Prerequisite: CHEM 128. PLSC 206 and PLSC 250 are recommended. *Schulthess*

Basic concepts of the physical chemistry of soil constituents. Topics include clay mineralogy, soil organic matter, weathering processes, ion-exchange, extraction of sorbed compounds, formation of colloids, and the mobility of contaminants.

Horticulture

203. Plant Diseases

First semester. Three credits. Two class periods and one 2-hour laboratory. Prerequisite: BIOL 108 or 110.

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. *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. Three credits. Two 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.

226. Greenhouse Crop Production I

First semester. Two credits. One class period and one 2-hour laboratory period. Field trips required. Prerequisite: PLSC 225 (may be taken concurrently). Taught jointly with SAPL 26. 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 produced for fall and winter markets. Laboratories provide experience in crop production.

227. Greenhouse Crop Production II

Second semester. Two credits. One class period and one 2-hour laboratory period. Field trips required. Prerequisite: PLSC 226. Taught jointly with SAPL 27. Not open for credit to graduate students. *Elliott*

Continuation of PLSC 226. Emphasis on flowering potted plants and bedding plants produced for spring and 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.

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. *Bridgen*

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

244. Garden Center Management

First semester. Three credits. Taught concurrently with SAPL 71. 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 concurrently with SAPL 68. Not open for credit to graduate students. *Auer*

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.

260. Woody Landscape Plants: Deciduous

First semester. Three credits. Two class periods and one 2-hour laboratory.

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.

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. *Shashok*

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: Biology: MCB 213 or consent of instructor. Offered in even-

numbered years.

Principles of cultivated plant improvement, breeding techniques and germplasm manipulation.

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.

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. *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. *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. *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 or consent of instructor. *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. *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 or consent of instructor. 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 or consent of instructor. *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 or consent of the instructor. *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. *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 6 credits. Hours by arrangement. Open only to Upper Division 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 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.

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**132. Introduction to International Relations**

Either semester. Three credits.

The nature and problems of international politics.

132W. Introduction to International Relations**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**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 Women's Studies 203W.) Second semester. Three credits.

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 Women's Studies 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

(Also offered as Women's Studies 204W).

206W. Western Marxist Tradition

Either semester. Three credits.

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. Four class hours (three lecture/film, one discussion).

Lectures, discussions, 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. Not open for credit to students who have passed POLS 213.

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.

† Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

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.

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.

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.

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. Not open for credit to students who have passed POLS 233.

Comparative analysis of the governments and politics of Western Europe.

231W. Political Institutions and Behavior in Western Europe

(Formerly offered as POLS 233.) Open to sophomores.

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**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.

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. Not open for credit to students who have passed POLS 238.

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

(Formerly offered as Political Science 238.)

239W. Politics in Africa

First semester, alternate years. Three credits.

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.

240. Contemporary German Politics

First semester. Three credits.

The development of the German polity in the 20th century, focusing on the period since 1945: the forces leading to division in 1945; the comparative analysis of the two German States (1949-1990); and the politics of a unified Germany.

241. American Political Parties

Either semester. Three credits. Prerequisite: POLS 173. Open to sophomores. Not open for credit to students who have passed POLS 243.

An analysis of the aims, organization, and growth of parties in the United States.

241W. American Political Parties

(Formerly offered as Political Science 243.) Open to sophomores.

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. Not open for credit to students who have passed POLS 247.

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

(Formerly offered as Political Science 247.)

248. African-American Politics

Either semester. Three credits.

Political behavior, theory, and ideology of African-Americans, with emphasis on contemporary U.S. politics.

251. Law and Society

(Formerly offered as Political Science 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.

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.

263W. Urban Politics

(Also offered as Urban Studies 263W.) Either semester. Three credits. 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.

270W. Connecticut State and Municipal Politics

First semester, alternate years. Three credits.

An examination of contemporary Connecticut politics on the state and municipal levels.

274. State and Local Government

Either semester. Three credits. Open to sophomores.

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. Not open for credit to students who have passed POLS 277.

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

(Formerly offered as Political Science 277.)

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**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. 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: Recommended preparation: High School Algebra II. Open to sophomores.

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.

An exploration of the fundamental nature of political conflicts on the national and international levels.

296W. Political Issues**†297. Supervised Field Work**

Either or both semesters. Credits up to 12. Hours by arrangement. Open only with consent of the department head.

298. Special Topics

Either semester. Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites, required preparation, 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.

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*.

112. Brain, Behavior and Mental Activity

Either semester. Three credits.

Current research and concepts about the brain as related to behavioral adjustments made by human beings to their physical, biological and social environments.

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. Required preparation: PSYC 132.

Psychology as a social science. Research methodology, developmental, personality, clinical, abnormal and social psychology.

135. General Psychology II (Intensive)

Either semester. Four credits. Three lecture periods and one 1-hour discussion section. Required preparation: 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.

Design and analysis of psychological research. Experimental and quasi-experimental designs, laboratory and correlational techniques, research ethics.

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. *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. Required 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 201Q or 202Q, and PSYC 254, which may be taken concurrently. *Carello, Growney*

Techniques for the study of sensory capacities and perceptual processes.

220. Learning

Either semester. Three credits. Prerequisite: PSYC 135 or 133. Open to sophomores.

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 Development Psychology

Second semester. Four credits. Prerequisite: PSYC 236 and PSYC 202Q. *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. *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 consent of instructor. 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

Either semester. Three credits. Prerequisite: PSYC 135 or 133. Open to sophomores.

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**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**243. The Study of Personality**

Either semester. Three credits. Prerequisite: PSYC 135 or 133. Open to sophomores. *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**245. Abnormal Psychology**

Either semester. Three credits. Prerequisite: PSYC 135 or 133. *Schwarz*

† Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

Nature of abnormal behavior, theories and data regarding symptoms, etiology, treatment and prevention of mental disorders.

245W. Abnormal Psychology

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

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

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

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. *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 Biology: PNB 264-265, and PSYC 132. Open to sophomores. *Salamone, Swadlow*

Physiological processes related to motivation, emotion, sensory processes, motor skills, learning, and psychiatric conditions.

257W. Physiological Psychology

258. Hormones and Behavior

Either semester. Three credits. Prerequisite: PSYC 132 and BIOL 100 or 102 or 107, and PSYC 257 or BIOL 262 (which may be taken concurrently), or consent of instructor.

Interactions among hormones, behavior, and psychological states and processes.

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

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

268. Industrial Psychology

Either semester. Three credits. Prerequisite: PSYC 135 or 133. *Barnes-Farrell, Henning, Mellor, Sohn*

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: PSYC 135 or 133 and 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.

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 135 or 133, and 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. Required preparation: PSYC 268 or PSYC 240 or any 200-level Management course. *Lowe*

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. Not open for credit to students who have passed PSYC 291W.

Philosophical and scientific origins and major schools, including structuralism, functionalism, behaviorism, gestalt, and psychoanalysis.

291W. The History and Systems of Psychology

292. Variable Topics

Either semester. Three credits. With a change in topic, may be repeated for credit. Prerequisites, required preparation, 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.

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. 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. Prerequisite: 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, required preparation, 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 Scott Cook

Office: Room 413, Beach Hall, 4th floor

241. Latin American Minorities in the United States

(Also offered as Anthropology 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.

260. Media and Special Audiences

(Also offered as COMS 260.) Either semester. Three credits. Recommended preparation: 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.

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.

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 History 206.) First semester. Three credits. Open to sophomores. 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.

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.

Discussions based on the content of Science 240.

Sociology (SOCl)

Head of Department: Professor Wayne Villemez

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 and 109; ENGL 109 may be taken concurrently.

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 and 109; ENGL 109 may be taken concurrently.

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**205. Methods of Social Research**

Either semester. Three credits. Prerequisite: SOCI 107.

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.

207Q. Quantitative Methods in Social Research

Either semester. Three credits. Prerequisite: SOCI 205 or consent of instructor; and STAT 100 or 110.

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 consent of instructor. *Ratcliff*

Applying sociology and its methods to ask research questions, gather information, and evaluate social programs.

212. Language and Society

Either semester. Three credits.

Linguistic construction of social reality, social variations in speech behavior, and political issues.

216. Criminology

Either semester. Three credits. Open to sophomores.

DeFronzo, Logan

Theories and research on crime, criminal law, and the criminal justice system.

216W. Criminology

Open to sophomores.

217. Deviant Behavior

Either semester. Three credits. *McNeal*

Behaviors labeled by society as deviant, such as crime, prostitution, suicide, alcoholism, drug abuse, and mental illness.

217W. Deviant Behavior**218. Juvenile Delinquency**

Second semester. Three credits. *Wright*

An overview of sociological theory and research on juvenile delinquency.

218W. Juvenile Delinquency**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**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.)

226. Modern Africa

Either semester. Three credits. *Gugler*

Cultural patterns, social structure, and political conflict in Sub-Saharan Africa.

226W. Modern Africa**227. Revolutionary Social Movements Around the World**

Either semester. Three credits. One 3-hour class per week. Open to sophomores. *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

230. Society and the Individual

Either semester. Three credits. Prerequisite: SOCI 107. *Dashefsky, Oates*

Modern social systems and the behavior, psychological organization, and development of individuals.

230W. Society and the Individual**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**241. Women and Health**

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**243. Prejudice and Discrimination**

Either semester. Three credits. *McNeal, Taylor*

Sources and consequences of racial and ethnic prejudice and discrimination.

243W. Prejudice and Discrimination**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**246. Human Sexuality**

Either semester. Three credits. Open to sophomores.

How sexual behavior is molded by culture and social structure. Among the topics are premarital sex, homosexuality, pornography, and rape.

246W. Human Sexuality

Open to sophomores.

247. Sociology of Health

Either semester. Three credits. *Ratcliff*

Social factors related to health, illness, and health-care systems.

247W. Sociology of Health**248. Aging in American Society**

(Also offered as HDFR 248.) Either semester. Three credits. This course may be used only once to meet the distribution requirements. *Sheehan*

Social gerontology: the role and status of older people in a changing society.

248W. Aging in American Society

(Also offered as HDFR 248W.)

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**250. Sociology of the Family**

Either semester. Three credits. Open to sophomores. *McDonald*

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**252. Sociological Perspectives on Women**

Either semester. Three credits. *Ferree, McDonald, Tuchman*

The status of women in American society.

252W. Sociological Perspectives on Women**253. Sociology of Religion**

Either semester. Three credits.

Religion in social context: differences of church, denomination, sect, and cult; religious culture, organization, and ideology.

253W. Sociology of Religion**255. Population**

Either semester. Three credits. *Hadden*

Size, growth, composition and distribution of population; social factors in population change.

255W. Population**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**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**260. Social Organization**

Either semester. Three credits. Prerequisite: SOCI 107. *Villemez, Weakliem*

Social organization and structure in modern society. Sociology majors should take this required course in their junior year.

260W. Social Organization**267. Public Opinion and Mass Communication**

Either semester. Three credits. *Ferree, 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**268. Class, Power, and Inequality**

Either semester. Three credits. *Glasberg, Neubeck, Villemez*

Inequality and its consequences in contemporary societies.

268W. Class, Power, and Inequality**269. Political Sociology**

Either semester. Three credits. *Glasberg, Neubeck, Weakliem*

Social analysis of power, democracy and voting, society and the state, and political economy.

269W. Political Sociology**270. Social Theory**

Either semester. Three credits. Prerequisite: SOCI 107. *McDonald, Tuchman*

Sociological theory for advanced undergraduates.

270W. Social Theory**274. Work and Occupations**

Either semester. Three credits. *McDonald, Villemez*

Occupations, jobs, careers, and the professions, and their effects on the division of labor, on the workplace, and on individuals in the labor force.

275. Collective Bargaining

Either semester. Three credits.

Labor-management relations, with emphasis on issues of public policy.

280. Urban Sociology

(Also offered as Urban Studies 280.) Either semester. Three credits. Open to sophomores. *Abrahamson, Gugler*

Social and physical organization of cities and suburbs.

280W. Urban Sociology

(Also offered as Urban Studies 280W.) Open to sophomores.

281. Urban Problems

(Also offered as Urban Studies 281.) Either semester. Three credits.

Social problems of American cities and suburbs, with emphasis on policy issues.

281W. Urban Problems**282. Urbanization**

Either semester. Three credits. *Gugler*

The rapid urbanization of the world's population: its causes, characteristics and consequences.

282W. Urbanization**283. City Life**

Either semester. Three credits.

Ways of life in large cities and suburbs and the culture of modernism.

283W. City Life**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

290. Social Movements and Social Change

Either semester. Three credits.

Revolutionary, reform, reactionary, religious, communal, and escapist movements.

290W. Social Movements and Social Change**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.

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: Sociology 107. *Logan, Neubeck, Ratcliff*

Internship in a social-welfare agency or institution.

296W. Field Experience

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, required preparation, 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.

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. 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. 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.

201Q. Introduction to Statistics II

Either semester. Three credits. Prerequisite: STAT 100 or 110. Open to sophomores.

Analysis of variance, multiple regression, chi-square tests, and non-parametric procedures.

220Q-221Q. Statistical Methods (Calculus Level)

Either semester. Three credits each semester. Required preparation: 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. Required preparation: 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. Required preparation: 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. Required preparation: 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. Required preparation: STAT 201 or 220 or consent of instructor. 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. Required preparation: STAT 201 or 220 or consent of instructor. 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 consent of instructor.

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 consent of instructor.

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. Required preparation: 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. Required preparation: 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. Required preparation: STAT 220 or an applied statistics course along with either STAT 230 or MATH 231 or consent of instructor.

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. Required preparation: STAT 231 or consent of instructor.

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

(Also offered as MATH 284Q.) Either semester. One or two credits. Hours by arrangement. Required preparation: MATH 231 and STAT 230. Not open for credit to students who have passed MATH 284.

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. Required preparation: 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 Lower Division General CLAS requirements. Completion with a grade of "C" or better of STAT 220 or STAT 230 and STAT 242 or STAT 243.

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, required preparation, 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, recommended preparation, required preparation vary.

299. Independent Study

Either semester. Credits and hours by arrangement.

Open only with consent of instructor. May be repeated for credit.

Urban Studies (URBN)

Director, Urban Studies Program: Thomas J. Cooke
Office: Room 444, Beach Hall

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 Geography 130.) Either semester. Three credits. *Allen, Cooke, Halvorson*

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. *Halvorson*

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. *Cooke*

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 Urban Studies 212.) (Also offered as Geography 233.) Either semester. Three credits. Not open for credit to students who have passed GEOG 233. *Halvorson, Meyer*

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 History 241.) Second semester. Three credits. Not open for credit to students who have passed HIST 241. *Stave*

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 History 241W.)

248. Urban Anthropology

(Also offered as Anthropology 248.) First semester. Three credits. Not open for credit to students who have passed ANTH 248. *Magubane*

A general course on urbanization, emphasizing contrasts between "developed" and "developing" countries.

259. Urban and Regional Economics

(Also offered as Economics 259.) Second semester. Three credits. Required preparation: ECON 112 or 113. Recommended preparation: ECON 111. Not open for credit to students who have passed ECON 259.

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 Political Science 263W.) Either semester. Three credits. Not open for credit to students who have passed POLS 263.

Political systems and problems confronting urban governments.

280. Urban Sociology

(Also offered as Sociology 280.) Either semester. Three credits. Open to sophomores. Not open for credit to students who have passed URBN/SOCI 286. *Abrahamson, Allen, Gugler*

Social and physical organization of cities and suburbs.

280W. Urban Sociology

(Also offered as Sociology 280W.) Open to sophomores.

281. Urban Problems

(Also offered as Sociology 281.) Either semester. Three credits. Not open for credit to students who have passed URBN/SOCI 284.

Social problems of American cities and suburbs with emphasis on policy issues.

281W. Urban Problems

(Also offered as Sociology 281W.)

295. Variable Topics

Either semester. Three credits. With a change in topic, may be repeated for credit. Prerequisites, required preparation, 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, required preparation, 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.

Women's Studies (WS)

Director, Women's Studies Program: Mary Crawford
Office: Room 425 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

(Formerly offered as INTD 103.) First semester. Three credits. Not open for credit to students who have passed INTD 102.

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. Introduction to Women's Studies in the Arts

(Formerly offered as INTD 104.) Second semester. Three credits. Not open for credit to students who have passed INTD 102.

Interdisciplinary examination of the representations of women and works by women in one or more of the following genres – drama, art, music, or film. Key issues of feminist criticism and scholarship in the arts are introduced and discussed.

124. Changing Roles of Women and Men: A Global Perspective

(Formerly offered as INTD 124.) Either semester. Three credits.

Exploration of the social position and relations of women and men (political, economic, cultural and familial) in selected non-western societies. Emphasis is given both to understanding the origins of culturally distinctive patterns and to recognizing the ways in which these relationships have been and are being transformed.

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 Political Science 203W.) Second semester. Three credits. *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.

† Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

204. Women and Politics

(Also offered as Political Science 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 History 210.) Either semester. Three credits. Not open to students who have taken HIST 202 or WS 202 before fall 1998. *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.

215. History of Women and Gender in the United States, 1790-Present

(Also offered as History 215.) Either semester. Three credits. Not open 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.

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 Anthropology 231.) First semester. Three credits. Open to sophomores. *Dussart*

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.

261. Women's Studies Internship Program

(Formerly offered as INTD 261.) Either semester. Three to nine credits. Hours by arrangement. Required preparation: One Women's Studies course in field appropriate to placement. 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 9-18 hours per week in an organization related to the student's major field of study. Such work is overseen by the field work supervisor, the Women's Studies Internship Coordinator and an additional faculty member when deemed appropriate.

262. Women's Studies Internship Seminar

(Formerly offered as INTD 262.) Either semester. Three credits. Open only with consent of Women's Studies Internship Coordinator.

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

(Formerly offered as INTD 263.) Second 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

(Formerly offered as INTD 264.) First semester. Three credits.

An examination of the role of gender in shaping the American workplace and the lives of workers. Discussion of important issues such as comparable worth and sexual harassment drawing on research done in a variety of social science disciplines.

265. Women's Studies Research Methodology

First semester. Three credits. Required preparation: 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 Philosophy 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

First 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 the "Feminization of Poverty" 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 – Women, Language and Communication.

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

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. Hours by arrangement.

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. Hours by arrangement. 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.

289W. Senior Seminar in Women's Studies

Second semester. Three credits. Recommended preparation: WS 265 and Philosophy 218 (Feminist Theory) or consent of instructor. For WS majors only.

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. *Valentino*

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, required preparation, 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, required preparation, 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.

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.

Using the computers for solving 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. *Singha*
 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.
 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.

Agricultural and Resource Economics (SARE)

050. Principles of Agricultural and Resource Economics
 Either semester. Three credits. Prerequisite: SAAG 090 or exemption by examination. 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. 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. *Stake*
 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 periods and one 2-hour discussion/laboratory period. *Yonash*
 The principles genetics, chemistry of nucleic acids, replication, transcription expression and regulation of genes, population and quantitative genetics, and modern molecular genetics approaches as tools for breeding.

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.
 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. *Stake*
 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 horses in harness and under saddle.

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.
 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. *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. *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. *Darre*
 Practical experience in common management practices is offered by working in the University facilities under supervision.

† Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

†068. Management Skills and Practices – Sheep
Either semester. One credit. Hours by arrangement. May be repeated once for credit. *Hoaglund*

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. *Hoaglund*

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. Offered in odd-numbered years. *Hoaglund*

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. Offered in even-numbered years. *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. Taught concurrently with ANSC 277S. Offered in odd-numbered years. *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. *Zimm*

A discussion of current employment opportunities in animal agriculture.

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 outlined 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. 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.

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. 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.

Plant Science (SAPL)

003. Introduction to Plant Science

First semester. Four credits. Three class periods and one 2-hour laboratory period. *Allinson*

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.

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.

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. Three credits. Two class periods and one 2-hour laboratory period. Prerequisite: SAPL 003 and SAPL 022. *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. Field trips required.

026. Greenhouse Crop Production I

First semester. Two credits. One class period and one 2-hour laboratory period. Prerequisite: SAPL 025 (may be taken concurrently). 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 produced for fall and winter markets. Laboratories provide experience in crop production. Field trips required.

027. Greenhouse Crop Production II

Second semester. Two credits. One class period and one 2-hour laboratory period. Prerequisite: SAPL 026. Taught jointly with PLSC 227. *Elliott*

Continuation of SAPL 026. Emphasis on flowering potted plants and bedding plants produced for spring and summer markets. Laboratories provide experience in crop production. Field trips required.

029. Forage Crops

First semester. Three credits. Two class periods and one 2-hour laboratory period. *Allinson*

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.

† Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

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. *Bridgen*

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. *Shashok*

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 or consent of instructor. *Shashok*

An overview of integrated pest management (IPM) techniques, from development to implementation, with horticultural crops.

046. Fruit Production

Second semester. Three credits. *Shashok*

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. *Shashok*

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. *Bridgen*

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. *Bridgen*

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.

068. Landscape Plant Maintenance

Second semester. Three credits. Taught concurrently with PLSC 245. *Auer*

Lectures will emphasize the ecological dynamics of altered landscapes related to the planting and maintenance of established man-made landscapes. The relationship of ecology to plant installation, plant care during the establishment period, and plant care after establishment will be covered. Protection of existing plants during construction and plant-landscape standards will be discussed.

069. Landscape and Planting Design

Second semester. Four credits. Two class periods and two 2-hour laboratory periods. Prerequisite: SAPL 031, 066, and 067 or consent of instructor. *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. *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. *Ashley*

Students will be responsible for planning, producing, and marketing a vegetable crop on a commercial scale. Requires the availability of private production facilities.

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.

† Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

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Policies and Procedures for Students with Disabilities

Preamble. The University of Connecticut is committed to achieving equal educational opportunity and full participation for persons with disabilities. It is the 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 commitment to non-discrimination for all persons in employment, access to facilities, student programs, activities, and services.

A person with a disability must be ensured the same access to programs, opportunities, and activities at the University as all others. Existing barriers, whether physical, programmatic, or attitudinal must be removed. There must be ongoing vigilance to ensure that new barriers are not erected.

The efforts to accommodate people with disabilities must be measured against the goal of full participation and integration. Services and programs to promote these benefits for people with disabilities shall complement and support, but not duplicate, the regular services and programs.

Achieving full participation and integration of people with disabilities requires the cooperative efforts of all of the departments, offices, and personnel. To this end, the University will continue to strive to achieve excellence in its services and to assure that its services are delivered equitably and efficiently to all of its members.

Adopted June, 1989

Accessibility: The Key to Equal Opportunity

Assurance of equal educational opportunity rests upon legal foundations established by federal law, specifically the Rehabilitation Act of 1973 including Section 504, and the Americans with Disabilities Act of 1990. By federal law, a person with a disability is any person who: 1) has a physical or mental impairment; 2) has a record of such impairment; or 3) is regarded as having such an impairment which substantially limits one or more major life activities such as self-care, walking, seeing, hearing, speaking, breathing, or learning.

Policies regarding access for persons with disabilities apply to the main campus, regional campuses, the School of Social Work, and the School of Law. Individuals seeking services should contact the designated Disability Contact Person at each respective campus.

University Disability Contact Personnel Main Campus (Storrs):

Center for Students with Disabilities (CSD)

Donna M. Korbel, Director Jennifer H. Lucia, Associate Director
Wilbur Cross, Room 161, (860) 486-2020 (voice/TDD), (860) 486-4412 (FAX)

University Program for College Students with Learning Disabilities (UPLD)

Joseph Madaus, Director
Neag School of Education, Hall Building, Room 110
(860) 486-0178, (860) 486-5799 (FAX)

Regional Campuses

Avery Point: Trudy Flanery, Assistant to the Dean of Students
Administration and Student Affairs Building, Room 109
1084 Shennecossett Road
Groton, CT 06340, (860) 405-9024, (860) 405-9018 (FAX)

Greater Hartford Campus: Jane Thierfeld Brown, Disability Coordinator or
Nadine Brennan, Assistant to the Dean of Students
Undergraduate Building, Room 310
85 Lawler Road
West Hartford, CT 06117-2697, (860) 570-9188, (860) 570-9210 (FAX)

Stamford: Sharon Johnson White, Assistant to the Dean of Students
1 University Place
Stamford, CT 06903, (203) 251-8487, (203) 251-8486 (FAX)

Torrington: Judith DiLaurenzio, Assistant to the Dean of Students
Student Affairs Office, 855 University Drive, Torrington, CT 06790,
(860) 626-6804, (860) 626-6847 (FAX)

Waterbury: Stuart Brown, Assistant to the Dean of Students
Benedict Miller House, Room 215, 32 Hillside Avenue, Waterbury, CT 06710-
2288, (203) 236-9847, (203) 236-9845 (FAX)

Graduate School of Social Work: Jane Thierfeld Brown
1798 Asylum Avenue, West Hartford, CT 06117,
(860) 570-9188, (860) 570-9210 (FAX)

School of Law: Jane Thierfeld Brown, Disability Coordinator
Hartranft 106, 55 Elizabeth Street, Hartford, CT 06105-2296,
(860) 570-5130 (voice), (860) 570-5299 (TDD)

Laurie S. Werling, Associate Dean
Hartranft 104, 55 Elizabeth Street, Hartford, CT 06105-2296,
(860) 570-5130, (860) 570-5128 (FAX)

Student Rights and Responsibilities. Every student with a documented disability has the following rights:

1. Equal access to courses, programs, services, jobs, activities, and facilities available through the University.
2. Reasonable and appropriate accommodations, academic adjustments, and/or auxiliary aids determined on a case-by-case basis.
3. Appropriate confidentiality of all information pertaining to his/her disability with the choice of whom to disclose their disability to except as required by law.
4. Information reasonably available in accessible formats.

Every student with a disability has the responsibility to:

1. Meet the University's qualifications and essential technical, academic, and institutional standards.
2. Identify themselves in a timely manner as an individual with a disability when seeking an accommodation.
3. Provide documentation from an appropriate professional source that verifies the nature of the disability, functional limitations, and the need for specific accommodations.
4. Follow specific procedures for obtaining reasonable and appropriate accommodations, academic adjustments, and/or auxiliary aids.

Institutional Rights and Responsibilities. The University of Connecticut, through its Disability Contact Persons (see pp. 2-3) has the right to:

1. Maintain the University's academic standards.
2. Request current documentation from a student completed by an appropriate professional source to verify the need for reasonable accommodations, academic adjustments, and/or auxiliary aids.
3. Discuss a student's need for reasonable accommodations, academic adjustments, and/or auxiliary aids with the professional source of his/her documentation with the student's signed consent authorizing such discussion.
4. Select among equally effective and appropriate accommodations, adjustments, and/or auxiliary aids in consultation with students with disabilities.
5. Deny a request for accommodations, academic adjustments, and/or auxiliary aids if the documentation does not identify a specific disability, the documentation fails to verify the need for the requested services, or the documentation is not provided in a timely manner.
6. Refuse to provide an accommodation, adjustment, and/or auxiliary aid that is inappropriate or unreasonable including any that:
 - pose a direct threat to the health and safety of others;
 - constitute a substantial change or alteration to an essential element of a course or program; or
 - pose undue financial or administrative burden on the University.

The University of Connecticut, through its Disability Contact Persons, has the responsibility to:

1. Ensure that University courses, programs, services, jobs, activities, and facilities, when viewed in their entirety, are offered in the most integrated and appropriate settings.
2. Provide information regarding policies and procedures to students with disabilities and assure its availability in accessible formats upon request.
3. Evaluate students on their abilities, not their disabilities.
4. Provide reasonable and appropriate accommodations, academic adjustments, and/or auxiliary aids for students with disabilities upon a timely request by a student.
5. Maintain appropriate confidentiality of records and communication concerning students with disabilities except where disclosure is required by law or authorized by the student.

More specifically, the University's Disability Contact Person has the responsibility to:

1. Assist students with disabilities who self-identify and meet University criteria for eligibility to receive reasonable and appropriate accommodations, academic adjustments, and/or auxiliary aids determined on a case-by-case basis.
2. Assure confidentiality of all information pertaining to a student's disability.
3. Inform students with disabilities of University policies and procedures for filing a formal grievance through the Office of Diversity and Equity and/or through external agencies (e.g., Office of Civil Rights).

Specific Policies

Academic Accommodations Policy/Responsibilities of the Disability Contact Person Include:

- Determining eligibility for participation of students with disabilities in the academic accommodations process based upon a review of appropriate documentation.
- Determining the appropriate accommodation for each student based on the individual's need.
- Assuring the student receives the appropriate accommodation.
- Interacting with faculty when appropriate.

Responsibilities of the Student Include:

- Contacting the Disability Contact Person at the campus he/she is attending at **the beginning of each semester** so that appropriate accommodations can be made in a timely manner. Students are strongly encouraged to make this contact **within the first two weeks** of each semester. This includes filling out the required academic accommodation form, which indicates the student's need (e.g., extended time to complete exams, notetaker, classroom relocation, laboratory assistant, etc.).
- Providing the Disability Contact Person with appropriate medical, psychological, psychoeducational, or neuropsychological documentation indicating the student's disability and suggested accommodations.
- Providing signed consent authorizing the Disability Contact Person to discuss his/her need for reasonable accommodations, academic adjustments, and/or auxiliary aids with the professional source of his/her documentation.
- Informing the faculty member or professor at the beginning of each semester about his/her disability, how performance may be affected, and necessary and reasonable accommodation(s). (This responsibility is optional for students at the School of Law.)
- Meeting the timelines and procedural requirements established by the Disability Contact Person for scheduling exams, requesting assistance, arranging with a faculty member, and/or the Disability Contact Person for getting the exam to the location of testing. If the student fails to provide adequate notice of the need for space and/or assistance, he/she is still entitled to the accommodation, but there is no guarantee that it can be provided in the fullest measure.
- If the student fails to comply with these requirements, he/she will receive a written reminder of responsibilities in order to stress the importance of these requirements.

Responsibilities of the Faculty Member Include:

- Discussing with the Disability Contact Person any concerns related to the accommodation(s) or arrangements that have been requested by the student during their initial contacts.
- Determining the conditions under which the exam is to be administered (e.g., open book, use of notes, computer with word processing including spell check, formula sheet, calculator, scrap paper, dictionary).
- Providing appropriate accommodations, either personally or by making arrangements with the Disability Contact Person.
- Assuring the timely delivery of the exam, along with all necessary instructions and materials for proper administration, if a student's exam is to be administered outside of class. The faculty member may also make arrangements with the student for the delivery and return of the exam.
- Assuring the confidentiality of information regarding students with disabilities.

Eligibility for Financial Aid. Students with documented disabilities may enroll in a less than full-time course load as an academic adjustment to accommodate their disability under the Americans with Disabilities Act of 1990 and the regulations accompanying Section 504 of the Rehabilitation Act of 1973. Students are encouraged to discuss full-time course load requirements with an academic advisor or student affairs counselor for their respective program. A financial aid counselor can determine how their aid will be affected by a reduced course load.

Students should be aware that Federal law requires the federal Pell Grant funds be prorated based on the number of credits taken, and that the student financial aid budget will also be reduced accordingly. In addition, under the federal Stafford Loan Program, or to have a previous loan deferred, the student must take at least six credits.

Students whose disabilities warrant the adjustment of carrying less than a full-time load per semester can be determined eligible for student financial aid status. In such a case, these procedures must be followed:

1. Students must provide appropriate documentation regarding their disability that substantially limits one or more major life functions to the Disability Contact Person.
2. If a student is registered at the beginning of a semester for less than a full-time credit load as an accommodation for a disability, this must be verified by the Disability Contact Person. Students must contact the Disability Contact Person for this verification **NO LATER THAN** the last day of the University's ADD/DROP period.

3. If a student is registered at the beginning of a semester for a full-time course load but to accommodate his/her disability withdraws from a course within the approved drop period for the respective program and according to the procedures for dropping a course, he/she must discuss this with the Disability Contact Person **NO LATER THAN** the last day of the drop period for classes.

4. The Disability Contact Person will notify Certifications **each semester** regarding students with disabilities carrying fewer than a full-time course load who are eligible for Financial Aid consideration under these procedures.

Students should be aware that, as always, eligibility for Financial Aid depends upon satisfactory academic progress.

Undergraduate Eligibility for Dean's List Status. 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. In such a case, the procedures for **Eligibility for Financial Aid** must be followed **each semester**. The Disability Contact Person will notify Certifications each semester regarding students who are eligible.

Course Substitutions for Undergraduate Students with Documented Severe Learning Disabilities Policy. Recognizing that the nature and severity of the documented specific learning disability may preclude learning in the quantitative or foreign language area even with reasonable accommodations, the University will permit the substitution of specific courses as an accommodation. Because these requirements are often important parts of a program, each case must be carefully considered on an individual basis before a decision is made by the appropriate Dean of the student's School or College.

Procedures. The following procedures must be followed if a student with a documented learning disability is seeking a modification of either the University's Q or Foreign Language requirement:

1. The petition process should begin as soon as there is strong objective evidence (e.g., previous documented difficulties) that the student will be unable to fulfill the requirement.
2. The student must provide the Director of the University Program for College Students with Learning Disabilities (UPLD) on the Storrs campus with **current**, relevant, and comprehensive documentation and assessment data from certified professionals. Detailed guidelines for acceptable documentation are available from UPLD. This documentation must substantiate a severe learning disability and its specific impact upon the student's ability in the area of mathematics or foreign language learning.
3. A complete case history is required to document the student's history of problems in quantitative or foreign language learning from high school until the date of the petition. This case history should include:
 - a. a personal statement by the student indicating the reasons for the request including prior experiences with the subject matter; and
 - b. the names of courses and grades, as well as letters from high school personnel and/or college faculty attesting to the student's efforts and diligence in attempting to master the subject matter.

Upon completion of these steps, the documentation and the supporting evidence from the case history are reviewed by the Director and Associate Director of UPLD. If there is evidence that a substitution is warranted, the Director will forward the petition packet to the Dean of the student's College or School with a copy sent to the student. The student will be notified in a timely manner of the final decision rendered by the Dean of his/her College or School. If the Director and Associate Director find there is insufficient evidence to verify the appropriateness of the request, the student has the option of having a Documentation Review Team, comprised of University faculty in the areas of special education and school psychology and advanced graduate students with expertise in learning disabilities and assessment, conduct an impartial, blind review of the documentation. The Team's decision as to whether there is sufficient evidence to warrant a course substitution will be conveyed to the student.

Any student who receives an exemption is expected to fulfill the University's Q or Foreign Language requirements according to the following guidelines for selecting alternative courses. To fulfill the University's Q-requirement, two alternative courses must be chosen from Groups VI, VII, and VIII. To fulfill the foreign language requirement, an equivalent number of courses must be chosen from Column A (Literature) of Group IV, and/or from Group V.

Students with a Documented Severe Communication Disorder Policy. For students with a documented severe communication disorder for whom learning a foreign language would be unreasonable, the University will permit the substitution of specific courses as a reasonable accommodation. Because these foreign language requirements are often important parts of a program, each case must be carefully considered on an individual basis before a decision is made by the appropriate Dean.

Procedures. The following procedures must be followed if a student with a

documented severe communication disorder is seeking a modification of the University's Foreign Language requirement:

1. The petition process should begin as soon as there is strong objective evidence that the student will be unable to fulfill the requirement.
2. The student must provide the Director of the Center for Students with Disabilities (CSD) on the Storrs campus with **current**, relevant, and comprehensive documentation from a certified professional. This documentation must substantiate both the severe communication disorder and its specific impact upon the student's ability in the area of foreign language learning.

Upon completion of these steps, the documentation is reviewed by the Director of the CSD and a diagnostic evaluator. A decision regarding the validity of a student's petition is rendered within one (1) month of the team's receipt of the documentation. The decision and recommendation of the team are then forwarded to the Dean of the student's College or School with a copy sent to the student. The student will be notified in a timely fashion of the final decision rendered by the Dean of his/her College or School. Any student who receives an exemption is expected to fulfill the University's Foreign Language requirements according to the guidelines for selecting alternative courses.

Procedures for Accessing Services at the Storrs Campus

Center for Students with Disabilities

Donna M. Korbel, Director
Jennifer H. Lucia, Associate Director
Wilbur Cross, Room 161
(860) 486-2020 (voice/TDD), (860) 486-4412 (FAX)

Any student with a documented disability is eligible to receive services from the Center for Students with Disabilities (CSD). The purpose of accommodations and modifications is to reduce or eliminate any disadvantages that may exist because of an individual's disability. The law does not require institutions to waive specific courses or academic requirements considered essential to a particular program or degree. Rather, they are mandated to modify existing requirements on a case-by-case basis in order to ensure that individuals are not discriminated against on the basis of their disability. Students wanting to access services must self-identify and provide appropriate verification of their disability. Eligibility for reasonable and appropriate accommodations will be determined on an individual basis.

Appropriate documentation will assist the student and the University in determining reasonable accommodations as stipulated under Section 504 of the Rehabilitation Act of 1973, the Americans with Disabilities Act, and other pertinent state and federal regulations. It is the responsibility of the student requesting accommodations to present documentation and request accommodations in a timely manner prior to the beginning of the academic semester.

Students requesting accommodations of either an academic or personal nature must contact the CSD and present appropriate documentation prior to receiving services. Documentation must be current, in most cases within three years of the current date, and must be submitted by a qualified practitioner. This documentation must be a comprehensive assessment including recommendations for accommodations as well as recommendations for treatment. Documentation should include:

- A diagnostic statement including the date of the most recent evaluation
- The current impact of (or limitations imposed by) the condition
- Treatments, medications, devices or services currently prescribed or used to minimize the impact of the condition
- The expected duration, stability or progression of the condition.

In addition to the basic documentation for a condition listed above, recommendations from the treating professional are welcome and will be given consideration in evaluating a request. Recommendations should:

- Provide clear description of the recommended accommodations
- Connect the recommended accommodations to the impact of the condition
- Provide possible alternatives to the recommended accommodations
- Include a statement of the level of need (or consequences of not receiving) the recommended accommodations

Reasonable accommodations depend upon the nature and degree of severity of the documented disability. While the Americans with Disabilities Act of 1990 requires that priority consideration be given to the specific methods requested by the student, it does not imply that a particular accommodation must be granted if it is deemed not reasonable and other suitable techniques are available.

Documentation guidelines for students with ADD/ADHD are as follows:

Documentation Guidelines for Students with ADD/ADHD:

I. A Qualified Professional Must Conduct the Evaluation. Professionals conducting assessments and rendering diagnoses of ADHD must have training in differential diagnosis and the full range of psychiatric disorders. The name, title, and professional credentials of the evaluator, including information about license or certification as well as the area of specialization, employment, and state or province in which the individual practices should be clearly stated in the documentation. The

following professionals would generally be considered qualified to evaluate and diagnose ADHD provided they have comprehensive training in the differential diagnosis of ADHD and direct experience with an adolescent or adult ADHD population: clinical psychologists, neuropsychologists, psychiatrists, and other relevantly trained medical doctors. It may be appropriate to use a clinical team approach consisting of a variety of educational, medical, and counseling professionals with training in the evaluation of ADHD in adolescents and adults.

Use of diagnostic terminology indicating an ADHD by someone whose training and experience are not in these fields is not acceptable. It is also not appropriate for professionals to evaluate members of their own families. All reports should be on letterhead, typed, dated, signed, and otherwise legible. The receiving institution or agency has the responsibility to maintain the confidentiality of the individual's records.

II. Documentation Should be Current. Because the provision of all reasonable accommodations and services is based upon assessment of the current impact of the disability on academic performance, it is in an individual's best interest to provide recent and appropriate documentation. In most cases, this means that a diagnostic evaluation has been completed within the past three years. Flexibility in accepting documentation which exceeds a three-year period may be important under certain conditions if the previous assessment is applicable to the current or anticipated setting. If documentation is inadequate in scope or content, or does not address the individual's current level of functioning and need for accommodation(s), reevaluation may be warranted. Furthermore, observed changes may have occurred in the individual's performance since previous assessment, or new medication(s) may have been prescribed or discontinued since the previous assessment was conducted. In such cases, it may be necessary to update the evaluation report. The update should include a detailed assessment of the current impact of the ADHD and interpretive summary of relevant information (see Section III, G) and the previous diagnostic report.

III. Documentation Should be Comprehensive

A. Evidence of Early Impairment. Because ADHD is, by definition, first exhibited in childhood (although it may not have been formally diagnosed) and manifests itself in more than one setting, relevant historical information is essential. The following should be included in a comprehensive assessment: clinical summary of objective, historical information establishing symptomology indicative of ADHD throughout childhood, adolescence, and adulthood as garnered from transcripts, report cards, teacher comments, tutoring evaluations, past psychoeducational testing, and third party interviews when available.

B. Evidence of Current Impairment. In addition to providing evidence of a childhood history of an impairment, the following areas must be investigated:

1. Statement of Presenting Problem. A history of the individual's presenting attentional symptoms should be provided, including evidence of ongoing impulsive/hyperactive or inattentive behaviors that significantly impair functioning in two or more settings.

2. Diagnostic Interview. The information collected for the summary of the diagnostic interview should consist of more than self-report, as information from third party sources is critical in the diagnosis of ADHD. The diagnostic interview with information from a variety of sources should include, but not necessarily be limited to, the following:

- history of presenting attentional symptoms, including evidence of ongoing impulsive/hyperactive or inattentive behavior that has significantly impaired functioning over time;
- developmental history;
- family history for presence of ADHD and other educational, learning, physical, or psychological difficulties deemed relevant by the examiner;
- relevant medical and medication history, including the absence of a medical basis for the symptoms being evaluated;
- relevant psychosocial history and any relevant interventions;
- a thorough academic history of elementary, secondary, and postsecondary education;
- review of prior psychoeducational test reports to determine whether a pattern of strengths or weaknesses is supportive of attention or learning problems;
- relevant employment history;
- description of current functional limitations pertaining to an educational setting that are presumably a direct result of problems with attention;
- relevant history of prior therapy.

C. Rule Out of Alternative Diagnoses or Explanations. The evaluator must investigate and discuss the possibility of dual diagnoses, and alternative or co-existing mood, behavioral, neurological, and/or personality disorders, *which* may confound the diagnosis of ADHD. This process should include exploration of possible, alternative diagnoses, and medical and psychiatric disorders as well as educational and cultural factors impacting the individual which may result in behaviors mimicking an Attention-Deficit/Hyperactivity Disorder.

D. Relevant Testing. Neuropsychological or psychoeducational assessment is

important in determining the current impact of the disorder on the individual's ability to function in academically related settings. The evaluator should objectively review and include with the evaluation report relevant background information to support the diagnosis. If grade equivalents are reported, they must be accompanied by standard scores and/or percentiles. Test scores or subtest scores alone should not be used as a sole measure for the diagnostic decision regarding ADHD. Selected subtest scores from measures of intellectual ability, memory functions tests, attention or tracking tests, or continuous performance tests do not in and of themselves establish the presence or absence of ADHD. Checklists and/or surveys can serve to supplement the diagnostic profile but in and of themselves are not adequate for the diagnosis of ADHD and do not substitute for clinical observations and sound diagnostic judgment. All data must logically reflect a substantial limitation to learning for which the individual is requesting the accommodation.

E. Identification of DSM-IV Criteria. According to the DSM-IV, "the essential feature of ADHD is a persistent pattern of inattention and/or hyperactivity-impulsivity that is more frequent and severe than is typically observed in individuals at a comparable level of development" (p. 78). A diagnostic report should include a review and discussion of the DSM-IV criteria for ADHD both currently and retrospectively and specify which symptoms are present.

In diagnosing ADHD, it is particularly important to address the following criteria:

- symptoms of hyperactivity/impulsivity or inattention that cause impairment which must have been present in childhood;
- current symptoms that have been present for at least the past six months;
- impairment from the symptoms present in two or more settings (for example, school, work, and home);
- clear evidence of significant impairment in social, academic, or occupational functioning; and
- symptoms, which do not occur exclusively during the course of a Pervasive Developmental Disorder, Schizophrenia, or other Psychotic Disorder and are not better accounted for by another mental disorder (e.g., Mood Disorder, Anxiety Disorder, Dissociative Disorder, or a Personality Disorder).

F. Documentation Must Include a Specific Diagnosis. The report must include a specific diagnosis of ADHD based on the DSM-IV diagnostic criteria. The diagnostician should use direct language in the diagnosis of ADHD, avoiding the use of terms such as "suggests," "is indicative of," or "attention problems."

Individuals who report only problems with organization, test anxiety, memory and concentration in selective situations do not fit the proscribed diagnostic criteria for ADHD. Given that many individuals benefit from prescribed medications and therapies, a positive response to medication by itself does not confirm a diagnosis, nor does the use of medication in and of itself either support or negate the need for accommodation(s).

G. An Interpretative Summary Should be Provided. A well-written interpretative summary based on a comprehensive evaluative process is a necessary component of the documentation. Because ADHD is in many ways a diagnosis, which is based upon the interpretation of historical data and observation, as well as other diagnostic information, it is essential that professional judgment be utilized in the development of a summary, which should include:

1. demonstration of the evaluator's having ruled out alternative explanations for inattentiveness, impulsivity, and/or hyperactivity as a result of psychological or medical disorders or non-cognitive factors;
2. indication of how patterns of inattentiveness, impulsivity, and/or hyperactivity across the life span and across settings are used to determine the presence of ADHD;
3. indication of whether or not the student was evaluated while on medication, and whether or not there is a positive response to the prescribed treatment;
4. indication and discussion of the substantial limitation to learning presented by the ADHD and the degree to which it impacts the individual in the learning context for which accommodations are being requested; and
5. indication as to why specific accommodations are needed and how the effects of ADHD symptoms, as designated by the DSM-IV, are mediated by the accommodation(s).

IV. Each Accommodation Recommended by the Evaluator Should Include a Rationale

The evaluator(s) should describe the impact, if any, of the diagnosed ADHD on a specific major life activity as well as the degree of impact on the individual. The diagnostic report should include specific recommendations for accommodations that are realistic and that postsecondary institutions, examining, certifying, and licensing agencies can reasonably provide. A detailed explanation should be provided as to why each accommodation is recommended and should be correlated with specific functional limitations determined through interview, observation, and/or testing. Although prior documentation may have been useful in determining appropriate services in the past, current documentation should validate the need for services based on the individual's present level of functioning in the educational setting. A

school plan such as an Individualized Education Program (IEP) or a 504 plan is insufficient documentation in and of itself but can be included as part of a more comprehensive evaluative report. The documentation should include any record of prior accommodations or auxiliary aids, including information about specific conditions under which the accommodations were used (e.g., standardized testing, final exams, licensing or certification examinations) and whether or not they benefited the individual. However, a prior history of accommodations, without demonstration of a current need, does not in itself warrant the provision of a like accommodation. If no prior accommodations were provided, the qualified professional and/or the individual should include a detailed explanation as to why no accommodations were used in the past and why accommodations are needed at this time.

Because of the challenge of distinguishing normal behaviors and developmental patterns of adolescents and adults (e.g., procrastination, disorganization, distractibility, restlessness, boredom, academic underachievement or failure, low self-esteem, and chronic tardiness or inattentance) from clinically significant impairment, a multifaceted evaluation should address the intensity and frequency of the symptoms and whether these behaviors constitute an impairment in a major life activity. Reasonable accommodation(s) may help to ameliorate the disability and to minimize its impact on the student's attention, impulsivity, and distractibility. The determination for reasonable accommodation(s) rests with the designated disability contact person working in collaboration with the individual with the disability and when appropriate, college faculty. The receiving institution or agency has a responsibility to maintain confidentiality of the evaluation and may not release any part of the documentation without the individual's informed consent.

DSM-IV Diagnostic Criteria for ADHD*. The following diagnostic criteria for ADHD are specified in the DSM-IV (American Psychiatric Association, 1994):

A. Either (1) or (2):

1. six (or more) of the following symptoms of **inattention** have persisted for at least 6 months to a degree that is maladaptive and inconsistent with developmental level:

Inattention

- (a) often fails to give close attention to details or makes careless mistakes in schoolwork, work, or other activities
- (b) often has difficulty sustaining attention in tasks or play activities
- (c) often does not seem to listen when spoken to directly
- (d) often does not follow through on instructions and fails to finish schoolwork, chores, or duties in the workplace (not due to oppositional behavior or failure to understand instructions)
- (e) often has difficulty organizing tasks and activities
- (f) often avoids, dislikes, or is reluctant to engage in tasks that require sustained mental effort (such as schoolwork or homework)
- (g) often loses things necessary for tasks or activities (e.g., toys, school assignments, pencils, books, or tools)
- (h) is often easily distracted by extraneous stimuli
- (i) is often forgetful in daily activities

- 2) six (or more) of the following symptoms of **hyperactivity-impulsivity** have persisted for at least 6 months to a degree that is maladaptive and inconsistent with developmental level:

Hyperactivity

- (a) often fidgets with hands or feet or squirms in seat
- (b) often leaves seat in classroom or in other situations in which remaining seated is expected
- (c) often runs about or climbs excessively in situations in which it is inappropriate (in adolescents or adults, may be limited to subjective feelings of restlessness)
- (d) often has difficulty playing or engaging in leisure activities quietly
- (e) is often "on the go" or often acts as if "driven by a motor"
- (f) often talks excessively

Impulsivity

- (g) often blurts out answers before questions have been completed
 - (h) often has difficulty awaiting turn
 - (i) often interrupts or intrudes on others (e.g., butts into conversations or games)
- B. Some hyperactive-impulsive or inattentive symptoms that caused impairment were present before age 7 years.
- C. Some impairment from the symptoms is present in two or more settings (e.g., at school [or work] and at home).
- D. There must be clear evidence of clinically significant impairment in social, academic, or occupational functioning.

E. The symptoms do not occur exclusively during the course of a Pervasive Developmental Disorder, Schizophrenia, or other Psychotic Disorder and are not better accounted for by another mental disorder (e.g., Mood Disorder, Anxiety Disorder, Dissociative Disorder, or a Personality Disorder).

The DSM-IV specifies a code *designation* based on type:

314.01 Attention-Deficit/Hyperactivity Disorder, Combined Type: if both

Criteria A1 and A2 are met for the past 6 months

314.00 Attention-Deficit/Hyperactivity Disorder, Predominantly Inattentive

Type: if Criterion A1 is met but Criterion A2 is not met for the past 6 months

314.01 Attention-Deficit/Hyperactivity Disorder, Predominantly Hyperactive-Impulsive Type: if Criterion A2 is met but Criterion A1 is not met for the past 6 months.

Coding note: For individuals (especially adolescents and adults) who currently have symptoms that no longer meet full criteria, "In Partial Remission" should be specified.

314.9 Attention-Deficit/Hyperactivity Disorder Not Otherwise Specified: This category is for disorders with prominent symptoms of inattention or hyperactivity-impulsivity that do not meet criteria for Attention-Deficit/Hyperactivity Disorder.

***Note.** From Diagnostic and Statistical Manual of Mental Disorders (4th ed.) (pp. 83-85), by the American Psychiatric Association, 1994, Washington, D.C. Copyright © 1994 by the American Psychiatric Association. Reprinted with permission.

Recommendations for Consumers.

1. For assistance in finding a qualified professional:
 - a. contact the disability services coordinator at a college or university for possible referral sources; and/or
 - b. contact a physician who may be able to refer you to a qualified professional with demonstrated expertise in ADHD.
2. In selecting a qualified professional:
 - a. ask what experience and training he or she has had diagnosing adolescents and adults;
 - b. ask whether he or she has training in differential diagnosis and the full range of psychiatric disorders. Clinicians typically qualified to diagnose ADHD may include clinical psychologists, physicians, including psychiatrists, and neuropsychologists;
 - c. ask whether he or she has ever worked with a postsecondary disability service provider or with the agency to whom you are providing documentation; and
 - d. ask whether you will receive a comprehensive written report.
3. In working with the professional:
 - a. take a copy of these guidelines to the professional; and
 - b. be prepared to be forthcoming, thorough, and honest with requested information.
4. As follow-up to the assessment by the professional:
 - a. schedule a meeting to discuss the results, recommendations, and possible treatment;
 - b. request additional resources, support group information, and publications if you need them;
 - c. maintain a personal file of your records and reports; and
 - d. be aware that any receiving institution or agency has a responsibility to maintain confidentiality.

University Program for College Students with Learning Disabilities (UPLD)

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(860) 486-0178

UPLD Learning Lab
Neag School of Education, Hall Building, Room 103
(860) 486-0177

Accessing Services. To access services, students must refer themselves to UPLD and submit documentation to verify eligibility under Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990. Protection under these civil rights statutes is determined on a case-by-case basis. Documentation of a LD that **currently substantially limits** some major life activity including learning must be provided.

Guidelines for Documentation of a Specific Learning Disability. The following guidelines are provided in the interest of assuring that documentation is appropriate to verify eligibility **and** to support requests for reasonable accommodations, academic adjustments, and/or auxiliary aids. The Director and Associate Director of UPLD are available to consult with diagnosticians regarding any of these guidelines.

1. Testing **must** be comprehensive. It is not acceptable to administer only one test for the purpose of diagnosis. Minimally, domains to be addressed must include (but not be limited to):
 - a. **Aptitude.** The Wechsler Adult Intelligence Scale - Revised (WAIS-R) or WAIS-III with subtest scores is the preferred instrument. The Woodcock-Johnson Psychoeducational Battery - Revised: Tests of Cognitive Ability **or** the Stanford-Binet Intelligence Scale: Fourth Edition are acceptable. The Kaufman Brief Intelligence Test (KBIT) is **not** a comprehensive measure and therefore is not suitable.
 - b. **Achievement.** Current levels of functioning in reading, mathematics and written language are required. Acceptable instruments include the Woodcock-Johnson Psychoeducational Battery - Revised: Tests of Achievement; Wechsler Individual

Achievement Test (WIAT); Stanford Test of Academic Skills (TASK); Scholastic Abilities Test for Adults (SATA); or specific achievement tests such as the Test of Written Language - 3 (TOWL-3), Woodcock Reading Mastery Tests - Revised, **or** the Stanford Diagnostic Mathematics Test. The Wide Range Achievement Test - 3 (WRAT-3) and the Mini-Battery of Achievement (MBA) are **NOT** comprehensive measures of achievement and therefore are not suitable.

c. **Information Processing.** Specific areas of information processing (e.g., short- and long-term memory; sequential memory; auditory and visual perception/processing; processing speed) must be assessed. Information from subtests on the WAIS-R (or WAIS-III), the Woodcock-Johnson Tests of Cognitive Ability, **or** the Detroit Test of Learning Aptitude-Adult (DTLA-A), **as well as** other instruments relevant to the presenting learning problem(s) may be used to address these areas.

This is not intended to be an exhaustive list or to restrict assessment in other pertinent and helpful areas such as vocational interests and aptitudes.

2. Testing must be **current**. In most cases, this means testing that has been **conducted within the past three years**. Because the provision of all reasonable accommodations and services is based upon assessment of the current impact of the student's disabilities on his/her academic performance, it is in a student's best interest to provide recent and appropriate documentation.
3. **There must be clear and specific** evidence and identification of a learning disability. Individual "learning styles" and "learning differences" in and of themselves do not constitute a learning disability.
4. **Actual test scores must** be provided. Standard scores are required; percentiles and grade equivalents are **not** acceptable unless standard scores are also included. This is important since certain University policies and procedures (e.g., petitioning for permission to substitute courses) require actual data to substantiate eligibility.
5. In addition to actual test scores, interpretation of results is required. Test protocol sheets or scores alone are **not** sufficient.
6. Professionals conducting assessment and rendering diagnoses of learning disabilities **must** be qualified to do so. Trained, certified and/or licensed psychologists, neuropsychologists, clinical psychologists, learning disabilities specialists, and other professionals with training and experience relevant to adults and their evaluation are typically involved in the process of assessment. Experience in working with an adult population is **essential**.
7. Tests used to document eligibility **must** be technically sound (i.e., statistically reliable and valid) and standardized for use with an adult population.
8. Diagnostic reports **must** include the names, titles and professional credentials (e.g., licensed psychologist) of the evaluators as well as the date(s) of testing. **All reports must be typed.** Handwritten scores or summary sheets are **not** acceptable.
9. A written summary of or background information about the student's educational, medical, and family histories that relate to the learning disability **must be included**.
10. Any recommendation for an accommodation should be based on objective evidence of a substantial limitation to learning, supported by specific test results or clinical observations. Reports should establish the rationale for any accommodation that is recommended, using test data to document the need.
11. A description of any accommodation and/or auxiliary aid that has been used at the secondary or postsecondary level should be discussed. Include information about the specific conditions under which the accommodation was used (e.g., standardized testing, final exams) and whether or not it benefited the student.
12. Individual Education Programs (IEP's) are useful, but are not, in and of themselves, sufficient documentation to establish the rationale for accommodations.

Program Services. Three types of program services are offered along a Continuum leading to independence. Components of Direct Instruction, Monitoring, and Consultation are illustrated in the UPLD Continuum of Services (see back of brochure).

A trained staff of Learning Specialists (graduate students pursuing Masters and Doctoral degrees) are available to work with students on developing learning strategies to apply to their college coursework. Individual structured sessions are planned on a weekly, biweekly, or monthly basis. Students are encouraged to plan their coursework in a way that affords an opportunity for success including a reduced course load and extending the time period for degree completion. Accommodations including, but not limited to, testing (e.g., extended test time), use of a tape recorder for notetaking, and taped textbooks are facilitated by program staff.

Learning Specialists assist students with learning disabilities to identify and make use of existing campus resources such as the Center for Students with Disabilities (CSD), Counseling Services, the Speech and Hearing Clinic, Writing Resource Center, Math Center, Mental Health Services and Career Services. UPLD staff work closely with students to empower them to plan and implement a successful academic experience. Training and self-advocacy skills encourages students to consult directly with faculty regarding modifications and alternative testing procedures. Learning Specialist are available to assist students identify and monitor their needs for additional support services. This process culminates in the development of an individu-

alized, comprehensive, education plan that is cooperatively generated by the student, the Learning Specialist, and UPLD administrative staff.

Learning Specialists also work with students with LD to identify which level of program services will best meet their individual needs. Most students find that it is beneficial to access services at the Direct Instruction level, and to progress at an individual rate through the UPLD Continuum as they experience increasing confidence and competence. Support services are available at no cost and for as long as a student needs them.

Testing Accommodations. Students with disabilities are eligible for test accommodations determined on an individual basis. "Test," as used in this context, refers to quizzes and examinations taken during the semester in conjunction with an academic class. Students should discuss their specific needs for testing accommodations (e.g., extended time; separate location; use of computer) with CSD or UPLD staff **within the first two weeks** of a semester.

Students with documented learning disabilities who require accommodations must identify themselves to the University Program for College Students with Learning Disabilities (UPLD) and present appropriate documentation, as detailed in the preceding section. All other students, including those diagnosed with ADD and ADHD must present documentation to the Center for Students with Disabilities (CSD).

If the need for accommodations is deemed appropriate, UPLD or CSD will generate an academic accommodation request letter, which the student will present to the class instructor. Ideally, the student and the professor will determine the appropriate accommodation. UPLD and CSD will be available for consultation, and CSD will be able to execute accommodations if necessary.

Students are responsible for meeting with professors to discuss exam considerations **at the beginning of the semester**. Preferably, instructors or the academic department will administer the test accommodations. If this is not possible, the CSD can administer and/or proctor examinations.

Exams can also be taken at the Homer Babbidge Library. Please note that the Library may only be used as a testing site, and Library personnel will not administer or proctor exams. Exams to be taken at either location must be arranged in advance and taken as close to the actual class time as possible.

Reasonable accommodations depend upon the nature and degree of severity of the documented disability. While the Americans with Disabilities Act of 1990 requires that priority consideration be given to the specific method requested by the student, it does not imply that a particular accommodation must be granted if it is deemed not reasonable and other suitable techniques are available.

Test accommodations determined on a case-by-case basis may include:

- extended time to complete examinations and quizzes;
- a testing location free of distractions;
- special equipment such as a computer, magnifier, or braille;
- readers and scribes; and
- alternative formats such as oral or taped tests.

Procedures for Accessing Services at Other Campuses. Please get in touch with the Disability Contact Personnel at the University campus or School of attendance to request information about procedures for accessing services. (See section on **University Disability Contact Personnel** for detailed information.)

Academic Accommodations Advisory Panel. If a disagreement arises concerning specific accommodation requests, the Center for Students with Disabilities (CSD) and the University Program for College Students with Learning Disabilities (UPLD) are the official University agents in such matters if a process of conflict resolution is desired. Students must provide relevant documentation of their disability from an appropriate professional source in order to verify their eligibility for accommodations. This documentation is confidential and shared with University personnel on a need-to-know basis only.

The University of Connecticut has established an Academic Accommodations Advisory Panel under the jurisdiction of the Chancellor, the University's chief academic officer. The purpose of this Panel is to assist the Chancellor, on a case-by-case basis, in resolving any disagreements that arise concerning specific requests for academic accommodations. The Panel serves as a resource for all University entities including faculty, academic administrators, and University students for a final review of disagreements concerning specific academic accommodation requests.

Members of the Panel. Members of the Academic Accommodations Advisory Panel may include the following:

- * Faculty chairperson or designated representative of the Department offering the course(s) in which the accommodation is requested.
- * Representative from CADRI.
- * Director from either the University Program for College Students with Learning Disabilities (UPLD) or the Center for Students with Disabilities (CSD). The staff member who determined an accommodation for the student requesting a review will not participate in the Panel's review of that accommodation request.
- * Representative appointed by the Dean of Students.

* Faculty representative from the Special Education Program of the Department of Educational Psychology, Allied Health, or another department or program with specific expertise, to be determined by the ADA Compliance Officer depending upon the nature of the disability.

Procedure.

1. The student requests accommodation(s) and provides supporting documentation according to University guidelines to the Disability Contact Person.
2. In instances where there is disagreement concerning the appropriateness of the requested accommodation, the student, instructor teaching the course for which the accommodation has been requested, and the Disability Contact Person will make every effort to resolve the disagreement in a timely manner.
3. If agreement cannot be reached, the student, instructor, or University administrative staff may file a petition with the ADA Coordinator who would have responsibility for convening the Academic Accommodations Advisory Panel.
4. The Panel then reviews the petition and any additional relevant information from University personnel in order to render a decision within ten (10) days from the date of the petition. This decision is subject to the approval of the Chancellor.
5. While a petition is under review by the Academic Accommodations Advisory Panel or the Chancellor, a reasonable accommodation should be provided by the instructor.
6. The decision of the Chancellor is not appealable; however, a student may pursue standard administrative channels through the Office of Diversity and Equity, Hall Building, Room 221, and/or through external agencies (e.g., Office for Civil Rights) for filing a formal grievance.

Discrimination Complaint Procedures

Summary. Any employee, student, or other member of the University community injured by the discriminatory behavior of an employee may file a complaint under the *Discrimination Complaint Procedures*. Similar complaints against students should be filed with the Office of the Dean of Students under the *Student Conduct Code*.

University policy prohibits discrimination on the basis of race, sex, age, national origin, ethnicity, physical or mental disabilities, sexual orientation, marital status, religion, status as a disabled veteran or veteran of the Vietnam Era, and any other group protected by civil rights laws. Discrimination means unequal treatment or harassment based upon any of these group characteristics.

1. One may file complaints with the Office of Diversity and Equity (ODE) within 30 days after the discriminatory act by calling (860) 486-2943 or writing to ODE at Room 221, Hall Building, 362 Fairfield Road, Box U-175, Storrs, CT 06269. Alternatively, one may file a complaint with the line administrator in the unit/division in which the incident occurred.
2. The ODE staff/line administrator interviews complaints to obtain complete accounts of their allegations, and advises them of their right to file complaints through the internal administrative systems and with civil rights agencies. They may also counsel complainants on self-resolution techniques or refer them to additional sources of support. Line administrators may enlist the ODE's advice or support in this phase.
3. Cases filed directly with the ODE (a) if the accused employee is a member of a bargaining unit, the ODE will immediately involve the Office of Labor Relations (OLR) and the line administrator responsible for resolving the problem. Throughout the complaint process, the ODE and the OLR advise line administrators from the perspective of civil rights and contractual obligations, respectively. (b) If the accused employee is not in a bargaining unit, the ODE may either have the line administrator handle the complaint or investigate it itself. In the latter case, the ODE's finding and recommendation are referred to the line administrator for action.
4. Cases filed directly with line administrators. In all cases, line administrators receiving complaints must consult with the ODE who may advise him/her on the proper handling of the case. If the accused employee is covered by a collective bargaining agreement, 3 (a) applies. If not, 3 (b) applies.

The Center for Students with Disabilities has a website at

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

University Program for College Students with Learning Disabilities (UPLD) has more information at

<http://www.ucc.uconn.edu/~wwwpcse/upld.htm>

Appendix

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 the Appendix 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 Extended and Continuing Education may exempt them from the Foreign Language requirement (Group 1) and the one-semester laboratory science requirement (in Group 8).

Services for Students with Disabilities. The University is committed to providing equal educational opportunities and to achieving full participation and integration for people with disabilities. Students are encouraged to contact the Center for Students with Disabilities or the University Program for College Students with Learning Disabilities (UPLD) to discuss their eligibility for services. See Policies and Procedures for Students with Disabilities included in this Appendix.

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

Expository Writing: All students must take English 105 and 109. Additionally, all students must take two W courses, which may also satisfy other requirements. (Note: English 105 is a prerequisite to all W courses.) Evaluative testing may exempt qualified students from the 105, 109 requirement. Students passing English 250 will also be exempted from the 105, 109 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

CLAS 103	Classical Mythology
* CLAS 211	Greek Drama
* CLAS 221	Survey of Classical Latin Literature
CLAS 244	Ancient Fictions
CLCS 101	Classics of World Literature I
ENGL 205	British Literature I
ENGL 206	British Literature II
ENGL 112/112W	Classical and Medieval Western Literature
ENGL 113/113W	Renaissance and Modern Western Literature
ENGL 127/127W	Masterworks of English and American Literature
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	Major Works of French Literature in Translation
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
ITAL 101	The Italian Renaissance
* ITAL 243	Main Currents of Italian Literature Through the Renaissance
* ITAL 244	Main Currents of Italian Literature After the Renaissance
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

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 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
ITAL 149	Cinema and Society in Contemporary Italy
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	Introduction to Women's Studies in the Arts

GROUP 5

Culture and Modern Society: All students must take History 100 or History 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	Indians of South America
ANTH 223	Pre-Colonial Africa
ANTH 225	Contemporary Africa
ANTH 226	Indians 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
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

* 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.

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	Changing Roles of Women and Men: A 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
COMS 102	The Process of Communication
ECON 100	Critical Issues in Economics
ECON 111	Principles of Macroeconomics
ECON 112	Principles of Microeconomics
ECON 113	Principles of Economics (Intensive)
GEOG 104	Introduction to Geography
GEOG 200	Economic Geography
HIST 121	Women in History
HDFR 190	Individual and Family Development
LING 102	Language and Environment
POLS 121	Introduction to Comparative Government
POLS 132	Introduction to International Relations
POLS 173	Introduction to American Political Processes
PSYC 133	General Psychology II
PSYC 135	General Psychology II (Intensive)
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

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 100	General Biology
BIOL 102**	Foundations of Biology
BIOL 103**	The Biology of Human Health and Disease (Also offered as PATH 103)
BIOL 107	Principles of Biology
BIOL 108	Principles of Biology
BIOL 110	Introduction to Botany
CHEM 122	Chemical Principles and Applications
CHEM 127Q-128Q	General Chemistry
CHEM 137Q	General Chemistry
CHEM 138Q	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
NUSC 160	The Science of Food (Also offered as ANSC 160)
NUSC 165	Fundamentals of Nutrition
PATH 103**	The Biology of Human Health and Disease (Also offered as BIOL 103)
PHAR 150	Toxic Chemicals and Health
PHYS 101Q***	Elements of Physics
PHYS 103Q	Physics of the Environment
PHYS 104Q	Physics of the Environment with Laboratory
PHYS 107Q***	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
SCI 110	Humans and the Changing Global Environment

* Indicates foreign language prerequisite

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

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