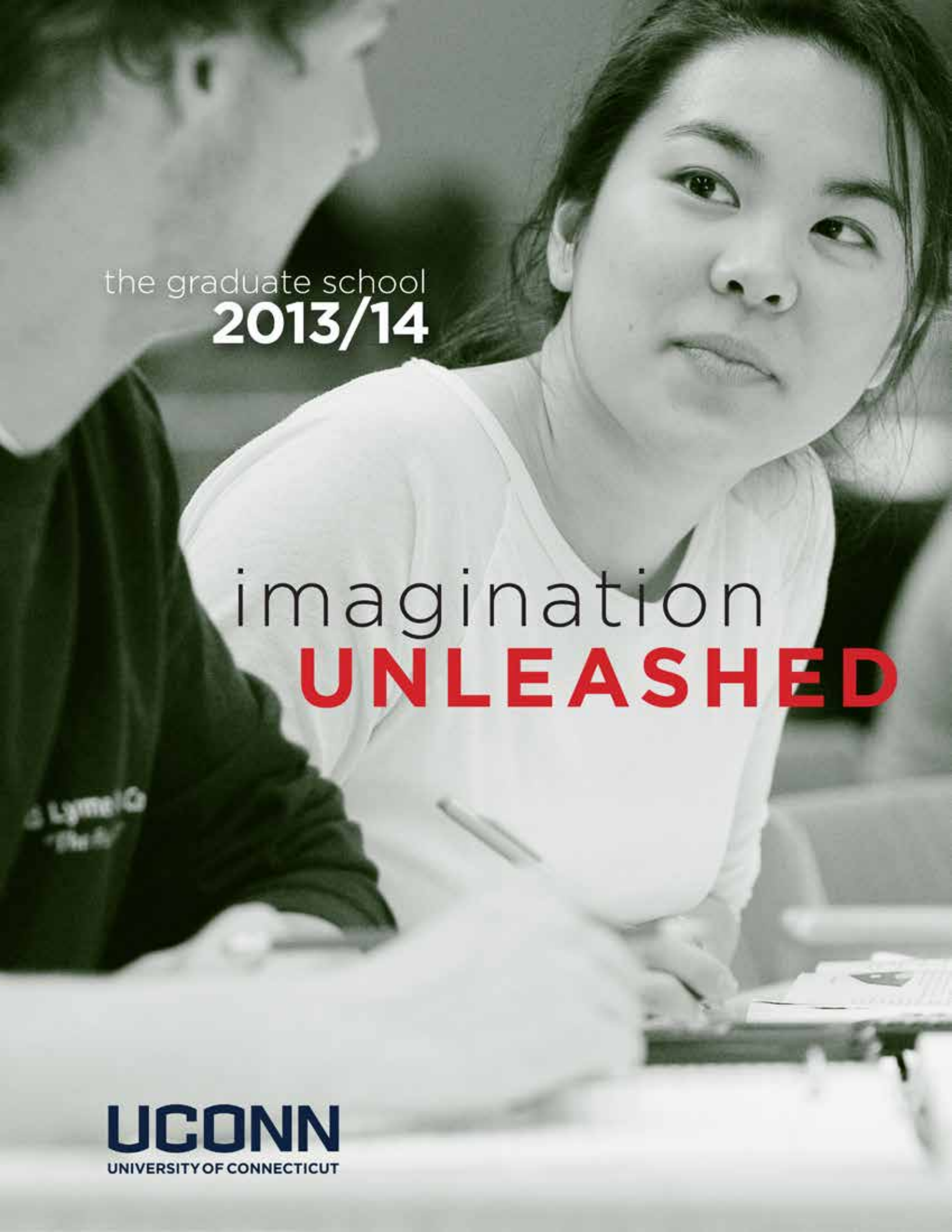

the graduate school
2013/14

imagination UNLEASHED

UCONN
UNIVERSITY OF CONNECTICUT

CONTENTS

UNIVERSITY ACCREDITATION

The University of Connecticut is accredited by the New England Association of Schools and Colleges.

AFFIRMATIVE ACTION POLICY

The University of Connecticut policy prohibits discrimination in education, employment, and in the provision of services on the basis of protected group identity (unless there is a bona fide occupational qualification related to employment), or any other unlawful factor. In Connecticut, protected class characteristics include: race, color, ethnicity, religious creed, age, sex, marital status, national origin, ancestry, sexual orientation, genetic information, physical or mental disabilities (including learning disabilities, intellectual disabilities, past/present history of a mental disorder), prior conviction of a crime (or similar characteristic), workplace hazards to reproductive systems, gender identity or expression, or other factors which cannot lawfully be the basis for employment actions, unless there is a bona fide occupational qualification.

GRADUATE SCHOOL CALENDAR

SUMMER SESSIONS 2013

The summer calendar and detailed information concerning the Summer Session may be obtained from the Registrar's office. For course offering, registration procedures, fees, and deadlines, please consult http://www.summersession.uconn.edu/summer/.

The last day to announce an oral defense of a doctoral dissertation for conferral of a Summer 2013 degree is Friday, July 26, 2013.

The last day to defend a master's thesis or doctoral dissertation for conferral of a Summer 2013 degree is Friday, August 9, 2013.

The last day for degree candidates to submit thesis and dissertation final copies to Digital Commons and related paperwork to the Graduate School is Friday, August 23, 2013 for conferral of a Summer 2013 degree.

The conferral date for Summer 2013 degrees is Saturday, August 24, 2013.

Faculty members should construct course syllabi with awareness of religious holidays.

http://www.registrar.uconn.edu

Fall Semester 2013

Mon. Aug. 26	Fall Semester begins
Mon. Sept. 2	Labor Day – No classes
Mon. Sept. 9	Courses dropped after this date will have a "W" for withdrawal recorded on the academic record
	Add/Drop via the Student Administration System closes
Mon. Oct. 21	Registration for the Spring 2014 semester via Student Administration System begins
Mon. Oct. 28	Last day to drop a course without advisor's written recommendation and dean's approval
Fri. Nov. 15	Last day to announce an oral defense of a doctoral dissertation for conferral of a Fall 2013 degree
Sun. Nov. 24	Thanksgiving recess begins
Fri. Nov. 29	Last day to defend a master's thesis or doctoral dissertation for conferral of a Fall 2013 degree
Sat. Nov. 30	Thanksgiving recess ends
Fri. Dec. 6	Last day of Fall semester classes
Mon. Dec. 9	Final examinations begin
Fri. Dec 13	Last day to submit thesis and dissertation final copies to Digital Commons and related paperwork to the Graduate School for conferral of a Fall 2013 degree
Sun. Dec. 15	Final examinations end
	Conferral date for Fall 2013 degrees

Spring Semester 2014

Tue. Jan. 21	Spring semester begins
Mon. Feb. 3	Courses dropped after this date will have a "W" for withdrawal recorded on the academic record
	Add/Drop via the Student Administration System closes
Sun. Mar. 16	Spring recess begins
Sat. Mar. 22	Spring recess ends
Mon. Mar. 24	Registration for Fall 2014 semester via Student Administration System begins
Mon. Mar. 31	Last day to drop a course without advisor's written recommendation and dean's approval
Fri. Apr. 11	Last day to announce an oral defense of a doctoral dissertation for conferral of a Spring 2014 degree
Fri. Apr. 25	Last day to defend a master's thesis or doctoral dissertation for conferral of a Spring 2014 degree
Fri. May 2	Last day of Spring semester classes
Mon. May 5	Final examinations begin
Fri. May 9	Last day to submit thesis and dissertation final copies to Digital Commons and related paperwork to the Graduate School for conferral of a Spring 2014 degree
Sat. May 10	Final examinations end
	Conferral date for Spring 2014 degrees
	Graduate School Commencement Ceremony

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Suman Singha, Ph.D., Vice President for Research

THE GRADUATE SCHOOL

Kent E. Holsinger, Ph.D., Vice Provost for Graduate Education and Dean of the Graduate School

Sandra M. Chafouleas, Ph.D., Associate Dean of the Graduate School – Storrs and Regional

Barbara E. Kream, Ph.D., Associate Dean of the Graduate School – Health Center

Anne Lanzit, B.S., Program Administrator

Melanie Chenette, M.S., Program Specialist

Lisa Pane, M.A., Systems Administrator

Charmane Thurmand, M.A., Graduate Diversity Officer

Ann Wilhelm, M.B.A., M.S., Database Manger

Terra A. Zuidema, B.A., Administrative Services Specialist II

GRADUATE FACULTY COUNCIL

The Graduate Faculty Council is the legislative body of the Graduate School. It establishes academic policy for graduate education, except for those areas reserved to the Board of Trustees, to the University Senate, or to the faculties of other colleges and schools. The 60 members, representing specific content areas derived from constituent Fields of Study, are elected to serve three-year terms. The membership includes two voting student members chosen by the Graduate Student Senate. The President, the Provost, the Vice Provost for Graduate Education and Dean of the Graduate School, and certain other administrative officers of the Graduate School are nonvoting ex officio members. The Council, representing the Graduate Faculty at large, exercises legislative authority in such areas as admissions criteria, curricular and degree requirements, new course approval, academic program review, and the like.

The Executive Committee

The Executive Committee has both executive and advisory responsibilities to the Graduate Faculty Council and to the Vice Provost for Graduate Education and Dean of the Graduate School. Its membership is drawn from the Graduate Faculty Council and from the Graduate Faculty at large. The Dean serves as chair. The Executive Committee is the steering committee for the Graduate Faculty Council. It advises the Vice Provost on matters of policy and regulatory interpretation, approves plans of study and dissertation prospectuses, and considers on the basis of academic merit proposals to modify or to create fields of study and areas of concentration. Members include:

Mark Aindow, Ph.D., Professor of Chemical, Materials, and Biomolecular Engineering

Richard W. Bass, Ph.D., Professor of Music

J. Garry Clifford, Ph.D., Professor of Political Science

Sylvain De Guise, D.M.V., Ph.D., Associate Professor of Pathobiology

Kelly Dennis, Ph.D., Associate Professor of Art and Art History

Robert Gross, Ph.D., Professor of History

Joseph J. LoTurco, Ph.D., Professor of Physiology and Neurobiology

Shayla C. Nunnally, Ph.D., Assistant Professor of Political Science

Lynn Puddington, Ph.D., Associate Professor of Medicine

Kent E. Holsinger., Ph.D., Vice Provost for Graduate Education and Dean of the Graduate School (ex officio), Chair

Sandra M. Chafouleas, Ph.D., Associate Dean of the Graduate School – Storrs and Regional (ex officio)

Barbara E. Kream, Ph.D., Associate Dean of the Graduate School – Health Center (ex officio)

Thomas B. Peters, Ph.D., Program Director (ex officio), Secretary

* As of April 2013

As of March 2013

ADMISSIONS

To study for a graduate degree, a student must be admitted by the University of Connecticut's (University) Dean of the Graduate School (Dean). No course work taken before the date of admission to the University's Graduate School may be included on a plan of study for a graduate degree unless specific approval has been granted by the Dean.

Unless students complete appropriate course work for credit in the semester or summer for which they have been admitted, or a written request for a deferral has been submitted to and approved by the Graduate School before the end of that semester or summer, the admission becomes invalid. If this occurs, the student must apply for readmission with no certainty of being accepted.

Students may earn a graduate degree only in a program to which they have been admitted. Ordinarily, a student is granted admission to pursue graduate study in one field at a time. On occasion; however, a student may be permitted with approval to enroll concurrently in two different programs.

There are several approved dual degree programs providing the opportunity for the student to pursue work toward two degrees simultaneously. These programs often involve the sharing of a limited and specified number of course credits between the two degrees. The list of dual degree programs offered by the Graduate School and the other participating schools and colleges within the University (e.g., the School of Law, Medicine, and Dental Medicine) can be found in the index under "Dual Degree Programs." In some cases, separate applications must be filed for each of the two degree programs.

To be admitted to Regular status and to begin studies, an applicant must hold a baccalaureate degree from a regionally accredited college or university or present evidence of the equivalent. The applicant must submit to the Graduate School official transcripts covering all previous work, undergraduate and graduate, which must be of at least the following quality: a cumulative grade point average (GPA) of 3.0 for the entire undergraduate record, or 3.0 GPA for the last two years, or 3.5 GPA or higher in the entire final year. The GPA is computed on the basis of the following scale: A = 4.0, B = 3.0, C = 2.0, D = 1.0, F = 0. Applicants from foreign colleges and universities must meet equivalent standards of eligibility and are expected to submit official transcripts showing all work completed. All advanced post-baccalaureate course work is considered, as well. Failure to send transcripts from all educational institutions, regardless of whether or not a degree was received, may be grounds for cancellation of admission.

Applicants to most programs are encouraged to submit test scores from the General Test of the Graduate Record Examinations directly to the Graduate School. Most departments usually require three letters of recommendation, preferably from members of the academic profession.

Meeting the minimum requirements does not guarantee admission. Applicants must show promise of superior achievement and must have specific preparation for the course of study they wish to undertake. If the applicant's record indicates deficiencies, the applicant may be refused admission or required either to take background courses without graduate credit or to demonstrate by examination that he/she has the acquired requisite knowledge or skills for graduate study. In addition, since each graduate program has a limited number of places, the successful applicant must have a record competitive with those of other applicants in the same field.

Regular and Provisional Status

Application procedures and required credentials for admission to Regular status are specified above. Occasionally students who hold a baccalaureate degree but do not qualify fully for admission to Regular status may give evidence of ability in the applicant's chosen field, thus sufficiently convincing a warrant of Provisional admission to a master's degree program only. (Applicants are not admitted provisionally to a doctoral program.) If a Provisional student's initial twelve credits of completed course work (excluding 1000's-level courses) meet the minimum scholastic requirement of the Graduate School, the applicant is accorded Regular status. Otherwise, the applicant is subject to dismissal. In situations where special consideration is warranted, and only upon the specific request of the major advisor, the Dean may approve changing a student to Regular status if at least nine credits of advanced course work have been completed with superior grades. Regular, not Provisional, status is required for degree conferral.

Language-Conditional Status

International graduate applicants whose English language proficiency does not meet the minimum standard to qualify for Regular admission (an internet based score of 79 or greater, or a written test score of at least 550 on the TOEFL [Test of English as a Foreign Language], or an overall band score of 6.5 on the IELTS [International English Language Testing System]) may be admitted at the master's level as Language-Conditional Students. Those admitted on F-1 visas must be fully academically admissible as a Regular student (see above). The applicant will have 12 months to meet the language requirement by receiving certified English proficiency from UCAELI (University of Connecticut English Language Institute) and/or receiving a passing English proficiency score.

Admission to the Department of Physical Therapy (D.P.T.) Program

The Department of Physical Therapy in the Neag School of Education offers study leading to the degree of Doctor of Physical Therapy. In addition to the standard requirements of the Graduate School, applicants must have the required prerequisite courses which include cellular biology, comparative anatomy and physiology (8 credits), general chemistry (8 credits), general psychology, pre-calculus or calculus, statistics, and general physics (8 credits). Recommended courses include biology of human health and disease, organic chemistry with lab, human development, human genetics, biochemistry, fundamentals of nutrition, nutrition for exercise and sport, developmental psychology, physiological psychology, abnormal psychology, and pathology.

Admission to the Doctor of Musical Arts (D.M.A.) Program

Applicants are expected to demonstrate outstanding musical ability and have a superior record of previous performance and scholarship. A completed master's degree is required for admission. Holding a master's degree from the University or from any other institution; however, does not render the applicant automatically admissible to the D.M.A. program. Areas of Concentration offered are Conducting and Performance (specifically cello, piano, trumpet, violin, viola, and voice). A personal audition is required as part of the application process. Inquiries should be addressed to: Director of Graduate Studies, Department of Music, 1295 Storrs Road, U-1012, University of Connecticut, Storrs, CT 06269-1012

Admission to Doctor of Philosophy Degree (Ph.D.) Programs

Admission into the University's Ph.D. programs is limited to those whose scholastic records show distinct promise of success in

doctoral study. Holding a master's degree from the University or any other institution does not render the applicant automatically admissible into a doctoral program. Certain master's programs, on the other hand, are open only to applicants likely to qualify for doctoral study. In general, doctoral applicants must meet all admission requirements for the master's degree as Regular graduate students and must present evidence that they are capable of doing independent work of distinction.

Visiting Students

Individuals who otherwise would qualify for admission with Regular status but who do not seek a degree from the University may be permitted to take courses for an unspecified time if the individuals work meets University Graduate School standards. Special students may be working toward an advanced degree at another institution, in which case they are presumed to be fully qualified to pursue degree work at the University. Others may wish to take courses as special students for personal enrichment.

Graduate Certificate Programs

Applicants must have a baccalaureate degree (or its equivalent) with a cumulative GPA of 2.6 or higher. Detailed information concerning admissions criteria and procedures can be obtained from the coordinator of the specific graduate certificate program or from the Graduate Admissions Office.

Non-Degree Study

Individuals with appropriate preparation who have not been admitted to any of the admissions categories described above may take courses as non-degree students. All non-degree students are presumed to be taking courses for reasons other than earning a certificate, Sixth-year Diploma in professional education, or a graduate degree at the University. If an individual is later admitted to a graduate degree program at the University, usually no more than six credits will be accepted toward the master's degree. In any event, such credits accepted toward a graduate degree must be of B (not B-) quality or higher. For further information, contact the Registrar's Office via telephone at (860) 486-3331, via email at registrar@uconn.edu or in writing at 233 Glenbrook Road, Unit 4077, Storrs, Connecticut 06269-4077.

Admission of University Faculty and Staff

University faculty members who hold tenure or a rank higher than instructor leading to tenure track status ordinarily may not earn a graduate degree at the University. Exceptions to this policy may be made by the Graduate School Dean, with the advice of the Executive Committee of the Graduate Faculty Council, who must be satisfied that the intended program is in the best interest of the University.

New England Regional Student Program

The University participates in a regional program administered by the New England Board of Higher Education. This program, known as the New England Regional Student Program, permits qualified residents of the New England states to study with reduced out-of-state tuition privileges. The purpose of the program is to expand opportunities in higher education for New England residents by making available on a substantially equal basis to all students those programs not commonly offered at every institution. This practice tends to reduce duplication of courses and thus to utilize most efficiently the higher educational facilities in each state.

Detailed information about this program can be obtained from the Graduate School, 438 Whitney Road Extension, Unit 1152, Storrs, Connecticut 06269-1152 or from the New England Board of Higher Education, 45 Temple Place, Boston, Massachusetts 02111.

Application Processing Fee

A non-refundable fee of $75 for electronic submission must accompany the application and may not be applied toward other charges. This fee must accompany every application submitted except for applications submitted into a doctoral degree program that will immediately follow submission into a master's degree program in the same field at the University. (Fees are subject to change without notice.)

Application Deadlines

Applicants are advised to check with appropriate academic departments concerning deadlines and prospective students are encouraged to submit their applications for admission as early as possible. At a minimum, applicants should file the application for admission several months in advance of the first semester of course work. All credentials, including official transcripts covering all undergraduate and graduate work taken up to the time of application, as well as the non-refundable processing fee, must also be received by deadline dates.

International Applicants

Students who are not United States citizens or permanent resident aliens must meet additional requirements before their admission is finalized. They must present documentary evidence of their ability to meet all expenses for at least the first year of study and an acceptable plan for financing the remainder of their program. Students whose native language is not English must show evidence of proficiency in the English language by having earned either a internet-based score of at least 79 or a written score of at least 550 on the TOEFL (Test of English as a Foreign Language), or an overall band score of 6.5 on the IELTS (International English Language Testing System). Some departments require the Test of Spoken English (TSE) or the Test of Written English (TWE). All graduate students who will be serving as teaching assistants will be required to present evidence of competence in spoken English. This may take the form of a score of 50 or higher on the TSE if the student's native language is not English and if the student does not hold a degree from an anglophone college or university. Further information is available from the International Teaching Assistants Program (ITAP) at the Rowe Center for Undergraduate Education, 368 Fairfield Way, Unit 4142, Storrs, Connecticut 06269-4142.

Program Inquires

Inquiries regarding the Master of Business Administration should be addressed to the director of that program, School of Business, 2100 Hillside Road, Suite 238, Unit 1041-MBA, Storrs, Connecticut 06269-1041. Inquiries regarding graduate degree programs located at the University of Connecticut Health Center should be addressed to: University of Connecticut Health Center, Graduate Student Affairs Office, Room MC 3906, Farmington, Connecticut 06030. Inquiries regarding the Master of Social Work should be directed to the School of Social Work, University of Connecticut, 1798 Asylum Avenue, West Hartford, Connecticut 06117-2698. Inquiries regarding study in Law should be directed to the School of Law, 55 Elizabeth Street, Hartford, Connecticut 06105-2296.

Supplementary and Departmental Transcripts

If a student is admitted before completing a baccalaureate or graduate degree or additional non-degree course work which

is in progress at the time of application, admission is conditional on the completion of the degree or course work and the submission to the Graduate School by the end of the first semester of study of a satisfactory supplemental official transcript. Until all transcripts have been received, the plan of study will not be approved. All transcripts submitted, including test scores, become the property of the Graduate School and are not returnable.

ADVISORY SYSTEM

Degree programs are planned by the advisory committee after consultation with the student. There is considerable flexibility in meeting special needs insofar as these are consistent with the regulations of the Graduate School. A degree program may entail course work in more than one field of study, but each program must include a coherent emphasis within one existing field of study and area of concentration, if applicable.

A major advisor must be appointed at the appropriate level by the Dean, by authorization of the President of the University, to advise in a particular field of study or area of concentration. In applying for admission, an applicant may indicate a preference for a particular major advisor. If at the time of admission an applicant expresses no preference, or if the preferred advisor is unable to accept, another may be appointed. Since consistency of direction is important, a durable relationship between the student and advisor should be formed as early as possible. Occasionally, it may be desirable or appropriate for a student's degree program to be directed by co-major advisors (not more than two). Each co-major advisor must hold an appropriate appointment to the graduate faculty in the student's field of study and area of concentration (if applicable).

If a change of major advisor becomes necessary for any reason, the student must file a special form, bearing the signatures of the former advisor and the new advisor, with the Graduate School. The signature of the former major advisor is requested for informational purposes only. It does not, in any way, signify permission or consent on the part of the former major advisor.

If a major advisor decides that it is not possible to continue as a student's major advisor and wishes to resign, the Graduate School must be notified in writing as soon as possible. The student is then provided with a reasonable opportunity to arrange for a new major advisor. If a new major advisor is not identified within six weeks of the resignation of the former major advisor, the student's graduate degree program status is terminated. A student whose status has been terminated may request a hearing before the Associate Dean by filing a written request within 30 days of receipt of the letter of termination.

The advisory committee of a master's degree student is formed after consultation between the major advisor and the student and must include at least two associate advisors, at least one of whom must hold a current appointment to the graduate faculty of the University. An associate advisor must possess suitable academic or scientific credentials in the field of study of the degree. The advisory committee should be formed before the student has completed twelve credits of degree program course work and shall then supervise the remainder of the student's degree program.

The advisory committee of a doctoral degree student is formed after consultation between the student and the major advisor and shall include at least two associate advisors with suitable academic or scientific credentials. The major advisor and at least one associate advisor shall be members of the graduate faculty appointed to advise doctoral students in the student's field of study and area of concentration, if applicable. In addition to the three or more members chosen in the usual way, another member, ordinarily a member of the graduate faculty outside the student's field of study but in a related field, may be appointed by the Dean. If the committee consists of three members, committee decisions must be unanimous. If the committee consists of four or more members, committee decisions are considered adopted if there are no more than one negative vote, although the major advisor must always vote in the affirmative. Committee decisions involving the outcome of the General Examination, approval of the dissertation proposal, oral defense of the dissertation, or approval of the dissertation itself, however, must be a unanimous vote.

A member of the University of Connecticut Graduate Faculty who has retired from active service may be considered for appointment as Major Advisor for a newly-admitted master's or doctoral student. Application is made to the Executive Committee of the Graduate Faculty Council and requires submission of a curriculum vitae and letters of support as well as the endorsement of the appropriate department or program head. The retired faculty member must present substantial evidence of ongoing research and scholarly activity in the field. Separate application is required for each newly-admitted student for whom a retired faculty member wishes to serve as major advisor. Such appointments are made by the Dean with the advice of the Executive Committee.

A current graduate student may not serve as a member of another graduate student's advisory committee.

If deemed appropriate by a graduate student's major advisor, the major advisor may request that a suitably qualified external associate advisor be appointed to the student's advisory committee by writing to the Graduate School. The request should be accompanied by a curriculum vitae for the individual being recommended for appointment. Such appointments are made on the basis of advanced training and significant experience in the field of study. An appointment as external associate advisor is limited to an individual student's advisory committee and does not imply in any way membership on the Graduate Faculty of the University. Ordinarily, not more than one external associate advisor is appointed to any master's or doctoral student's advisory committee. The major advisor and at least one associate advisor on any doctoral student's advisory committee must be members of the University's Graduate Faculty.

The major advisor is responsible for coordinating the supervisory work of the advisory committee. Therefore, when the major advisor is to be on leave or is not in residence, it is the major advisor's responsibility to appoint an acting major advisor. The acting major advisor must be a member of the Graduate Faculty or be fully eligible for such an appointment. The acting major advisor will assume all duties and responsibilities of the major advisor for the duration of the appointment. The major advisor will inform the Graduate School of the appointment and provide any information that may be required concerning the credentials of the acting major advisor.

Students' advisory committees are responsible directly to the Dean of the Graduate School. For advisory committees of doctoral students, it is required that the written consent be obtained from the Graduate School before any changes are made in the membership of an advisory committee which has been duly established.

FEES AND EXPENSES

The schedule of fees contained on the Office of the Bursar's website is expected to prevail during any given academic year, but the Board of Trustees and the Board of Governors for Higher Education reserve the right, at any time, to authorize changes in fees and to establish new fees applicable to all currently enrolled students.

Fee bills, covering the semester's charges, are computed by and are payable to the Office of the University Bursar no later than the first day of the semester (see "Graduate School Calendar").

Financial Responsibility

Graduate students are permitted to register, to modify their course registrations without penalty, and to pay their fee bills or obtain deferments through the first day of the semester. Graduate students become liable for payment of tuition and other required course-related fees, however, beginning with the first day of classes of the semester or session whether or not they have attended any classes or have paid their fee bills as of that date.

Failure to receive a bill does not relieve a student of responsibility for payment of fees by the specified due date. A student who fails to make timely payment of an outstanding balance may be barred from all privileges normally accorded to a student in good standing. Additionally, any pending University employment authorization may not receive approval or may be subject to cancellation. If there is a question concerning a bill, it is the student's responsibility to contact directly the Office of the Bursar for clarification and resolution.

If a graduate student does not meet his/her financial obligations to the University by the first day of a given semester or by the expiration date of an approved deferment, an enrollment and service restricting hold is placed on the student's record.

Application Processing Fee

A non-refundable fee of $75 for electronic submission must accompany an application to the Graduate School. It may not be applied toward other charges. This fee must accompany every application submitted except for a doctoral degree program to follow immediately on a completed master's degree program in the same field at this University, or for a University Scholar, or for a current graduate degree seeking student applying for a graduate certificate program. If applicable, a fee waiver may be obtained by contacting the Graduate Admissions Office.

In-State and Out-of-State Status

Each student must file an affidavit of residence with the application for admission to the Graduate School. A form for this purpose is provided as part of the application. On the basis of this information, each entering student is classified as either a Connecticut student or an out-of-state student. Failure to file the form will result in classification as out-of-state.

Questions concerning the classification of graduate students as resident (in-state) or non-resident (out-of-state) are resolved by the Graduate School. In the event that a student believes that he or she has been incorrectly classified, a request for a review, along with supporting documentary evidence, should be directed to the Graduate School.

Residents of other New England states enrolled in certain graduate degree programs may be eligible for special tuition rates through the New England Board of Higher Education Regional Student Program.

Bursar's Office Website

Graduate students should refer to the Bursar's Office website at http://www.bursar.uconn.edu/grad.html for current tuition and fee information, procedures, and policies pertaining to graduate students and graduate programs.

Reinstatement Fee

The Graduate School regulations require registration in each semester by all graduate degree program students. All graduate students who fail to complete initial course registration by the end of the tenth day of classes of any semester will be dropped from active status and will be required to pay a penalty fee of $65. The reinstatement fee is added to a student's bill along with any registration fee that has accrued. Students who do not register for longer than a year will be required to reapply for admission. A letter from the major advisor is required to count previous course work towards the new enrollment.

Refunds and Cancellations of Charges

In order to be eligible for a refund or cancellation of charges, a student must officially drop all courses currently being taken for credit.

The University grants a full refund of fees to any student dismissed for academic deficiency or other cause, provided that the dismissal takes place prior to the start of classes. In certain other instances, including illness, full refunds or cancellations of charges may be made at the discretion of the Dean of the Graduate School, provided that the interruption or termination of the student's program takes place prior to the start of classes.

A student inducted into military service will receive a prorated refund or cancellation of charges based on his/her date of separation. The student in this situation must furnish the Office of the Bursar with a copy of the orders to active duty, showing this to be the reason for leaving the University.

Refunds or cancellations of charges are available on the following schedule for students whose programs are interrupted or terminated prior to or during a regular academic semester. When notice is received prior to the first day of classes of a semester, full refund (less nonrefundable fees) will be made if the fees have been paid in full. Thereafter, refunds or cancellations of refundable charges will be made 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%

ASSISTANTSHIPS, FELLOWSHIPS, AND OTHER AID

Financial Support for Graduate Students

The University of Connecticut supports the Council of Graduate Schools Resolution Regarding Graduate Scholars, Fellows, Trainees, and Assistants:

Acceptance of an offer of financial support (such as a graduate scholarship, fellowship, traineeship, or assistantship) for the next academic year by a prospective or enrolled graduate student completes an agreement that both student and graduate school expect to honor. In that context, the conditions affecting such offers and their acceptance must be defined carefully and understood by all parties.

Students are under no obligation to respond to offers of financial support prior to April 15; earlier deadlines for acceptance of such offers violate the intent of this Resolution. In those instances in which a student accepts an offer before April 15, and subsequently desires to withdraw that acceptance, the student may submit in writing a resignation of the appointment at any time through April 15. However, an acceptance given or left in force after April 15 commits the student not to accept another offer without first obtaining a written release from the institution to which a commitment has been made. Similarly, an offer by an institution after April 15 is conditional on presentation by the student of the written release from any previously accepted offer. It is further agreed by the institutions and organizations subscribing to the above Resolution that a copy of this Resolution should accompany every scholarship, fellowship, traineeship, and assistantship offer. (Source: http://www.cgsnet.org/april-15-resolution)

Support for graduate students engaged in degree study at the University of Connecticut comes from many sources. Two general types of financial aid support are available: (1) aid based on academic merit and (2) aid based on demonstrated financial need.

Awards based on academic merit include: Graduate Assistantships (for teaching or research), University Predoctoral Fellowships, and Dissertation Fellowships. Application for merit aid such as graduate assistantships should be made directly to the academic department. Students interested in scholarships and fellowships offered through the Graduate School should monitor the website for appropriate application procedures and deadlines.

Need-based financial aid includes: Federal Direct Stafford Loans (FDSL), Federal Work-Study (FWS), and University of Connecticut Tuition Remission Grants. Citizens or permanent residents of the United States can apply for need-based financial aid by completing the Free Application for Federal Student Aid (FAFSA) on the web at http://www.fafsa.ed.gov each year. The University of Connecticut's on time deadline each year is March 1 (May 1, for entering graduate students).

[Note: International students are not eligible to receive need-based financial aid.]

All need-based financial aid recipients and merit-based award recipients must meet Satisfactory Academic Progress (SAP) requirements, which are based on federal regulations. These requirements include maintenance of an appropriate grade point average (3.00) and satisfactory completion of a percentage (75%) of the number of credit hours attempted in each award year, as well as not exceeding published credit maximums for the student's program plan. A warning is sent to students once they have reached their degree minimums. A complete text of this policy is available at <http://financialaid.uconn.edu/sap>.

Assistantships, fellowships and other awards from University sources are used in combination with need-based aid to calculate final need-based financial aid amounts offered either for a semester or an academic year.

Additional information regarding need-based financial aid for Graduate students is available from the Office of Student Financial Aid Services at <http://financialaid.uconn.edu/index.php/Gradprocess>. For example, information is provided concerning benefits under the various educational assistance programs provided by the Veterans Administration.

Graduate Assistantships and Fellowships

Many graduate students engaged in full-time degree study at the University of Connecticut hold graduate assistantships for teaching or research, whereas others hold fellowships, traineeships, or internships. Support from any of these sources is subject to terms of the funding source and to approval by the Graduate School. A brief definition of each is as follows:

• An assistantship (teaching assistantship or research assistantship) is awarded to a graduate student who provides teaching or research support to the University that is a part of her/his academic program. In recognition of this support, the tuition of the student is provided by the grant/contract funding agency (for research assistants) or the University (for teaching assistants). Note that all assistantships must be administered through an academic department.

• A fellowship is awarded to a graduate student to pursue her/his academic program, but does not require the student to provide any teaching or research support to the institution. The tuition of a student receiving a fellowship must be paid by the student, the granting organization, the department and/or school/college or through the Office of the Vice President for Research with prior approval. An example of this can be found in the Policy on Competitive Federal Graduate Awards (http://policy.uconn.edu/?p=966).

• An internship is an experiential job placement designed to enhance the knowledge, skills, and abilities of a student, enhance their employability, and requires a student to perform specific work at the host's site. The tuition payment is the responsibility of the student, the host or the external funding specifically designated for this purpose.

Note that holders of an assistantship, fellowship, or internship are responsible for associated fees.

The following information provides more details regarding assistantships, fellowships, and other forms of aid available through the University of Connecticut. Other sources may be available upon further inquiry, and graduate students are encouraged to seek opportunities for external sources of support, such as prestigious national fellowships.

Graduate Assistantships

Graduate School degree-seeking students and students in the program leading to the Sixth Year Diploma in Professional Education, who meet the criteria listed below, are eligible. Appointments are ordinarily made for the nine-month period, August 23 through May 22, but shorter appointments may be made for a variety of reasons. Recipients serve the University as teaching assistants, readers, or laboratory and research assistants. They take fewer than the usual number of courses per year because of this added workload. To be appointed, to retain an appointment, or to be reappointed, a student must have been accorded Regular (not Provisional) status, must have been maintaining a cumulative average of at least B (3.00) in any course work taken, must be eligible to register (i.e., must not have more than three viable grades of Incomplete on his or

her academic record), must be enrolled in a graduate degree program scheduled to extend through the entire period of the appointment or reappointment, and must be a full-time student, counting course work and/or its equivalent together with assistantship duties (see "Course Loads"), throughout the period.

The holder of a full assistantship devotes one-half of available time to studies and one-half (approximately 20 hours per week) to assistantship duties, while the holder of a half assistantship devotes three-quarters of available time to studies and one-quarter (approximately 10 hours per week) to assistantship duties. Assistantships are not available for less than 10 hours per week.

Graduate assistants divide their full-time efforts between study and assistantship responsibilities. As a result, they may not hold concurrent employment outside the University without the written consent of their major advisor.

Stipend rates for graduate assistants are graduated in terms of progress toward the advanced degree and experience. The rates for nine months for academic year 2013-2014 are:

I. $20,159 for graduate assistants with at least the baccalaureate.

II. $21,212 for experienced graduate assistants in a doctoral program with at least the master's degree or its equivalent in the field of graduate study. Equivalency consists of twenty-four credits of appropriate course work beyond the baccalaureate completed at the University of Connecticut, together with admission to a doctoral program.

III.$23,583 for students with experience as graduate assistants who have at least the master's degree or its equivalent and who have passed the doctoral general examination.

Tuition (but not the General University Fee, the Graduate Matriculation Fee, or other fees) is waived for graduate assistants. (See "Tuition," for possible proration.) If an assistantship begins or terminates during the course of a semester, tuition will be prorated on a weekly schedule – charged for that portion of the semester when the assistantship is not in force, waived when it is in force. This often results in an adjustment of the tuition charges, including partial assessment (if the student is registered throughout the semester for course work for which tuition is charged) or a partial refund (if tuition has been paid).

A graduate assistant is eligible for health insurance. Graduate assistants should be aware that it is necessary to complete the proper forms to enroll in health insurance. Health insurance does not take effect automatically.

A graduate assistant may be appointed on a twelve-month basis, with the stipend being increased proportionately. There are, however, no additional benefits or waiver of tuition in the summer months.

When students become eligible for the Level II or Level III stipend rate, their department may request an increase by filing a new employment authorization effective at any time after the student attains eligibility. In no case shall the increase become effective later than the August 23rd appointment start date following the date on which the student becomes eligible.

FINANCIAL SUPPORT PROGRAMS OFFERED THROUGH THE GRADUATE SCHOOL

Semi-Annual Doctoral Dissertation Fellowship Program

Twice each year, the Graduate School awards a number of $2,000 Doctoral Dissertation Fellowships for advanced students in doctoral programs requiring a dissertation. The purpose is to enable students to place high priority on writing the doctoral dissertation as expeditiously as possible. Pending budgetary approval, competitions are held in late fall and late spring each year. To be eligible, the student must have passed the doctoral General Examination and have obtained full approval of the Dissertation Proposal (including the use of any human or animal subjects or stem cells) and must meet the maximum personal income limit (specified on the application form). Note that students based at the Health Center are not eligible to apply for this fellowship program.

Graduate School Predoctoral Fellowships

Predoctoral fellowships are awarded to doctoral students on the recommendation of the graduate faculty in their program. Award amounts vary considerably. Predoctoral fellowships carry no service (teaching or research) commitment. Students must be a Regular (not Provisional) full-time doctoral student to be eligible for these fellowships. Funds for this program are provided directly to the academic units, so please contact your graduate coordinator for more information.

Multicultural Scholars Program (MSP)

The Graduate School and the Provost's Office have established a fund for the promotion of diversity within graduate education. This program functions to promote the recruitment of diverse populations of graduate students by matching the funding support provided by the schools, departments, or fields of study. Students are nominated by the graduate program to which they are applying, and are typically provided for students entering in the fall semester. Eligibility for support is based on the student's academic qualifications, U.S. citizen or permanent resident status, and the demonstrated need for increased cultural diversity within the field of study.

Outstanding Multicultural Scholars Program

As part of the Multicultural Scholars Program, the Graduate School makes available a limited number of awards to incoming doctoral students who represent the very best of the entering graduate student class and who will enhance the diversity of our graduate programs. Eligibility for support is based on the student's academic qualifications, U.S. citizen or permanent resident status, and the demonstrated need for increased cultural diversity within the field of study.

The award consists of an annual service-free fellowship, equivalent to a half-time academic-year graduate assistantship which is paired with a half-time academic year graduate assistantship and a $2000 summer stipend. This is guaranteed for up to three years. Teaching or research duties associated with the graduate assistantship will be determined by the graduate program in which the scholar is enrolled.

Outstanding Scholars Program (OSP)

The Graduate School, along with participating academic departments and programs, offer a number of OSP awards for new outstanding doctoral students. The academic quality of the candidate and the nominating program serve as the primary criteria, with graduate faculty providing the recommendation during the spring semester for applicants who intend to commence graduate study in the subsequent fall semester.

Each award is provided by the Graduate School and includes a fellowship equivalent to a half-time graduate assistantship for the academic year plus a $2,000 summer stipend. The portion related to the graduate assistantship is provided by the department or program. The award is renewable for up to two additional years.

Tuition Assistance Program for Out-of-State Master's Degree Students

The Tuition Assistance Program for Outstanding Out-of-State Master's Degree Students provides tuition assistance by

allowing recipients to pay tuition at the in-state rate. Selected students must be classified as out-of-state for tuition purposes and enrolled in terminal master's degree tracks. Tuition assistance can be provided for a maximum of four semesters. Selection criteria for these grants include: (a) admission to and full-time matriculation in a master's degree program which ordinarily does not lead to a doctorate; (b) absence of graduate assistantship support (which carries with it a tuition waiver); (c) out-of-state residency status; (d) evidence of academic excellence (based on grade point averages, GRE/ GMAT scores, etc.); and (e) U.S. citizen or permanent resident status.

The Thomas G. Giolas Fellowship Fund

The Thomas G. Giolas Fellowship Fund was established as a permanent endowment fund held by the University of Connecticut Foundation in honor of father and husband, Thomas G. Giolas, Dean Emeritus of the Graduate School. This fund will provide scholarship support for an incoming or continuing graduate student enrolled full-time at the University of Connecticut's Graduate School. The award shall be given annually to a student who demonstrates high academic achievement in their field of study. The scholarship(s) may be renewed annually to the recipient(s) provided satisfactory academic progress is achieved.

Additional Sources of Financial Support

Many additional sources of funding for graduate education exist through both internal and external opportunities. Opportunities to seek external funding can be found through the Office of National Scholarships (http://ons.uconn.edu/). A searchable database of opportunities can be accessed through the website, in addition to resources helpful to graduate students seeking to prepare competitive applications.

Additional internal awards are available in many programs, and students are encouraged to seek information about awards on program websites. Although not exhaustive, the Graduate School website maintains a list of internal funding opportunities. In addition, the Graduate School maintains a limited amount of grant based funding to provide tuition remission and the general University fee to a small number of international students who are sponsored by certain organizations [e.g., IIE and LASPAU].

UNIVERSITY SUPPORTS FOR GRADUATE STUDENTS

A wide variety and continuum of support services are offered at the university that can be accessed by graduate students. Although not considered to be exhaustive, the following offers an alphabetical listing of university contacts for graduate students who may be seeking supports to facilitate successful graduate study. Graduate students are also encouraged to visit the website maintained by the Division of Student Affairs for additional information about university services for students.

Career Services

The mission of Career Services is to assist students in gaining and applying knowledge and skills to make well-informed career decisions by advising them through the process of identifying a major, exploring career interests, and securing post-graduate opportunities. Examples of services offered include individual career counseling, assistance with resume/cv writing, career fairs, a variety of career-oriented presentations, and a career resource library.

Website: career.uconn.edu

Address: Wilbur Cross Building (Rm 201), 233 Glenbrook Road (U-4051)

Phone: 860-486-3013

Center for Students with Disabilities (CSD)

The Center for Students with Disabilities (CSD) offers a variety of accommodations and services to students with documented permanent and temporary injuries and conditions. Additional programs are offered to prepare students to enter college as well as for life beyond college.
Website: csd.uconn.edu

Address: Wilbur Cross Building (Rm 204), 233 Glenbrook Road (U-4174)

Phone: 860-486-2020

Email: csd@uconn.edu

Division of Environmental Health and Safety

The goal of the Division of Environmental Health and Safety is to promote and maintain a safe and healthful environment by ensuring the highest level of environmental health and safety services for faculty, staff, students, and visitors at the University of Connecticut. Graduate students can find information about relevant policies and procedures governing safety in their workplace, including checklists to guide thinking through various issues. In addition, personal consultation related to assessment of the safety of the student's work environment can be provided by staff.

Website: ehs.uconn.edu

Address: 3102 Horsebarn Hill Road (U-4097)

Phone: 860-486-3613

Email: ehs@uconn.edu

Financial Aid Services

The Financial Aid office provides information regarding the costs of attendance, student employment, veteran benefits and financial literacy.

Website: financialaid.uconn.edu

Address: 233 Glenbrook Road (U-4116)

Phone: 860-486-2819

Email: financialaid@uconn.edu

Office of Diversity and Equity (ODE)

The Office of Diversity and Equity (ODE) ensures the University's commitment and responsibility to foster diverse and inclusive working and learning environments. Their work focuses on ensuring compliance with the University's non-discrimination policies and also state and federal laws and regulations related to equal opportunity and affirmative action. ODE's major areas of focus include Americans with Disabilities Act (Title I) Compliance, Affirmative Action, Discrimination, Diversity, Education and Training, Search Process Compliance, and Title IX Compliance, including sexual violence awareness.

Although oversight is provided by ODE, specific resources regarding sexual violence are maintained here: http://sexualviolence.uconn.edu/

Website: ode.uconn.edu

Address: 241 Glenbrook Road, Wood Hall (U-4175)

Phone: 860-486-2943

Email: ode@uconn.edu

Office of Global Affairs

The Office of Global Affairs includes the following units:

Study Abroad: The University offers over 300 study abroad programs in 65 countries on six continents. Begin your journey by exploring their site using the navigation links on this page.

International Center: The International Center website provides a wealth of information about living in the United States and in Connecticut. The center offers a place to gather with family and friends, programs and cultural activities in a relaxing atmosphere where you can forget the rigors of academic study

Immigration Services: Immigration Services supports the greater internationalization of the University through the development and delivery of services and programs that help our international students, scholars, faculty and staff accomplish their academic and professional goals at UConn. Services provided include: a) ensuring UConn's compliance with U.S. immigration regulations governing visa; b) sponsoring international students, scholars, faculty, and staff; c) providing quality service and assistance with immigration and intercultural matters to UConn-sponsored visa holders and their families through advising, programs, workshops and events; d) serving as the resource for academic and administrative units; e) hiring and sponsorship of international students, scholars, faculty and staff; f) providing on-going orientation and support services designed to foster cultural adjustment to the U.S.; and g) building links within the UConn community.

Global Partnerships: The University enters into a limited number of partnerships with institutions of higher education abroad. Most of these partnerships revolve around particular projects, but some are general, laying the foundation for more focused activities in the future. Search the UConn Global Database or consult the Interactive Map to learn more about our global presence.

The University American English Language Institute (UCAELI): UCAELI supports the greater internationalization of the University through the development and delivery of services and programs that help our international students, scholars, faculty

and staff accomplish their academic and professional goals at UConn.

Website: global.uconn.edu

Office of Student Services and Advocacy (OSSA)

The primary function of the Office of Student Services & Advocacy (OSSA) is to help students and their families get answers and solutions to those tough college-life questions or problems that students may have. Question and problems may include life decisions (personal or academic), navigating the bureaucracy of a large institution and/or learning self-advocacy. In addition, the website maintains a page with helpful UConn web links.

Website: ossa.uconn.edu

Address: Wilbur Cross Building (Rm 203), 233 Glenbrook Rd. (U-4062)

Phone: 860-486-3426

Email: ossa@uconn.edu

Payroll Department

The primary function of the Payroll department is processing bi-weekly payments to employees of the University. Other special services provided include, but are not limited to, worker's compensation administration, wage verifications and social security earnings reports, moving expense reimbursements, and nonresident alien tax consultation. The Payroll department may also be contacted with questions regarding salary and deductions or to complete the various forms available from our office. Such forms include the following: Federal and State W-4 forms, Form I-9, Direct Deposit Authorization Agreement, Salary Amendment Agreement Form (for tax deferred products), and the Personal Information Change form.

Website: payroll.uconn.edu

Address: Budds Building, 343 Mansfield Road (U-1111)

Phone: 860-486-2423

Residential Life (Student Housing)

The primary role of the Department of Residential Life is to provide assistance with campus housing. Housing options vary widely for graduate students at the University. The primary decision which will guide your housing need is whether you want or need to be located on-campus, close to campus, or find something in a more urban area.

Website: reslife.uconn.edu

Address: Rome Hall (Ground Floor), 626 Gilbert Road Extension (U-1022)

Phone: 860-486-2926

In addition, resources for assisting in your off-campus housing search include:

Off Campus Student Services: http://www.offcampus.uconn.edu/

Off Campus Student Housing (UConn Sponsored): http://www.offcampushousing.uconn.edu/

The Renter's Directory (Off Campus Housing): http://www.therentersdirectory.com

Student Health Services

The Department of Health Services provides primary level health care for both medical and mental health. The Department of Health Services is a fully accredited ambulatory health care facility. Students are offered both in- and out-patient services, as well as health care treatment for non-emergency conditions.

Services include the following:

- Primary Medical Care
- Women's Clinic
- Nutrition Services
- Counseling & Mental Health
- Clinical Research
- Health Education
- Sports Medicine
- Orthopedics
- Physical Therapy
- Club Sports Athletic Training

Website: shs.uconn.edu

Address: Hilda May Williams Student Health Services Building, 234 Glenbrook Road (U-4011)

Phone: 860-486-4700

Email: shs@uconn.edu

Veterans Resources

Veterans Resources provide support for returning armed forces personnel as they adjust to the academic and social terrain at the University. The office assists student veterans in accessing services on campus and in the surrounding community. The University is an institution that enhances its support towards and celebration of its student veteran population.

Website: huskyveterans.uconn.edu

Address: 2110 Hillside Road (U-3008)

Email: huskyveterans@uconn.edu

Phone: 860-486-1973

REGISTRATION

Applicants admitted on the basis of an expected baccalaureate or graduate degree must have completed all requirements for that degree prior to the start of classes. University of Connecticut seniors must have completed the baccalaureate prior to the start of classes. Otherwise they must continue to register as undergraduates, even though admitted to the Graduate School and registering for graduate courses.

Occasionally, a University of Connecticut senior planning to enter the Graduate School has less than a full course load remaining to complete for graduation. Such a student may take advanced courses along with the remaining undergraduate courses and may count those advanced courses toward the graduate degree. Inclusion of up to six credits of such course work is permissible under the following conditions: (a) the work is completed with grades of B or above; (b) the student is later admitted to Regular status in the Graduate School; (c) the work is approved as part of the graduate plan of study; and (d) the student presents a written statement from the University Registrar certifying that the work was not counted toward the baccalaureate degree.

Advance registration and fee payments are accepted on the assumption that students will remain eligible to continue, having met the scholastic standards of the Graduate School and by having complied with its regulations.

The following instructions apply to students registering for most courses conducted on the Storrs campus. All degree-seeking students must register for courses using the Student Administration System and pay all fees either at the Office of the Bursar or online using the Student Administration System. All course charges (applicable tuition and fees) are due and payable by the close of business on the first day of the semester. Late fees and the reinstatement fee are assessed after that time. Part-time students who are not degree-seeking students must register through the Office of the University Registrar.

Both new and continuing students should make appointments with their major advisors to determine the courses in which they plan to enroll. Dates for registration are contained in the Academic Calendar. Depending upon course selections, most students should be able to register using the Student Administration System. Problems encountered during registration (including enrollment in restricted courses) may be brought to the Graduate School in the Whetten Graduate Center. Graduate students are permitted to register, to modify their course registrations without penalty, and to pay their fee bills or obtain deferments through the first day of the semester. Graduate students become liable for payment of tuition and other required course-related fees, however, beginning with the first day of classes of the semester or session whether or not they have attended any classes or have paid their fee bills as of that date.

Continuous Registration

Master's, doctoral, Sixth Year in education, and graduate certificate students must begin their programs with course work and must maintain registration continuously each semester thereafter (except summer sessions) until all requirements for the degree have been completed. Registration may be maintained either by taking course work for credit or by registering for one of the four non-credit Continuing Registration courses. These include Special Readings at the master's (GRAD 5998) or doctoral (GRAD 6998) level, Master's Thesis Preparation (GRAD 5999), and Doctoral Dissertation Preparation (GRAD 6999). Other zero-credit courses may be substituted, if appropriate. Non-credit registration requires payment of University fees.

International students should consult with the Graduate School prior to registering for zero-credit courses. Per SEVIS guideline 8 C.F.R 214.2 (f) (6) (iii), students are permitted to register for zero credits for a maximum of one academic year. Continuous registration is granted on a semester-by-semester basis with the consent of the student's major advisor and the student's international advisor.

Failure to maintain continuous registration during any semester results in the student's inactivation. Reinstatement is possible within a year of last registration and payment of all fees. (See "Reinstatement Fee.") The consequences associated with matriculation via Continuing Registration rather than credit courses are addressed in the "Course Loads" section.

Neither enrollment for Continuing Registration nor payment for it is required for any semester, during the first ten class days of which the student completes all requirements for a degree, if it is the only degree the student is pursuing.

Any currently matriculated student taking course work at another institution, either for transfer to a University of Connecticut graduate degree program or for any other reason, must register for Continuing Registration as specified above in any affected semester.

Enrollment in Continuing Registration is not required during the summer. To receive most forms of summer financial aid for study or research, a student must register for either 5 credits of coursework in each of two summer sessions or one of the full-time research courses, GRAD 5960 (Full-time Master's Research) or GRAD 6960 (Full-time Doctoral Research). For summer registration, permission numbers for GRAD 5960 and 6960 are issued by the Graduate School Office.

Registration Deadlines

All graduate students registering with the University must have their initial registration in place no later than the close of business of the first day of classes each semester. Additions to and deletions from a student's class schedule may occur freely throughout the first ten business days of the term. Students who do not complete an initial registration by the close of business of the first day of classes are subject to a late registration fee.

Course Loads

The number of credits and choice of courses for which a student registers is a matter to be discussed by the student and the major advisor. A student may be classified as a full-time student in one of three ways: (1) enroll in 9 or more credits of course work; (2) enroll in 6 or more credits of course work while holding a graduate assistantship (50% or greater); or (3) enroll in one of the four special purpose 3-credit courses. These courses include GRAD 5960 (Full-time Master's Research), GRAD 6960 (Full-time Doctoral Research), GRAD 5930 (Master's Level Directed Studies), and GRAD 6930 (Doctoral Level Directed Studies). The former two courses may be taken by students who have completed all requirements for the respective degree except the research component and who have no other obligations at the University (i.e., no other course work and no graduate assistantship). The latter two courses denote a full-time off-campus directed project, such as an internship, field work, or other special activity. Students in GRAD 5930 or GRAD 6930 may hold graduate assistantships if those assistantships are in direct support of their studies. Such an assistantship may not be a standard teaching assistantship.

To be classified as half-time, the student's course credit load must be between 5 and 8 credits/semester. A credit load of fewer than

5 credits/semester is a part-time load. These criteria apply to all registered students at the University. The currently defined Continuing Registration courses (GRAD 5998, 5999, 6998, and 6999) are zero-credit "placeholder" courses denoting part-time study and do not count toward the credit load requirement for half-time or full-time enrollment status. Degree-seeking students who do not need to be certified by the University as holding at least half-time enrollment status may use these courses to maintain registration on a part-time basis.

Students holding graduate assistantships must register for 6 or more credits/semester. Such students are considered to be full-time students.

In addition to courses offered by each department, a student's credit load may include GRAD 5950 (Thesis Research), GRAD 6950 (Dissertation Research), and other equivalent research courses defined by the Graduate School, including seminar and other "colloquium" courses that are not part of the plan of study. These variable credit courses carry S/U grading, with the student's major advisor as the instructor of record.

Auditing Courses

Students who do not wish to register for credit may be permitted to register as auditors under the following conditions: (1) they pay the appropriate tuition and fees for courses; (2) they obtain the consent of the instructor; (3) they audit only courses for which there are adequate classroom or laboratory facilities; and (4) in the case of students in degree programs, they obtain consent from their major advisors. All permissions and registrations for auditing courses must be filed in the Graduate School. Courses audited are entered on the student's permanent record, but such courses cannot be used toward fulfilling requirements for a graduate degree at the University.

The privileges of an auditor in a course are limited specifically to attending and listening. Auditors must attend class regularly. The auditor assumes no obligation to do any of the work required of the course and is not expected to take any of the instructor's time. In addition, the auditor does not submit any work, and is neither eligible to take any tests or examinations nor able to receive grades on all or any part of the course.

Students should not "sit-in" on classes for which they do not register as auditors.

Adding a Course

After the beginning of a semester or summer session, a student may not add a course if the instructor feels that elapsed time might preclude its successful completion. For degree-seeking students, courses added after the tenth day of a semester or after the fifth day of a summer-session term must be submitted to the Graduate School. Certain exceptions to this policy exist. Students in the Sixth-Year Program must obtain permission from the Associate Dean of the School of Education. Students in part-time M.B.A. programs conducted at locations other than Storrs must obtain permission from the director of the program at their location. Students in Social Work must follow the procedures in effect at the School of Social Work.

Dropping a Course

Discontinuance of attendance or notice to an instructor or to an advisor does not constitute cancellation of course registration, and may result in a failing grade on the student's permanent record. Before terminating class attendance, the student should ensure that the course has been dropped officially. Until this has been done, the student is obligated to complete all work. No grade is recorded for courses officially dropped, but a mark of W is recorded to signify withdrawal from a course after the tenth day of the semester or after the first week of a summer-session course. Cancellation of course registration does not automatically drop a course from a plan of study, nor does approved deletion of a course from a plan of study cause cancellation of course registration. The procedures are separate and unrelated.

During the first nine weeks of a semester or prior to the midpoint of a summer-session course, a course may be dropped by the following procedure. Students registered directly by the Graduate School at Storrs must file properly completed and signed schedule revision request form with the Graduate School. Non-degree students register through the Office of the Registrar.

After the first nine weeks of a semester or the midpoint of a summer-session course, students ordinarily are not allowed to drop a course. If, however, a student must drop a course because of illness or other compelling reason beyond the student's control, the student must request special permission as early as possible and well before the last day of classes. Permission to drop a course or to change from participant to auditor is granted only for good cause. All students must obtain permission from the Graduate School. Permission is granted only on the major advisor's written recommendation, which must be convincing and sufficiently specific regarding reasons beyond the control of the student. The recommendation should be accompanied by properly completed and signed schedule revision request form for the course(s) to be dropped. Students in the M.B.A. programs must obtain permission from the director of the program. Under no circumstances is a student at any location or in any program permitted to drop a course after the course has officially ended.

Dropping all Courses

The general policies and procedures regarding dropping a course (above) apply to dropping all courses, whether the student wishes to remain active in the graduate degree program or to withdraw permanently from it. Permission from the Graduate School is needed for the student either to remain active in the program or to leave in good standing. No refund is possible unless all course work for credit is dropped.

STANDARDS AND DEGREE REQUIREMENT

The general academic standards and requirements of the Graduate School apply to all graduate students enrolled in certificate and degree programs. Some programs have additional requirements that are more detailed or tailored to the needs of the specific program. Students should acquaint themselves with all of the standards and degree requirements for their degree program, as specified in both the Graduate Catalog and official graduate program handbooks. Undergraduate and non-degree students taking a graduate course should consult the appropriate catalog for regulations which apply to them.

Course Grades

Instructors are required to file grades with the University Registrar for all credit-bearing courses taken by a student. Although instructors are free to set the standard of performance expected in their courses, the following uniform scale is published to encourage general agreement on the meaning of grades:

• The letter A signifies work of distinction.

• The letter B represents work of good quality, such as is expected of any successful graduate student.

• The letter C represents work below the standard expected of graduate students in their area of study. It is recognized that work of C quality in a supporting area may be of benefit to students and that they should not be discouraged by the grading system from including some supporting work in their programs. Such work shall be identified on the plan of study. Plus and minus values may be assigned to all but failing grades, are entered on the permanent record, and are computed into the student's grade point average.

• A grade of D+, D, or D- signifies work of unsatisfactory quality. If a graduate student receives any form of a D grade, the course may not remain on the plan of study and the student's eligibility to continue in the degree program is reviewed by the student's advisory committee.

• The grade of F or U signifies failure in the course and necessitates a recommendation by the advisory committee to the Graduate School as to whether or not the student shall be permitted to continue graduate study.

Final grades of S (Satisfactory) or U (Unsatisfactory) are associated only with certain courses designated as such by the Executive Committee of the Graduate Faculty Council. Certain foreign language courses designed under method (2) for fulfillment of a doctoral language requirement also may carry the S/U grading option, if chosen by the student. (See "Foreign Language; Related or Supporting Area of Study.") An S is not computed into the student's grade point average whereas a U is viewed as an F.

Graduate students are not permitted to take any course, undergraduate or graduate, on a Pass/Fail basis.

A mark of I (Incomplete) is assigned if a student has been doing work of acceptable quality but, for some reason satisfactory to the instructor, has not completed all of the work required to earn credit for a course by the end of the semester or session.

If a student whose work in a course throughout the semester has been of satisfactory quality fails to take a required final examination in the course because of illness or other serious cause, the instructor is permitted to give a mark of X (Absent) and may, with the permission of the Graduate School, reschedule the examination. If the student's work up to the time of the examination was not clearly of passing quality, the instructor is to enter a mark of F or U if a required final examination is missed.

Note that beginning with the Fall 2004 semester, the symbol I or X is replaced by the final course grade on the permanent academic record when the student completes all required work for the course and the instructor reports the final grade to the Registrar. Prior to the Fall 2004 semester, the symbols I and X appear together with final course grades on students' permanent academic records.

The letter W signifies withdrawal from a course after either the tenth day of a semester course or the first week of a summer-session course. Except in extraordinary cases where academic factors or extreme or unusual circumstances warrant it, this mark is not deleted from the permanent academic record.

The letter N signifies that no grade was reported by the instructor for an individual student duly registered for a course.

The letter T indicates that course credit has been accepted in transfer from another institution.

The letter R is an administrative symbol signifying that a student is registered. Any zero credit course (e.g., GRAD 5998, 5999, 6998, or 6999) for which a student registers appears on the permanent academic record with the letter R as the grade.

Students are required to maintain in their course program at least a B (3.00) average, for which a grade point average will be computed using the following scale:

A +	= 4.3
A	= 4.0
A –	= 3.7
B+	= 3.3
B	= 3.0
B –	= 2.7
C +	= 2.3
C	= 2.0
C–	= 1.7
D+	= 1.3
D	= 1.0
D –	= 0.7
F	= 0

Maintenance of good academic standing in the Graduate School requires a cumulative grade point average of 3.00 or higher at all times while enrolled in a graduate program. An official transcript of an individual's graduate academic career, however, includes grade point average calculations based on all course work completed during the student's graduate career (including any 1000's level courses). Credits completed elsewhere and accepted in transfer by the Graduate School do not affect the student's University of Connecticut grade point average in any way.

Whenever a student's cumulative average falls below 3.00, the program is to be reviewed by the student's advisory committee to determine whether or not the student shall be permitted to continue graduate study.

If all work required to change a mark of I or

X is not submitted to the University Registrar within twelve months following the end of the semester or session for which the mark was recorded, or within a shorter period of time specifically designated by the instructor, no credit is allowed for the course. For grades of I, it is the student's responsibility to reach and to maintain an understanding with the instructor concerning the timely completion of the work. For grades of X, it is the student's responsibility to seek the required permission to take the final examination from the Graduate School as soon as possible after it has been missed.

Upon the recommendation of the instructor to the Graduate School, a limited extension of an Incomplete may be granted. The Graduate School is not obligated to approve an extension if the instructor of the course no longer is a faculty member at the University of Connecticut. If more than three courses have been left incomplete, the student may be required to complete those still viable before being allowed to register for additional course work. Too many permanent Incompletes on the record may be grounds for the student's termination or dismissal. An employment authorization for a graduate assistantship appointment may not be approved for a student who has four or more viable incomplete courses on his or her academic record.

For further information, refer to the document "Key to the Transcript", available from the Office of the Registrar.

Final Grade Appeals

The Graduate School endorses the process for appealing a final course grade as described in the University Senate By-Laws. Information regarding the process can be found at http://guide.uconn.edu/instruction/challenges-to-a-grade/, and is as follows:

• A student who believes that an error in grading has occurred and wishes to request a review must request a review by the instructor of record within six months of the course grade having been posted. If the instructor of record cannot be contacted, the student should contact the department head. If the instructor agrees that a change is justified, the instructor will initiate the grade change (according to the procedure in the previous section of these by-laws). Individual schools and colleges may have more stringent requirements than the six-month requirement of this by-law.

• If a student requests a review of a course grade and the instructor believes that the original grade is correct, the student has 30 days to appeal the decision to the head of the department in which the course is taught. The department head will seek input from the instructor and the student. If this process results in agreement by the instructor that a grade change is justified, the instructor will initiate the grade change according to the procedure in paragraph 2 of section II. E. 9 of these by-laws.

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

• If the department head thinks that a grade change is justified but the instructor does not agree, the department head shall request, through the dean of the school or college in which the course is taught, a review by a Faculty Grade Change Review Panel. This request shall be made within 10 days of completion of the department head's review.

• The Faculty Grade Change Review Panel, hereafter referred to as the Faculty Review Panel, shall be composed of three full-time faculty members appointed by the dean of the school or college in which the course is taught. The Faculty Review Panel shall convene a hearing within 10 working days of notification of a case. Both the appealing student and the course instructor should be present at the hearing. The student will be afforded an opportunity to state the grounds on which he or she is appealing the grade. The instructor will be afforded the opportunity to document the basis on which the grade was awarded. Both parties may present supporting evidence and/or request testimony of others. The Faculty Review Panel may request input from the department head.

• If the Faculty Review Panel recommends a grade change, it is authorized to execute the change by sending to the registrar a change of grade request signed by all the members of the Review Panel. The Review Panel will send a written report of the decision to the instructor, the student, the department head, and the dean of the school or college offering the course within 10 working days of the decision. The decision of the Faculty Review Panel shall be considered final.

Termination of Status

To remain in good standing, a student at all times must have a major advisor and be within the degree time limits for the degree s/he is seeking. Once a student's plan of study has been approved by the Executive Committee of the Graduate Faculty Council, the student at all times must have a duly constituted advisory committee with at least two associate advisors in addition to the major advisor.

A student's major advisor may resign from the advisory committee by written notice to the Graduate School and the student. If the student does not identify a new major advisor within six weeks of the resignation, the student's graduate degree program status is terminated. Weeks when classes are not in session, e.g., within or between semester breaks, will not be included in determining the time by which a student must identify a new major advisor.

A graduate student and his or her major advisor should always be cognizant of the time limits associated with the student's degree. The student, the major advisor, and the program head or coordinator are notified of the date by which requirements must be completed when the Graduate School sends approved copies of the student's plan of study. Any request to extend the terminal date must be submitted in writing to the Graduate School and must be accompanied by a written endorsement from the major advisor. Extensions of the terminal date are granted by the Graduate School only on the basis of substantial evidence that the student is making consistent and satisfactory progress toward the completion of degree requirements. If an extension is granted, it establishes a new terminal degree date for the student. In the event that a student passes the terminal degree date without completing the associated degree requirements, the student's graduate degree program status is terminated.

Whenever a student's graduate degree program status is terminated, the Associate Dean notifies the student by letter. The student may request a hearing to contest the termination under the provisions outlined under "Hearing and Appeal Procedures."

Academic Dismissal

A graduate student's progress in a degree program is monitored regularly by the student's advisory committee. If at any time, a student's academic performance, progress in a graduate degree program, or professional development and/or suitability is judged by his or her advisory committee to be unsatisfactory, and

if the advisory committee determines that dismissal on any of these grounds is warranted, the advisory committee must submit its written recommendation that the student be dismissed on such grounds to the Dean of the Graduate School. A student may be subject to academic dismissal if he or she: (1) fails to maintain the minimum cumulative grade point average required by the Graduate School (3.00); (2) receives a grade of D+, D, D-, F, or U in any course; (3) fails to satisfy a foreign language requirement for a degree; (4) fails the doctoral general examination; (5) fails to produce an acceptable doctoral dissertation proposal; (6) performs unsatisfactorily in any aspect of the research or writing for a master's thesis or doctoral dissertation; (7) fails the final examination for the master's or doctoral degree; or (8) fails to satisfy any other academic requirement of the student's graduate degree program. The specific judgment on which the advisory committee's recommendation is based must be stated. The recommendation must bear the signature of each member of the advisory committee. For a student whose advisory committee has not yet been established, the major advisor alone submits the recommendation. Whenever a student is to be dismissed from a graduate degree program, the Associate Dean notifies the student by letter. The student may request a hearing to contest the dismissal under the provisions outlined under "Hearing and Appeal Procedures."

Hearing and Appeal Procedures

If a student's graduate degree program status is to be terminated or if a student is to be dismissed on academic grounds, the Associate Dean issues a letter to the student stating this intent. If a student wishes to request a hearing regarding termination or academic dismissal, the student must submit a written request to the Graduate School within thirty (30) business days of receipt of the letter. The hearing will follow the procedures outlined in "Hearing on Allegation of Scholarly Misconduct" except that the presentation is based on evidence related to the academic dismissal. The Hearing Committee will decide simply whether the termination of status or dismissal is warranted.

If the Hearing Committee recommends termination or academic dismissal, the decision will stand unless the student files a written appeal with the Dean within ten (10) business days of his/her receipt of the Hearing Committee's decision. An appeal is not a new hearing. It is a review of the record of the original hearing. In order to prepare an appeal, the student and his/her support person (with the written consent of the student), shall have the right to review the records of the hearing, including the audio recording.

An appeal may be sought on the following three grounds:

1. On a claim of error in the hearing procedure;

2. On a claim of new evidence or information material to the case that was not available at the time of the hearing.

3. On a claim of substantive error arising from misinterpretation of evidence presented at the hearing.

The Dean shall have the authority to dismiss an appeal not sought on one or more of these three grounds.

The decision of the Dean concerning an appeal shall be final.

GRADUATE CERTIFICATE PROGRAMS

Graduate certificate programs may be offered within the structure of the Graduate School.

Students may be awarded these certificates upon completion of a well-defined program of course work. The graduate certificate is not defined as a degree by the Graduate School; rather, it is simply a focused collection of courses that, when completed, affords the student some record of coherent academic accomplishment in a given discipline or set of related disciplines. Moreover, the graduate certificate is not viewed as a guaranteed means of entry into a graduate degree program. While the courses comprising a graduate certificate may be used as evidence in support of a student's application for admission to a graduate degree program, the certificate itself is not considered to be a prerequisite. The didactic material contained within a graduate certificate program may represent a more practice-oriented subset of an existing graduate discipline. Detailed information concerning admissions criteria and procedures can be obtained from graduate certificate program coordinators.

An appropriate number of academic credits must comprise the certificate program. The number of graduate (5000- or 6000-level) credits may not be fewer than nine nor more than one half of the credits necessary for a related Master's degree from the Graduate School. Ordinarily, the credit requirement ranges from 12 to 15 graduate semester credits. When there exists no related Master's program, the number of credits required for a graduate certificate is limited to 12.

A certificate student may enroll on either a part-time or a full-time basis, as determined by the certificate program coordinator and the number of credits taken by the student. Students enrolled on a full-time basis have access to many of the same campus services as other full-time graduate students. They may live in on-campus graduate student housing and they may be granted student library access and campus parking privileges, among others. They also may be considered for merit-based financial aid by the department or program, as well as for need-based financial aid by the Student Financial Aid Office, but at a reduced priority compared to degree seeking students.

Graduate School Certificate programs currently approved for offering include but are not limited to the following:

- Adult Learning
- Biomedical Science Research Experience
- Clinical and Translational Research
- Cognitive Science
- College Instruction
- Culture, Health, and Human Development
- Feminist Studies
- Geographic Information Systems
- Global Governance Studies
- Graduate Certificate in Nursing
- Health Promotion/Health Education
- Health Psychology
- Human Rights
- International Studies
- Music Performance
- Public and Nonprofit Management
- Occupational Health Psychological Certificate
- Occupational Safety and Health
- Positive Behavior Support

- Postsecondary Disability Services
- Program Evaluation
- Public Financial Management
- Quantitative Research Methods
- Survey Research Certificate

MASTER'S DEGREE PROGRAMS

Master's degree programs are offered in a broad range of fields throughout the University. A master's degree program represents the equivalent of at least one year of full-time study beyond the baccalaureate (or its equivalent).

The Master of Arts degree usually is awarded to qualified candidates in the humanities, the social sciences, education, and other non-scientific fields. The Master of Fine Arts is a terminal degree in the fields of Art and Dramatic Arts. The Master of Science degree is awarded to candidates in the natural, physical, mathematical, pharmaceutical, nutritional, and agricultural sciences, as well as Accounting, Nursing, and Engineering. Other master's degrees awarded include the Master of Business Administration, the Master of Dental Science, the Master of Engineering, the Master of Music, the Master of Professional Studies, the Master of Public Administration, the Master of Public Health, and the Master of Social Work.

Time Limits

The student is expected to register for course work with reasonable regularity and to complete all requirements for the degree within a moderate span of time to assure continuity and adequate familiarity with developments in the field of study. (See "Continuous Registration.") Master's degree programs requiring between 24 and 36 credits must be completed within a period of six years, master's degree programs requiring between 37 and 59 credits must be completed within a period of seven years, and master's degree programs requiring 60 credits or more must be completed within eight years from the beginning of the student's matriculation in the degree program. Failure to complete the work within this period or failure to maintain continuous registration (see "Continuous Registration") as required may result in termination.

An extension of a student's terminal date is considered only when there is substantial evidence that the student has attempted to make regular and consistent progress toward completion of degree requirements. A written recommendation to extend the terminal date must bear the signature of the major advisor and be submitted in a timely manner to the Dean. A second request to extend a student's terminal date requires extraordinary circumstances. Third requests for extension are rarely, if ever, granted.

Thesis and Non-Thesis Master's Degrees

Master's degrees may be earned under either of two plans, as determined by the advisory committee. The Thesis plan emphasizes research activities while the Non-Thesis plan requires comprehensive understanding of a more general character. Non-Thesis plans in the Masters of Fine Arts emphasize research that culminates in a final Research Project. The Thesis plan requires no fewer than fifteen credits of advanced course work and no fewer than nine additional credits of Master's Thesis Research (GRAD 5950 or GRAD 5960), as well as the writing and oral defense of a thesis. The Non-Thesis plan requires no fewer than twenty-four credits of advanced course work and a comprehensive final examination. In either case, advisory committees may require more than the minimum number of credits.

Advanced course work taken on a non-degree basis at the University of Connecticut may account for up to 25% of the course credits required toward a master's degree plan of study provided the following conditions are met: (1) courses are graduate level; (2) the grades earned in such course work are B (not B-) or higher; (3) such course work is within the time limit for completion of master's degree requirements; and (4) such credits have not been applied toward any other degree, here or elsewhere (already completed or to be completed in the future). In any event, inclusion of non-degree course work on the plan of study requires the consent of the advisory committee.

Up to 25% of the credits required for a University of Connecticut master's degree program may be accepted in transfer from other institutions provided these conditions are met: (1) the major advisor or the advisory committee indicates its approval of the transfer of credit(s) by signing the plan of study and the Transfer Credit Request Form as appropriate for the degree program; (2) the courses must be at a level appropriate for a graduate degree and offered by an accredited institution; and (3) the grades earned in any courses to be transferred must be B (not B-) or higher. Official transcripts of any course work to be transferred must be on file in the Graduate School. Once the approved plan of study or program plan is submitted to the Graduate School and official transcripts indicating satisfactory completion of the course work to be transferred are received, the transfer of credit is noted on the student's permanent University of Connecticut academic record. Any credits transferred to a graduate degree program at the University of Connecticut must not have been or be used toward a degree elsewhere (already completed or to be completed in the future).

Students admitted to study for the degree of Doctor of Philosophy may earn a Master of Arts or Master of Science degree, if one is offered specifically in their field of study, under either the Thesis or the Non-Thesis Plan. Students also may apply for this degree if they have on file a fully approved Ph.D. plan of study including at least twenty-four completed credits of suitable content course work taken at this University and have passed a master's final examination. They also may apply for this degree if they have completed at least 24 credits on an approved Ph.D. plan of study, have passed the doctoral general examination, and have been recommended by their major advisor or by the Dean for award of the master's degree. More than one master's degree may not be awarded at this institution to an individual student unless the degree titles are different or unless the degrees are earned in substantially different fields of study. The same course may not be offered for credit toward more than one degree, except in the case of officially approved dual degree programs.

Plans of Study and Program Plans

To become a candidate for a master's degree, the student must have on file with the Graduate School an approved plan of study or program plan approved by their advisory committee or major advisor as appropriate for the degree program. The student may not take the final examination for the degree before the plan of study or program plan has been prepared and approved. The plan of study must be prepared and signed by the student and the members of the advisory committee, and submitted no later than the beginning of their final semester to the Graduate School. Failure to present the plan on time may prolong the period of study for the degree. Before drawing up and approving the plan of study, the major advisor should have on file and should consult for guidance a set of transcripts of all undergraduate and graduate work the student has taken. The advisory committee may require that the student take an exploratory examination to guide the committee in formulating the plan of study. Certain master's degree programs submit program plans for individual students at the conclusion of master's study rather than a plan of study. Program plans require the approval of

the major advisor.

Courses elected shall be consistent with the student's objectives and related to the field in which the degree is to be taken. Plans of study shall consist largely of courses at the 5000's level or above. A limited number of credits at the 3000's or 4000's level (not more than six credits) may be accepted. In addition to the minimum number of course credits required for the degree, the advisory committee may require the student to take other courses with or without graduate credit, depending on the student's objectives and previous preparation. Course credit by examination is not allowed as a means of accumulating credits to meet the requirements for advanced degrees at this institution.

Once the approved plan of study or program plan is submitted to the Graduate School, any request for change must be submitted to the Graduate School on the official form bearing the signatures of the major advisor, the members of the advisory committee, and the student as appropriate. Successful completion of all work indicated on the approved plan of study or program plan is a fundamental prerequisite to the conferral of the degree.

The Master's Thesis

The advisory committee must approve the topic and scope of the thesis and, upon its completion, ascertain that it represents an independent investigation of a significant topic and is an important contribution to ongoing research in the candidate's field. The thesis must be acceptable in literary style and organization.

Specifications for preparation of the thesis can be obtained at the Graduate School or from the Graduate School's website. It is the student's ultimate responsibility to be certain that the thesis conforms to the specification.

The thesis must be dated as of the calendar year in which all requirements for the degree are completed. The Graduate School requires the electronic submission of the thesis though Digital Commons, a university repository for public access. The final copy must meet all specifications outlined on the Graduate School Website. The Thesis Submission Checklist must be submitted to the Graduate School once it has been signed by a Homer Babbidge Library designated staff member together with an approval page bearing original signatures of all members of the advisory committee. Once a thesis is bound, it becomes the property of the Homer Babbidge Library. No restrictions that limit or delay the accessibility, use, or distribution of the results of a master's student's research are acceptable if such delays are inconsistent with an embargo period requested by the student or if they interfere with the timely completion of a student's academic program.

Final Examination

Near the close of the candidate's period of study – not later than one year after the completion of course work or the thesis – the student must pass a final examination under the jurisdiction of the advisory committee. The student may not take the final examination before Regular graduate status has been granted. The advisory committee has discretion to determine whether the examination shall be written, oral, or both. Invitation to participate in an oral examination is issued by the advisory committee, although members of the faculty may attend. The examination must be completed by the published deadlines for the appropriate conferral period for the degree to be granted with that conferral date.

The decision as to whether a student has passed or failed the examination rests solely with the advisory committee, which shall take into account the opinions of other participating faculty members. The vote of the advisory committee must be unanimous. Following the examination, the major advisor shall communicate the results to the student and send a report on the official form to the Graduate School. If the student has failed the examination or if the advisory committee considers the result of the examination inconclusive, the committee has the option of requiring the student to retake it. In such cases, the recommendation must reach the Graduate School promptly, and any re-examination must take place within twelve months from the date of the original examination.

Under the Thesis plan, the examination may center on the candidate's research and its relation to the field of study as a whole, but may have a wider scope. Under the Non-Thesis plan, the examination shall be comprehensive and designed to assess the candidate's mastery of the field and ability to integrate the knowledge acquired. The final examination for M.F.A. candidates may include a focus on the candidate's research project and its relationship to the field.

THE DOCTOR OF MUSICAL ARTS DEGREE

The D.M.A. degree is the highest practice-oriented degree offered by the Graduate School in the field of Music. The program leading to its attainment is intended to give persons of outstanding ability the opportunity to become creative contributors in musical performance and scholarship. Award of the degree testifies to broad mastery of the art of music, an ability to practice that art on an exceptionally high level, and acquisition of appropriate research skills.

While certain minimum requirements are set by the Graduate School and the Music Department, it is important for students to realize that work toward this degree is not merely a matter of accumulating course credits or satisfying other requirements. The degree will be conferred only after the advisory committee and the Graduate Music Faculty are convinced that the student is able to demonstrate consummate artistry in a public forum, and has developed independence of judgment and mature scholarship.

Time Limits

The equivalent of at least two years of full-time study beyond the Master's degree is required. All work must be completed within seven years of the beginning of the student's matriculation in the degree program. The general examination shall be passed within four years of the beginning of doctoral study. Failure to complete the work within the periods specified or failure to maintain continuous registration (See "Continuous Registration") will require re-evaluation of the entire program and may result in a notice of termination. A five-year time limit applies to the acceptance of foreign-language courses. (See "Foreign Language.")

An extension of a student's terminal date is considered only when there is substantial evidence that the student has attempted to make regular and consistent progress toward completion of degree requirements. A written recommendation to extend the terminal date must bear the signature of the student's major advisor, and it must be submitted in a timely manner to the Graduate School. Approval is granted by the Dean. Each subsequent request to extend a student's terminal date requires greater justification and more extraordinary circumstances. Third requests for extension are rarely, if ever, granted.

Residence Requirement

A graduate student can fulfill the special demands of a doctoral program only by devoting a continuous period of time to concentrated study, practice, and research with a minimum of outside distraction or employment. The D.M.A. student must complete one year (two semesters) of full-time study in residence. This residence period must be completed through registration for and completion of appropriate course loads or research at the Storrs campus. Students ordinarily must register for full-time student status during the residence period (see "Course Loads").

The principal criterion for full-time study as required for fulfillment of the doctoral residence requirement is whether the student is in fact devoting essentially full-time effort to studies, without undue distraction caused by outside employment. It is left to the advisory committee to determine whether a student's outside employment is a distraction that prevents the student from devoting essentially full-time effort to the planned program. The advisory committee will record this determination on the plan of study, along with a description of the nature, extent, and period(s) of outside employment during the residence period.

Plan of Study

The plan of study must be prepared; signed by the student, the members of the advisory committee, and the Director of Graduate Studies in Music; and then submitted to the Graduate School for approval by the Executive Committee of the Graduate Faculty Council. The student may not take the general examination before the plan of study has been fully approved. Failure to present the plan on time may prolong the period of study for the degree. Before formulating and signing the plan, the major advisor should have transcripts of all of the student's undergraduate and graduate work on file and should consult them for guidance. The advisory committee may require that the student take an exploratory examination to guide the committee in formulating the plan of study.

A limited number of credits at the 3000's or 4000's level (not more than six) may be accepted. The degree ordinarily requires at least 60 credits. The plan will designate any foreign language(s) in which the student is to be tested. Course credit by examination is not allowed as a means of accumulating credits to meet the requirements for advanced degrees at this institution. At least fifteen credits of GRAD 6950 must appear on the plan of study. This effort represents the research for the D.M.A. Dissertation, which is an essential component of the student's program.

Advanced course work taken on a non-degree basis at the University of Connecticut may be included on a D.M.A. plan of study provided the following conditions are met: (1) the grades earned in such course work are B (not B-) or higher, (2) such course work is within the seven year limit for completion of D.M.A. degree requirements, and (3) such credits have not been applied toward any other degree here or elsewhere (already completed or to be completed in the future). In any event, inclusion of non-degree course work on the plan of study requires the consent of the advisory committee and is subject to the approval of the Executive Committee.

After approval of the plan by the Executive Committee, any request for change must be submitted in advance to the Graduate School on an official form bearing the signatures of the members of the advisory committee and the student. Such changes are subject to approval by the Executive Committee. The successful completion of all work indicated on the approved plan of study is a fundamental prerequisite to conferral of the degree.

Once the plan of study is approved, the student and the advisory committee should reevaluate it regularly and modify it, following the established procedure, if appropriate.

Foreign Language

Students in all areas of concentration shall be required to have a competent reading knowledge of at least one foreign language appropriate to the general area of study.

Students should plan to meet the language requirement early in their graduate career and well before they begin preparation for the general examination. Methods for establishing evidence of reading competence are the same as those for the Ph.D. (See explanation of the Foreign Language requirement under "The Doctor of Philosophy Degree.")

Transfer Credit

Transfer of credit for course work completed at other institutions is approved only after the student has demonstrated the ability to do acceptable graduate work at the University of Connecticut. Such ability must be demonstrated by successful completion of graduate level University of Connecticut course work. The maximum number of credits accepted from accredited institutions is six, provided it is of at least B (not B-) quality and contributes to the objectives of the proposed doctoral program. Such graduate work may be approved for transfer provided that the general examination is to be passed and all degree requirements are to be completed within the prescribed period – seven years – from the beginning date of the earliest course, wherever taken, listed on the approved doctoral plan of study. (See "Time Limits.") Transfer credit is not granted for individual courses used for a degree elsewhere (already completed or to be completed in the future). Instead, consideration is given to that degree program as an entity when the doctoral plan of study is being prepared.

Evaluation of Performance

The advisory committee shall evaluate continually the student's performance. Any graduate student whose scholastic performance does not meet the minimum requirements of the Graduate School may be subject to dismissal. The first recital for all D.M.A. students, except for those in conducting, is considered to be a qualifying recital, and must be presented during the first year of D.M.A. study. The hearing for this recital is evaluated by the full performance faculty. Any student who does not demonstrate an appropriate level of performance in this hearing and recital is subject to dismissal.

General Examination

The general examination shall be taken near the end of the course program. Before arrangements for the examination are made, the foreign language requirement(s) should have been met and the plan of study must have been approved by the Executive Committee of the Graduate Faculty Council. The examination is comprehensive in nature and incorporates elements of music history and literature, music theory, performance practice, and practical application of these constituent components.

The examination is under the jurisdiction of the student's advisory committee and contains both written and oral components. Not fewer than five faculty members, including all members of the advisory committee, constitute the examining committee and participate in the examination. The final decision as to whether or not the student has

passed the examination is determined solely by majority vote of the examining committee.

After the examination, the major advisor communicates the results to the candidate and sends the official report on the examination to the Graduate School.

D.M.A. Dissertation Proposal

Before preparation of the D.M.A. Dissertation is well under way, the student must file a proposal describing the intended research with the Graduate Studies Committee of the Music Department. Failure to file the proposal early may result in wasted effort on a document if changes are required in the project. The proposal must be approved by the Graduate Studies Committee in Music at least four months before the filing of the D.M.A. Dissertation and it must be approved by the Executive Committee of the Graduate Faculty Council at least three months before the filing of the D.M.A. Dissertation.

Candidacy, Recitals, and D.M.A. Dissertation Preparation

Upon passing the general examination, the foreign language requirements, and (in the case of all students except conducting majors) the qualifying recital, the student becomes a candidate for the degree Doctor of Musical Arts. Students are notified of their advancement to candidacy.

Students in every D.M.A. area of concentration except conducting must present three full-length recitals during the course of study for the degree. The first of these is considered a qualifying recital, which must be preceded by a pre-recital hearing. This hearing must be presented on a designated date at least three weeks before the scheduled recital, and is adjudicated by the full performance faculty. Hearings for subsequent degree recitals may be held at the discretion of the major advisor or applied instructor. These recitals and concerts represent the culmination of the performance aspect of this degree, and will be judged according to the highest levels of musical artistry. Majors in conducting must appear in concert as conductors with an appropriate departmental ensemble. Appearances in multiple concerts are permitted provided that the amount of music prepared and performed is equal to whole concert appearance.

A written dissertation representing research into some aspect of music performance, repertoire, or pedagogy is an important requirement of this degree. The D.M.A. Dissertation is under the immediate supervision of a member of the music theory or music history faculty, and secondarily under the supervision of the advisory committee. It must be acceptable in literary style and organization. It is the student's responsibility to be certain that the dissertation conforms exactly to the specifications prescribed by the student's advisory committee. The D.M.A. Dissertation receives no academic credit, although the fifteen credits of GRAD 6950 are associated with its preparation. This document will uphold the highest standards of scholarship, identical to those required of Ph.D. dissertations.

The advisory committee will set a date for completion of the D.M.A. dissertation, allowing time for each advisor to make suggestions for revisions, and then will set a date for the final examination, allowing time for the student to make those revisions. In some cases, further revision of the dissertation may be required by the advisory committee as a result of the final examination. Final approval of the dissertation following the examination is indicated by the original signatures of all members of the advisory committee on the dissertation's final approval page. This must be submitted to the Graduate School following the examination. Final approval pages must be received at the Graduate School by the conferral period deadline in August, December, or May. The technical specifications for the preparation of the D.M.A. Dissertation are identical to the specifications for the preparation of the Ph.D. dissertation (see "Candidacy and Dissertation Preparation").

No restrictions that limit or delay the accessibility, use, or distribution of the results of any student's research are acceptable, if such delays interfere with the timely completion of a student's academic program.

Final Examination

The final examination is oral and under the jurisdiction of the advisory committee. It deals mainly with the subject matter of the D.M.A. Dissertation. It is held by the conferral period deadline in August, December, or May. Invitation to participate in the examination is issued by the advisory committee, although any member of the faculty may attend. Not fewer than five members of the faculty, including all members of the candidate's advisory committee, must participate in the final examination unless written approval for a lesser number has been secured in advance from the Dean of the Graduate School. The decision as to whether a candidate has passed or failed the examination rests solely with the advisory committee, which will take into account the opinions of any other participating faculty members. The vote of the advisory committee must be unanimous. Following the examination, the major advisor communicates the results to the student and verifies that the official report has been completed and signed for submission to the Graduate School.

THE DOCTOR OF PHILOSOPHY DEGREE

The Ph.D. is the highest degree offered by the University. The program leading to its attainment is intended to give persons of outstanding ability the opportunity to become creative contributors in a scholarly field. Award of the degree testifies to broad mastery of an established subject area, acquisition of acceptable research skills, and a concentration of knowledge in a specific field.

Although certain minimum requirements are set by the Graduate School, it is important for students to realize that work toward this degree is not merely a matter of accumulating course credits or of satisfying other requirements. The degree will be conferred only after the advisory committee and the Graduate Faculty are convinced that the student has developed independence of judgment and mature scholarship in the chosen field. An individual may not earn more than one Ph.D. degree in a single field of study at this institution.

Time Limits

All work must be completed within a period of eight years of the beginning of the student's matriculation in the degree program, or, if the student entered with a master's degree in the same or a closely related field, the doctorate must be completed within seven years. Failure to complete the work within the periods specified or failure to maintain continuous registration (see "Continuous Registration") will require reevaluation of the student's entire program and may result in a notice of termination.

A one-time extension of the student's terminal date of no longer than two years is considered only when there is substantial evidence that the student has made regular and consistent progress toward completion of degree requirements. A detailed recommendation to extend the terminal date must be signed by the Major Advisor and submitted in a timely manner to the Dean of the Graduate School.

Plan of Study

The Graduate School requires a minimum of at least 30 credits of content course work beyond the baccalaureate (or its equivalent) or at least 15 credits of content course work beyond the master's degree in the same or a closely-related field of study (exclusive of any required Related Area). The plan of study should be completed, signed by the student and advisory committee members, and submitted to the Graduate School for approval when 18 credits of course work have been completed.

Courses elected should be consistent with the student's objectives and related to the field in which the degree will be taken. Plans of study will consist largely of courses at the 5000's level or above. A limited number of credits at the 3000's or 4000's level (ordinarily not more than six) may be accepted.

In addition to the content course work and any required Related Area included in the Plan of Study, satisfactory completion of at least 15 credits of GRAD 6950 – Doctoral Dissertation Research or GRAD 6960 – Full-Time Doctoral Dissertation Research is required.

The Plan of Study for some programs also may designate a foreign language(s) in which the student required to demonstrate reading knowledge and any courses comprising a Related Area. Course credit by examination is not allowed as a means of accumulating credits to meet the requirements for advanced degrees at this institution.

Up to 12 credits of course work taken on a non-degree basis at the University of Connecticut may be included on a Ph.D. plan of study provided the following conditions are met: (1) the grades earned in such course work are B (not B-) or higher, (2) such course work is within the time limit for completion of Ph.D. degree requirements, and (3) such credits have not been applied toward any other degree here or elsewhere (already completed or to be completed in the future). In any event, inclusion of non-degree course work on the plan of study requires the written consent of the advisory committee and is subject to the approval of the Graduate School.

After approval of the plan, any request for change must be submitted to the Graduate School on an official form bearing the signatures of the members of the advisory committee and the student. Such requests are subject to approval by the Graduate School. The successful completion of all work indicated on the approved plan of study is a fundamental prerequisite to the conferral of the degree.

Transfer Credit

Up to 30 credits of letter-graded, graduate-level academic work completed at accredited institutions may be accepted by the Graduate School in transfer provided the grade earned in any course to be transferred is B (not B-) or higher and any course to be transferred was taken within the time limit prescribed for the student's degree program. Official transcripts must be on file with the Graduate School to document any and all course work accepted in transfer. Transfer credit is not granted for individual courses used toward a degree elsewhere (already completed or to be completed in the future). Transfer of credit toward the Ph.D. degree requires the approval of both the advisory committee and the Graduate School. Submission by the advisory Committee of the completed Transfer Credit Request Form together with the signed Ph.D. Plan of Study is required.

Related Area and/or Foreign Language Requirement

For all Fields of Study except those listed in the following paragraph, satisfactory completion of at least one Related Area or demonstrated reading proficiency of at least one appropriate language other than English is required.

Fields of Study which require neither a related area nor demonstrated reading knowledge of a language other than English currently include: Biomedical Engineering, Biomedical Science, Cell Biology, Chemical Engineering, Chemistry, Civil Engineering, Computer Science and Engineering, Ecology and Evolutionary Biology, Economics, Environmental Engineering, Human Development and Family Studies, Linguistics, Materials Science, Materials Science and Engineering, Molecular and Cell Biology, Pathobiology, Philosophy, Physics, Plant Science, and Political Science.

If a related or supporting area is required, the courses chosen must comprise a coherent unit of advanced (i.e., 4000's level or above) work outside the major field of study (or area of concentration, if appropriate). Course work toward the Related Area normally is taken outside the student's "home" department. The courses must be approved by the advisory committee as a part of the plan of study. With few exceptions, they must be taken at this institution. With the consent of the advisory committee, a three-credit advanced course in mathematics or statistics passed satisfactorily at this institution may fulfill the otherwise six-credit-minimum requirement if the student's preparation contains a suitably advanced prerequisite course (i.e., equivalent to a 4000's level University of Connecticut course) passed satisfactorily at this or another institution (although no course credits will be accepted in transfer).

For a specific language to be considered appropriate, there must exist a significant body of literature written in that language in

the student's field. Students should plan to meet any language requirement early in their graduate careers and usually well before they begin preparation for the general examination. One of five methods may be used to establish evidence of reading competence in an approved language. The advisory committee may designate which method shall be used or may leave the choice of method up to the student. For methods (1) through (3), below, courses and examinations will not be accepted if passed more than five years prior to submission of the plan of study for approval.

(1) The student may pass both semesters of an approved one-year reading or intermediate course in the language with grades equivalent to C (not C-) or higher. This requirement will be considered to be met if, in light of previous preparation, the student is permitted by the instructor to enter directly into the second semester of the one-year sequence and earns a grade of C (not C-) or higher. The courses may be taken by graduate students on a Satisfactory/ Unsatisfactory basis, with a grade of Satisfactory denoting performance at the level of C (not C-) or higher. Courses that have been currently approved for this purpose include French 1163-1164, German 1145-1146, and Spanish 1003-1004. Alternatively, the student may pass a course in a foreign language or literature at or above the 3000's level, provided that the reading for the course is required to be done in the language.

Language courses taken at other institutions are not accepted. However, the student may consider option (2).

(2) The student may pass an examination set by a member of the University faculty (or, if approved by the advisory committee and the Graduate School, a faculty member at another college or university) designated by the student's advisory committee and approved by the head of the department in which the major advisor holds an appointment. The examiner may be a member of the same department but may not be a member of the student's advisory committee. The examination will include, but need not be limited to, the translation of a passage approximately 400 words in length. The use of a dictionary may be permitted at the option of the examiner. The translation is to be written in English unless permission is granted by the Executive Committee of the Graduate Faculty Council to write it in another language. Such permission is granted only if it is deemed in the best interest of the student and if an acceptable examiner is available. The examiner will choose the passage from among books or articles submitted by the major advisor. The passage may be the same for a group of students in the same field or may be selected individually for each student. The examination must be supervised and have a reasonable time limit. The result of the examination, whether passed or failed, must be reported to the Graduate School on the official form bearing the signature of the examiner.

(3) A doctoral reading examination passed at another graduate school of approved standing may be accepted in transfer (subject to the above five-year limitation) provided the examination was taken prior to the student's enrollment in this Graduate School.

(4) The student may establish evidence of competence in the language through an official transcript stating that the baccalaureate or a higher degree was earned with that language as the major.

(5) The student may establish evidence of competence in the language through documentation that it is the student's native language, learned in childhood and used primarily through at least secondary school.

Evaluation of Performance

The advisory committee continually evaluates the student's performance. Any graduate student whose scholastic record does not meet the minimum requirements of either the program and/or the Graduate School may be subject to dismissal.

General Examination

The Doctoral General Examination usually is undertaken when the student has completed at least 75% of the content course work listed on the approved Plan of Study. The student may not take the general examination before the plan of study has been approved.

The general examination is under the jurisdiction of the student's advisory committee unless the members of the Graduate Faculty in a student's field of study have voted to assign jurisdiction for all or part of the examination to a differently constituted examining committee. The examination may be written, oral, or both. All members of the advisory committee must participate in any oral examination. A student is examined in the several facets of his or her field of study, not merely in the particular area of concentration. Advisory or examining committees may give a series of cumulative examinations, to be taken at intervals over the student's period of study. For practical purposes, the final part of such a series shall be regarded as "the general examination," and its scope may be limited as the advisory or examining committee may judge appropriate.

The examining committee includes at least one faculty member representing each of the major areas addressed in the examination. Not fewer than five faculty members, including all members of the student's advisory committee, must participate in the examination. All examiners are invited to submit questions and to evaluate answers, but the final decision as to whether or not the student has passed the examination shall rest solely with the advisory committee unless the members of the Graduate Faculty in a student's field of study have voted to assign this authority to a differently constituted examining committee.

After the examination, the Report on the General Examination, indicating the result of the entire examination and the names of all faculty members participating, must be signed by the members of the advisory committee and submitted to the Graduate School no later than the date of the submission of the Dissertation Proposal for final approval by the Graduate School (see below).

Dissertation Proposal

The Dissertation Proposal is to be prepared in consultation with the members of the advisory committee before the research is well underway. The Dissertation Proposal, bearing the signatures of the members of the student's advisory committee well as the signature of the department or program head verifying satisfactory review by two experts (see the following paragraph) who are not members of the advisory committee, should be submitted to the Graduate School for final approval by the time the student has completed the ninth credit of GRAD 6950 or 6960. The Graduate School will not grant final approval of the Dissertation Proposal without proof of any required IRB, IACUC, or human stem cell approval granted by SCRO. In any event, the approved Dissertation Proposal must be on file in the Graduate School before the public announcement of the oral defense of the dissertation.

When the dissertation proposal has been completed and signed by the student and also has been approved by the members of the advisory committee, the proposal then is submitted to the head of the department or program to which the student was admitted. The head appoints reviewers from outside the advisory committee to conduct a critical evaluation of the dissertation proposal. The use of at least one reviewer from outside the University is encouraged. Reviewers may be appointed to evaluate an individual

student's proposal, or they may be appointed to a committee responsible for reviewing all proposals in a particular field of study or group of related fields of study.

Dissertation proposals are reviewed with the following questions in mind:

(1) Is the proposal well written, well organized, and well argued?

(2) Does the proposal describe a project of appropriate scope?

(3) Does the student demonstrate knowledge of the subject and an understanding of the proposed method of investigation?

(4) Does the student show awareness of the relevant research by others?

(5) Does the student consider how the proposed investigation, if successful, will contribute to knowledge?

The department or program head's signature on the proposal when the review is completed confirms that the results of the review were favorable. The evaluation may take the form of a reading of the proposal or attendance at an oral presentation and discussion of the proposal. A copy of the signed approval form and dissertation proposal must be received by the Graduate School when the review process has been completed. Receipt by the Graduate School of the approved Dissertation Proposal and any required IRB, IACUC, or SCRO approval is a basic requirement for eligibility to schedule the oral defense of the dissertation and for conferral of the doctoral degree.

Candidacy, Dissertation Preparation, and Final Oral Defense

Upon approval of the plan of study, passing the general examination, and approval of the dissertation proposal by the Executive Committee of the Graduate Faculty Council, the student becomes a candidate for the degree of Doctor of Philosophy.

A dissertation representing a significant contribution to ongoing research in the candidate's field is a primary requirement. The preparation of the dissertation is under the immediate and continuous supervision of the advisory committee, and it must meet all standards prescribed by the committee and by the Graduate School. It must be acceptable in literary style and organization. Specifications for its preparation may be obtained at the Graduate School or from the Graduate School website. It is the student's ultimate responsibility to be certain that the dissertation conforms to the specifications.

No restrictions that limit or delay the accessibility, use, or distribution of the results of a doctoral candidate's research are acceptable if such delays are inconsistent with an embargo period requested by the student or if they interfere with the timely completion of a student's academic program.

The oral defense of the dissertation must be announced publically by means of the university events on-line calendar at least two weeks prior to the date of the defense. At this time, electronic tentative approval of the dissertation and an electronic working copy of the entire dissertation must be filed with the Graduate School (or with Health Center, if appropriate). Not fewer than five members of the faculty, including all members of the candidate's advisory committee, must participate in the final examination, unless written approval for a lesser number has been secured in advance from the Dean of the Graduate School.

The decision regarding whether a candidate has passed, conditionally passed, or failed the examination rests solely with the advisory committee, which will take into account the opinions of other participating faculty members and other experts. The vote of the advisory committee must be unanimous. Following the examination, the major advisor communicates the results to the student and verifies that the official report has been completed and signed for submission to the Graduate School (or to the Health Center, if appropriate).

The abstract and dissertation must be dated as of the calendar year in which all requirements for the degree are completed. The Graduate School requires the electronic submission of the dissertation though Digital Commons, a university repository for public access. The final copy must meet all specifications outlined on the Graduate School Website. The Dissertation Submission Checklist must be submitted to the Graduate School once it has been signed by a Homer Babbidge Library designated staff member together with an approval page bearing original signatures of all members of the advisory committee. Once a dissertation is bound, it becomes the property of the Homer Babbidge Library. No restrictions that limit or delay the accessibility, use, or distribution of the results of a doctoral student's research are acceptable if such delays are inconsistent with an embargo period requested by the student or if they interfere with the timely completion of a student's academic program.

CONFERRAL OF DEGREES

Conferral

Degree conferral requires that the student be in good academic standing and that all requirements for the degree have been completed satisfactorily by the deadline specified in the Graduate School Academic Calendar. Degrees are conferred three times each year – in August, December, and May. However, the only graduate Commencement ceremony is held annually in May. Students who qualify for degree conferral receive their diplomas by mail, normally within three months following conferral.

Application for the Degree

Formal application for a degree to be conferred must be filed on-line by the degree candidate using the Student Administration System. Information and instructions can be found on the Graduate School's website under the section titled Current Students. If filing is not timely, conferral is delayed to the next conferral period, even though all other degree requirements may have been completed on time.

Commencement

The graduate Commencement ceremony is held once each year at the end of the spring semester. Individuals who have had degrees conferred at the end of the previous summer or fall semester, and candidates for degrees who complete degree requirements by the end of the spring semester may participate in the annual Commencement ceremony. Academic regalia appropriate for the University of Connecticut degree being conferred is strictly required for all who participate in the ceremony. Information concerning the Commencement ceremony, including academic regalia and guest tickets, is made available by the mid-spring semester, and can be found on the Graduate School's website: grad.uconn.edu.

FIELDS OF STUDY

Fields of study and areas of concentration officially recognized by the Graduate School are limited to those listed below. Graduate degrees are awarded in these fields of study. Each field of study is shown in conjunction with the degree or degrees that may be awarded. The final transcript also will record completion of the special requirements of a listed area of concentration, if appropriate.

These requirements are determined by a student's advisory committee. The Graduate School does not require that a student select an area of concentration, although an advisory committee may require a student to do so.

Fields of Study

Accounting.....M.S.

Adult Learning.....M.A.

Agricultural and Resource Economics..... M.S., Ph.D.

Animal Science..... M.S., Ph.D.

- Physiology of Reproduction

Anthropology.....M.A., Ph.D.

- Social Science and Health Care (Ph.D. only)

Applied Financial Mathematics.....M.S.

Applied Microbial Systems Analysis.....M.S.

Art.....M.F.A.

Art History.....M.A.

Biodiversity and Conservation Biology.....M.S.

Biomedical Engineering.....M.S., Ph.D.

Biomedical Science.....Ph.D.

- Cell Biology
- Cell Analysis and Modeling
- Genetics and Developmental Biology
- Immunology
- Molecular Biology and Biochemistry
- Neuroscience
- Skeletal, Craniofacial and Oral Biology

Business Administration..... M.B.A., Ph.D.

Full - time M.B.A. Program Areas of Concentration

- Finance
- Health Care Management
- Information Technology
- Venture Consulting
- Marketing Intelligence
- Real Estate

Part - time M.B.A. program Areas of Concentration

- Accounting
- Finance
- General
- Health Care Management
- International Business
- Management
- Management of Technology
- Marketing
- Real Estate

Ph.D. Program Areas of Concentration

- Accounting
- Finance
- Management
- Marketing
- Operations and Information Management

Business Analytics and Project Management.....M.S.

Chemical Engineering.....M.S., Ph.D.

Chemistry.....M.S., Ph.D.

Civil Engineering.....M.S., Ph.D.

- Applied Mechanics (Ph.D. only)
- Environmental Engineering (M.S. only)
- Fluid Dynamics (Ph.D. only)
- Geotechnical Engineering
- Structural Engineering
- Transportation and Urban Engineering

Clinical and Translational Research.....M.S.

- Communication M.A., Ph.D

Computer Science and Engineering.....M.S., Ph.D.

Curriculum and Instruction.....M.A., Ph.D.

- Agricultural Education (M.A. only)
- Bilingual and Bicultural Education
- Elementary Education
- English Education
- Music Education (M.A. only)
- Mathematics Education
- Reading Education
- Science Education
- Secondary Education
- Social Studies Education
- World Language Education

Dental Science.....M.Dent.Sc.

Dramatic Arts..... M.A., M.F.A.

- Acting
- Design
- Puppetry
- Technical Direction

Ecology and Evolutionary Biology.....M.S., Ph.D.
Economics..... M.A., Ph.D.
Education Administration.....M.A.
Educational Leadership.....Ed.D.
Educational Psychology.....M.A., Ph.D.
- Cognition, Instruction and Learning Technology
- Counselor Education and Counseling Psychology (Ph.D. only)
- Gifted and Talented Education
- Measurement, Evaluation, and Assessment
- School Counseling (M.A. only)
- School Psychology
- Special Education

Electrical Engineering ..... M.S., Ph.D.
- Electronics, Photonics, and Biophotonics
- Information, Communications, Decision, and Biosystems

Engineering..... M.Engr.
- Civil and Environmental Engineering
- Chemical Engineering
- Computer Science and Engineering
- Electrical and Computer Engineering
- Materials Science and Engineering
- Mechanical Engineering

English.....M.A., Ph.D.
- American Studies (M.A. only)

Environmental Engineering.....M.S., Ph.D.
Financial Risk Management.....M.S.
Geography.....M.A., Ph.D.
Geological Sciences.....M.S., Ph.D.
- Geology
- Geophysics

Health Care Genetics.....M.S.
Health Promotion.....M.S.
Higher Education and Student Affairs.....M.A.
History.....M.A., Ph.D.
- American Studies(M.A. only)
- Latin American (Ph.D. only)
- Medieval European (Ph.D. only)
- Modern European (Ph.D. only)
- United States (Ph.D. only)

Human Development and Family Studies.....M.A., Ph.D.
Human Resource Management .....M.P.S.
International Studies.....M.A.
- European Studies
- Italian History and Culture
- Latin American Studies

Judaic Studies .....M.A.
Kinesiology.....M.S., Ph.D.
- Exercise Science
- Sport Management

Learning, Leadership, and Educational Policy.....Ph.D.
- Adult Learning
- Leadership and Policy

Linguistics.....M.A., Ph.D.
Literatures, Cultures and Languages.....M.A., Ph.D.
- French and Francophone Studies
- German Studies
- Italian Cultural and Literary Studies
- Spanish Studies
- Comparative Literacy and Cultural Studies

Materials Science .....M.S., Ph.D.
- Alloy Science
- Biomaterials
- Corrosion Science
- Crystal Science
- Dental Materials
- Metallurgy
- Polymer Science

Materials Science and Engineering.....M.S., Ph.D.
Mathematics.....M.S., Ph.D.
- Actuarial Science (M.S. only)

Mechanical Engineering.....M.S., Ph.D.
- Applied Mechanics (Ph.D. only)
- Design
- Dynamics and Control
- Energy and Thermal Sciences
- Fluid Dynamics (Ph.D. only)
- Manufacturing

Medieval Studies.....M.A., Ph.D.
Molecular and Cell Biology.....M.A., Ph.D.
- Cell and Developmental Biology
- Genetics and Genomics
- Microbiology
- Structural Biology, Biochemistry and Biophysics

Music.....M.Mus., M.A., D.M.A., Ph.D.
- Conducting (M.Mus. and D.M.A. only)
- Historical Musicology (M.A. only)
- Music Theory and History (Ph.D. only)

Performance (M.Mus. and D.M.A. only)
Theory (M.A. only)
Natural Resources: Land, Water, and Air.....M.S., Ph.D.
Nursing.....M.S., D.N.P., Ph.D.
Adult/Gero Acute Care Nurse Practitioner
(M.S. and D.N.P. only)
Adult/Gero Primary Care Nurse Practitioner
(M.S. and D.N.P. only)
Clinical Nurse Leader (M.S. and D.N.P. only)
Family Nurse Practitioner (M.S. and D.N.P. only)
Neonatal Nurse Practitioner (M.S. and D.N.P. only)
Nutritional Science.....M.S., Ph.D.
Oceanography.....M.S., Ph.D.
Pathobiology.....M.S., Ph.D.
Bacteriology
Pathology
Virology
Pharmaceutical Science.....M.S., Ph.D.
Medicinal and Natural Products Chemistry
Neurosciences
Pharmaceutics
Pharmacology and Toxicology
Philosophy .....M.A., Ph.D.
Physical Therapy.....D.P.T.
Physics .....M.S., Ph.D.
Physiology and Neurobiology .....M.S., Ph.D.
Comparative Physiology
Endocrinology
Neurobiology
Neurosciences
Plant Science.....M.S., Ph.D.
Agronomy
Horticulture
Landscape Architecture (M.S. only)
Plant Breeding
Plant Environment
Soil Science
Political Science.....M.A., Ph.D.
American Studies (M.A. only)
Survey Research (M.A. only)
Polymer Science.....M.S., Ph.D.
Psychology.....M.A., Ph.D.
Behavioral Neuroscience
Clinical
Developmental
Ecological Psychology
Industrial/Organizational
Language and Cognition
Neurosciences
Social
Public Administration.....M.P.A.
Public Health .....M.P.H., Ph.D.
Occupational and Environmental Health Sciences
Social and Behavioral Health Sciences
Social Work.....M.S.W., Ph.D.
Sociology.....M.A., Ph.D.
Social Science and Health Care (Ph.D. only)
Survey Research (M.A. only)
Speech, Language, and Hearing Sciences M.A., Ph.D., Au.D.
Statistics.....M.S., Ph.D.
Industrial Statistics (M.S. only)
Survey Research.....M.A.

GRADUATE CERTIFICATES

Certificate programs currently approved for offering within the structure of the Graduate School include:

- Adult Learning
- Biomedical Science Research Experience
- Clinical and Translational Research
- Cognitive Science
- College Instruction
- Culture, Health, and Human Development
- Feminist Studies
- Geographic Information Systems
- Global Governance Studies
- Graduate Certificate in Nursing
- Health Promotion/Health Education
- Health Psychology
- Human Rights
- Music Performance
- Public and Nonprofit Management
- Occupational Health Psychological Certificate
- Occupational Safety and Health
- Positive Behavior Support
- Postsecondary Disability Services
- Program Evaluation
- Public Financial Management
- Quantitative Research Methods

- Survey Research Certificate
- Sixth-Year Certificate Programs in Education
    - Adult Learning
    - Bi-lingual and Bi-cultural Education
    - Cognition, Instruction and Learning Technology
    - Counselor Education and Counseling Psychology
    - Educational Administration
    - Educational Technology
    - Gifted and Talented Education
    - Professional Education
    - Reading and Language Arts Consultant
    - Remedial Reading and Remedial Language Arts Teacher
    - School Psychology
    - Special Education

PROGRAMS AND COURSE OFFERINGS

All graduate degrees at the University of Connecticut except the M.D., D.M.D., Pharm.D., and J.D. are awarded through the Graduate School. Only those fields of study and areas of concentration identified in the preceding list are recognized by the University and the Graduate School. Here, descriptions of degree programs appear under the titles of the approved fields of study, if possible. In some cases, it has been necessary to group the approved fields of study under a departmental or other title in order to facilitate location in the text. For many of the programs, special requirements (over and above those of the Graduate School) that are generally applied to all students in that program are outlined. However, each student's program is non-departmental in that the advisory committee alone, in supervising it, is directly responsible to the Dean of the Graduate School.

Course Offerings

The following lists include most of the graduate courses that the University has approved for offering. However, not all courses listed are offered every semester or every year. For actual current offerings, students should consult the appropriate schedule of classes which can be accessed from the Graduate School's registration website. Part-time, evening, and summer session students may wish to consult class schedules published by the Office of Credit Programs, Center for Continuing Education. Descriptions of undergraduate courses are contained in the Undergraduate Catalog. The University reserves the right to change announced offerings.

Course Numbering System

Undergraduate courses are numbered 1000-4999. Courses numbered 1000-1999 are primarily for freshmen, courses numbered 2000-2999 are primarily for sophomores, courses numbered 3000-3999 are primarily for juniors, and courses numbered 4000-4999 are primarily for seniors. A limited number of credits of course work completed at the 4000-level (usually not more than six) may be applied, with the approval of the student's advisory committee, toward a graduate degree program provided certain conditions are met (see "Standards and Degree Requirements.").

Graduate courses are numbered 5000-6999. This Catalog contains listings of graduate-level courses only. Courses numbered 5000- 5999 are primarily for master's degree students, and courses numbered 6000-6999 are primarily for doctoral students.

Satisfactory/Unsatisfactory Grading

Throughout the text, courses approved by the Executive Committee of the Graduate Faculty Council for Satisfactory (S)/Unsatisfactory (U) grading (see "Standards and Degree Requirements") are designated by the dagger symbol (†).

Course Semesters

Class schedules for each semester and session can be accessed from the University's PeopleSoft Web site. Not all courses are offered every semester or every year. Information concerning the availability of particular courses may be obtained also from departmental and program offices. Courses carrying hyphenated numbers are full-year courses extending over 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.

Course Meeting Times

Information about the specific time(s) that a course will meet may be obtained from the appropriate departmental office at the time of registration or from appropriate class schedules.

Course Prerequisites

All course prerequisites must be met before a student is permitted to register for the particular course. If, however, the instructor of a course is convinced that the student has the equivalent of such a prerequisite, the instructor may admit the student by providing the student with a unique PeopleSoft permission number (which is valid only for that student to use in registering for the course in question).

Course Instructor

Students should consult the schedule of classes contained in the PeopleSoft database or contact the departmental office at the time of registration to obtain information concerning course instructor(s).

Agriculture and Resource Economics

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Department Head
Professor Rigoberto A Lopez

Professors
Bravo-Ureta, Cotterill, Hanink, Langlois, L. Lee, T. Lee, Lopez, Pomeroy, Ray, and Segerson

Associate Professor
Altobello, Minkler, Randolph, Shah, and Tripathi

Assistant Professors
Huang and Matchke

M.S. and Ph.D. degrees in Agricultural and Resource Economics are offered. Study may be undertaken in three broad areas, namely Food Marketing and Industrial Organization, Environmental and Resource Economics, and International Agricultural and Economic Development. Examples of sub-areas of specialization include prices and market performance, production economics, applied econometrics and statistics, environmental economics, benefit-cost analysis, economics of recreation, natural resource economics, economics of fisheries and aquaculture, economic development, and agricultural and resource policies.

The graduate program includes courses designed to provide a foundation in theory, empirical methods, and policy. Ph.D. students take additional courses in their field of interest prior to carrying out dissertation research. For M.S. students, the opportunity of selecting a specialized study area is offered via a thesis (or a non-thesis research project and additional course work). Graduate students usually take courses from those listed below and, in addition, select complementary offerings from the Departments of Economics, Natural Resources Management and Engineering, and Statistics, as well as the School of Business. Further information regarding graduate program structures and course requirements is available in the Departmental Graduate Bulletin (which may be downloaded from the Agricultural and Resource Economics website).

Admission Requirements

The Department recommends that applicants for admission to the master's program have a background of basic courses in undergraduate level economics, mathematics, and statistics, although there are no fixed requirements. Applicants to the Ph.D. program are expected to have superior preparation in these subjects and are also required to submit scores from the GRE General Test.

Special Facilities and Opportunities

Graduate students have exclusive access to a computer lab with state-of-the-art equipment, software, and wireless internet. The Food Marketing Policy Center has extensive scanner data and a collection of all major food industry trade publications. Several faculty members are engaged in international research, teaching, and policy projects that present numerous opportunities for graduate student participation. Prospective students are encouraged to visit the Department website for a more detailed description of program offerings and faculty interests.

Courses

ARE 5201 - Microeconomics I

Beginning graduate microeconomics covering consumer and producer theory, price determination, economic efficiency, and welfare analysis.

ARE 5305 - The Role of Agriculture and Natural Resources in Economic Development

The role of agriculture in the economic development of less developed economies.

ARE 5311 - Econometrics I

Construction, estimation, and interpretation of economic behavioral and technical equations using data that are passively generated by a system of simultaneous, dynamic and stochastic relations.

ARE 5315 - Mathematical Programming for Economists

Procedures for formulating and applying mathematical optimizing techniques. Emphasis is on the use of linear and nonlinear programming models for researching economic problems.

ARE 5462 - Environmental and Resource Economics

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

ARE 5464 - Benefit-Cost Analysis and Resource Management

Theoretical foundations and applications of benefit-cost analysis in project appraisal and in evaluation of public policies regarding resource management and environmental protection.

ARE 5474 - Industrial Organization: Empirical Analysis

Analysis of the structure, conduct, and performance of industries with examples from the food sector and other industries. Explains the development of testable hypotheses from theory, empirical methods, evidence on the level and type of competition, economies of size, product differentiation, entry barriers, and the impact of alternative organizational forms including cooperatives on economic performance.

ARE 5495 - Special Topics

Topics and credits to be published prior to the registration period preceding the semester offerings.

ARE 5499 - Independent Study in Agricultural and Resource Economics

This course provides the opportunity for graduate students to carry on independent reading or research in the field of the student's needs and interests.

ARE 6466 - Environmental Economics

Economic analysis of environmental problems and corrective policy instruments. Theory of externalities and public goods, role of uncertainty and imperfect information in policy design, benefit-cost analysis, and non-market valuation. Applications to environmental problems (such as air and water pollution, hazardous waste, and occupational health and safety).

Prerequisite: ARE 5201 or ECON 5201 (RG158).

ARE 6468 - Economics of Natural Resources

Economic concepts and issues related to the allocation of stock resources through time, the use and protection of flow resources, and the role of natural resources in economic growth.

ARE 6472 - Microeconomic Applications to Food Markets

This course trains students in applied microeconomics, with particular emphasis on food markets and public policy. The course is divided into three broad areas: production economics, economics of consumer behavior, and market analysis. Particular emphasis is placed on quantitative tools using empirical models and welfare economics. Students design and undertake an individualized project in their area of interest.

Prerequisites: ARE 5201 (325) or ECON 5201 (308) and ARE 5311 (345) or ECON 5311 (310) (RG 3510).

ARE 6474 - Empirical Industrial Organization I

Empirical Industrial Organization models that use simultaneous equations, discrete choice, and/or nonlinear econometric methods to analyze conduct and performance of brands and firms in non competitive industries. Includes static and dynamic modeling of pricing and advertising in differentiated product oligopolies. Antitrust policy applications in the U.S. and E.U.

ARE 6476 - Empirical Industrial Organization II

This course builds on Empirical IO I and explores the use of advanced applied methods to gauge consumer demand, firm conduct and relevant policy implications. The empirical methods covered include both structural models, static or dynamic, and reduced forms. To this end, we will discuss papers in class demonstrating these methods. The emphasis will be data, sources of identification, and estimation techniques.

ARE 6495 - Graduate Research Seminar

Participation in research seminars presented by invited scholars and departmental faculty. This course can be repeated to a maximum of 12 credits.

ARE 6695 - Special Topics

May be repeated to a maximum of 12 credits with a change of topic. Topics and credits to be published prior to the registration period preceding the semester offerings.

†GRAD 5930. Full-Time Directed Studies (Master's Level) (GRAD 397) 3 credits.

†GRAD 5950. Master's Thesis Research (GRAD 395) 1 - 9 credits.

†GRAD 5960. Full-Time Master's Research (GRAD 396) 3 credits.

GRAD 5998. Special Readings (Master's) (GRAD 398) Non-credit.

GRAD 5999. Thesis Preparation (GRAD 399) Non-credit.

Animal Science

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Department Head
Professor Steven Zinn

Professors
Darre, Faustman, Hoagland, Tian, and Venkitanarayanan

Associate Professor
Andrew, Kazmer, Nadeau, and Milvae,

Assistant Professors
Govini, Mancini, Reed, and White

The Master of Science and Doctor of Philosophy degrees are offered in Animal Science with supportive instruction in biochemistry, environmental health, food science, growth physiology, lactation physiology, reproductive physiology, biology, nutrition, statistics and related fields. All prospective students should have a strong academic background in the biological sciences. In addition to the credit requirements indicated below, M.S. and Ph.D. students must complete one credit of ANSC 5693 (Graduate Presentation Skills). In addition, M.S. students must complete one credit of ANSC 5694 (Animal Science Seminar), while Ph.D. students must complete two credits of ANSC 5694. M.S. (Plan B) students are exempt from the ANSC 5694 requirement. All graduate students receiving assistantship support are required to assist with the teaching of one course per year of enrollment.

The M.S. degree offers students the opportunity to emphasize study in animal behavior, by Text-Enhance">food science, nutrition, growth, physiology of lactation, physiology of reproduction, or production management within Animal Science. Master of Science students are required to conduct thesis research (Plan A) or attain a comprehensive understanding in one of the above outlined areas (Plan B). Plan A programs of study must include a minimum of 15 credits of formal course work exclusive of research. Plan B programs of study must include a minimum of 24 credits of formal course work of which at least two, but not more than four credits, shall be a special research project. Additional specialization may be attained by focusing on dairy and beef cattle, sheep, swine, poultry, horses, companion or aquatic animals or their products.

Admission

In addition to the admission requirements of the Graduate School, all applicants are required to submit scores from the General Test of the Graduate Record Examinations, three letters of recommendation, and a Personal Statement. Prospective students are strongly encouraged to read the Department of Animal Science Web pages before applying.

The Ph.D. Program

The Doctor of Philosophy degree is offered in Animal Science. Within the Animal Science Field of Study is the option for an area of concentration in Physiology of Reproduction. Dissertation research may also emphasize environmental health, immunobiology, animal behavior, animal breeding, food science, nutrition, growth physiology, lactation physiology, and reproductive physiology. The Ph.D. degree requires demonstrated capabilities for conducting independent research plus related scholarly attributes. Each Ph.D. plan of study must include 44 to 48 credits of course work beyond the baccalaureate degree, not including credits for foreign language or those substituted for foreign language requirements prescribed by the GraduateSchool.

Special Facilities

Modern and extensive laboratory capabilities exist for the support of graduate student research in animal science, reproductive physiology, and animal food products. Special laboratory facilities include eight modern endocrinology, physiology, and molecular genetic laboratories; and numerous modern field laboratories.

Courses

ANSC 5414 - Advanced Animal Nutrition

A comparative study of nutritional, physiological, microbiological, immunological and biochemical aspects of digestion and metabolism in the non-ruminant and ruminant animal. Topics include digestive system structures, utilization of nutrients, energy metabolism, control of nutrient metabolism, and experimental techniques used in the study of animal nutrition. Feedstuffs appropriate to meet nutrient requirements and ration formulation across various physiological stages, growth, gestation, and lactation will be covered in this course. There will be a focus on developing

critical thinking skills, reading current literature, and assimilating scientific concepts in written and oral forms.

ANSC 5601 - Experimental Design in Animal Science

This course will discuss the basic principles of design and analysis for experiments in animal and food science. Both theory and practical application of designing experiments will be included. Emphasis is placed on data analysis using SAS, highlighting determination of the most appropriate analysis for an experiment and interpretation of output.

ANSC 5611 - Physiology of Lactation

Anatomical, endocrine and metabolic aspects of lactation, emphasizing lactation in dairy cattle. Mastitis prevention and therapy are discussed.

ANSC 5612 - Advancements in Ruminant Nutrition

Critical review of current literature on digestive physiology, metabolism, feed processing and management related to ruminant animals.

ANSC 5613 - Growth and Metabolism of Domestic Animals

An assessment of animal growth and metabolism interrelated to nutrition, selection, environment, production and idiosyncrasies among species.

ANSC 5614 - Advanced Animal Nutrition

A comparative study of nutritional, physiological, microbiological, immunological and biochemical aspects of digestion and metabolism in the non-ruminant and ruminant animal. Topics include digestive system structures, utilization of nutrients, energy metabolism, control of nutrient metabolism, and experimental techniques used in the study of animal nutrition. Feedstuffs appropriate to meet nutrient requirements and ration formulation across various physiological stages, growth, gestation, and lactation will be covered in this course. There will be a focus on developing critical thinking skills, reading current literature, and assimilating scientific concepts in written and oral forms.

ANSC 5621 - Frontiers in Animal Embryo Biotechnology

Focuses on the genetic aspects of embryology such as imprinting and X inactivation. Introduces the state of technology of numerous established and emerging embryo biotechnologies such as assisted reproductive technologies, transgenesis, cloning, gene targeting, embryonic stem cells, as well as induced pluripotent cells. Lab demonstrations of basic embryology techniques will be included.

ANSC 5623 - Current Advances in Epigenetics

Also offered as MCB 370.

ANSC 5641 - Food Chemistry

Chemical, physical and biological changes in foods and food macromolecules that occur during processing and storage that affect texture, color, flavor, stability and nutritive qualities. Field trips may be required.

ANSC 5692 - Research

Independent research in animal science, livestock production, meats, dairy production, animal nutrition, growth, reproductive physiology, animal breeding, or environmental health.

ANSC 5693 - Graduate Presentation Skills

A discussion-based class which prepares students to make oral presentations.

ANSC 5694 - Animal Science Seminar

Students present a seminar on the topic of their thesis research.

ANSC 5695 - Special Topics in Animal Science

May be repeated for credit with a change of topic.

ANSC 5699 - Independent Study

ANSC 6622 - Fundamentals of Proteomics

Principles and practices of various methodologies of protein separation science will be covered. The course intends to serve as an introduction to methodologies such as 1-D and 2-D electrophoresis, mass spectrometry, peptide mass fingerprint, tandam MS, protein identification by MS/MS, post-translational modification characterization etc. A lab exercise on database search on the internet is included.

†GRAD 5930. Full-Time Directed Studies (Master's Level) (GRAD 397) 3 credits.

†GRAD 5950. Master's Thesis Research (GRAD 395) 1 - 9 credits.

†GRAD 5960. Full-Time Master's Research (GRAD 396) 3 credits.

GRAD 5998. Special Readings (Master's) (GRAD 398) Non-credit.

GRAD 5999. Thesis Preparation (GRAD 399) Non-credit.

Anthropology

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Department Head
Professor Sally McBrearty

Professors
Boster, Dussart, Erickson, Handwerker, Linnekin, Singer, and Wilson

Associate Professor
Martínez, McBride, and Sosis

Assistant Professors
Adler, Bruhac, Munro, and Smith

The Department of Anthropology offers programs leading to the M.A. and Ph.D. degrees in anthropology. Selected study areas at the Ph.D. level include: applied medical anthropology, ecology and evolution, globalization and transnational studies, New England ethnology and ethnohistory, Old World prehistoric archaeology, and psychological and cognitive anthropology. Area strengths include Africa, Caribbean, Latin America, and North America, including both North American and other U.S. ethnic minorities. Interdisciplinary study in related fields may be pursued in consultation with the major advisor.

Admission Requirements

Applicants must present results of the General Test of the Graduate Record Examinations and three letters of recommendation. These should be sent directly to the Graduate School, University of Connecticut, 438 Whitney Road Extension, Unit 1152,Storrs, CT 06269-1152. The application deadline is December 1st.

The M.A. Program

An undergraduate major in anthropology is not required for admission to the M.A. program. Qualified students who hold a baccalaureate in various fields may be admitted provided that they meet the requirements of the Graduate School and the department.

The Ph.D. Program

The department admits into the Ph.D. program only those students whose past work in anthropology on either the undergraduate or the graduate level shows promise of high scholastic ability and whose research interests are compatible with the areas of specialization represented among the faculty. Students are expected to define at the outset the study area which they wish to emphasize. A period of field research normally precedes the writing of the dissertation.

Interdisciplinary Study

The medical anthropology area of emphasis involves course work and research in public health at the Health Center in Farmington.

Courses

ANTH 5305 - Investigation of Special Topics
Special topic readings or investigations according to the needs of each student.

ANTH 5306 - Human Behavioral Ecology
This seminar will apply the theory of natural selection to the study of human behavior in an ecological setting, with particular focus on the adaptive features and biological design of human behavior.

ANTH 5308 - Human Evolutionary Theory
Evolutionary concepts applied to human body size and shape, diet, disease, group composition, and reproductive behavior.

ANTH 5309 - Violence, Stress, and Social Support
This seminar surveys theory and observations bearing on the nature, sources and consequences of traumatic stress, stressors, and social support in human populations.

ANTH 5311 - History of Anthropological Theory
Development of theory from the nineteenth century through the 1970s. Required for graduate students in Cultural and Historical Anthropology.

ANTH 5312 - Seminar: Contemporary Theory in Social and Cultural Anthropology
Selected current issues and debates in the discipline.

ANTH 5315 - Gender and Culture
Anthropological perspectives on the analysis of gender with special focus on dynamics of gender, culture, and power.

ANTH 5316 - Globalization and Transnational Anthropology
Methods and theories in the study of cultural, social, political andeconomic phenomena spanning international frontiers; historical origins of transnational anthropology, theories of globalization, ethnographic case studies.

ANTH 5321 - Ethnographic Methods I
Theoretical foundations and basic tools used to conduct professional field studies in anthropology. Research design; moral and ethical dimensions of field work; designing and conducting informal, semi-structured and structured interviews (one-on-one and in groups); managing field notes, questionnaires, and data; computer data management; summary statistics and graphics; identifying and interpreting random variation; modeling and testing explanations.

ANTH 5322 - Research Methods and Design
Selected topics in ethnographic methods and research design.

ANTH 5332 - Cognitive Anthropology
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.

ANTH 5333 - Evolution and Cognition
An introduction to recent work in evolutionary psychology, exploring the variety of ways in which we can understand human cognition as a product of evolution.

ANTH 5334 - Culture and Religion
Theories and problems in the analysis of non-western religious systems.

ANTH 5335 - Psychological Anthropology
The seminar explores theoretical and empirical relationships between the individual and sociocultural systems, and it seeks to identify worldwide principles of human behavior.

ANTH 5336 - Cultural Ecology
Interrelationships between population organization in contrasting preindustrial societies.

ANTH 5337 - Economic Anthropology
Issues of scope, method and epistemology.

Economic organization and performance in preindustrial societies. Economic development and underdevelopment.

ANTH 5339 - Cultural Dynamics
An analysis and comparison of contemporary anthropological theories of sociocultural dynamics, with an investigation of selected problems in the study of change and persistence.

ANTH 5341 - Analysis of Rituals
Examines various theoretical contributions to the anthropological study of ritual. Controversies and ambiguities surrounding the social and symbolic significance of the ritual act for both men's and women's experiences and participation are addressed. Prerequisite: Anthropology 5311 (RG170).

ANTH 5345 - The Neanderthals
The biological, cultural, technological, and behavioral evolution of Neanderthals as understood through the fields of genetics, physical anthropology, palaeolithic archaeology, human behavioral ecology, hunter-gatherer ethnography, palaeoclimatology, chronometric dating, and geology. Neanderthal-Modern Human interactions and the Middle-Upper Palaeolithic transition are also considered.

ANTH 5350 - Physical Anthropology
Critical review of selected topics and current issues in the theory and practice of physical anthropology.

ANTH 5352 - Medical Anthropology
An overview of current theory and practice in medical anthropology.

ANTH 5353 - Applied Anthropology
An overview of various applications of anthropology to solve human problems both internationally and within the United States. Emphasis upon history of applied anthropology, ethical considerations, and specific roles of anthropologists in development.

ANTH 5354 - Contemporary Issues in Archaeology
A critical review of current trends and developments in archaeological method and theory.

ANTH 5356 - History of Archaeological Theory
A critical review of the development of archaeology, with particular emphasis on the theoretical innovations of the 1960s and 1970s.

ANTH 5357 - Settlement Systems
Approaches to human systems of settlement, including the applications of locational models and hierarchial analysis of settlement system data.

ANTH 5358 - Analytical Methods in Archaeology
The use of qualitative and quantitative techniques in the analysis of archaeological data. Topics covered include seriation, sampling, data screening, statistical testing and numerical taxonomy.

ANTH 5359 - Advanced Analysis in Archaeology
An examination of recent developments in archaeological analysis, with particular emphasis on multivariate techniques, new methods of spatial analysis, chronological seriation, and microcomputer applications. Prerequisite: ANTH 5358 (RG169).

ANTH 5361 - The Ecology of Human Evolution
Early human ancestors as components of past ecosystems. Recovery of ecological information from fossil sites; reconstruction of ancient behavior; relevance of ethology and the study of contemporary foraging people for reconstruction of the past.

ANTH 5363 - Archaeological Site Formation Processes
The creation of archaeological sites by human behavior and geological forces. The characteristics of various formation processes and identification of them in the archaeological record.

ANTH 5364 - New England Prehistory
Topics in the prehistory of New England. Regional chronology and cultural history, early Holocene adaptation, ecology of hunter-gatherers, coastal adaptations, development of horticulture, and the evolution of tribal societies.

ANTH 5365 - Northeast North American Ethnohistory
Ethnohistory of northeastern North America from the Contact Period through the 20th century. Social and political organization, land use, subsistence, trade and exchange, mortuary ritual, native responses to Christianity and European trade and settlement. Contemporary issues of reburial and repatriation, federal recognition, and federal and state trust responsibilities for Indian tribes.

ANTH 5369 - Culture and Reproduction
A cross-cultural overview of human reproduction. Biological, social, cultural, and behavioral factors; cultural patterning of fertility and perinatal behavior; fertility control; gender and power in reproduction.

ANTH 5374 - Culture, Power, and Social Relations
Power, cultural evolution, and social change; law, global relations, identity and ethnicity, revolution and revitalization, the power of numbers, parents and children, women and men.

ANTH 5375 - Ethnographic Methods Laboratory
Intensive study of selected tools for ethnographic data collection and analysis. Design and implementation of specialized ethnographic interviews; protocols, event histories, life histories, censuses, identity construction. OLS and logistic regression, demographic methods, triads tests, consensus analysis, ProFit analysis, multidimensional scaling, cluster and factor analysis, scale construction and validation, and text analysis.

ANTH 5376 - Ethnomedicine
Medical systems in cultural context. Traditional healers, herbal medicine, culture bound systems, the meaning of illness, curing and disease. Impact of biomedicine on traditional and alternative medical systems.

ANTH 5377 - International Health
The role of anthropology in international health, morbidity and mortality, population, maternal and child health, nutrition, infectious diseases and epidemiology, health care infrastructure and underdevelopment.

ANTH 5378 - Anthropology of Infectious Diseases
Examination of medical anthropological research and insights on biosocial/biocultural

factors in the spread of infectious diseases, including human understanding and responses across cultural groups and through time, anthropogenic factors in contagion, and the nature and pathways of adverse infectious disease interactions.

ANTH 5381 - Sex and Gender
The historical, structural, and personal influences that shape the biocultural phenomena of sex and sexuality.

ANTH 5389 - Population Ecology
This seminar surveys theory and observations bearing on the causes and consequences of changes in fertility and mortality rates, and in the configuration of causes of mortality and morbidity in human populations.

ANTH 5390 - Cultural Rights
Politics of culture and cultural rights, minority rights, indigenous rights, multicultural policies, race, difference and law, cosmopolitanism, globalization and human rights.

ANTH 5391 - Human Rights in a Diverse World
Basic issues, methods and theories in the anthropological study of human rights; cultural relativism, the international human rights system, social movements, transnational activist networks, media and representation are studied in their relationship to rights claims, adjudication, and outcomes.

ANTH 5392 - Human Rights in a Diverse World
Basic issues, methods and theories in the anthropological study of human rights; cultural relativism, the international human rights system, social movements, ransnational activist networks, media and representation are studied in their relationship to rights claims, adjudication, and outcomes.

ANTH 5510 - The Neanderthals
Interdisciplinary understanding of the biological, cultural, technological and behavioral evolution of Neanderthals and their societies.

ANTH 5512 - Modern Human Origins
The earliest modern people in Africa: their way of life seen from the archaeological, fossil, and genetic evidence.

ANTH 5513 - Modern Human Dispersals
Interdisciplinary understanding of the tempo and mode of modern human dispersals across Europe, Asia, Australia, and the Americas.

ANTH 5515 - Ancient Civilizations of the Old World
Examination of early civilizations in Mesopotamia, Egypt, the Indus Valley, and sub-Saharan Africa. Theories explaining the development and collapse of early state-level societies are critically considered.

ANTH 5517 - Hunter-Gatherers Past and Present
Investigation of recent and prehistoric hunter-gatherer societies informed by human behavioral ecology, archaeology, and ethnoarchaeology.

ANTH 5522 - Ecological Anthropology
Interdisciplinary study of human ecology integrating ecological and anthropological theory with archaeological, historical, and contemporary case studies.

ANTH 5609 - Quantitative Zooarchaeology
Archaeological problem solving using zooarchaeological and taphonomic data; the evolutionary ecology of human economies; evaluation and quantification of zooarchaeological data; formation of faunal assemblages

ANTH 5706 - Archaeobotany
Method and theory of studying archaeological plant remains in the laboratory, including sampling, identification, and interpretation of data.

†GRAD 5930. Full-Time Directed Studies (Master's Level) (GRAD 397) 3 credits.

†GRAD 5950. Master's Thesis Research (GRAD 395) 1 - 9 credits.

†GRAD 5960. Full-Time Master's Research (GRAD 396) 3 credits.

GRAD 5998. Special Readings (Master's) (GRAD 398) Non-credit.

GRAD 5999. Thesis Preparation (GRAD 399) Non-credit.

†GRAD 6930. Full-Time Directed Studies (Doctoral Level) (GRAD 497) 3 credits.

†GRAD 6950. Doctoral Dissertation Research (GRAD 495) 1 - 9 credits.

†GRAD 6960. Full-Time Doctoral Research (GRAD 496) 3 credits.

GRAD 6998. Special Readings (Doctoral) (GRAD 498) Non-credit.

GRAD 6999. Dissertation Preparation (GRAD 499) Non-credit.

Art & Art History

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Interim Department Head
Associate Professor Anne D'Alleva

Professors
Deibler, Dancy, Givens, Machida, Myers, Oguibe, and Thorpe

Associate Professor
Bock, D'Alleva, Dennis, DiCapua, Greeley, Hagen, Machida, Noelker, Orwicz, Pritchard, Rosenberg, Sloan, Yegir, and Zurolo

Assistant Professor
Boylan

Emeritus Professor
Mazzocca, Talvacchia

The Master of Fine Arts (M.F.A.)

The Master of Fine Arts degree, a terminal degree for studio artists, requires a minimum of two years study in residence. Graduate level studio work for the serious artist is desirable to enable intensive aesthetic experimentation assisted by the guidance of established professional artists. As a result of such experience, a student is expected to complete a body of art significant in content and of professional quality. Students develop a plan of study in consultation with a major advisor and advisory committee. While the program emphasizes individualized studies concentrating on and combining studio art in such areas as ceramics, drawing, painting, performance art, photography, printmaking, and sculpture, and video, there are courses that also enable students to engage other resources of the Department of Art and Art History and the University community.

Admission

Students are admitted to begin study in the fall semester only. Applicants for the M.F.A. degree must first meet the admission requirements of the Graduate School as specified in this Catalog. Consideration for admission also requires submission of the following to the Department of Art and Art History: (1) examples of recent original art presented digitally; (2) three letters of recommendation; (3) a personal letter of application also submitted online; (4) official transcripts of all undergraduate and graduate level studies. The principal criterion for admitting applicants into the M.F.A. program is the quality of the art work submitted and the potential for graduate level development it suggests. Applicants are not required to take the Graduate Record Examinations or the Miller Analogies Test.

Plan of Study

Students establish their own direction and goals in consultation with a major advisor and an advisory committee. After such consultation, the plan of study is completed for the approval of the student's advisory committee. Candidates for the M.F.A. are required to complete a minimum of 60 credits of graduate course work. This total typically includes 39 credits of graduate studio art distributed as follows: 21 credits in an area of major emphasis, 12 credits outside the area of major emphasis, and six credits of M.F.A. project. An additional 15 credits are to be taken in non-studio graduate art courses and are distributed as follows: nine credits of graduate art seminar, three credits in modern and contemporary issues in art, and three credits of special topics in art history. The remaining six credits are graduate electives. When deemed appropriate by the advisory committee, additional credits in advanced studio or art history may be required of students whose undergraduate backgrounds are deficient in these areas.

M.F.A. Project

Reserved for the last semester of study after candidacy review, the M.F.A. project requires accomplishment of a body of studio work culminating in a substantial exhibition for public viewing, supported by a written statement, public presentation, and a digital photographic portfolio. Each candidate presents to the advisory committee an oral defense of the completed body of studio work and the written statement. The exhibition emphasizes work resulting from the M.F.A. project and courses taken in the final year of study. A public presentation is required in conjunction with the exhibition. The digital photographic portfolio, which is to include each work in the exhibition, and the candidate's written statement should be prepared in duplicate for retention in the Department of Art and Art History and in the Art and Design Division of the Homer Babbidge Library.

Scholastic Standards

The advisory committee evaluates the student's program whenever a grade of C or lower is recorded for a graduate course. Progress in all courses is monitored by the advisory committee, particularly if a student's cumulative grade point average falls below 3.00 at any time during the course of study. The M.F.A. is not conferred unless the candidate maintains a cumulative grade point average of at least 3.00 in all course work.

The Master of Arts in Art History (M.A.)

The M.A. in Art History prepares graduates to engage with a wide spectrum of theoretical, methodological, cross-cultural, and ethical issues involved in the study, interpretation, display, and consumption of works of art and artifacts. Coursework is oriented by developing visual analysis, critical reading, and writing skills by exploring how disparate cultural groups interpret their visual worlds. Interdisciplinary and flexible, the program features faculty scholars focusing on visual cultures in Africa, the Americas, Asia, Europe, and the Pacific Islands. The program likewise investigates the impact and implications of new visual technologies in transforming social, historical, and political consciousness. Students in the Master's Degree program in Art History can expect the following: individualized study, faculty mentoring, and professionalization. The M.A. program in Art History at the University of Connecticut is designed to move students into the next stage of their intellectual and professional careers, including Ph.D. work, arts law or administration, or museum and gallery work, by working closely with accomplished faculty and/or by including a professional certification available from the Graduate School, which include Human Rights, Feminist Studies, and Public and Non-Profit Management.

Admission

Applicants for the M. A. degree must meet the admission requirements of the Graduate School as specified in this Catalog. Three letters of recommendation, preferably from members of the academic profession, along with a writing sample and personal statement from the applicant are required. Students are admitted to begin study in the fall semester only.

Advisory Committee

The advisory committee includes a major advisor and at least two associate advisors, one a member of the Art History faculty and one from outside the Department of Art and Art History. One associate advisor may be chosen from outside the University in

accordance with Graduate School procedures.

Plan of Study

Candidates for the M.A. are required to complete a minimum of 30 credits of graduate course work including 18 credits of required work and twelve elective credits. A plan of study listing the courses to be taken must be prepared by the student, and approved by the advisory committee and the Graduate School. Other requirements, including specifics regarding the M.A. Thesis and the Final Examination, are described on the Art and Art History Department website.

Foreign Language Recommendation

The M.A. program in Art History does not have language requirement. However, we strongly encourage speaking and translation competency in a second language related to student research interests. For students interested in Ph.D. work, demonstrated language competency is essential. Even for students interested in gallery or museum work or in contemporary art, language competency plays an increasingly important role in global citizenship.

M.A. Thesis

The required M.A. thesis is a research paper of approximately 50 pages that is intended to demonstrate the candidate's mastery of independent scholarly study and a professional understanding of the discipline of art history.

Final Examination

The final examination or thesis defense is an oral examination under the jurisdiction of the advisory committee that deals primarily with the subject matter of the thesis. In addition to the final examination, the candidate publicly presents the research at a symposium organized by the Department.

Special Facilities

Outside the university, our graduates gain hands-on experience in museum and curatorial work through internships arranged with an array of regional museums, arts centers, historical societies, private collections, and art galleries throughout Connecticut, as well as in Boston and New York City. Located on the main campus is the William Benton Museum of Art and within two hours of driving time from Storrs are the Wadsworth Atheneum, New Britain Museum of American Art, Boston Museum of Fine Arts, Worcester Art Museum, Yale Art Galleries, Lyman Allyn Museum, Slater Museum, and other notable museums and public collections. New York City is just under three hours travel time from the University campus.

Courses

ART 5301 - Graduate Studio Art (Ceramics)

Open to students in Studio Art, others with permission (RG2793).

ART 5303 - Graduate Studio Art (Painting)

Open to students in Studio Art, others with permission (RG2793).

ART 5304 - Graduate Studio Art (Photography)

Open to students in Studio Art, others with permission (RG2793).

ART 5305 - Graduate Studio Art (Printmaking)

Open to students in Studio Art, others with permission (RG2793).

ART 5306 - Graduate Studio Art (Sculpture)

Open to students in Studio Art, others with permission (RG2793).

ART 5307 - Graduate Studio Art (Drawing)

Open to students in Studio Art, others with permission (RG2793).

ART 5308 - Graduate Studio Art (Video)

Open to students in studio art, others with permission.

ART 5309 - Graduate Studio Art (Performance)

Open to students in studio art, others with permission.

ART 5310 - Graduate Art Seminar

Discussions, readings, and analyses relating current studio work to contemporary trends in art.

Open to students in Studio Art, others with permission (RG2793).

ART 5320 - Issues in Art Criticism

Seminar investigating selected critical and theoretical issues of significance to the visual arts, involving a core of general reading and discussion on historical and contemporary topics in art from the 20th century to the present day. An individual research project culminating in an oral presentation and a final paper on the research are required.

Open to students in Studio Art, others with permission (RG2793).

ART 5330 - Interdisciplinary Study

Special course work that combines resources in art and/or areas outside of art.

Open to students in Studio Art, others with permission (RG2793).

ART 5340 - Studio Art Instruction and Curriculum Planning

Teaching methods, strategies, and curriculum planning in studio art instruction.

Prerequisite: Must be taken in the first semester in the initial program year by all graduate students with teaching appointments (RG171).

ART 5383 - Special Topics in Studio Art

Seminar focused on special, limited topic relating to practices in studio art. The content will vary from semester to semester. May be repeated for credit with change in course content.

ART 5392 - Independent Study

Open to students in Studio Art, others with permission (RG2793).

ART 5397 - M.F.A. Project

Seminar and studio work culminating in required exhibition, supported by a written statement, public presentation and photographic color-transparency portfolio.

Open to students in Studio Art, others with permission (RG2793).

Art History

ARTH 5319 - Art History Methods and Theories

This seminar focuses on developing visual analysis, critical reading, and writing skills by exploring the historiography and most theoretically relevant methods of Art History and Visual Culture. Focus on one or more methodologies varies with instructor. Possible topics include: social history, gender, sexuality, psychoanalysis, formalism, aesthetics, post-structuralism, post-colonialism, critical race studies, media, and technologies. Components: Seminar. Requirement Group: Open to Graduate students, others with permission.

ARTH 5320 - Issues in Art Criticism

Topics in visual arts criticism, including art criticism debates, practices, writingart criticism, and the impact and use of social networking media. May be repeated to a maximum of 6 credits with a change in course content.

Open to graduate students only.

ARTH 5321 - Historiography of Art History

Philosophical, theoretical, cultural and historical issues that underwrite art historical methods

ARTH 5322 - Theory in Art History

Selected topics in theory and/or methodology. May be repeated to a maximum of 6 credits with a change in course content.

Prerequisites: ARTH 5319 and ARTH 5321 (RG3505).

ARTH 5330 - Curatorial Practices

Issues facing curators working in the arena of contemporary art today in a globalized art world.

Open to graduate students only.

ARTH 5340 - Advanced Studies in Museum and Exhibition Practices

Contemporary and theoretical issues in museum and exhibition practices directed toward their application in various internship contexts. Components: Varies: May be offered online or as seminar.

Prerequisites: ARTH 5321 and ARTH 5322 (RG3506).

ARTH 5370 - Issues in Contemporary Art

Art History 5370 Issues in Contemporary Art. Seminar. Three credits. . Critical and theoretical issues in twentieth and twenty-first century art production and reception including: modernism, postmodernism, feminism, technology, and globalization. Open to graduate students in Studio Art and Art History, others with instructor¿s permission.

Prerequisite: ARTH 5370 Prerequisite

ARTH 5383 - Special Topics in Art History

Seminar focusing upon a special, limited topic in the history of art. The content will vary from semester to semester.

ARTH 5392 - Independent Study

Independent study in Art History. May be repeated to a maximum of 6 credits with a change in course content.

ARTH 5397 - Museum Studies Internship

Internship practicum in museum, gallery, or other curatorial context. May be repeated to a maximum of 6 credits with a change in course content.

†GRAD 5930. Full-Time Directed Studies (Master's Level) (GRAD 397) 3 credits.

†GRAD 5950. Master's Thesis Research (GRAD 395) 1 - 9 credits.

†GRAD 5960. Full-Time Master's Research (GRAD 396) 3 credits.

GRAD 5998. Special Readings (Master's) (GRAD 398) Non-credit.

GRAD 5999. Thesis Preparation (GRAD 399) Non-credit.

Biomedical Engineering

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Biomedical Engineering (BME) is a profession involving engineering and the life sciences, physical sciences and medical science to understand problems in physiology and biology and improve human health. The BME Graduate Handbook at the website http://www.bme.uconn.edu further describes the program.

The goal of the biomedical engineering graduate program is to provide students the interdisciplinary training in biological and medical sciences, physical sciences, and engineering necessary to solve complex biomedical problems. Faculty members from engineering, biomedical sciences, materials sciences, chemistry, physics, medicine, and dental medicine form an interdisciplinary graduate degree program that spans the University campuses at Storrs and at the Health Center (UCHC) in Farmington. Biomedical engineering can embrace the following diverse yet complementary research areas: biochemical engineering, bioinformatics, bioinstrumentation, biomaterials, biomechanics, biomedical imaging/biosignal processing, biosensors, biotechnology, cellular and tissue engineering, clinical engineering, ergonomics, medical informatics, physiological systems modeling, and rehabilitation engineering.

An entering student's primary undergraduate training may be in engineering, the physical sciences, medicine or biology. However, all students must demonstrate competence in mathematical analytical methods, certain basic and advanced skills in engineering and computer science, as well as knowledge of core fundamentals of biomedical engineering at the time of their graduation. Plans of study are developed in consultation with the student's advisory committee and are designed to meet individual needs and program requirements.

Application Procedure

Applicants are required to submit two letters of recommendation (preferably from members of the academic profession), a personal letter from the student describing their interest in biomedical engineering and the application to the Graduate School. The GRE and TOEFL are required only for students with an undergraduate degree from a non-US institution.

The M.S. Program

Students whose primary training is in engineering can prepare themselves for entrance into one of the biomedical fields by completing a program leading to the master's degree in biomedical engineering. The program also offers the biology and chemistry student a means of achieving the mathematical, engineering, and instrumentation skills necessary for a career in biomedical engineering after completing remedial coursework. (see http://www.bme.uconn.edu)

Both a Plan A (thesis option) and Plan B M.S. degree are offered. The course requirements for Plan A and B M.S. degree can be found at http://www.bme.uconn.edu.

The Ph.D. Program

Applicants to the Ph.D. program are expected to demonstrate outstanding ability and to show, based on their record of previous scholarship and experience, that they are likely to do superior creative work in their respective fields. Holding a master's degree from the University or any other institution does not render the applicant automatically admissible to a doctoral program. In general, doctoral applicants must meet all admission requirements for the BME M.S. degree and must present evidence that they are capable of doing independent work of distinction. Exceptional students with a B.S. degree may be directly admitted into the BME Ph.D. program.

The BME Ph.D. program requires the passing of two tests, the Qualifying Exam and the General Exam which is based on course work.

All Ph.D. candidates must take the BME General Exam no later than nine months before defending their dissertation at a time arranged between the Ph.D. Candidate and Advisory Committee. The objective of the General Exam is to evaluate a Ph.D. candidate's competency in developing and formulating a research project and the student's ability to approach a new problem in ways appropriate for an independent scientist. The exam will consist of a research proposal based on the student's research project. At least two weeks prior to the exam, the student will submit a written research proposal to the advising committee. The general exam is mainly an oral defense of this research proposal by the student. The committee tries to evaluate the candidate's competency in developing and formulating the research project, as well as the scientific merits of the project, research hypothesis, research methods, potential findings, implications and limitations. The General Exam must be conducted by at least five faculty (including the Ph.D. Candidate's Advisory Committee) in the fields related to the student's project. There are no exemptions from the General Exam.

Research required for the doctoral degree in biomedical engineering involves the use of advanced engineering techniques for the solution of a biological or medical problems. Ph.D. candidates must submit at least two journal papers to a leading BME journal before graduation, with at least one of them having gone through the review process favorably.

Clinical Engineering Internship

This is a hospital-based, two-year program supported by the clinical engineering departments of various hospitals including Hartford Hospital, The John Dempsey Hospital (UCHC), Baystate Medical Center, UMass Medical Center, Rhode Island Hospital, Middlesex Memorial Hospital, Brigham & Woman's Hospital, Massachusetts General Hospital, LINC/ABM Health Incorporated, Providence V.A. Hospital, Boston VA Hospital and West Haven V.A. Hospital. Applications should be received by January 1 for full consideration. As part of the selection process, applicants are invited to the hospital and campus in February and March for interviews. The interview is required to secure a graduate assistantship (paid internship). Final selections are made in April for fall admission. Each intern is expected to spend 20 hours per week in a hospital's clinical engineering department. The primary objectives are to: (1) provide exposure to hospital organization and administrative structure; (2) provide an opportunity to apply engineering techniques to patient care and hospital-based research; and (3) provide substantial hands-on experience working with health care technology and hospital personnel, including administrators, nurses, technicians and medical staff. Clinical engineering trainees are supported by stipends contributed by the participating hospitals and receive a tuition waiver. Students accepted for the internship earns either a Plan A or Plan B Master's degree.

The following courses are required for all Plan A Clinical Engineering Interns: BME 5020 - Clinical Engineering Fundamentals

(3 credits), BME 5030 - Human Error and Medical Device Accidents (3 credits), BME 5040 - Medical Instrumentation in the Hospital (3 credits), BME 5050 - Engineering Problems in the Hospital (3 credits, BME 6086 - Healthcare Technology Clinical Rotations I (3 credits, Spring semester, 1st year), GRAD 5950- Master's Thesis Research (3 credits, Fall semester, 1st year), GRAD 5950 - Master's Thesis Research (3 credits, Fall semester, 2nd year), GRAD 5950 - Master's Thesis Research (3 credits, Spring semester, 2nd year).

The following courses are required for all Plan B Clinical Engineering Interns: BME 5020 - Clinical Engineering Fundamentals (3 credits), BME 5030 - Human Error and Medical Device Accidents (3 credits), BME 5040 - Medical Instrumentation in the Hospital (3 credits), BME 5050 - Engineering Problems in the Hospital (3 credits, BME 6086 - Healthcare Technology Clinical Rotations I (3 credits, Spring semester, 1st year), BME 6086 - Healthcare Technology Clinical Rotations II (3 credits, Spring semester, 2nd year)

The remaining two courses can be selected from the following: BME 5000 - Physiological Systems I (3 credits) (Fall semester only), BME 5500 - Clinical Instrumentation Systems (3 credits) (Spring semester only), BME 5100 - Physiological Modeling (3 credits) (Spring semester only), BME 5600 - Human Biomechanics, BME 5700 - Introduction to Biomaterials & Tissue Engineering, GPAH 6305 - Program Evaluation for Health Professionals (Allied Health Sciences), MGMT 5675 - Strategic Management of Human Resources, NURS 5020 - Statistical Methods in Nursing, NURS 5860 - Organization, Systems, and Health Care Policy Leadership, NURS 5865 - Information Systems for the Scholarship of Application.

The BME Graduate Program Director must approve any exceptions to the course requirements.

Research Facilities

Because of the interdisciplinary nature of the Biomedical Engineering field of study, graduate research facilities in Biomedical Engineering are diverse, and can be found in the various academic departments of the biomedical engineering major advisors on the Storrs campus and at the University of Connecticut Health Center in Farmington.

Courses

BME 5000 - Physiological Systems I

Eleven major human organ systems are covered in this course, including: integumentary, endocrine, lymphatic, digestive, urinary, reproductive, circulatory, respiratory, nervous, skeletal, and muscular. Recommended preparation: BME 211 (or equivalent).

BME 5010 - Research Methods in Biomedical Engineering

(Also offered as GPAH 306.)

BME 5020 - Clinical Engineering Fundamentals

Provides the fundamental concepts involved in managing medical technology, establishing and operating a clinical engineering department, and the role of the clinical engineering designing facilities used in patient care. Topics covered include managing safety programs, technology assessment, technology acquisition, the design of clinical facilities, personnel management, budgeting and ethical issues of concern to the clinical engineer.

BME 5030 - Human Error and Medical Device Accidents

This course teaches the basic principles needed to analyze medical devices, medical device users, medical device environments and medical device accidents. It particularly focuses on human factors engineering as an important step to minimizing human error. The role of medical device manufacturers, medical device regulators and medical device owners will be examined to identify their role in reducing medical device use errors and medical device accidents. The nature and types of human error as well as a taxonomy of medical device accidents will also be presented. Investigative techniques involving root cause analysis and failure modes and effects analysis will be taught and applied to industrial and medical device accidents. Operating room fires, electrosurgical and laser burns, anesthesia injuries, infusion device accidents, catheters and electrode failures and tissue injury in the medical environment will be discussed in detail. A semester project will require the student to employ these tools and techniques to analyze a medical device accident.

BME 5040 - Medical Instrumentation in the Hospital

This course will examine 10-12 current major technologies in use by healthcare practitioners. It will review the physiological principles behind each technology, the principles of operation, major features, methods for testing and evaluating each technology and will highlight available versions of the devices on the market today. Technologies to be covered will be selected from anesthesia equipment, surgical and ophthalmic lasers, cardiac assist devices, surgical & endoscopic video systems, radiographic and fluoroscopic devices, CT, MRI, ultrasound imaging equipment, radiation therapy, nuclear medicine, clinical chemistry analyzers, spectrophotometers and hematology analyzers. The course will be based on one text, selected manufacturers training documents as well as journal articles from current medical publications. Grading will be based on exams, quizzes, a semester project and class participation. Several classes will take place on site in Hartford area hospitals in order to observe and examine the equipment being discussed.

BME 5050 - Engineering Problems in the Hospital

This course will cover engineering solutions to problems that are found in the healthcare environment. This includes a wide variety of topics such as electrical power quality of and the reliable operation of high tech medical equipment; electrical safety in the patient care environment; electromagnetic compatibility of various medical devices and electromagnetic interference; radiation shielding and radiation protection; medical gas systems, medical ventilation systems and indoor air quality; fire protection systems required in the hospital; networking medical devices, patient information systems, digital imaging and image storage systems; telemedicine and medical image transmission; and finally, hospital architecture and the design of patient care facilities.

BME 5060 - Clinical Engineering Rotations I

This course is associated with the clinical engineering rotations that interns experience in hospitals, such as surgeries, CT, MRI, ICU, clinical laboratory and physical therapy.

BME 5061 - Clinical Engineering Rotations II

This course is associated with the clinical engineering rotations that interns experience in hospitals, such as surgeries, CT, MRI, ICU, clinical laboratory and physical therapy.

BME 5099 - Independent Study

Individual exploration of special topics as arranged by the student with an instructor of his or her choice.

BME 5100 - Physiological Modeling

Unified study of engineering techniques and basic principles in modeling physiological systems. Focuses on membrane biophysics, biological modeling, and systems control theory. Significant engineering and software design is incorporated in homework assignments using MATLAB and SIMULINK. Recommended preparation: BME 211 and BME 251 (or equivalent).

BME 5210 - Biomedical Optics: Tissue Optics, Instruments and Imaging

Principles and imaging of biomedical optics. Optical absorption, scattering and their biological origins, radiative transfer equation and diffusion theory, diffuse optical tomography, Monte Carlo modeling and photon transport in biological tissue, ballistic light imaging, time domain, frequency domain and continuous light measurement systems, optical coherence tomography, and photoacoustic tomography.

Prerequisite: PHYS 1502Q and ECE 3101

BME 5302 - Biochemical Engineering for Biomedical Engineers

Introduction to chemical reaction kinetics; enzyme and fermentation technology; microbiology, biochemistry, and cellular concepts; biomass production; organ analysis; viral dynamics.

Prerequisite: Not open to students who have passed BME 3300

BME 5329 - Advanced Ultrasonic Imaging Techniques

Introduction to advanced techniques of ultrasonic image formation for biomedical applications. Introduction to acoustic wave propagation. A, B, C, M and Doppler ultrasonic imaging modes. Interaction of ultrasound with biological tissue. Acoustical holography. Ultrasonic transducer design and calibration. Transducer arrays. Ultrasound detection modes. Laboratory demonstrations will include Schieren visualization of ultrasound fields and transducer calibration techniques. Assumes a background in linear systems.

Prerequisite: EE 6302 or BME 6400 (RG345).

BME 5339 - Introductory Ergonomics for Biomedical Scientists and Engineers

This problem-based course begins with a work-related overview of the design strengths and limitations of human anatomy and physiology (molecular, tissue and systems levels) and the contribution of work/worker mismatches to the development of disease. Measurement of the response of these biological tissues and systems to work-related stressors is examined, to define the mechanism and presentation of musculoskeletal disorders. The course addresses physiological and anatomical damage due to biomechanical, psychosocial and work organization stressors and explores the range of possible control strategies of interest to the engineer and public health practitioner. To measure presence and levels of risk factors, students will be introduced to the use of laboratory techniques (e.g., EMG, digital motion capture, force cells) as well as field methods used in ergonomic work-site assessment, ranging from simple check-lists (geared towards worker-based interventions), through detailed time/motion studies, self-report effort scales, epidemiological instruments, and psychosocial and organizational measurement tools. A research project is required.

Prerequisite: BME 5600 (312) (RG3444).

BME 5341 - Exposure Assessment in Ergonomics

The goal of the course is to develop a broad understanding of ergonomic risk factors, knowledge of the measurement modalities available for characterizing workplace risk, and an appreciation of the advantages and disadvantages of each modality. Students will be introduced to the use of laboratory techniques (EMG, videotaping and digitization, digital motion capture, force cells, accelerometry and exercise physiology). They will also be instructed in methods used in ergonomic work-site assessment, ranging from simple check-lists (geared towards worker-based interventions), through detailed time/motion studies, self-report effort scales, epidemiological instruments, and psychosocial and organizational measurement tools. The grade will depend on completion of a laboratory-based, field or epidemiological project.

Prerequisite: BME 5339 (RG3445).

BME 5500 - Clinical Instrumentation Systems

Analysis and design of transducers and signal processors; measurements of physical, chemical, biological, and physiological variables; special purpose medical instruments, systems design, storage and display, grounding, noise, and electrical safety. These concepts are considered in developing devices used in a clinical or biological environment. Recommended preparation: ECE 210W, BME 251, and 252 (or equivalent).

BME 5600 - Human Biomechanics

Instructor consent required. Recommended preparation: BME 261W (or equivalent).

BME 5700 - Biomaterials and Tissue Engineering

Instructor consent required. Recommended preparation: BME 271W (or equivalent). Also offered as MEDS 313.

BME 5800 - Bioinformatics

Advanced mathematical models and computational techniques in bioinformatics. Topics covered include genome mapping and sequencing, sequence alignment, database search, gene prediction, genome rearrangements, phylogenetic trees, and computational proteomics. Recommended preparation: BME 280 (or equivalent).

BME 6020 - Physiological Systems II

A problem based learning course that focuses on in-depth coverage of four human organ systems. Format: didactic session followed by group problem solving. Also offered as MEDS 472.

Prerequisite: BME 5000 (310). Enrollment limited to BME students in the Ph.D. program (RG3474).

BME 6086 - Special Topics In Biomedical Engineering

Classroom and/or laboratory courses in special topics as announced in advance for

each semester.

BME 6094 - BME Graduate Seminar

Presentations will be given by invited speakers from outside, faculty members, and student presenters on current research topics in biomedical engineering.

BME 6110 - Computational Neuroscience

Explores the function of single neurons and neural systems by the use of simulations on a computer. Combines lectures and classroom discussions with conducting computer simulations. The simulations include exercises and a term project.

BME 6120 - Neuronal Information Processing and Senory Coding

Processing, transmission, and storage of information in the central and peripheral nervous systems. Mechanisms of signal generation, transmission and coding by neurons and dendrites. Analysis of invertebrate and vertebrate visual and auditory systems, including: mechanisms of neurosensory transduction, coding, and signal-to-noise ratio enhancement. Neural spatio-temporal filters for feature extraction and pattern recognition. Information theoretic analysis of signal encoding and transmission in the nervous system. This course assumes a background in linear systems and feedback control systems.

Prerequisite: BME 5100 (315). This course and ECE 6311 (372) may not both be taken for credit (RG3473).

BME 6125 - Digital Image Processing

Problems and applications in digital image processing, two-dimensional linear systems, shift invariance, 2-D Fourier transform analysis, matrix Theory, random

BME 6126 - Optics for Biomedical Engineers

Two-dimensional signal processing using optical techniques. Topics include: review of two-dimensional linear system theory; scalar diffraction theory, Fresnel and Fraunhofer diffraction; Fourier transforming and imaging properties of lenses; image formation; frequency analysis of optical imaging systems; modulation transfer function; two-dimensional spatial filtering; coherent optical information processing;

BME 6130 - Systems Identification of Physiological Systems

Overview of linear and nonlinear methods for determining the input-output relationship of sensory and other physiological systems. Topics include: white noise analysis using the Voltera and Wiener expansion of non-linear system, moving average and autoregressive models, transfer function method, parametric identification using least-squares method, multi-input systems, spectrotemporal and spatiotemporal reverse correlation, spectral estimation methods using coherence. Examples from a host of neuronal systems will be provided, including the mammalian and amphibian visual and auditory systems

Prerequisite: BME 5100 (315) (RG3443).

BME 6140 - Cellular Systems Modeling

Cellular response to drugs and toxins, as well as normal cell processes such as proliferation, growth and motility often involve receptor-ligand binding and subsequent intracellular processes. Focuses on mathematical formulation of equations for key cellular events including binding of ligands with receptors on the cell surface, trafficking of the receptor-ligand complex within the cell and cell signaling by second messengers. Background material in molecular biology, cell physiology, estimation of parameters needed for the model equations from published literature and solution of the equations using available computer programs are included. Examples from the current literature of cell processes such as response to drugs and proliferation will be simulated with the model equations.

Prerequisite: BME 5600 (RG654).

BME 6143 - Image Recognition

Review of probability and stochastic processes. Statistical pattern recognition. Nonlinear signal processing and feature extraction. Correlation filters. Metrics for pattern recognition. Baysian classifiers. Minimum probability of error processors. Supervised and unsupervised learning. Perception learning methods. Multilayer neural networks. Applications to security and encryption.

BME 6150 - Computational Cell Biology for Biomedical Engineers

In the last decade, interdisciplinary science has established itself as a leading area of scientific investigation. The use of physics and mathematics to help understand biological systems hints at being one of the major scientific frontiers of this coming century. This course looks at biology at three separate length scales: molecular, cellular, and organismal/population. We will find that the math/physics of elasticity, hydrodynamics, statistical mechanics and reaction/diffusion can explain a broad range of phenomena throughout these size ranges. This course stresses the physical intuition of how to apply quantitative methods to the study of biology through the use of dimensional analysis, analytic calculation and computer modeling.

BME 6160 - Computational Genomics

Advanced computational methods for genomic data analysis. Topics covered include motif finding, gene expression analysis, regulatory network inference, comparative genomics, genomic sequence variation and linkage analysis.

Prerequisite: CSE 5800 (377) or BME 5800 (380) (RG3878)

BME 6400 - Biomedical Imaging

Fundamentals of detection, processing and display associated with imaging in medicine and biology. Topics include conventional and Fourier optics, optical and acoustic holography, thermography, isotope scans, and radiology. Laboratory demonstrations will include holography and optical image processing. Assumes a background in linear systems. Recommended preparation: BME 251 or ECE 232 (or equivalent).

BME 6420 - Medical Imaging Systems

This course covers imaging principles and systems of x-ray, ultrasound, optical tomography, magnetic resonance imaging, positron emission tomography.

Prerequisite: BME 5500 (311) or BME 6500 (354) (RG3442).

BME 6450 - Optical Microscopy and Bio-imaging

The course presents the current state of the art of optical imaging techniques and their applications in biomedical research. The course materials cover both traditional microscopies (DIC, fluorescence etc.) that have been an integrated part of biologists' tool-box, as well as more advance topics, such as single-molecule imaging and laser tweezers. Four lab sessions are incorporated in the classes to help students to gain some hand-on experiences. Strong emphasis will be

given on current research and experimental design. Also offered as MEDS 301.

BME 6460 - Advanced Optical Microscopy and Bio-imaging

This course will cover several aspects of state of the art biological and biophysical imaging. We will focus on advanced techniques including nonlinear optical processes (multi-photon excitation, second harmonic generation, and stimulated Raman processes), as well as optical coherence tomography. 3 lab projects will supplement the lectures, providing hands-on experience with nonlinear optical methods. Special emphasis will be given to current imaging literature and experimental design. Also offered as MEDS 302.

Prerequisite: BME 6450 or MEDS 6450 (RG 4099).

BME 6500 - Biomedical Instrumentation I

Origins of bioelectric signals; analysis and design of electrodes and low noise preamplifiers used in their measurement. Statistical techniques applied to the detection and processing of biological signals in noise, including the treatment of nerve impulse sequences as stochastic point processes. Methods of identifying the dynamic proper ties of biosystems. Assumes a background in linear systems and electronics.

Prerequisite: BME 5500 or consent of the instructor (RG653).

BME 6510 - Biomedical Instrumentation Laboratory

Experimental investigation of electrodes, transducers, electronic circuits and instrumentation systems used in biomedical research and clinical medicine.

BME 6520 - Biosensors

Principles and design of acoustic imaging transducers, and force, pressure and hearing sensors. Covers also optical biosensors including oxygen monitoring sensors, glucose sensors and optical sensors used in imaging.

Prerequisite: BME 5500 or consent of the instructor (RG653).

BME 6610 - Biofluid Mechanics

Provides a foundation for continued studies of biofluid mechanical subjects. Topics covered include kinematic principles, the Navier-Stokes equations, the vorticity equation, unsteady fluid flows of physiologic relevance, turbulence and interfacial phenomena. Emphasis is placed on physical analysis of the cardiovascular and pulmonary systems, as well as of other biologic systems of interest.

Prerequisite: BME 5600 (RG652).

BME 6620 - Biosolid Mechanics

Mechanical behavior of biological solids. Applications of the theories of elasticity, viscoelasticity, and poroelasticity to bones, ligaments and tendons, skeletal muscle, and articular cartilage. Axial, bending, shearing and torsional loadings. Bone morphology and growth. Biphasic theory. Failure theories. Research paper. Topics may be modified slightly to accommodate student interests. Recommended preparation: BME 261, CE 287, and BME 312 (or equivalent).

Prerequisite: BME 5600 (312) (RG3444).

BME 6630 - Biodynamics

Dynamic modeling of biological systems using three-dimensional rigid body dynamics with a review of kinematics and kinetics and three-dimensional vector calculus. Applications of Newtonís Laws and Lagrangian Equations presented. A critical review of various biodynamic assessment techniques and the principles of their operation will also be discussed. Biodynamic data analysis techniques will be shown along with fundamental model construction.

Prerequisite: BME 5600 (312) (RG3444). systems; modulation transfer function; two-dimensional spatial filtering; coherent optical information processing;

BME 5210 - Biomedical Optics: Tissue Optics, Instruments and Imaging

Principles and imaging of biomedical optics. Optical absorption, scattering and their biological origins, radiative transfer equation and diffusion theory, diffuse optical tomography, Monte Carlo modeling and photon transport in biological tissue, ballistic light imaging, time domain, frequency domain and continuous light measurement systems, optical coherence tomography, and photoacoustic tomography.

Prerequisite: PHYS 1502Q and ECE 3101

BME 6094 - BME Graduate Seminar

Presentations will be given by invited speakers from outside, faculty members, and student presenters on current research topics in biomedical engineering.

BME 5060 - Clinical Engineering Rotations I

This course is associated with the clinical engineering rotations that interns experience in hospitals, such as surgeries, CT, MRI, ICU, clinical laboratory and physical therapy.

BME 5061 - Clinical Engineering Rotations II

This course is associated with the clinical engineering rotations that interns experience in hospitals, such as surgeries, CT, MRI, ICU, clinical laboratory and physical therapy.

Prerequisite: BME 5500 or consent of the instructor (RG653).

BME 6610 - Biofluid Mechanics

Provides a foundation for continued studies of biofluid mechanical subjects. Topics covered include kinematic principles, the Navier-Stokes equations, the vorticity equation, unsteady fluid flows of physiologic relevance, turbulence and interfacial phenomena. Emphasis is placed on physical analysis of the cardiovascular and pulmonary systems, as well as of other biologic systems of interest.

Prerequisite: BME 5600 (RG652).

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Mechanical behavior of biological solids. Applications of the theories of elasticity, viscoelasticity, and poroelasticity to bones, ligaments and tendons, skeletal muscle, and articular cartilage. Axial, bending, shearing and torsional loadings. Bone morphology and growth. Biphasic theory. Failure theories. Research paper. Topics may be modified slightly to accommodate student interests. Recommended preparation: BME 261, CE 287, and BME 312 (or equivalent).

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Prerequisite: BME 5600 (312) (RG3444).

†GRAD 5930. Full-Time Directed Studies (Master's Level) (GRAD 397) 3 credits.

†GRAD 5950. Master's Thesis Research (GRAD 395) 1 - 9 credits.

†GRAD 5960. Full-Time Master's Research (GRAD 396) 3 credits.

GRAD 5998. Special Readings (Master's) (GRAD 398) Non-credit.

GRAD 5999. Thesis Preparation (GRAD 399) Non-credit.

†GRAD 6930. Full-Time Directed Studies (Doctoral Level) (GRAD 497) 3 credits.

†GRAD 6950. Doctoral Dissertation Research (GRAD 495) 1 - 9 credits.

†GRAD 6960. Full-Time Doctoral Research (GRAD 496) 3 credits.

GRAD 6998. Special Readings (Doctoral) (GRAD 498) Non-credit.

GRAD 6999. Dissertation Preparation (GRAD 499) Non-credit.

Biomedical Science

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The following programs leading to the Ph.D. degree in the various areas of the biomedical sciences are offered at the University of Connecticut Health Center at Farmington. Further information about these programs may be obtained from: The Graduate Admissions Office, PhD in Biomedical Science Program, University of Connecticut Health Center, 263 Farmington Ave, MC3906, Farmington, Connecticut 06030-3906.

CELL ANALYSIS AND MODELING

Program Director

Professor John Carson

Associate Program Director

Assistant Professor Michael Blinov

Professors

Carson, Cowan, Loew, and Mayer

Associate Professors

Mohler, Moraru, and Rodionov

Assistant Professors

Blinov, Huber, Y. Wu, and J. Yu

UCHC's Quantitative Cell Biology research has grown into the area of concentration in Cell Analysis and Modeling (CAM). Faculty associated with this area explore complex biological systems using the tools of computational cell biology, optical imaging and other quantitative approaches to analyze processes in living cells. Our program is designed to train students from diverse disciplinary backgrounds in the cutting-edge research techniques that comprise the interdisciplinary research of modern cell biology. Students are provided with rigorous cross training in areas of mathematical, physical, and computational sciences and biology. Cell Analysis and Modeling students take courses, attend seminars and work on interdisciplinary research projects to broaden and strengthen their abilities to do quantitative cell biology research.

The Cell Analysis and Modeling area of concentration is based within the Richard D. Berlin Center for Cell Analysis and Modeling (CCAM) at UCHC. Established in 1994, CCAM has emerged as a Center that promotes the application of physics, chemistry and computation to cell biology. The environment of CCAM is designed to promote interdisciplinary interactions and its cadre of physical scientists are supported and valued in a way that is unique for a medical school.

The program consists of the following research areas: cellular modeling (analysis and simulation, data integration, modeling movies boundaries, modularity and multistate complexes, molecular flux in crowded spaces, stochastic modeling and discrete particles), optical imaging (florescent correlation spectroscopy, optical probe development, second harmonic generation, single molecule imaging), biophysics (biological signaling platforms, in vivo nanofabrication), and cell biology (cellular tissue and development, cytoskeleton dynamics, RNA trafficking, signal transduction, molecular medicine).

CELL BIOLOGY

Program Director

Professor Kevin Claffey

Associate Program Director

Assistant Professor Lisa Mehlmann

Professors

Arnold, Bansal, Carmichael, Claffey, Cowna, A. Fein, Graveley, Hand, Hurley, Jaffe, King, Liang, Loew, Pachter, Peluso, Pilbeam, Rosenberg, Rowe, White, C. Wu, and G. Wu

Associate Professors

R. Clark, Delany, Dorsky, Epstein, Fong, Han, Levine, Maulik, Rodionov, Shapiro, Terasaki, Watras, and Yue

Assistant Professors

Brocke, Caron, Dodge-Kafka, Huber, and Mehlmann.

The Cell Biology area of concentration offers a program of study for the Ph.D. degree with comprehensive training in the modern molecular and cellular research. The program is composed of Health Center faculty from basic as well as clinical departments, all of whom are conducting state-of-the-art research. The fundamental philosophy of the Cell Biology program is to advance knowledge in basic and clinical problems from the cellular and molecular perspective.

The program is particularly strong in the following areas of research: angiogenesis; bone biology; cancer biology; cardiac and cardiovascular biology; cellular organelle structure and function; gene expression; molecular medicine; quantitative proteomics; reproductive biology; sensory transduction; signal transduction; tumor immunology; and vascular biology.

GENETICS AND DEVELOPMENTAL BIOLOGY

Program Director

Associate Professor William Mohler

Associate Program Director

Associate Professor Blanka Rogina

Professors

Arnold, Benn, Carmichael, Das, Graveley, Gunzl, Hansen, Kream, Lalande, Mayer, Mina, Peluso, Radolf, Rosenberg, Rowe, Sarfarazi, and White

Associate Professors

Aguila, Covault, Dadras, Dealy, Drissi, Fong,, Lichtler, Mohler, Rogina, and Xu

Assistant Professors

Blinov, Carlson, Chamberlain, Y. Wu, and J. Yu

The Ph.D. program in the area of concentration of Genetics and Developmental Biology provides qualified students with fundamental interdisciplinary training in modern molecular genetics and developmental biology, emphasizing cellular and molecular aspects as well as tissue interactions. Primary emphasis is placed upon regulation of gene expression and molecular events in development. Areas of emphasis include the mapping and cloning of human genes responsible for disease, RNA processing (including RNA editing, alternative splicing, antisense regulation, and RNA interference), the molecular mechanisms of aging, signal transduction pathways, microbial pathogenesis,

developmental neurobiology, cell differentiation, musculoskeletal development, morphogenesis and pattern formation, reproductive biology and endocrinology. Faculty members are from several basic science and clinical departments and study a wide range of organisms including yeast, worms, fruit flies, mice, and humans.

IMMUNOLOGY

Program Director

Associate Professor H. Leonardo Aguila

Professors

Lefrançois, Lorenzo, Radolf, Srivastava, Thrall, and Zeff

Associate Professors

Adler, Aguila, Brocke, Clark, Huang, Medvedev, Puddington, Salazar, and Vella

Assistant Professors

Cauley, Khanna, and Sansing

The Ph.D. program in the area of concentration of Immunology is focused on the cellular and molecular aspects of immune system structure and function in animal models and in humans. Areas of emphasis include: (1) Innate and adaptive immune responses to infectious agents including viruses, bacteria, or parasites; (2) Anti-tumor immunity and immunotherapy; (3) Hematopoiesis and development of cells of the adaptive (lymphocytes -- T or B cells) or the innate immune system (NK cells, dendritic cells, osteoclasts); (4) Organ-specific inflammatory diseases of the respiratory (asthma), gastrointestinal tracts (inflammatory bowel disease) or nervous system; and (5) Autoimmunity including pathogenesis and prevention (tolerance and immunoregulation).

MOLECULAR BIOLOGY AND BIOCHEMISTRY

Program Director

Associate Professor Chris Heinen

Associate Program Director

Assistant Professor Bing Hao

Professors

Carmichael, Carson, Cowan, Das, Eipper, Hoch, King, Klobutcher, Radolf, Setlow, Torti, and Weller

Associate Professors

Gryk and Heinen

Assistant Professors

Bezsonova, Dodge-Kafka, Everson, Hao, Krozhnev, Maciejewski and Tagbalout

The Ph.D. program in the area of concentration of Molecular Biology and Biochemistry explores biological phenomena at the molecular level with special emphasis on the genetic and biochemical mechanisms controlling biosynthesis, structure and function of macromolecules and their assembly into organized cellular structures. There are four major study areas: (1) Microbiology, including gene expression, cell division, and DNA replication and repair in microbes and spore formation; (2) Cell biology, including intracellular transport of macromolecules, molecular interactions and molecular motors; (3) Structural biology and biophysics, including protein folding, dynamics and structural bioinformatics; and (5) Cancer Biology, including DNA repair, iron and cancer and manipulation of cellular homeostasis by pathogenic viruses.

NEUROSCIENCE

Program Director

Associate Professor Zhao-Wen Wang

Associate Program Director

Associate Professor Royce Mohan

Professors

Bansal, Barbarese, Bernstein, Carson, Eipper, Frank, Kim, Kuwada, Li, Y, Loew, Mains, Maxwell, Oliver, Pachter, Potashner, and Zecevic

Associate Professors

Antic, Covault, Levine, McCullough, Mohan, and Wang

Assistant Professors

Crocker, Jun Li, Xue-Jun Li Ma, and Sansing

The Neuroscience area of concentration at the University of Connecticut Health Center is an interdisciplinary and interdepartmental Ph.D. program. The goal of this program is educate young people to become future academic, industrial or public health leaders. Molecular, electrophysiological, behavioral, confocal imaging, and stem or virtual cell approaches are employed to understand the development, function, and dysfunction of the nervous system at the molecular, cellular, systems, and whole animal levels. The program offers students with a rich neuroscience curriculum and research opportunities covering a broad spectrum of modern neuroscience. For additional information, see http://neuroscience.uchc.edu.

SKELETAL, CRANIOFACIAL AND ORAL BIOLOGY

Program Director

Professor Gloria Gronowicz

Associate Program Director

Associate Professor Caroline Dealy

Professors

Arnold, Dongari-Bagtoglou, Frank, Goldberg, Gronowicz, Hand, Hansen, Harrison, Hurley, Kream, Lalande, Lefrançois, Lurie, Mina, and Pilbeam

Associate Professors

Bayarsaihan, Dealy, Delany, Drissi, P. Epstein, Kalajzik, Kuhn, Lichtler, Reichenberger, and Rogina

Assistant Professors

Chen, Diaz, Khan, Kumbar, Lee, Maye, Nair, Nukavarapu, Sanjay, and Y.H. Wang

Skeletal, Craniofacial and Oral Biology investigates the development, maintenance, and regeneration of the human skeleton, including craniofacial and oral structures. Ongoing research includes: skeletal and craniofacial development, aging and disease; cartilage, bone and tooth biology; regeneration and restoration of skeletal tissue; osteoarthritis and bone fracture repair; the oral microbiome; musculoskeletal and craniofacial tissue engineering; and stem cell research. Trainees participate in regular events including an annual retreat and seminar series. A federally funded institutional training grant is associated with the program

Courses

MEDS 5306 - Physiological Digital Imaging
A combination lecture/seminar/project coursse in "Foundations of Imaging Science." It covers the principal mechanisms of physiological imaging in digital applications and focuses on critical analysis of the performance of modern imaging sensors, modeling and measuring of visual perception parameters for image information and optimizing of digital imaging for the life sciences, pathology and radiology, including teleradiology. The course is intended for anyone who works with or will use digital images.

MEDS 5307 - Critical Analysis of the Biological Literature
This course is intended to develop and improve each student's capacity for critical analysis of research articles, with special emphasis on the logic used to frame hypotheses and justify conclusions. An understanding of experimental methods will also be emphasized. Each week one or two papers, across a wide spectrum of modern biomedical research, will be discussed in depth in a small group format.

MEDS 5308 - The Nature of Evidence in Scientific Research
This course will examine the aspects of the scientific process that are common to all levels of biomedical investigations: from

MEDS 5309 - Molecular Basis of Disease
This is a seminar and discussion based course that reviews the molecular understanding of human disease.

MEDS 5310 - Responsible Conduct in Research
This course introduces the student to ethical and legal issues associated with the practice and reporting of science. Thr course uses a case study approach and requires in-class student participation.

MEDS 5313 - Biomaterials and Tissue Engineering
Instructor consent required. Recommended preparation: BME 271W (or equivalent). Also offered as BME 313.

MEDS 5322 - Developmental Biology
This course covers history, concepts, and experimental strategies in both classical and modern developmental biology. Topics ranging from early fertilization, to early embryonic development, to the formation of adult structures are considered and compared in a range of model organisms. Class format includes one hour of lecture by instructors and one hour of literature analysis and discussion by students each week. Course grade will combine results of class participation and a final exam.

MEDS 5323 - Genetics and Developmental Biology Journal Club
Reading and discussion of current research in the fields of genetics and developmental biology with emphasis on molecular aspects. Periodic presentation of research papers and active discussion will be expected of all participants.

MEDS 5325 - Practical Applications of Sequence Analysis
Provides an understanding of how to analyze genetic sequence information by computer. Includes basic analyses such as restriction mapping and detection of coding sequences, to more advanced analyses such as sequence similarity searching, sequence comparisons and multi-sequence alignment, prediction of functional motifs from primary sequence information, and current tools for mapping, assembly, and analysis of genomic sequence information. The course emphasizes NCBI and other Web-based tools currently available for use. Students will be exposed to the Genetic Computer Group (GCG) series of sequence analysis programs, but these are not emphasized. Students are required to complete a series of computer-based exercises to demonstrate proficiency in the application and use of the various computer programs presented in class.

MEDS 5327 - The Logic of Modern Biology
This course covers the fundamental biochemical and genetic principles that underlie all areas of modern biology. The biochemistry and genetics of both prokaryotes and eukaryotes are addressed. Reading and discussion of papers in the literature are important elements of the course.

MEDS 5329 - Immunobiology I
An overview of basic concepts in immunology including antibody structure, function and production, molecular genetics of the immune system and cellular regulation of immunity.

MEDS 5330 - Immunobiology II
This continuation of MEDS 329 will consider effect or mechanisms of the immune system in inflammation, hypersensitivity, transplantation and autoimmunity as well as regulation of the immune system by cells, cellular products and chemical or physical agents.
Pre or Corequisite: MEDS 5329 (RG179).

MEDS 5333 - Immunobiology of Transplantation
Immunogenetics of transplantation, alloantigen reaction lymphocytes, afferent recognition phase of transplantation immunity, cellular effector mechanisms and antibody participation in transplant immunity.

MEDS 5335 - Advanced Molecular and Cellular Immunology I.
Major areas covered include: (1) Development of the immune system with respect to lymphoid organs and lymphocyte subsets; (2) Mechanisms of antigen processing and presentation; (3) Lymphocyte activation including the role of costimulatory molecules and (4) Regulation of the immune response including tolerance induction, cytokine interactions and signal transduction.

MEDS 5336 - Advanced Molecular and Cellular Immunology II.
Major areas covered include: (1) Immunoglobulin genetics and structure; (2) T cell receptor genetics and structure; (3) Molecular nature of antigen recognition by T cell receptor; (4) Structure, function and molecular genetics of lymphocyte accessory molecules; (5) Mechanisms of cytolysis and (6) Complement and complement receptors.
Prerequisite: MEDS 5329 and 5330 (RG180).

MEDS 5337 - Immunopathology
The immediate-type hypersensitivities will be considered, with special emphasis on anaphylactic-type responses, pathologic responses, pathologic responses to immunologic complexes, immunohematologic diseases and models such as virus immunopathology, and rheumatoid arthritis and systemic lupus erythematosus.

MEDS 5338 - Techniques in Structural Biology
Also offered as MEDS 338.

MEDS 5341 - Molecular Neurobiology of Excitable Membranes
Emphasizes the relation between structure and function of biological interfaces that comprise electrically excitable and chemically excitable (synaptic) membranes. Models of electrically-and chemically-induced regulation of ion movement via channels and transporters are examined. Genetic manipulation of channel composition is evaluated with attention to altered function and inferences about their structure.

MEDS 5349 - Principles of Pharmacology
An introductory course covering the basic principles of Pharmacology. Introduces the student to the concept that drugs and chemicals act on the body by binding to receptors. The physico-chemical properties of ligand-binding to macromolecules is examined, followed by an examination of the nature of receptors and the mechanisms whereby they exert their physiological responses to pharmacological agents. The uptake and fate of xenobiotics (compounds foreign to the body) in the body is discussed. The responses to chemicals, as therapeutic agents, i.e., the desired correction of diseased conditions, as well as toxins, carcinogens and teratogens. The mechanisms governing these different responses are examined in detail.

MEDS 5350 - Biochemistry I
Introductory biochemistry of protein structure, function and synthesis, enzymology, structure and replication of nucleic acids, membrane structure and function.

MEDS 5351 - Biochemistry II
This course covers fundamentals of biomolecular interactions and protein structure. Additionally, the course covers the structure/function of select proteins and enzymes essential to the following: metabolic pathways, DNA/RNA transactions, gene expression, cell cycle and signal transduction, and the cytoskeleton.

MEDS 5365 - Genetics
Introduction to the principles and practices of molecular genetics of prokaryotes and eukaryotes. Topics include gene structure and function; gene transfer and recombination; gene regulation; molecular genetics of eukaryotic viruses, yeast, Drosophila, somatic cells and humans.

MEDS 5367 - Introduction to Molecular Biology and Biochemistry
This course involves reading and discussing classic papers in Molecular Biology and Biochemistry in order to introduce first year students to the field and to develop critical skills. Topics will vary from year to year but may include nature of the gene, basic principles of transcription, translation, DNA replication, and membrane structure.
Prerequisite: Open only to students enrolled in the Biomedical Science doctoral program (RG600).

MEDS 5368 - Topics in Biochemistry and Molecular Biology
To be offered every semester by a different faculty member on a rotating basis. Topic to be determined by individual faculty member. The purpose of the course will be to discuss and critically evaluate relevant literature in each topic. The topics will include viral replication strategies, membrane molecular biology, growth factors and second messengers, molecular biology of microbial development, membrane receptors, extracellular matrix-cell interactions, and peptide hormones.

MEDS 5369 - Advanced Genetics and Molecular Biology
An advanced course emphasizing approaches to the genetic analysis of eukaryotic systems including yeast, fungi, Drosophila, mice, and humans. Topics include genome organization, DNA replication, regulation of gene expression, development, and differentiation.

MEDS 5370 - Introductory Neuroscience
This course will provide an introduction to neuroscience as a discipline and the important concepts and problems that make the nervous system unique. The nervous system consists of the brain, spinal cord, and peripheral nervous structures. Our scientific understanding of sensation, movement, emotional behavior, homeostatic systems, and cognition each require knowledge and understanding of the nervous system. This course will provide the student with an introduction to the neurobiological bases of these behaviors and the experimental approaches that underlie modern neurobiological research. The course will also introduce the student to the unique cell and molecular biology of the nervous system. Neuroscience, as a discipline, incorporates data from many other scientific fields to address fundamental problems. Therefore, one goal of the course is to show how our understanding of the nervous system requires the integration of data from disciplines like endocrinology, genetics, computation biology, engineering, and biophysics. In addition, this course will introduce common diseases of the nervous system. Diseases are instructional since dysfunction may help explain normal function. More important though is that the cure of diseases, such as stroke, Alzheimers disease, and multiple sclerosis, provide a strong motivation for research in the nervous system.

MEDS 5371 - Systems Neuroscience
Part of the core series in the Neuroscience graduate program. This course will address the functional organization of neural systems underlying sensation, movement, language, learning/plasticity, and emotion/arousal. Sensory systems will include the somatosensory, auditory, visual, vestibular, and chemosensory systems. Motor systems will include the spinal cord, brain stem, cerebellum, vestibular system, oculometer system, basal ganglia and cerebral cortex.

MEDS 5372 - Neuroscience: Cellular and Molecular Neuroscience
Part of a core series in the Neuroscience Program, this course provides an introduction to basic concepts in the study of cell biology, neuroanatomy, neurophysiology, neurochemistry, and molecular biology of the nervous system.

MEDS 5374 - Neuroscience: Structure, Function, and Development of the Nervous System
Provides systematic coverage of neuroanatomy, neurophysiology, neuropathology, neurochemistry and developmental neurobiology (including embryology and neural plasticity). Introduction to neuroendocrinology, degeneration and regeneration, communicative sciences (speech, hearing, chemical senses, and psychophysics), and research methods.
Prerequisite: MEDS 5372 (RG182).

MEDS 5375 - Neuroscience: Current Research Topics/Methods
The goal of this course is to familiarize students early in their education (first or second year) with various key methodologies to which they will be exposed in courses, journal club presentations, and seminars. After a brief overview of basic concepts, applications, controls, and permutations of the method in the classroom, students will

observe and participate in a demonstration of important technical aspects of the method in the laboratory setting. The course is targeted especially toward students with an interest in neuroscience or neuroimmunology.

MEDS 5376 - Developmental Neurobiology
Emphasis on the cellular and molecular mechanisms which underlie the development of the nervous system. Reading and discussion of research papers in the literature is stressed.

MEDS 5377 - Neurobiology of Hearing
Provides in-depth analysis (using the Auditory System as a model system) with application of interdisciplinary approaches of cell and molecular biology, developmental neurobiology, neuroanatomy, neurophysiology/biophysics, neurochemistry, neural modeling, psychophysics, and plasticity, with state-of-the-art methods used in neuroscience research today. The team of faculty members contribute a variety of complementary fields of study.

MEDS 5378 - Computational Neuroscience
Students study the function of single neurons and neural systems by the use of simulations on a computer. The course will combine lectures and classroom discussions with conducting computer simulations. The simulations will include exercises and a term project. Each student will complete a term project of neural simulation to be developed during the second half of the semester. The topic of the term project should be approved by the instructors by the middle of the semester. The grade will be based on the exercises and the term project. Course includes: analysis of electrical circuits modeling neuronal cell membrane and the related differential equations; the Hodgkin-Huxley model of voltage- and time-dependent sodium and potassium conductances in the squid axon; voltage-clamp and current-clamp; the relationship between two rate constants versus the steady-state value and time constant underlying each conductance; neuronal response properties that are related to voltage-dependent and calcium-dependent ion channels; single- and multi-compartment models with ionic conductances simulating specific neuronal response properties described in the literature; excitatory and inhibitory postsynaptic currents and underlying ligand-gated ion channels; dendritic electrotonus and synaptic integration; temporal and spatial interactions of synaptic inputs to the dendritic tree and the cell body; action potential propagation in axons; neural circuits.

MEDS 5380 - Cell Biology
Basic eucaryotic cell biology. Major topics include: Methods in Cell Biology; Cell Growth and Proliferation; Cytoskeleton; Transport: Hormone Response; Cytoplasmic Organelles and Membrane Structure, Function, Biogenesis, Transport and Sorting; Cell Motility; Chromatin Structure and Organization; and Extracellular Matrix and Cell Adhesion.

MEDS 5381 - Cell Biology and Physiology II
Part I: Lecture format on membrane biophysics (membrane structure and permeability, electrical properties and gated channels, concentration gradients, volume and shape control, energy transduction, membrane dynamics). Part II: Lecture/Seminar format. Topics in receptors and channels, cell biology of the senses, cell junctions in the nervous system, growth factors and cell activation, cell cytoskeleton and matrix. Emphasis on in-depth discussions of specific cell systems through current literature. Final paper required in the form of research proposal.
Prerequisite: MEDS 5380 (RG186).

MEDS 5382 - Practical Microscopy and Modeling for Cell Biologists
Intracellular signaling is one of the most rapidly advancing fields in cell biology. The objective of this course is to introduce to the students the most recent achievements in the field of intracellular signaling and regulation. Each of the participating faculty members will give an introductory lecture to provide an overview of signaling events in their field of expertise and discuss the most important recent papers.

MEDS 5383 - Neurobiology of Disease
Discussion and Lecture, run by clinician and basic scientist, on diseases of the nervous system.

MEDS 5384 - Brain Microcircuits
Brain Microcircuitry is an upper level course.

MEDS 5385 - Molecular Mechanisms of Neurobiological Disorders
Discussion of current papers relevant to molecular analyses of neurobiological diseases.

MEDS 5388 - Principles and Techniques of Biological Electron Microscopy
A lecture/laboratory course on the theory and practice of transmission and scanning electron microscopy as applied in the biological sciences. Topics include instrument design and operation, electron optics, specimen preparation, photography, microscopic image interpretation and special techniques. Laboratory students learn and carry out commonly used preparative techniques, observe and photograph specimens in the electron microscope, and complete an independent project.

MEDS 5391 - Enzymes of Xenobiotic Biotransformation
Lectures and student presentations of journal articles relevant to the lectures plus one laboratory. Topics include an overview of metabolic routes of drugs and chemicals in the body with an emphasis on the hepatic cytochrome P450 monooxygenases. Other topics include conjugative xenobiotic metabolizing enzymes.

MEDS 5395 - Independent Study
Independent Study

MEDS 5415 - Craniofacial and Oral Biology
Craniofacial and Oral Biology is a combination lecture and literature discussion

MEDS 5418 - Stem Cells and Regenerative Biology
A literature based course on the fundamental aspects of stem cells; their nature, origin, self-renewal and differentiation during embryogenesis and tissue regeneration. Taught by a team of experts. Grade based on mid-term tests, class participation and presentation.
Prerequisite: MEDS 5418 prerequisite

MEDS 6400 - Human Biology
Introduces the histology of the major types of tissues and cellular ultrastructure. Following this introductory material, the students will dissect the limbs, and study epithelia, connective tissue, and skin including the extracellular matrix and body fluid compartments. The course will also cover muscle, bone, peripheral nerves, the neuromuscular junction, blood vessels, and other elements essential to understanding the function of the limbs. For all tissues considered, there will be an integrated presentation of structure, biochemistry,

and physiology. Also, presents the general principles of biochemistry and molecular biology. Fundamental processes involved in cellular growth and division are included as well as an overview of metabolism and energy production. This is followed by consideration of cellular differentiation. Finally, there will be a survey of the general principles of immunology and the lymphoid tissues including the function of blood cells and coagulation.

MEDS 6401 - Organ Systems I
Presents, in an integrated fashion, the anatomy, histology, biochemistry, and physiology of the central nervous system. Concurrently, the students dissect the head and the neck.

MEDS 6402 - Organ Systems II
Presents, in an integrated fashion, the anatomy, histology, biochemistry, and physiology of the cardiovascular, respiratory and renal-urinary systems. The emphasis is placed on how these organ systems interact and work together to maintain homeostasis. Concurrently, the students dissect the thorax. Introductory biostatistics and epidemiology are also presented at this time.

MEDS 6403 - Organ Systems III
Presents, in an integrated fashion, the anatomy, histology, biochemistry and physiology of the gastrointestinal, endocrine and reproductive systems. Also presented is material related to principles of human genetics. At the same time, students dissect the abdomen and pelvis.

MEDS 6404 - Correlated Medical Problem Solving - Part A
This course serves to expand upon and integrate basic science concepts introduced in the Human Systems.

MEDS 6405 - Correlated Medical Problem Solving - Part B
Expands upon and integrates basic science concepts introduced in the Human Systems course.

MEDS 6406 - Human Development & Health
Human Development and Health (HDH) is taught over 7 weeks and consists of 5 major content areas: Human Development; Health and the Health Care System; Bio-Psycho-Social Framework of Health and Illness; Legal and Ethical Aspects of Health Care; and Clinical Epidemiology. The course represents a multidisciplinary survey of the biological, psychological and social development of the human from conception to death; behavioral and social influences on health and fitness; principles of medical law and ethics; the organization, delivery and effectiveness of health care services; and evidenced-based medicine through clinical epidemiology.

MEDS 6407 - Mechanisms of Disease: Part A
Mechanisms of Disease (MOD) is a 30-week year long medical school course covering the pathology and pathophysiology of organ systems and basic principles of therapeutics. The instruction format includes about 50% lecture, 15% laboratory, 30% small group conference and 5% clinical-pathological correlations. The course covers General Pathology, Pharmacological Principles, and Infectious Disease; Diseases of Homeostasis; Oncology and Diseases of Metabolism; and Diseases of the Nervous System, Diseases of the Reproductive System and Immune and Non-immune Mediated Diseases.

MEDS 6408 - Mechanisms of Disease: Part B
Mechanisms of Disease (MOD) is a 30-week year long medical school course covering the pathology and pathophysiology of organ systems and basic principles of therapeutics. The instruction format includes about 50% lecture, 15% laboratory, 30% small group conference and 5% clinical-pathological correlations. The course covers General Pathology, Pharmacological Principles, and Infectious Disease; Diseases of Homeostasis; Oncology and Diseases of Metabolism; and Diseases of the Nervous System, Diseases of the Reproductive System and Immune and Non-immune Mediated Diseases.

MEDS 6409 - Mechanisms of Disease: Part C
Medicine. Oncology, metabolism, endocrinology, and the nervous system.

MEDS 6410 - Mechanisms of Disease: Part D
Reproduction, immunology, and connective tissue.

MEDS 6411 - Clinical Practicum
Clinical experience in the major disciplines including: Medicine, Surgery, Obstetrics & Gynecology, Psychiatry, Family Medicine, and Pediatrics.

MEDS 6412 - Advanced Clinical Practicum
Advanced clinical work with opportunities in the major clinical disciplines.

MEDS 6413 - Cancer Biology
This is a survey course to explore the genetics and pathobiology of cancer by focusing on a variety of current research topics. Understanding the disease process requires studying normal mechanisms of growth control. Emphasis will be on topics such as differentiation, apoptosis, growth factors, oncogenes, tumor suppressor genes, viruses and signal transduction.

MEDS 6414 - Advanced Correlated Medical Problem Solving - Part A
Expands upon and integrates basic science concepts introduced in Human Development and Health and Mechanisms of Disease.

MEDS 6417 - Advanced Correlated Medical Problem Solving - Part B
Expands upon and integrates basic science concepts introduced in Human Development and Health and Mechanisms of Disease.

MEDS 6418 - Classic Papers in Molecular Biology & Biochemistry
Students are required to read and critically analyze one or two papers selected by the instructor each week.

MEDS 6419 - Classic Papers in Neuroscience & Immunology
Students are required to read and critically analyze one or two papers selected by the instructor each week.

MEDS 6421 - Classic Papers in Cell Biology & Developmental Biology
Students are required to read and critically analyze one or two papers selected by the instructor each week.

MEDS 6422 - Classic Papers in Cellular & Molecular Pharmacology
Students are required to read and critically analyze one or two papers selected by the instructor each week.

MEDS 6423 - Cellular and Molecular Biology of the Vascular System
Systematic survey of classic and current literature in vascular biology, emphasizing

the molecular and cellular basis of the development, function, and malfunction of the vascular system.

MEDS 6424 - Neuropharmacology
Highlights the different neurotransmitter and neuromodulator systems and the pharmacological agents that affect them. Emphasis is placed on the mechanisms of drug action in the treatment of nervous system and mental disease, serving to complement other courses in neuroscience, pharmacology, immunology, and pharmaceutical science.

MEDS 6425 - Neuroimmune Interactions
Addresses the chemical and physical relationships between the immune system and the nervous system and emphasizes the coordinate operations of the two systems.

MEDS 6430 - Molecular and Medical Parasitology
Provides students with an in-depth knowledge of classical and modern

MEDS 6444 - Medical Microbiology
Provides first and second year graduate students with a broad understanding of the molecular and medical aspects viruses and bacteria. For viruses, topics include entry, genome replication and gene expression, assembly, viral transformation, pathogenesis, host immune responses, clinical presentations viral immunology, treatment principles including vaccines and antiviral therapeutics, and emerging and re-emerging viruses that threaten human health. For bacteria, topics include development and differentiation, bacterial genetics and genomics, bacterial cell cycle (DNA replication, chromosome segregation and cell division), cell-cell communication, pathogenesis, host immune responses, clinical presentations and treatment principles. The course will include lecture, discussion of primary literature and student presentations. Grading will be based on class participation, student presentation and a short paper.

MEDS 6445 - Skeletal Biology
A comprehensive survey of the cellular and molecular mechanisms that regulate the development, growth, differentiation, remodeling, and repair of the skeletal system.

MEDS 6447 - Tool Kit for Scientific Communication
Through a series of lectures and workshops, this course is designed to improve the ability of students to present scientific data in written and oral format. These skills are essential, not only as a graduate student, but in future careers as scientist. The curriculum covers basic elements and logical order of presentations. Reviewer's perspectives, grant writing resources, workshops, and evaluation of recent seminars help students to design and evaluate research projects.

MEDS 6450 - Optical Microscopy and Bio-imaging
The course presents the current state of the art of optical imaging techniques and their applications in biomedical research. The course materials cover both traditional microscopies (DIC, fluorescence etc.) that have been an integrated part of biologists' tool-box, as well as more advance topics, such as single-molecule imaging and laser tweezers. Four lab sessions are incorporated in the classes to help students to gain some hand-on experiences. Strong emphasis will be given on current research and experimental design. Also offered as BME 341.

MEDS 6455 - Introduction to Systems Biology
The course will guide students into a biology world as seen by engineers, physicists,

MEDS 6456 - Human Systems A
Human Systems (HS) is a 38-week long medical school course taken in the first year of the combined MD/PhD program. The course is divided into four sections: Human Biology, Organ Systems 1, Organ Systems 2 and Organ Systems 3. The course covers the basic elements of human anatomy, histology, biochemistry, physiology and genetics and an introduction to biostatistics and the principles of epidemiology. The instructional format includes about 50% didactic lectures, 30% laboratory and 20% small group sessions.

MEDS 6457 - Human Systems B
Human Systems (HS) is a 38-week long medical school course taken in the first year of the combined MD/PhD program. The course is divided into four sections: Human Biology, Organ Systems 1, Organ Systems 2 and Organ Systems 3. The course covers the basic elements of human anatomy, histology, biochemistry, physiology and genetics and an introduction to biostatistics and the principles of epidemiology. The instructional format includes about 50% didactic lectures, 30% laboratory and 20% small group sessions.

MEDS 6460 - Advanced Optical Microscopy and Bio-imaging
This course will cover several aspects of state of the art biological and biophysical imaging. We will focus on advanced techniques including nonlinear optical processes (multi-photon excitation, second harmonic generation, and stimulated Raman processes), as well as optical coherence tomography. 3 lab projects will supplement the lectures, providing hands-on experience with nonlinear optical methods. Special emphasis will be given to current imaging literature and experimental design. Also offered as BME 342.
Prerequisite: BME 341 or MEDS 301 (RG 4136).

MEDS 6461 - Clinical Radiation Sciences: Physics and Biology (Part A)
A continuous pair (i.e., MEDS 451 and 452) of semester lecture/seminar courses which examines the physical and biological principles underlying the uses of radiation and allied radiation sciences in clinical diagnosis and therapy. Characteristics of imaging systems, Nuclear Medicine, Radiation Therapy, biological effects of ionizing radiation, radiation measurement and dosimetry, and quality assurance will be covered through critical readings in texts and the literature. This course is available to individuals enrolled in residency programs of medical radiology, oral and maxillofacial radiology, and other specialties engaged in patient imaging. Some of these students will be enrolled in a concurrent degree program, either Master of Dental Science or PhD in Biomedical Sciences. The course is also available to individuals in Master's or PhD level graduate studies who desire an in-depth study of radiation sciences, and how they apply to patient care.

MEDS 6462 - Clinical Radiation Sciences: Physics and Biology (Part B)
A continuous pair (i.e., MEDS 451 and 452) of semester lecture/seminar courses which examines the physical and biological principles underlying the uses of radiation and allied radiation sciences in clinical diagnosis and therapy. Characteristics of imaging systems, Nuclear Medicine, Radiation Therapy, biological effects of ionizing radiation, radiation measurement and dosimetry, and quality assurance will be covered through critical readings in texts and the literature. This course is available to

individuals enrolled in residency programs of medical radiology, oral and maxillofacial radiology, and other specialties engaged in patient imaging. Some of these students will be enrolled in a concurrent degree program, either Master of Dental Science or PhD in Biomedical Sciences. The course is also available to individuals in Master's or PhD level graduate studies who desire an in-depth study of radiation sciences, and how they apply to patient care.

MEDS 6471 - Physiological Systems I
Designed for engineers or other graduate students without a life sciences background. Contents: introduction to cell structure and function; the cardiovascular, respiratory, and renal/urinary systems; the basics of hematology, and the interactions between these organ systems to transport oxygen and eliminate wastes. Format: didactic session followed by group problem-solving. Course grade will be determined by level of participation in the problem-solving session and by two take-home problem-solving exams. This course is available to all students involved in the BEACON (Biomedical Engineering Alliance for Central Connecticut) program. Also offered as BME 310.

MEDS 6472 - Physiological Systems II
A problem based learning course that focuses on in-depth coverage of four human organ systems with an engineering perspective. An extensive literature review is required for each topic which culminates in a major report that highlights the engineering standpoint unified mathematically. Case studies are used to develop each topic. Format: didactic session followed by group problem solving. Also offered as BME 318.
Prerequisite: MEDS 6471or BME 5000 or consent of instructor (RG187).

MEDS 6479 - Chemistry and Biology of Drugs of Abuse
An in-depth interdisciplinary approach to the neurobiology of drug abuse, integrating basic and clinical sciences. Lectures, student presentations of original research reports, and laboratory exercises dealing with methods to measure neurotransmitter transport, ligand binding to receptors and transmitter action on ligand-activated channels.

MEDS 6495 - Independent Study
A reading course for those wishing to pursue special topics in the biomedical sciences under faculty supervision.

MEDS 6496 - Laboratory Rotation

MEDS 6497 - Graduate Seminar
Reading and discussion of recent research developments in various areas of biomedical science.

†GRAD 6930. Full-Time Directed Studies (Doctoral Level) (GRAD 497) 3 credits.

†GRAD 6950. Doctoral Dissertation Research (GRAD 495) 1 - 9 credits.

†GRAD 6960. Full-Time Doctoral Research (GRAD 496) 3 credits.

GRAD 6998. Special Readings (Doctoral) (GRAD 498) Non-credit.

GRAD 6999. Dissertation Preparation (GRAD 499) Non-credit.

Business Administration

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Dean

John A. Elliott

Associate Deans

George Plesko and Larry Gramling

Director, Storrs M.B.A. Program

Michael J. Deotte

Director, Hartford M.B.A. Program

Colleen McGuire

Director, Stamford M.B.A. Program

Jud Savikas

Director, Waterbury M.B.A. Program

Nakeia Moore

Director, Executive M.B.A. Program

Colleen McGuire

Director, M.S. in Accounting Program

Amy Dunbar

Director, Ph.D. Program

Gary Powell

Professors

Biggs, Carrafiello, J. Clapp, Coulter, K. Fox, Garfinkel, Ghosh, Giaccotto, Gopal, Harding, Hegde, Hussein, S. Jain, Klein, Lubatkin, Marsden, Mathieu, Nair, O'Brien, Powell, Punj, Santerre, Sewall, Sirmans, Veiga, and Willenborg

Associate Professors

Ba, Bhattacharjee, Diaby, Dino, Dolde, Dunbar, Gilson, Goes, Golec, Hoskin, Hurley, N. Moore, Phillips, Plesko, Rosman, Salorio, Seow, Simsek, Spiggle, Srinivasan, Stallaert, Thakur, and Tung

Assistant Professors

Bird, Cao, Cruz, Day, Dimov, Gramling, Knopf, Liu, Madjar-Nanovska, Nunez, Pancras, Reilly, Sankaranarayanan, Souder, Yin, and Zhang

The School of Business offers course work and research leading to the degrees of Master of Business Administration (M.B.A.); Master of Science (M.S.) in the fields of Accounting, Business Analytics and Project Management, and Financial Risk Management; and Doctor of Philosophy (Ph.D.) in Business Administration. Detailed descriptions of these programs (as well as the Executive M.B.A.) can be found in brochures available from the School of Business.

THE PH.D. PROGRAM

The Ph.D. Program prepares students to conduct state-of-the-art research and to take faculty positions in business schools at leading universities. Students select an area of concentration from the following: accounting, finance, management, marketing or operations and information management. The program emphasizes: (1) student/faculty interaction; (2) flexibility in designing a program to meet individual needs; and (3) timely completion of the degree.

Degree Requirements

The Ph.D. program has four major components: course work, qualifying research paper, written general qualifying examination, and dissertation. Specific course work varies depending upon the student's area of concentration (refer to the Departmental Doctoral Curriculum at www.business.uconn.edu/phd). All courses must be at the graduate level and credits in the major area typically are Ph.D. level seminars. Interdisciplinary courses are encouraged in the supporting electives. Completion of the qualifying research paper is required by the end of the second year. The general qualifying examination is administered by the faculty in the student's area of concentration. The dissertation is the final requirement.

Admission

Admission to the Ph.D. program is based upon the applicant's potential to conduct research and commitment to a rigorous program of study. Applicants to the Marketing and the Operations and Information Management concentrations may submit a GRE or GMAT score. All other applicants must submit a GMAT score, regardless of their background. Students who have not previously acquired knowledge of the subject matter of the Common Body of Knowledge courses of the AACSB are expected to acquire that knowledge as part of their program. In addition, applicants should have satisfactorily completed one year of calculus. Letters of recommendation also are considered in the admission decision and a campus interview is desirable. Applicants whose native language is not English must submit a Test of Spoken English (TOEAFL iBT or IELTS).

THE M.S. PROGRAM IN ACCOUNTING

The Master of Science Program in the field of Accounting is an online degree which will provide students with the skill set critical to a successful professional career in public and private accounting. A dynamic online community has been created that supports and nurtures student-centered learning and information literacy, also known as "learning to learn". Information literacy is the process of identifying a problem and information sources, evaluating information to make a judgment, and then communicating that judgment. Student-centered learning shifts the focus for learning from the instructor to the student, with the instructor facilitating and guiding the learning experience. Both information literacy and student-centered learning produce individuals who can succeed in challenging work environments.

The online community allows students to readily access other students in the online class as well as pertinent faculty members. Completion of this program, combined with an undergraduate degree with at least 30 credit hours in business or economics other than accounting, will fulfill the 150-hour educational requirements in preparation for the CPA exam in most U.S. states.

Students can complete the 30-credit degree program in eight months on a full-time basis or within 16 months on a part-time basis. The part-time program provides a wide range of summer course offerings minimizing the coursework taken during the fall semester.

Admission

Admission is highly selective. General targets for admission are: a GMAT score of 550 (with a reasonable balance between

verbal and quantitative scores), and an undergraduate grade point average of 3.2 on a 4.0 scale. In addition, applicants must have completed at least 24 semester hours of accounting courses and received a baccalaureate degree at a college or university accredited by a regional accounting commission subscribing to established national policies and procedures or of equivalent accreditation as determined by the Connecticut State Board of Accountancy. Students with fewer than 24 credits in accounting should contact the program director or manager to discuss acquiring the necessary background courses.

Applicants with significant work experience and applicants who add to the cultural and geographic diversity of the student body are encouraged to apply even if they do not possess typical GMAT scores or undergraduate grade-point averages.

Students enter the program in May of each year. Applications and all accompanying materials should be received as early as possible, since admissions decisions are made on a rolling basis until the entering class is filled. The deadline for submitting the application and all materials is March 1.

THE M.B.A. PROGRAM

The University's M.B.A. degree offers a comprehensive state-of-the-art business education that empowers global business leaders to anticipate and effectively manage the challenges within the dynamic and complex world of modern-day business.

The M.B.A. degree is offered in three program formats – full-time, part-time/evening, and executive (E.M.B.A.) – and at multiple campuses. Regardless of format and location, all graduates receive the same M.B.A. degree upon successful completion.

Admission

All applicants must take the Graduate Management Admission Test (GMAT) and meet the general requirements for admission to the Graduate School. Interviews may be requested by the M.B.A. Admissions Review Committee. A college-level calculus course covering limits, functions, integration, and differentiation must have been completed at or prior to the start of the M.B.A. program.

Scholastic Standards

Ordinarily, a student will not be permitted to continue in the M.B.A. program if he or she: receives two or more grades of B- or below with a cumulative average below 3.0 after completing four courses in the program; accumulates four grades of B- or below at any point in the program with a cumulative average below 3.0; or receives an F at any point in the program. Under no circumstances will the M.B.A. degree be conferred if the student has a mark of Incomplete (I) or Absent (X) on his or her record even though the course may not be listed on the plan of study.

Accreditation

The UConn School of Business and M.B.A. degree is accredited by the AACSB International - The Association to Advance Collegiate Schools of Business – the premiere accrediting body for management education worldwide.

THE FULL-TIME M.B.A. PROGRAM

Residing in Storrs, UConn's flagship full-time M.B.A. program consists of 57 credits and takes 2 years to complete. The full-time M.B.A. program features an individualized plan of study fully customized to each candidate's unique career goals and interests, and emphasizes the role of experiential learning across all functional business disciplines.

Additional highlights of the rigorous interdisciplinary full-time M.B.A. curriculum include the blending of traditional academic instruction with unique experiential learning accelerators to significantly close the gap between theory and practice, as well as a comprehensive, integrated, live corporate-sponsored project that draws on the entire first-year curriculum. A laptop computer is also required for the program and its use is completely integrated into the curriculum.

Year 1 of the full-time M.B.A. program is presented in a lock-step format in which all students are required to progress through the core curriculum as a single cohort, taking all the same classes with no exceptions. The fall semester consists of core introductory courses in business law and ethics, financial accounting and reporting, economics, market-driven management, managerial statistics, and management information systems. The spring semester continues with additional core introductory courses in cost analysis and control, financial management, managing organizations, business strategy, and operations management.

As part of the Year 1 curriculum, students are grouped into functional teams. These teams undertake a comprehensive, company-sponsored project – the Application of Core Teaching (ACT) project – through which students generate and develop ideas for improving the organization's performance. The ACT project affords students a unique opportunity to synthesize knowledge and skills learned from all first-year courses, as well as past professional experiences, and employ them in a real-world context. The ACT project culminates in a case competition judged by the Year 1 faculty and sponsoring company executives. Previous sponsoring organizations include Aetna, General Electric, Hamilton Sundstrand, ING, Pratt & Whitney, The Hartford, Wiremold and Xerox.

Also in the spring of Year 1, M.B.A. students develop an Individualized plan of study in consultation with an advisory committee comprised of business school faculty, career counselors, and alumni/experts in the field. A student's Individualized plan of study includes 8 courses (24 credits) and must include 1-2 courses (3-6 credits) of experiential learning which cannot substitute for substantive courses in his/her area of specialization. The approved plan ultimately consists of a coherent bundle of courses and experiential learning participation that best aligns with the student's unique career goals and interests.

After fulfilling the required summer Internship Milestone, M.B.A. candidates continue with Year 2, pursuing the Individualized plan of study developed and approved in Year 1. Most, if not all, 2nd year course offerings are delivered in Hartford, Stamford and/or Waterbury to best coordinate with the experiential learning centers where Year 2 students participate.

Essential to the M.B.A. curriculum is the incorporation of innovative experiential learning accelerators – GE/UConn edgelab, SS&C Technologies Financial Accelerator, Innovation Accelerator, Student Managed Fund, and Sustainable Community Outreach & Public Engagement (SCOPE) program. These unique practice-based initiatives integrate traditional teaching and classroom experience with high-profile business partnering to close the gap between theory

and practice. By pushing the boundaries of cooperative research and analysis, employing student teams on substantive live projects, and providing a creative, collaborative environment, UConn's experiential learning accelerators redefine the partnership between business and education.

Candidates for the full-time M.B.A. degree are required to complete 57 credits of graduate study including: eleven mandatory core courses (33 credits) and eight courses (24 credits) in an area of specialization outlined within the candidate's approved Individualized plan of study.

Required M.B.A. Core Courses –

ACCT 5121 – Financial Accounting and Reporting

ACCT 5123 – Cost Analysis and Control

BLAW 5175 – Business, Law, and Ethics in Modern Society

FNCE 5101 – Financial Management

FNCE 5151 – Economic Analysis for Business

MGMT 5138 – Managing Organizations

MGMT 5800 – Strategy, Policy, and Planning

MKTG 5115 – Market-Driven Management

OPIM 5103 – Managerial Statistics

OPIM 5110 – Operations Management

OPIM 5165 – Management Information Systems

In accordance with Graduate School policy, up to 6 credits of graduate course work may be transferred into the M.B.A. program. Approved transfer credits will be applied toward graduate electives in the candidate's Individualized plan of study (if appropriate); transfer credits cannot substitute for core courses. Transfer credit approval rests with academic department heads.

PART-TIME/EVENING M.B.A. PROGRAM

The part-time/evening M.B.A. program requires 57 credits of graduate level courses and is offered in downtown Hartford, Stamford and Waterbury. Admission is offered on a rolling basis throughout the year.

Though the program is designed with part-time candidates in mind, accommodating the various obligations of working professionals, individuals may take more than one or two courses during a semester. Ultimately, students move through the program at a pace that is personally comfortable. Some students complete the program in fewer than three years while others take five or more years to finish.

A unique feature of the part-time/evening M.B.A. curriculum is the ability to develop more than one area of concentration. A minimum of two electives comprises an area of concentration; however, some concentrations may require more than two electives or require specific classes in that area of specialization.

Candidates in the part-time/evening M.B.A. program are required to complete 57 credits of graduate study which includes: eleven mandatory core courses (33 credits) – many of the same core course as the full-time M.B.A. program, one international elective (3 credits), and seven electives (21 credits). Students transferring from another institution must earn a minimum of 42 credits of graduate work in the UConn M.B.A. program.

All continuing M.B.A. students not registered for credit courses during the fall or spring semesters must register for GRAD 5998 Special Readings (Master's) to maintain active student status. In other words, if a student chooses to take the fall or spring semester off, he/she must register for GRAD 5998 to retain their place in the M.B.A. program.

THE EXECUTIVE M.B.A. PROGRAM

The Executive M.B.A. program is specifically tailored for experienced managers and other professionals who are seeking leadership positions. Our integrated curriculum leverages local and global perspectives in a cohort-based, holistic program. The Executive M.B.A. program provides participants with the opportunity to build their business acumen and enhance their leadership skills empowering them to have an increased impact on their organizations immediately and into the future. The class format enables participants to retain their current professional positions while pursuing graduate studies. Classes begin each September, and completion time is approximately 20 months. Class size is limited to provide a highly engaging and interactive classroom environment.

Completion of the 48-credit program leads to a Master of Business Administration. The School of Business at the University of Connecticut is accredited by The Association to Advance Collegiate Schools of Business (AACSB) International. Classes are held at the Graduate Business Learning Center in Hartford.

Admission

There is a rolling admissions process for the Executive M.B.A. program. All applicants must meet the general requirements for admission to the Graduate School and are required to take the Graduate Management Admission Test (GMAT); the GMAT requirement is waived for applicants with advanced degrees. Applicants are interviewed as part of the admissions process.

DUAL M.B.A. AND J.D. DEGREE PROGRAM

This program offers the student the opportunity to combine academic training in the fields of Business and Law by combining into four years of study the three-year J.D. program offered by the School of Law and the two-year M.B.A. program offered by the Graduate School. Fifteen credits from the J.D. program are used to meet the M.B.A. requirements. Twelve credits from the M.B.A. program are used to satisfy the J.D. requirements. To be admitted to the joint M.B.A./J.D. program, a student must meet the admission requirements of both schools. For additional information, interested students should review the materials of the regular programs contained in the catalogs of the respective schools.

DUAL M.B.A. AND M.D. DEGREE PROGRAM

Rapid changes in the health care industry as well as the increasing size and complexity of health care organizations have created a demand for physicians who also are effective managers. The Doctor of Medicine program is offered at the University of Connecticut Health Center. Usually, students complete the first two years of study in the School of Medicine, enroll in the full-time M.B.A. program in Storrs for the third year, and then return to the Health Center to take electives in both the School of Medicine and the M.B.A. program in Hartford. M.D./M.B.A. students are required to complete 42 credits in the M.B.A. program. For more information, contact the Director of the Storrs M.B.A

program or the Office of Admissions, School of Medicine.

DUAL M.B.A. AND PHARM.D. DEGREE PROGRAM

This program permits the pursuit of dual M.B.A. and Pharm.D. degrees in which the M.B.A. program waives 15 credits of non-core requirements for the dual Pharm.D./ M.B.A. students, and the Pharm.D. program waives 15 credits of 5000-level (P3, P4). Pharm.D. students complete their P1and P2 years in Pharmacy School and then spend the next year at the School of Business in the M.B.A. program taking 12 courses (33 credits) and fulfilling the M.B.A. Internship Milestone during the summer. They return to the Pharmacy School and complete their P3 and P4 years, as well as the M.B.A. degree requirements of three courses (9 credits). For additional information, interested students should review the materials of the regular programs contained in the catalogs of the respective schools.

DUAL M.B.A. AND M.A. IN INTERNATIONAL STUDIES DEGREE PROGRAM

This program is designed for students interested in the management of international organizations in African, Latin American and Caribbean, and European areas. Fifteen credits of course work in area studies in the School of Liberal Arts and Sciences are used to meet both M.B.A. and M.A. degree requirements. More details are available from the Directors of the Storrs M.B.A. Program, the Center for Contemporary African Studies, the Center for Latin American and Caribbean Studies or the Center for European Studies.

DUAL M.B.A. AND M.S.W. DEGREE PROGRAM

This program is designed for students who anticipate careers in the management and administration of social work services in either governmental or private agencies. Application to each school is made independently. Nine credits in the M.B.A. program are used to meet the M.S.W. requirements. Fifteen credits in the M.S.W. program are used to meet the M.B.A. degree requirements. For additional information, interested students should review the materials of the regular programs contained in the catalogs of the respective schools.

CONTINUOUS REGISTRATION FOR DUAL DEGREE CANDIDATES

All continuing M.B.A. students must maintain registration continuously (fall and spring semesters) until all requirements for both degrees are completed. Therefore, continuing M.B.A. students not registered for credit graduate business courses during the fall or spring semester must register for Grad 5998 Special Readings (Master's) to maintain active M.B.A. student status. (For more information, please see the Graduate School's policy under "Continuous Registration").

Courses

Accounting

ACCT 5121 - Financial Acctg & Reporting
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Accounting is an information system. This course is designed to introduce students to accounting concepts essential to the preparation and interpretation of financial statements issued to management and to external users such as stockholders and creditors. While appropriate consideration is given to procedural aspects of accounting, more emphasis is placed on understanding the conceptual bases of generally accepted accounting principles and the effects of using alternative accounting methods on financial statements.
Open to graduate business students only, others with permission. Prerequisite: undergraduate calculus course or OPIM 5602 (RG3739).

ACCT 5123 - Cost Analysis and Control
Internally, managers need timely information in order to plan and control operations. This course focuses on managerial uses of accounting information for decision-making within the business enterprise. Decisions considered include product pricing, transfer pricing, make or buy, and capital budgeting. Formation of budgets establishing an internal control structure, performance evaluation, and cost control techniques are also discussed.
Open to MBA students, others with permission. Prerequisite: ACCT 5121 (RG2089).

ACCT 5327 - Financial Statement Analysis and Business Valuation
Addresses the use of financial statements to analyze and value firms. Topics include advanced issues in accounting, earnings quality, performance measurement, cash flows, and accounting-based valuation and trading strategies.
Open to MBA students, others with permission. Prerequisite: ACCT 5121 (RG2089).

ACCT 5505 - Understanding the Responsibilities of an Accounting Professional
The groundwork for fundamental issues that are included in the curriculum in the MS in Accounting Program relating to content and skills associated with professional success will be set.
Open to students in the Accounting MS program (RG2753).

ACCT 5520 - Financial Planning for Accounting Professionals
Designed for the accounting professional in the role of financial planner, this course covers all facets of a professional in financial planning practice. Topics include personal income tax planning, debt management, investment and retirement planning, risk management and insurance, and estate planning.
Prerequisite: ACCT 5571. Accounting 5572 preferred but not required. (RG192).

ACCT 5531 - Contemporary Financial Accounting Issues
Study of major financial accounting issues, including the conceptual framework of accounting, the standard-setting process, asset valuation, income determination, and the agency theoretic perspective on managerial behavior and the use of accounting information in contracts. Other topics covered are fair

ACCT 5533 - Contemporary Managerial Accounting Issues
Study of major managerial accounting issues including analysis and evaluation of cost management systems. Overall focus is on the use of internally generated accounting data to support business strategy and maintain competitive advantages. Current research in the constantly evolving area of managerial accounting is emphasized.

ACCT 5535 - Global Financial Reporting and Analysis
Students will develop and test expectations about the content of financial reports based on an understanding of how national culture and subcultures affect financial reporting in a principles-based decision environment.

ACCT 5539 - Financial Services Reporting &

Analysis in the Financial Services Industry
Introduces the nature of and accounting for financial services firms. The major emphasis is on insurance and banking. In each section of the course the student will learn about the nature of the business and the basic transactions in which the business engages. The unique accounting aspects of the businesses are discussed, including any special regulatory accounting rules. The analysis of firms in the industry will be covered.

ACCT 5543 - Advanced Assurance Services
Advanced treatment of significant assurance services issues. Intended for students with previous coursework in assurance services and/or auditing. The course demonstrates more detailed level of audit techniques: audit planning, risk analysis, assessing internal control, executing audit procedures to substantiate validity of key financial accounts, and a presenting the audit findings in a final audit report.

ACCT 5545 - Business Law, Business Ethics, and Public Accounting
This course covers the major legal and ethical issues in business and their significance for the accounting profession and related stakeholders. Included among the topics are the tension between profit and the public interest, corporate responsibility to society, environmental concerns, consumer and employee relations, confidentiality, whistle blowing, advertising and hiring practices. This course may not be taken by MBA students, who should instead take BLAW 375.

ACCT 5546 - Forensic Accounting and Securities Fraud
Forensic accounting has become the ¿buzz¿ in accounting, largely due to several highly publicized fraud cases. Recent surveys identified this specialized field of accounting as the future growth area for both public and private accounting. However, forensic accounting involves much more than fraud. The course will define and contextualize forensic accounting, as well as provide students the mindset and skill set required of a forensic accountant, both of which can be applied to fraud or other contexts, or can prove to be invaluable within the traditional auditing and taxation areas as well.

ACCT 5549 - Accounting and Disclosure for Not for Profit Entities
Accounting for not-for-profit organizations (NFPs), including educational institutions, hospitals and other health care entities, and civic and cultural organizations, is substantially different than for-profit entities.

ACCT 5553 - Evaluating Internal Controls
This course examines frameworks for evaluating the control practices that an organization relies on to help ensure the integrity of information provided by its accounting systems. Students will learn how to: (1) analyze an organization's control environment and processes to assess information integrity risks that can be managed with control procedures; (2) design, implement, and monitor internal controls for both manual processing procedures and information-technology-intensive accounting systems; and (3) test the effectiveness of controls in order to evaluate the extent to which deficiencies threaten the reliability of accounting information.

ACCT 5559 - Accounting and Auditing for Governmental Entities
This course provides students with an understanding of how the characteristics and unique objectives of government entities are manifested in the accounting standards, audit risk and disclosure requirements. Topics addressed include the purpose of the various governmental financial statements, basis of accounting, measurement, audit focus, risk, fund types, and financial statement disclosures.

ACCT 5563 - Enterprise Risk Management: Identify Events as Risks to Manage or Opportunities to Seize
This course provides students with the ability within the COSO framework to identify events that may impact a nonfinancial publicly traded enterprise's ability to realize value for its stakeholders using the concept of the triple bottom line of profit, people, and planet. Events will be evaluated as risks that have negative impacts and opportunities as well as potential positive impacts. ERM techniques applied in the course will include: risk control, business continuity, reputation risk, supply-chain management, compensation system alignment, and strategic decisions.

ACCT 5571 - Taxation of Business Entities
Application of basic tax concepts to business entities, with particular emphasis on C corporations and partnerships. At the end of the course, students should be able to identify and address the tax issues faced when forming, operating, and liquidating a business entity.

ACCT 5572 - Research in Taxation
Application-oriented tax research, which has the objective of determining the defensibly correct tax treatment of a transaction based on the existing law. Tax research is a process of two basic activities: (1) the conceptualizing process to decide what research is needed and then to evaluate any information located through tax research, and (2) the search process, which requires the ability to use the massive quantity of tax authority available in electronic format. Students further develop their communication skills, both oral and written.

ACCT 5573 - Advanced Corporate Taxation
Focus is on topics relating to the taxation of corporations: taxable sales and acquisition of going concerns; tax-free reorganizations; multistate taxation; and international taxation of U.S. multinational corporations. The objective is to familiarize the student with the applicable tax rules. Students learn to identify applicable tax planning strategies and tax issues present in business decisions such as those involving the sale or acquisition of a going business, the location or expansion of operations, the repatriation of foreign earnings, and the setting of transfer prices for goods and services provided to related parties.
Prerequisite: ACCT 5571. Accounting 5572 preferred but not required. (RG192).

ACCT 5574 - Advanced Individual Taxation
Focus is on topics relating to taxation of individuals: estate and gift taxation; income taxation of estates and trusts; estate planning; compensation planning including, but not limited to, equity-based compensation; income taxation of and planning for high-income taxpayers, including taxation of investments and charitable planning. Students learn tax rules and tax planning strategies necessary for individuals to create, preserve, and transfer wealth to future generations.
Prerequisite: ACCT 5571. Accounting 5572 preferred but not required. (RG192).

ACCT 5582 - Research for Accounting Professionals
This course provides students with the information literacy skills required of an accounting professional to identify information needs, specify and implement research strategies, evaluate resources in

order to fulfill those needs, and communicate findings.

ACCT 5583 - Financial Reporting and Auditing Implications Relating to Income Taxes
This course focuses on the financial reporting and auditing provisions related to federal, foreign, and state income taxes. Students will learn how to: calculate income tax amounts reported on the income statement, balance sheet, and statement of cash flows; prepare the income tax footnote and related

ACCT 5603 - Advanced Accounting
An in-depth study of accounting for business combinations. Coverage also is given to accounting for nonprofit entities and contemporary issues in financial accounting. Prerequisite: ACCT 5622. Not open to students who have passed ACCT 4203 (RG190).

ACCT 5604 - Assurance Services
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 learn to think critically about issues facing the audit profession, primarily by analyzing cases and completing a number of individual and research group projects.
Prerequisite: Not open to students who have passed ACCT 4243 (RG 634).

ACCT 5622 - Financial Accounting
Study of the financial accounting principles which determine financial statements and the uses of the financial statements. The course adopts a broad perspective to understanding major accounting concepts contained in the intermediate accounting curriculum. Emphasis is placed on financial statement presentation and the meaning of resulting balance sheet and income statement amounts. Prerequisite: ACCT 5121 (RG191).

ACCT 5625 - The Federal Income Tax and Business Decisions
Designed for the business manager who wants an awareness of tax considerations involved in business decisions. It involves a symptom/recognition level of learning rather than a detailed analysis of each section of the law. The course involves an examination of the definition of income, evaluation of different business entities, methods of reporting income and deferral transactions. Students examine how slight changes in a transaction can materially alter the tax consequences. The course includes discussion of the social, economic, and political aspects of taxation as well as an opportunity to familiarize the student with tax research techniques.
Prerequisite: ACCT 5121 (RG191).

ACCT 5894 - Special Topics in Accounting
Investigation and discussion of special topics in accounting.
Open to MBA students, others with permission. Prerequisite: ACCT 5121 (RG2089).

ACCT 5895 - Independent Study in Accounting
Faculty-student interaction on a one-to-one basis involving independent study of specific areas of accounting. Emphasis, selected by the student, may be on theoretical or applied aspects. A written report is required.

ACCT 6200 - Investigation of Special Topics

ACCT 6201 - Introduction to Accounting Research
This seminar introduces students to three major elements of accounting research. First, students are introduced to philosophy of science and how that translates into the major research paradigms in accounting. Second, students are introduced to basic research design issues and how those issues are illustrated in the accounting literature. Finally, students are introduced to the major research paradigms in accounting.

ACCT 6202 - Seminar in Accounting Research II: Organizational Behavior
Continuation of study in current research topics in accounting.

ACCT 6203 - Accounting and Capital Markets
This seminar provides a broad survey of capital markets research in accounting and related fields. Students are introduced to major theoretical and methodological issues in this line of research. The seminar focuses on theoretical and intuitive constructs that frame accounting research questions and the methods that are used to address those research questions.

ACCT 6204 - Judgment and Decision Making in Accounting
The seminar examines theories and empirical research related to individual judgment and decision making in accounting. Students are introduced to the major theoretical and methodological issues involved in this line of research, and develop the background for reading the literature and for further study.

ACCT 6211 - Seminar in Special Research Topics
Students are exposed to a broad range of accounting research through reading and critiquing research papers presented at the Accounting Department Research Workshop (papers are presented by local scholars as well as scholars from other institutions). The seminar also focuses on how to present effective written and oral criticisms of research papers.

Courses

Business Administration

BBADM 5310 - Financial Accelerator I: Business Applications in Finance

This practicum is open to the participants of ongoing projects at the Financial Accelerator. It involves scoping the project, identification and review of the pertinent academic and practitioner literature, development of the deliverables, identification of data sources required for analysis, and performing various project work. The practicum involves a student team project with a faculty mentor.

BADM 5311 - Financial Accelerator II: Advance Financial Analysis

This practicum is open to the participants of ongoing projects at the Financial Accelerator. It involves application of advanced financial models to business problems, identification of the appropriate method for analysis of data, interpretation of results, making presentations to client managers during the semester, and writing the final report. The practicum involves a student team project with a faculty mentor.

BADM 5320 - Innovation Accelerator I: Evaluation of New Ventures -- Business Process

This practicum provides students hands on experience working with the founders of a high-tech entrepreneurial venture. Students, working in a team, are epowered to act as the CEO of the start-up venture focusing on developing innovative and implementable strategic solutions to a defined mission-critical problem faced by the venture. Students develop an expert¿s knowledge with respect to the venture¿s industry, markets, products, competitors, etc. that serve as a foundation for recommending evidence-based transformational solutions. Emphasis is placed on skill acquisition such that students can effectively frame the problem, research it and acquire 360 degree views/voices of the issues.

BADM 5321 - Innovation Accelerator II: New Venture Analytics

This practicum provides the students with hands on experience working with the founders of a high-tech entrepreneurial venture. Under a faculty mentor, the lab provides the students with hands-on experience collecting both primary and secondary data. Students acquire skills related to identifying targeted survey populations, the development of unambiguous survey questions, as well as best methods for survey implementation. Furthermore, students learn how to analyze the resultant data, combine it with other secondary research, extract relevant, non-duplicative findings, and develop evidence-based conclusions and strategic recommendations/solutions for the client venture.

BADM 5330 - SCOPE I: Social Entrepreneurship Processes

This practicum provides students with hands on experience in working with social entrepreneurs at work in start-up or existing organizations (private, public or not-for-profit). Experiences may include helping organizations identify social needs, evaluate alternative methods for improving social conditions and develop programs to implement solutions. Meaningful social entrepreneurship can be local in scope, or contribute to the development of cities, regions, nations or even be global in its reach. Under a faculty mentor, students work on projects which will provide the opportunity to make a positive difference by applying their skills and training to address critical social needs.

BADM 5331 - SCOPE II: Social Innovation Processes

This practicum examines how innovation by organizations can be used to develop responses to social problems. Social innovators employ “entrepreneurial skills,” such as finding opportunities, inventing new approaches, securing and focusing resources to meet social needs and managing risk, in the service of creating social value. We see social innovation, defined as innovative, social value creation, occurring within or across nonprofit, governmental, and for profit organizations. Under a faculty mentor, students in this course will work with an organization to help it improve people’s lives through the development of innovative programs to meet social needs.

BADM 5340 - Applied Business Research Methods

This practicum is open to participants of ongoing projects at edgelab. It involves applying critical thinking and problems solving skills to address business problems in areas such as finance, marketing, operations, or technology and then develop recommendations. There is an emphasis on project management skills while performing many project tasks including: problem definition, analysis of project specifications and scope; project planning; identifying, designing and developing research models and methods. Students conduct secondary research; review academic and practitioner literature; develop and deliver formal presentations. Practicum involves a student team project with a faculty mentor

OPIM 5103 & BADM5341 co

BADM 5341 - Advanced Business Research Methods

This practicum is open to the participants of ongoing projects at edgelab. This course builds upon the research conducted in BADM 5340 with additional emphasis on conducting primary research; building and testing models and interpretation of results. Students will develop and present formal presentations to project sponsors, and complete final deliverables for the project. The practicum involves a student team project with a faculty mentor.

OPIM 5103

BADM 5350 - Fund Management I

This course is the first part of a two-part Fund Management course. This course develops the objectives and goals, the process, and the procedure for execution for management of funds in conformity with the SMF Prospectus. The purpose is to train students in the art of asset allocation, security selection, portfolio construction, risk management, preparing analysts¿ reports for trade recommendations, monitoring of positions, and preparing reports for presentation to the Investment Advisory Board.

Prerequisite: FNCE5101 & FNCE 5202 co

BADM 5351 - Fund Management II

This course is the second part of a two-part Fund Management course. In addition to all the activities in the first part during Fall, this course focuses on portfolio management, performance evaluation, attribution analysis, development of various trading and risk management strategies, and technical analysis. Students prepare the final annual report for presentation to the UConn Foundation.

Prerequisite: FNCE 5101, BADM5350&FNCE5202

BADM 5894 - Special Topics

Special Topics

Open to MBA students, others with permission (RG2998).

BADM 6201 - Introduction to Research and Teaching

This course introduces students to

important dimensions of an academic career. The role and importance of research and teaching is stressed with emphasis on philosophy of science, as well as appreciation of research in other business administration areas of concentration. Teaching methods and values in higher education are covered. Guest speakers discuss research in their areas. Practical aids such as how to write a research proposal and how to manage a dissertation are covered.

Open to PhD students in the School of Business only (RG193).

Courses

Business Law

BLAW 5175 - Business, Law, and Ethics in Modern Society
This course examines the formulation, interpretation, and application of law to business. It incorporates the study of ethical issues that arise in contemporary business settings, including professional conduct and corporate social responsibility. This course covers major areas of legal regulation to which businesses are subject, including tort liability, contract law, partnership and corporate law, employment and labor law, intellectual property law, environmental regulation and sustainability, and financial regulation. Emphasis is placed on active, experiential application of legal reasoning and analysis and on the global and comparative dimensions of legal and ethical issues.
Open to MBA students, others with permission (RG2090).

BLAW 5660 - International Business Law
This course examines major issues in international law by focusing primarily on the extensive legal and ethical environment of the modern international marketplace. Key topics to be explored include jurisdiction, international dispute resolution, contract law and the international sale of goods, intellectual property, employment, and environmental issues. The course will also help students understand key institutions in the international legal system and learn about current legal topics related to international trade and foreign investment.
Open to MBA students, others with permission (RG2998).

BLAW 5680 - Securities Law
This course examines U.S. federal securities law, the Securities and Exchange Commission and other regulatory bodies to provide knowledge of the rules and institutions of securities regulation as well as related policy issues and strategic considerations by market participants. Emphasis is placed on the legal and ethical responsibilities of corporate managers and executives, accountants, underwriters, and broker-dealers, and on the global and transnational aspects of securities transactions. The Securities Act of 1933, the Securities Exchange Act of 1934, and reforms implemented by the Sarbanes-Oxley Act and the Dodd-Frank Wall Street Reform and Consumer Protection Act are covered.
Open to MBA students, others with permission (RG2998).

BLAW 5894 - Seminar
Investigation and discussion of special topics in law.
Open to MBA students, others with permission (RG2090).

BLAW 5895 - Special Topics in Business Law
Faculty-student interaction on a one-to-one basis involving independent study of specific areas of law. Emphasis, selected by the student, may be on theoretical or applied aspects. A written report is required.

Courses

Finance

FNCE 5101 - Financial Management
All major business decisions have financial implications, and therefore, the financial manager's contribution to directing the operations of the firm has become increasingly critical in the last decade. This course provides an overview of techniques for effectively studying financial decisions and their impact on the company. The course covers the basic concepts and tools necessary to understand the financial decision-making process. The fundamental issues of timing and uncertainty are integrated into the problem of asset valuation. Financial analysis models for determining appropriate sources of capital and effective use of long term and short term assets are discussed.
Open to MBA students, others with permission. Prerequisites: ACCT 5121 and OPIM 5103. (RG 795)

FNCE 5151 - Introduction to Economic Markets
Provides a foundation in the economics of markets, with particular application to financial markets and the role of information. Specific topics include the following: (1) the basic principles of supply, demand, profit maximization, price determination, international trade, and exchange rates; (2) the basic structure of modern, global financial markets, as an application of the basic economic principles; (3) the use of information and information technology in financial markets, including use of the internet, Bloomberg, Dow Jones and other computerized sources of information; and (4) a review of the "efficient market hypothesis. Open to graduate business students only, others with permission. Prerequisite: undergraduate calculus course or OPIM 5602 (RG3739).

FNCE 5202 - Investment and Security Analysis
A rigorous foundation in risk/return analysis, asset valuation, the use of derivatives, and financial engineering techniques in risk management and overall portfolio management. Information technology is applied, including computerized financial modeling and asset management software.
Open to MBA students, others with permission. Prerequisite: FNCE 5101 (RG2091).

FNCE 5205 - Global Financial Management
An exploration of global finance topics such as 1) international trade, 2) balance of payments, 3) exchange rate determination, 4) currency exposure, and 5) the cost of capital in global financial markets. Information technology is applied.
Open to MBA students, others with permission. Prerequisite: FNCE 5101 (RG2092).

FNCE 5206 - Financial Institutions: Management and Capital Markets
Investigation of the structure financial services companies (banks, insurance companies, securities firms, and so forth). Emphasis is on the tools used by these firms to compete to provide basic financial services like pooling resources, managing risk, transferring economic resources, pricing information and clearing and settling payments. Financial services product development and the role of information technology in financial services, including software and data.
Open to MBA students, others with permission. Prerequisite: FNCE 5101 (RG2093).

FNCE 5209 - Corporate Finance
A markets-oriented approach to corporate finance issues, especially capital structure and dividend policy. Modern concepts of agency theory and asymmetric information are integrated.
Open to MBA students, others with permission. Prerequisite: FNCE 5101 (RG2091).

FNCE 5311 - Financial Markets and Instruments
This course introduces fixed income securities, futures and forwards, swaps and options contracts and discusses the structure of financial markets, including equity and bond markets, money markets, foreign exchange, and commodities.

FNCE 5312 - Financial Institutions - A Risk Management Approach
Sources of risk and management of risk through diversification, hedging and gearing, Value at Risk (VAR), Risk Management System and Basel II Accord, as well as the measurement of market risk, interest rate risk, credit risk, and other risks are addressed in this course.

FNCE 5313 - Financial Risk Modeling I
Students of this course will learn the mathematical foundation for modeling financial risk as well as key concepts in algebra, statistics, calculus, time series and econometrics principles with applications to modeling risk management as a dynamic process over time.

FNCE 5321 - Financial Risk Modeling II
This course provides a background in building advanced financial models, including lattice models, numerical methods, and Monte Carlo simulation; programming techniques to value complex derivatives and portfolios; and analyses of financial risk problems with Excel, VBA, and higher level programming languages.

FNCE 5322 - Financial Risk Management I - Equity Markets
The objective of this course is to provide strategies for security selection and asset allocation and evidence on returns and volatility, trade-to-trade equity price behavior, trading volume and patterns, financial risks and optimal allocation of funds. Students will use pricing and equity derivatives in risk management as well as exotic options in equity-linked and interest rate-linked products

FNCE 5323 - Strategies & Risk Management in Alternative Investments I
The objectives of this course are to (a) discuss the alternative investment tools (b) examine the performance of hedge funds and other alternative investments such as venture funds and private equity, and (c) present an in-depth analysis of the main hedge fund investment strategies, (d) explore the behavioral issues and human factor in risk management. The recent financial crises have exposed how risk models can fail as a result of human errors, and lack of communication. The instructors will include business professionals and rely mostly on cases which apply the concepts developed in the previous classes. This class will devote a significant amount of time on how to address the human factor in modeling risk.

FNCE 5331 - Financial Risk Modeling III
This course covers the application of advanced estimation and forecasting techniques including multivariate and time series models (ARIMA) and maximum likelihood estimation to risk management, and advanced VAR topics, including computing and implementing VAR management systems, exten-sions and limitations of VAR (IVAR, DVAR), and stress testing.

FNCE 5332 - Financial Risk Management II - Fixed Income Markets
This course covers: bond fundamentals and risk, models of term structure, the use of interest rate derivative in hedging interest rate risk, the use of mortgage-backed and other asset-backed securities (MBS, CMBS), and other debt instruments (CDO¿s, CLO¿s etc.) to manage credit and cash flow risks, in addition to valuation and trading strategies of pooled assets and derivative bonds using Monte Carlo and option pricing techniques.

FNCE 5333 - Strategies & Risk Management in Alternative Investments II
The objectives of this course are to (a) discuss the alternative investment tools (b) examine the performance of hedge funds and other alternative investments such as venture funds and private equity, and (c) present an in-depth analysis of the main hedge fund investment strategies, (d) explore the behavioral issues and human factor in risk management. The recent financial crises have exposed how risk models can fail as a result of human errors, and lack of communication. The instructors will include business professionals and rely mostly on cases which apply the concepts developed in the previous classes. This class will devote a significant amount of time on how to address the human factor in modeling risk.

FNCE 5341 - Financial Risk Management III - Advanced Topics
Topics covered in this course include: pricing, measurement, and management of credit risk; credit risk modeling; use of credit derivatives to manage and control credit risk; building and managing portfolios, including long/short, and market neutral strategies; measurement of credit risk, including Actuarial, Merton, and Copula function; and portfolio construction, performance evaluation, asset allocation, and portfolio risk management (VAR, Hedging, Portfolio insurance).

FNCE 5342 - Internal Control Risk - Valuation and Analysis Issues
This course reviews the accounting requirements associated with asset valuation and income recognition of complex portfolios that utilize advanced hedging techniques. The course analyze an organization¿s control environment and processes within COSO and SOX frameworks and examines the control practices that organizations use to help ensure the integrity of information provided by its accounting systems. Finally tax related issues and Basel II are also discussed.

FNCE 5343 - Legal & Ethical Issues in Financial Risk Management
This course provides participants with an introduction to the federal laws regulating financial products and the internal controls necessary to comply with those laws. It examines the federal regulation of securities and derivatives and the market participants engaged in those businesses. Participants study safety and soundness regulation of other major financial institutions, including commercial banks, bank holding companies, and insurance underwriters. Finally, the course examines the compliance activities and internal controls that financial firms need to maintain to comply with federal law particularly the Sarbanes-Oxley Act. It closes with an overview of new developments in financial regulation and compliance.

FNCE 5408 - Valuation I: Asset Allocation and Security Selection
In the volatile stock market environment that has existed since the dot-com bubble burst, investors need a solid grounding in valuation techniques now more than ever. During the semester students will learn three different approaches to investment valuation: Balance Sheet Reproduction, Earnings Power Valuation and Discounted Cash Flow analysis. This course starts out with classic Graham and Dodd methodology, and progresses to more recent value scholarship.

The course will utilize real time company studies and practical applications of the value approach, including a project that requires researching and placing a valuation on an investment idea.
Prerequisite: FNCE 5101 or permission of instructor (RG194).

FNCE 5504 - Options and Futures
Analysis and valuation of speculative securities including options and futures with emphasis on their use for hedging and speculative motives. Major valuation models are discussed and applications of contingent claim valuation framework to corporate finance problems are also explored.
Open to MBA students, others with permission. Prerequisite: FNCE 5101 (RG195).

FNCE 5507 - Working Capital Management
Working capital management is critical in determining whether a firm is competitive and profitable. Each component of working capital cash, marketable securities, receivables, inventories, and payables is studied and is related to the firm's operations. The course concentrates on applications and includes lectures by working capital managers from major corporations.
Prerequisite: FNCE 5101 (RG196).

FNCE 5508 - Asset Allocation and Capital Market Theory
Provides an integrative overview of issues in financial theory. Contemporary theoretical developments in corporate finance and financial markets are addressed. Major topics include agency theory, option theory, term structure theory, CAPM, APT, market efficiency, capital structure, and dividend policies under full and asymmetric information.
Prerequisite: FNCE 5101 or permission of instructor (RG194).

FNCE 5512 - Fixed Income Instruments and Markets
This course examines contemporary portfolio management of fixed income institutional investors, issuers, and broker-dealers. It assesses current practice and presents a theoretical framework for anticipating change. Coverage includes pricing, assessment of return and risk, and the development of overall strategies, for these markets: government, corporate, municipal, and international bonds; mortgage-related and other asset-backed securities; and derivative securities including futures, options, swaps, and other interest rate contracts.
Open to MBA students, others with permission. Prerequisite: FNCE 5101 (RG2091).

FNCE 5513 - Advanced Corporate Finance: Capital Investment Finance
This course in dynamic capital budgeting applies corporate finance theory to the real-world problems that financial analysts face every day, integrating theory and practice, facilitated through the use of simulation analysis. These tools include both an understanding of the theoretical underpinnings of sound capial budgeting techniques and a mastery of the technology necessary to practically implement this knowledge in a real-world setting.
Prerequisite: FNCE 5101 (RG3017).

FNCE 5521 - Risk and Insurance
A study of the recognition, analysis, and treatment of pure risk from the viewpoint of the enterprise. This course considers various methods of risk management but emphasizes the role of insurance.
Prerequisite: FNCE 5101 or permission of instructor (RG194).

FNCE 5532 - Real Estate Investment and Portfolio Management
This course provides an overview of real estate investment decision-making. Topics include: risk-return analysis of alternative types of real estate investments; leases, operating costs, and tax consequences; valuation techniques, including discounted cash flow and option pricing; real estate portfolio management; and alternative forms of equity securitization such as real estate investment trusts.
Prerequisite: FNCE 5101 or permission of instructor (RG194).

FNCE 5533 - Real Estate Capital Markets
This course covers the structure and operation of the mortgage market. Topics include the identification, measurement and management of risk from the perspective of borrower, lender, and investor. The course stresses the integration of the real estate debt markets with the global capital market, and considers the role and impact of mortgage-backed securities for residential and commercial real estate lending.
Open to MBA students, others with permission. Prerequisite: FNCE 5101 (RG2091).

FNCE 5534 - The Internet and Information Systems Applied to Real Estate
Specialized information technology is now available for all segments of the real estate industry. For example, investment firms are particularly interested in information technology that helps them monitor, understand, and manage risks associated with mortgage-backed securities. Database management systems and geographic information systems (GIS) give the decision-maker unprecedented power to manage data and analyze risks. The Internet opens up vast new sources of timely information. This course stresses the use of GIS and of the Internet. Students will gain hands-on experience with these tools through projects that are organized around business problems.
Prerequisite: FNCE 5101 or permission of instructor (RG194).

FNCE 5610 - Personal Financial Planning
This course is for the professional working in the area of financial services as well as for one's personal planning. It is the application of finance theory to the individual and family. This integrated approach covers lifetime cash flows, asset accumulation and allocation, debt management, retirement planning, and risk management.
Open to MBA students, others with permission. Prerequisite: FNCE 5101 (RG2091).

FNCE 5611 - Financial Modeling
This course is a "hands-on" use of computerized decision aids to analyze a variety of financial problems. Applications will be drawn from corporate financial planning, modern portfolio theory, options pricing, dynamic trading, and so forth.
No computer experience is required; this course will help students develop the necessary programming skills to build fairly sophisticated models.
Open to MBA students, others with permission. Prerequisite: FNCE 5101 (RG2091).

FNCE 5630 - Real Estate: A Personal Investment Perspective
Real estate is a major component of household wealth. Important household real estate decisions include, for example, where to buy a house; renting versus owning a home; choosing between alternative mortgage instruments; understanding the house purchase transaction; and the risks and returns of real estate investing. This course surveys the fundamentals of real estate from a personal investment perspective.
Prerequisite: FNCE 5101 or permission of instructor (RG194).

FNCE 5894 - Seminar
Investigation and discussion of special topics in finance, risk and insurance and/or real estate and urban economic studies.
Open to MBA students, others with permission. Prerequisite: FNCE 5101

(RG2091).

FNCE 5895 - Special Topics in Finance
Faculty-student interaction on a one-to-one basis involving independent study of specific areas of finance, risk and insurance, and/or real estate and urban economic studies. Emphasis, selected by the student, may be on theoretical or applied aspects. A written report is required.
Prerequisite: FNCE 5101 or permission of instructor (RG194).

FNCE 6200 - Investigation of Special Topics

Prerequisite: FNCE 5508 (RG198).

FNCE 6201 - Introduction to Finance Theory and Evidence
Topics include: efficient market hypothesis, utility theory, portfolio theory, CAPM, arbitrage pricing theory, option pricing, capital structure / tax theory, capital budgeting under uncertainty, current empirical studies.

FNCE 6202 - Corporate and Institutional Finance
Topics include: information asymmetry, agency, internal capital markets, governance, market microstructure, moral hazard / adverse selection. Concepts are applied in both corporate and financial institution settings.
Prerequisite: FNCE 5508 (RG198).

FNCE 6203 - Theory of Financial Markets and Valuation
Topics include: fundamental pricing theorems, state preference theory, martingale pricing, dominance, spanning and arbitrage restrictions, consumption models, and continuous-time approaches to asset pricing, interest rate models, and derivatives pricing.

FNCE 6204 - Empirical Methods in Finance Research
Topics include: predictability of asset prices, time series models of market microstructure, event study methodology, tests of asset pricing models and derivative pricing models, market efficiency, volatility of asset returns, and term structure interest rates.
Prerequisite: FNCE 5508 (RG198).

Courses

Health Systems Management

HSMG 5240 - Health Care Organization and Management
This course examines the nation's healthcare delivery system with overviews provided for each major sector of the health economy. The basic tools of economics and finance are employed to gain critical insights into the structure, conduct and performance of each of these sectors. This course is designed to accommodate both health care professionals and individuals from other business areas interested in learning more about the health care industry.
Open to MBA students, others with permission (RG2090).

HSMG 5243 - Health Care Economics
This course demonstrates how various economic theories can be used to think about health care issues and takes a macro or industry perspective of various health care problems and policy questions. Students are provided with a set of economic tools to evaluate a theoretical or empirical argument relating to health or medical care. The course culminates with an in-depth analysis of the structure, conduct, and performance of the markets for medical insurance, physician services, hospital services, pharmaceutical products, and long-term care. Health care reform is also discussed.
Prerequisites: FNCE 5101 and HSMG 5240 (RG201).

HSMG 5544 - Competitive Strategies for Health Care Organizations
This course focuses on the microeconomic organization of healthcare business units and analyzes various issues central to the individual firm's short-term and long-term competitive success. Competitive strategies pertaining to various types of healthcare organizations such as physician practices, hospitals, health maintenance organizations, and pharmaceutical companies are explored using a wide variety of business tools and methods. Efficient market theory, industry analysis, the boundaries of the firm, principal and agent problems, incentive mechanisms, mergers and acquisitions, the development and sustainability of competitive advantage, and competitive pricing are some of the general topics discussed in the context of the health care sector.
Prerequisite: HSMG 5243 or consent of the instructor (RG3373).

HSMG 5545 - Management of Long-Term Health Care Organizations
This course examines administrative processes within the long?term health care facility including issues related to organizational effectiveness, financial management, the regulatory structure, operational procedures, policies and practices.
Prerequisite: HSMG 5240 (RG801).

HSMG 5548 - Health Care Law and Policy
This course examines legal, regulatory and ethical considerations in health care management, and the formation of public policy in the health care setting. Emphasis is on understanding legal principles and issues including administrative and regulatory law; institutional and individual liability in the health care sector; employment law; and torts. Special attention is paid to ethics in health care management and its interrelation to law and public policy. May be substituted for BLAW 375.
Open to MBA students, others with permission (RG2090).

HSMG 5549 - Management of Long-Term Health Care Organizations
This course examines administrative processes within the long?term health care facility including issues related to organizational effectiveness, financial management, the regulatory structure, operational procedures, policies and practices.
Prerequisite: Not open to M.B.A. degree students (RG530).

HSMG 5632 - Internship in Health Care Management
Under the guidance of a qualified preceptor, the student participates in the administrative process in the long-term health care organizational structure. A project is required.
Prerequisite: Not open to M.B.A. degree students (RG530).

HSMG 5642 - Decision Analysis in Health Care
The course covers methods used by health care managers in making strategic and operating decisions, including (but are not limited to) sales forecasting, product valuation, and cost effectiveness and cost/benefit analyses. Example of potential applications include estimating the value of new drugs under development, the payoff profile from strategic alliances and limited partnerships in different health care industries, the valuation of healthcare mergers and acquisitions, the profitability of different HMO benefit plans, and other ventures pertaining to health care organizations
Prerequisite: FNCE 301 and HSMG 383 or consent of the instructor (RG3372).

HSMG 5686 - Health Insurance and Risk Management
This course examines health insurance choices from the perspective of individuals, employers, and insurers. A portfolio perspective for individuals' choices is taken. Other topics include: health insurance loss and contingency distributions; health insurance loss reserving; pricing (rate-setting) for health insurance products; LTC insurance; health insurer risk management; health reinsurance structures; health insurance derivatives.
Prerequisites: FNCE 5101 and FNCE 5151 (RG802).

HSMG 5687 - Global Healthcare Systems
This course focuses on the examination and evaluation of diverse healthcare systems across the world. As part of this process, students will review the rationale that shapes the unique characteristics and attributes of different systems throughout the world and their associated strengths and weakness. From an organizational perspective, this course will introduce models used for the provision of health care services within the framework of business management practices. This course can be used to satisfy the MBA Program at Hartford.

HSMG 5688 - Risk Management and Quality Across Borders
This course examines the management of risk and quality within health care organizations and within different international settings. Within this framework, students are exposed to a number of different quality modes and study the relationship between risk management and quality.

HSMG 5891 - Health Care Internship
Under the guidance of a qualified preceptor, students are provided opportunities to study and analyze an organization's characteristics, functions, goals, strategies, and decision-making processes. Managerial skill is developed through the performance of administrative tasks and through participation in problem-solving processes. A research paper is required.

HSMG 5894 - Seminar
Investigation and discussion of special topics in health care management.
Open to MBA students, others with permission (RG2090).

HSMG 5895 - Special Topics in Health Care Management
Faculty-student interaction on a one-to-one basis involving independent study of specific areas of health care management. Emphasis, selected by the student, may be on theoretical or applied aspects. A written report is required.

Courses

Management

MGMT 5138 - Managing Organizations
Today's business climate demands that organizations and their managers be innovative, flexible, adaptive, and capable of maximizing the contributions of all their members. In addition, today's manager must possess the leadership and team skills necessary to manage the increasingly diverse work force. Knowing how to reap maximum benefit from an organization's human capital is essential for today's manager. This course examines topics such as leadership, motivation, team dynamics, organization structure, design and culture, conflict, power and politics.
Open to MBA students, others with permission (RG2090).

MGMT 5222 - Management Consulting
This course introduces students to the roles individual consultants and consulting firms play in enhancing the effectiveness of their clients. The course draws on a wide range of management theory and practice to help students develop the interpersonal, analytical, and technical skills required in consulting interventions. The course will provide an overview of the consulting industry and address such topics as relationship and client management, intervention frameworks and their application, project management, ethical issues in consulting, and implementation issues.
Open to MBA students, others with permission (RG2090).

MGMT 5223 - Managing Innovation and Change
Students will learn both the theory and practice underlying successful organizational change, thereby providing them with the understanding necessary to become effective change agents. The course addresses such topics as assessing organizational effectiveness/performance, fundamental organizational development techniques, change methodologies, individual, group, and organizational change processes, applied research methods for analysis of change problems, process interventions, the power and politics of change, and strategic change.
Prerequisite: MGMT 5634 Prerequisite

MGMT 5224 - Venture Consulting Practicum
The primary goal of the venture consulting practicum is to give students the opportunity to work directly with clients (in teams, with faculty mentors) in real-time and gain additional hands-on experience. Students will be required to prepare a consulting proposal for the client (scope of work, timeline, etc.), negotiate an end-product with the client, perform the proposed intervention, and prepare a final report and present findings with recommendations to the client for evaluation and critique. (Student participation in a project at the Innovation Accelerator can be substituted for this course.)
Open to MBA students, others with permission (RG2090).

MGMT 5260 - Management of Technology and Innovation
In today's dynamic organizations, management of research, technology and change are generic processes which constitute irresistible and critical elements of the overall environment of business. Awareness of these processes can be a powerful force for an organization's management of its future. This course introduces the student to the management of innovation in several contexts, dealing with products and services, tangible and intangible outputs.
Open to MBA students, others with permission (RG2090).

MGMT 5335 - Venture Planning, Management, and Growth
The primary goal of the venture consulting practicum is to give students the opportunity to work directly with clients (in teams, with faculty mentors) in real-time and gain additional hands-on experience. Students will be required to prepare a consulting proposal for the client (scope of work, timeline, etc.), negotiate an end-product with the client, perform the proposed intervention, and prepare a final report and present findings with recommendations to the client for evaluation and critique. (Student participation in a project at the Innovation Accelerator can be substituted for this course.)
Prerequisite: MGMT 5634 Prerequisite

MGMT 5377 - Human Resource Information Systems
Nearly every aspect of human resource management and labor relations is or will be undergoing significant improvements via information technology. Increasingly human resource professionals are called upon to be part of a team in the design of information systems. Indeed their role is critical in insuring that the system truly supports and integrates HR needs. HR professionals

must also query databases, create reports and contribute to departmental web sites. This course will prepare students for these challenges. The course will focus on future systems as well as seek to understand current configurations. It will explore the implications that systems design has for flexibility, efficiency, and effectiveness over the longer run.

MGMT 5621 - Business and Managerial Ethics
Recent observers of the business scene have questioned whether today's modern executive has lost his/her "moral compass." Clearly all businesses and their managers must be held accountable to ethical standards. At issue then is what is ethical behavior and what problems are created in trying to exercise such behavior. This course examines in detail the processes of policy formulation and implementation as they relate to ethical problems. Alternative responses to expressed and anticipated social needs, expectations and demands that arise in the daily conduct of business are considered.

MGMT 5629 - Formal Corporate Planning Systems
Planning is a corporate, group, and business function whose character has changed markedly and whose importance is universally recognized. Special attention is given to particular topics: environmental forecasting, corporate vs. business planning, staff vs. line functions, cycling/rolling systems, planning's impact on results, and others. In order to emphasize the essential nature of creating a managerial system which is efficient and effective through tailoring it to the specific requirements of the organizational setting, the work of the course centers on case analyses, but it employs also, as appropriate, lectures, discussions, and field projects and reports.

MGMT 5634 - Opportunity Generation, Assessment, and Promotion
This course provides a hands-on experience in opportunity development, exposing students to three distinct modules. The first, creativity and innovation, stimulates the flow of ideas. The second, feasibility analysis, runs these ideas through an comprehensive assessment framework. The third module, getting the first customer, focuses on the initial sales and marketing process needed to get the idea off the ground. At the end of the course, students will be able to: Identify, evaluate, and shape new business opportunities; Effectively present and sell their ideas to critical constituencies; Manage the resource constraints associated with launching new ventures.
Prerequisite: MGMT 5634 Prerequisite

MGMT 5637 - Organization Behavior
The course is divided into two major components: micro and macro organization behavior. The first component focuses on individual and group-level problems and the second focuses on organizational-level problems, as they relate to improving organizational performance. This course introduces some of the central topics in management theory, research, and practice and provides the basis for understanding and evaluating organizations and their management.
Prerequisite: MGMT 5637 prerequisite

MGMT 5639 - Gender and Diversity in the Workplace
The demographic composition of the international labor force is changing. In the United States, the proportions of both women and people of color have steadily increased in recent years. This course chronicles and examines the transition that is taking place in the workplace due to the increased diversity in employees. It examines gender-related issues such as sex differences and sex role development, occupational choice and organizational entry, peer and manager-subordinate interactions, sexual harassment, career development, the interface between work and family, and strategies for promoting equal opportunity in organizations. It examines diversity issues stemming from differences in individual characteristics such as race, ethnicity, and national origin.
Prerequisite: MGMT 5634 Prerequisite

MGMT 5640 - International Business
The growing impact of a rapidly changing international business environment on organizations today means that few managers can afford to remain indifferent to the issues of international business. It is important to understand the changing patterns of international business, the dynamics of international competition, government-business interactions in other countries, and the organizational challenges of managing strategically across borders. This course addresses these issues through an applied approach in the discussion of cases.
Prerequisite: MGMT 5640 Prerequisite

MGMT 5650 - Managerial Communications
Designed to improve effective oral and written communication skills for managers. Topics in written communications include: organization, structure, and clarity of business communications; practice in writing formal papers and research reports; establishing style and tone in different types of written business communications. Topics in oral communications include: analysis of audiences, presentations to small and large groups, persuasion and motivation techniques, using audio-visual aids, and improving delivery and style using video feedback.
Open to MBA students, others with permission (RG2090).

MGMT 5672 - Career Dynamics
As individuals pass through organizations, they both shape them and are shaped by them. This course looks at the issues involved in integrating the individual with the organization through the process known as career development. In particular, it focuses on the realities of entry, membership, and advancement that occur in organizations. Topics cover career stages and life stages; career stages and organizational stages; individual self-assessment including personal characteristics, interests, values and interpersonal styles; individual career mapping; and changing jobs and careers.
Open to MBA students, others with permission (RG2090).

MGMT 5673 - Organizational Renewal Development
Organizational renewal must be a regular part of the job of every manager. This course focuses on the management skills needed to diagnose, change and develop an organization. Participants learn not only the latest concepts but also are required to engage in organizational development (OD) exercises. Topics to be covered include methods of diagnosing organizations, planning and OD effort, deciding on a change strategy, fitting the intervention to the client's needs, managing an intervention and obtaining evaluative feedback. Through the use of exercises, presentations and hands-on-training, participants have the opportunity to practice their OD skills.

MGMT 5674 - Negotiation Strategies
Developing and implementing effective negotiation strategies and tactics is an increasingly important activity in a wide range of managerial positions. This course deals with negotiations both within and between organizations. Effective negotiations skills are essential for successful managers in complex contemporary organizations characterized by changing structures, temporary task forces, multiple demands

on resources, and the increased importance of interdepartmental cooperation.
Critical negotiation situations with other organizations range from those dealing with labor unions, purchasing, mergers, acquisitions, and joint ventures. During this course, participants plan and conduct negotiations simulations, as well as receive feedback on their performance.
Prerequisite: MGMT 5674 Prerequisite

MGMT 5675 - Strategic Management of Human Resources
Effective human resources management (HRM) is one of the most decisive factors in the success of any organization. This course examines how to manage human resources effectively in the dynamic legal, social, and economic environments currently constraining organizations. Among the topics included are: formulation and implementation of human resource strategy, job analysis, methods of recruitment and selection, techniques for training and management development, performance appraisal, compensation analysis and administration, and evaluation of the effectiveness of HRM systems. Attention is also given to the need for adjusting human resource strategies and tactics when applying them in a foreign setting. Emphasis is placed on integrating human resource management with other key aspects of management. A variety of teaching methods are used to help students acquire an understanding and appreciation of HRM.
Prereq MGMT 5138 and open to MBA students only

MGMT 5676 - Business Improvement Through Training and Development
Planning, implementing, and evaluating training programs designed to meet individual and organizational needs. Training methods, techniques, and processes. Strategic and international training issues. Focuses on the process by which organizations train and develop employees. Topics include training needs assessment, program design, training evaluation, and management development practices.

MGMT 5678 - Compensation and Benefits
Application of compensation principles to organizational objectives. Strategic use of compensation systems for attracting, motivating, and retaining employees. Managerial aspects of paying employees at all organizational levels. Focuses on managing employee compensation in contemporary organizations. The major objectives are: to examine the current state of compensation decision making, to examine how recent theoretical and research developments inform compensation decisions, and to offer an opportunity to develop competencies in making compensation decisions.
Prereq MGMT 5138 and open to MBA students only

MGMT 5800 - Strategy, Policy, and Planning
A firm's ability to survive and succeed in an increasingly competitive global arena depends on its ability to develop and maintain an effective strategy. This capstone course deals with the two major aspects of strategy: formulation and implementation. Strategy formulation examines such issues as environmental threats and opportunities, the values and priorities of management and societal stakeholders, and the strengths of company resources and competencies relative to principal competitors. Strategy implementation covers such topics as strategic leadership, organizational structure, resource allocation, and building a strategy-supportive culture. The course uses cases and readings to develop the knowledge and skills necessary to prepare students to deal with strategic issues. The student must have completed basic courses in the functional areas of business in order to be ready to assume the holistic perspective required of those who address this important topic.
Prerequisite: Completion of at least 45 credits and good standing in the MBA program are required (RG3925)

MGMT 5801 - Advanced Strategy, Policy, and Planning
This advanced strategy course offers practical tools to evaluate sources of a firm's competitive advantage. A supplement to the capstone course, This course offers an in-depth look at special strategic problems such as the implementation of strategy, corporate renewal, strategy formulation in decline contexts, and/or political elements of strategy.

MGMT 5894 - Seminar
Investigation and discussion of special topics in management.
Prerequisite: MGMT 5634 Prerequisite

MGMT 5895 - Special Topics in Management
Faculty-student interaction on a one-to-one basis involving independent study of specific areas of management. Emphasis, selected by the student, may be on theoretical or applied aspects. A written report is required.

MGMT 6200 - Directed Readings in Special Topics
Open to PhD students in the School of Business only (RG193).

MGMT 6201 - Seminar in Organizational Behavior
A survey of research in organizational behavior and theory. Topics include learning and cognition in organization, attribution theory, satisfaction and performance, leadership, motivation and group dynamics.

MGMT 6202 - Research Methods in Strategic Management
This course is an in-depth review of the content of policy research. The course is designed to cover several "streams" of research currently popular in the strategic management literature. The course will cover the major findings within each stream.

MGMT 6203 - Contemporary Research in Organizational Behavior
Focus is on several of the contemporary research themes popular in Organization Behavior. Students critique the methodology and future potential of each theme.

MGMT 6204 - Seminar in Strategic Management
Reviews the research of strategic management that emphasizes macro explanatory models. Students review recent dissertations and critique the content and methodology of each.

MGMT 6206 - Applied Research in Management
Students, individually or in groups, formulate, conduct and prepare a written report in publishable format on a research project pertaining to the area of management. Meetings will be devoted to discussion of issues which arise in the conduct of student projects and to presentation of projects.

MGMT 6405 - Research Design
Examination of research methods utilized in management research. Topics include the laboratory-field distinction, randomized experiments in field settings, content analysis and interrater reliability, log-linear analysis, instrument design and reliability analysis, survey design and sampling techniques, meta-analysis, quasi-experimental design, nonequivalent group design, interrupted time-series design and correlational analysis.

MGMT 6408 - Seminar in Strategic Entrepreneurship, Innovation, and New Ventures
This seminar introduces students to major theoretical and empirical issues in the area of strategic entrepreneurship, innovation, and new ventures. The course focuses on the construction and testing of theory regarding the generation, identification, assessment, and capture of opportunities that support the expansion of existing ventures or formation of new businesses. Subject matter includes, but is not limited to, an overview of the field; generation and identification of entrepreneurial opportunities; entrepreneurial thinking and the associated decisions to explore and exploit; and influences on and processes associated with innovation management and venture creation.

Courses

Marketing

MKTG 5115 - Market-Driven Management
The purpose of a business is to create a satisfied customer. To accomplish this objective managers must incorporate both their customers' and competitors' perspectives into their decision-making. This course focuses on the necessity to become a market-driven organization. Topics covered in this course include: market segmentation and target marketing, marketing research for obtaining critical customer information, development of marketing strategies, product development and the key linkage between marketing and R&D, pricing strategies and implementation, working with distribution partners, developing effective promotional programs, control and evaluation of the marketing function. These and other topics are applied in a wide range of market arenas such as global marketing, the new service economy, industrial and high technology products, consumer goods and services, financial services, and health care.
Open to MBA students, others with permission (RG2090).

MKTG 5220 - Customer Relationship Marketing
This course discusses the scope of interactive marketing strategies and programs and introduces business models that are suited for this purpose. It covers the concept of customer lifetime value and its linkage to various customer relationship forms including cusotmer,partner, stakeholder, and employee relationship marketing. Cross-marketing strategies for maximizing customer lifetime value are emphasized. Brand development and brand equity management are also explored from a relationship marketing perspective. Integrated marketing communications and interactive marketing tools including digital marketing are discussed. Students obtain hands-on experience of creating detailed marketing plans with appropriate financials for typical interactive marketing situations. Case studies of actual companies are used to better illustrate the concepts.
Prerequisite: MKTG 5115 (RG204).

MKTG 5230 - New Product and Innovation Management
This course takes a "whole enterprise" approach to the management of innovation, based on the perspectives of product managers and a CEO. The course's primary objective is to develop effective conceptual frameworks and analytical tools for managing innovation throughout the firm. The analytical tools used in the course range from traditional methods for forecasting new product performance (e.g. Bases, Assessor, etc.) to more sophisticated methods that use virtual reality lab environments. Topics include the nature of innovation, new product development processes, new product sales forecasting, successful integration of marketing and R&D, and acceleration of the new product process from design to commercialization advantages.
Prerequisite: MKTG 5115 (RG204).

MKTG 5250 - Marketing Research and Information Systems
This course discusses the collection and use of information on customers and their needs for designing marketing programs. The course develops skills in obtaining and using customer input for product design, communications, pricing, distribution, and customer service decisions. Some of the topics covered include: research design; use of secondary information sources; decision support systems; sampling techniques; questionnaire design; scaling and measurement; and multivariate data analysis procedures. The applications discussed in the course include the creation and use of data-warehouses; customer satisfaction measurement; customer-based brand equity measurement; and the use of the Internet as an information-gathering tool.
Prerequisites: MKTG 5115 and OPIM 5103 (RG205).

MKTG 5251 - Data Analytics
Introduces students to the concepts, methods, and quantitative tools for creating and exploiting customer databases. The course will have a strong hand-on methodological orientation with emphasis on applications involving real customer data. Students will learn quantitative tools for estimation of customer lifetime value, customer response modeling (e.g., multiple regression, logostic regression, cluster analysis, discriminant analysis, and neural network analysis) and experimentation in test markets. Applications will include prospecting, market segmentation and targeting, product customization, cross-selling, and
Prerequisite: MKTG 5115 and OPIM 5103 (RG788).

MKTG 5625 - Marketing for Global Competitiveness
The United States is the largest market for consumer goods in the world, yet it is also one of the slowest growing markets. Faced with increasing competition from American, Japanese, European and other global competitors, all companies are faced with the necessity of developing truly global marketing strategies. This course helps prepare the manager for these challenges by investigating specific success criteria in the world's major markets. Cultural, political, economic and institutional factors are discussed and their implications for marketing strategies are explored.
Prerequisite: MKTG 5115 (RG204).

MKTG 5635 - Marketing for Non-Profit Institutions
With reduced financial support from the government, non-profit organizations must adopt a marketing orientation to successfully survive in the turbulent environments which they face. This course explores techniques to analyze market needs and environmental opportunities as the basis for planning the products, services and communications of such non-profit organizations as government agencies, social action groups, universities, hospitals, religious organizations, charities, museums, public arts organizations, and civic groups. The course utilizes extensive case studies as well as field projects.
Prerequisite: MKTG 5115 (RG204).

MKTG 5640 - Integrated Marketing Communications
The implementation of integrated marketing communications is increasingly important for an organization's competitiveness. This course covers: communications models; the communications mix; communications strategy - including setting objectives, designing and implementing communications programs, and evaluation. Emphasis upon: customer response models; interactive marketing; direct marketing; information driven marketing; measuring customer life-time value, creation and use of marketing

data bases in communications strategy, the emergence of one-to-one marketing, and measurement of marketing productivity.
Prerequisite: MKTG 5115 (RG204).

MKTG 5645 - Business and Industrial Marketing
Explores the differences between consumer markets and business-to-business or industrial markets. Organizational buying models are discussed as they apply to a variety of purchasing situations. Special consideration is given to industrial and high technology market segmentation, industrial distribution, industrial sales practices, and requirements of cross functional marketing.
Prerequisite: MKTG 5115 (RG204).

MKTG 5650 - Strategic Brand Management
The objective of this course is to provide students with an advanced understanding customer behavior in relation to marketing strategies in building, leveraging, and enhancing brand equity and formulating strategic brand decisions, such as positioning and designing brands, building and leveraging
Prerequisite: MKTG 5115

MKTG 5655 - Pricing Strategies
One of the most closely scrutinized aspects of the marketing mix, pricing is a critical factor in the success of both new and old products and services. This course examines the price-setting process and the role of marketing, engineering, manufacturing and other business functions in price determination. Students will integrate economic and behavioral aspects of customer response to pricing, legal constraints as they impact the marketing manager's pricing flexibility, and the particular problems of pricing within the context of a global marketing strategy.
Prerequisite: MKTG 5115 (RG204).

MKTG 5660 - Customer Behavior
The analysis of customer behavior as it informs marketing decisions -- customer relationship management, brand management, and marketing strategy. Topics: customer information search; customer responses to marketing communications; customer choice processes; post-choice experiences, including product consumption and usage, satisfaction, brand and supplier loyalty, and customer defection; internal and external influences on customer behavior; and customer behavior research methods. The course considers both online and traditional behaviors, as well as individual, household and organizational customers.
Prerequisite: MKTG 5115 (RG204).

MKTG 5662 - Services Marketing
An examination the application of marketing principles to the service arena. Exploration of the differences between the marketing of goods and services. Development of appropriate decision models for services in consumer and industrial market segments and the use of services as a differentiation tool for product marketers. Topics include new service development; the service-profit chain; evaluating service quality; strategic service management; and the impact of customer satisfaction and loyalty on company profits. A variety of service industries are used as points of illustration, including telecommunications; insurance and financial services; health care; and business-to-business services such as advertising, temporary employees, and accounting.
Prerequisite: MKTG 5115 (RG204).

MKTG 5665 - New Media Marketing Strategies
This course will provide students with both an advanced understanding of the role of media in marketing strategy and how to use new media to understand and communicate with consumers using new media. Particular attention will be on how companies can and do leverage new media to develop a competitive advantage in the marketplace, and how consumers use new media to engage in and co-create marketplace experiences.
Prerequisite: MKTG 5115 (RG204).

MKTG 5894 - Seminar
Investigation and discussion of special topics in marketing.
Prerequisite: MKTG 5115 (RG204).

MKTG 5895 - Special Topics in Marketing
Faculty-student interaction on a one-to-one basis involving independent study of specific areas of marketing. Emphasis, selected by the student, may be on theoretical or applied aspects. A written report is required.

MKTG 6200 - Investigation of Special Topics

Prerequisite: Open only to students in the Marketing doctoral program (RG651).

MKTG 6202 - Introduction to Consumer Behavior
This course provides coverage of major research topics in consumer behavior, such as: theory development and testing, judgment and decision making, information search, memory, attitude theory, learning, group and interpersonal influence.

MKTG 6203 - Introduction to Quantitative Applications in Marketing
This course introduces students to the techniques and concepts of quantitative marketing modeling. Topics would typically cover: empirical models such as brand choice models, purchase quantity models, purchase timing models, related estimation issues such as heterogeneity and endogeneity, basic microeconomic and industrial organization models, and the use of such models in marketing applications such as pricing, channel strategies, customer word-of-mouth and retail competition.

MKTG 6209 - Introduction to Research in Marketing
This course introduces students to the contents and nature of academic marketing research. Topics typically include: an introduction to the area of marketing, theory development in marketing, research and the research process in marketing, a typology of research areas in marketing, a survey of research techniques in marketing (including qualitative, experimental, survey based, econometric, and analytical), and a survey of the base disciplines upon which marketing draws for theory (psychology, economics, and sociology).

MKTG 6210 - Strategic Applications in Marketing
This survey course acquaints students with the state of the art in strategic marketing. Topics are subject to change at the discretion of the instructor, but would typically cover strategic issues related to products, firms, customers and competition.

MKTG 6211 - Multivariate Analysis in Marketing
This course will present an overview of various multivariate statistical methods. Topics are subject to change at the discretion of the instructor, but would typically cover: discriminant, canonical, cluster, and factor analysis; multidimensional scaling; and conjoint, logit, probit and tobit analysis. Hands on experience in use of these methods will be provided; the primary focus will be on marketing applications.

MKTG 6212 - Socio-cultural Aspects of Consumer Behavior
This course focuses on the socio-cultural aspects of consumer behavior, such as consumer identity, consumption signs and symbols, cross-cultural consumption, class,

culture and consumption, consumption practices, transformative consumer research, and historical and ethnographic perspectives on consumer behavior.

MKTG 6213 - Advanced Quantitative Applications in Marketing
This course reviews advanced topics and recent developments in quantitative marketing. Current topics may include: dynamic structural models, numerical dynamic programming, learning models, entry and exit, and multi-category models. Students use these models and methods with empirical data to address marketing problems. A pre-requisite for this course is completion of MKTG 6203 or the equivalent as determined by the instructor.

MKTG 6296 - Special Topics: Progress Toward Qualifying Paper
Open only to students in the Marketing doctoral program. Independent study under faculty supervision in area chosen for doctoral student's qualifying paper. Satisfactory progress on qualifying paper (including literature review and research conceptualization) is required. Student can also develop research design, conduct pilot studies, refine questionnaires and measures, or develop a framework for model specification and model estimation. A written report is required.
Prerequisite: Open only to students in the Marketing doctoral program (RG710).

Courses

Operations & Information Management

OPIM 5103 - Managerial Statistics
A manager is concerned with recognizing and formulating statistical problems in business decision-making. This course covers some of the more familiar classical inference procedures and the basic statistical concepts that are often essential to the interpretation of business data. Methods of understanding variability, and detecting changes are explored using descriptive, exploratory, and inferential statistics found in widely available statistical packages. Topics include: discrete and continuous random variables, sampling, confidence intervals, hypothesis testing, and linear regression.
Open to graduate business students only, others with permission. Prerequisite: undergraduate calculus course or OPIM 5602 (RG3739).

OPIM 5110 - Operations Management
An operations manager is concerned with designing, operating and controlling a system for producing goods and services. Design decisions include selecting a process technology, organizing jobs, selecting vendors, and developing the location and layout of facilities. Operating the system involves planning and scheduling work and material flow, controlling quality, and managing inventories. General systems concepts and models are developed and applied. Topics include process flow analysis, inventory systems, waiting line analysis, quality design, capacity resource planning, project management, and integrating operations with the firm's strategic plans.
Open to MBA students, others with permission. Prerequisite: OPIM 5103 (RG2094).

OPIM 5165 - Management Information Systems
A manager is concerned with the solution of business problems by exploiting the information resources that are becoming available through the explosion in information technology. The emphasis is on business applications and how to structure the development and use of information systems for maximum benefit to the organization. Topics include: decision support systems, impact of the computer upon individual and organizations, competitive implications, technology change, telecommunications, and control of information systems resources.
Open to MBA students, others with permission (RG2090).

OPIM 5270 - Introduction to Project Management
Business objectives are increasingly solved by projects. Many projects fail to produce the expected results, are over budget, or not completed on time. Good project management significantly improves the likelihood of a successful project. This course will examine the project management process and the management of a portfolio of projects, with focus on techniques to overcome the pitfalls and obstacles that frequently occur during a typical project. It is designed for business leaders responsible for implementing projects, as well as beginning and intermediate project managers.
Open to MBA students, others with permission. Prerequisite: OPIM 5165 (RG2096).

OPIM 5272 - Business Process Modeling and Data Management
Managing and improving a business process adds to the bottom line, and data is a core business asset derived from multiple business processes. The need to manage both efficiently and use them effectively has assumed paramount importance. This course introduces market-leading techniques that help to identify and manage key data from business processes. It provides the essential tools required for data mining and business process re-engineering. It combines lecture, class discussion and hands-on computer work in a business-oriented environment.
Open to MBA students, others with permission. Prerequisite: OPIM 5165 (RG 2095).

OPIM 5602 - Mathematical Analysis for Business
Review of algebra followed by introduction to functions, limits, differentiation, integration, vectors, matrices and linear programming. Examples and applications of mathematical topics to business problems.
OPIM 5602 Prerequisite

OPIM 5604 - Predictive Modeling
Introduces the techniques of predictive modeling in a data-rich business environment. Covers the process of formulating business objectives, data selection, preparation, and partition to successfully design, build, evaluate and implement predictive models for a variety of practical business applications. Predictive models such as neural networks, decision trees, Bayesian classification, and others will be studied. The course emphasizes the relationship of each step to a company's specific business needs, goals and objectives. The focus on the business goal highlights how the process is both powerful and practical.
Open to MBA students, others with permission. Prerequisite: OPIM 5103 (RG2094).

OPIM 5620 - Managing and Controlling Information Systems
Examines the management control problems and systems development processes from the dual perspective of (a) managers of the computer information system, and (b) the organization as a whole, including persons who interact extensively with the systems personnel or are administratively in a position to influence the information system.
Prerequisite: OPIM 5165 (RG209).

OPIM 5641 - Business Decision Modeling
The course discusses business modeling and decision analysis. Covers topics such as optimization, simulation, and sensitivity analysis to model and solve complex business problems. As spreadsheets are often used as software tools for such problem solving, the course will emphasize developing high quality spreadsheets to ensure that the

objectives of the model are clear, defining the calculations, good design practices, testing and presenting the results.
Open to MBA students, others with permission. Prerequisite: OPIM 5103 (RG2094).

OPIM 5668 - Project Risk and Cost Management
Introduces the art and science of project risk as well as continuity management and cost management. Risk management ensures a project is completed through both general and severe business disruptions on local, national and international levels. Managing the risk of a project as it relates to a three-part systematic process of identifying, analyzing, and responding is examined through actual case studies. In addition, this course will examine the process of cost management, early cost estimation, detailed cost estimation, cost control using the earned value method, issues related to project procurement management, and the different types of contracts for various scope scenarios.
OPIM 5668 Prerequisite

OPIM 5671 - Data Mining and Business Intelligence
Discusses data mining techniques that can be utilized to effectively sift through large volumes of operational data and extract actionable information and knowledge (meaningful patterns, trends, and anomalies) to help optimize businesses and significantly improve bottom lines. The course is practically oriented with a focus of applying various data analytical techniques in various business domains such as customer profiling and segmentation, database marketing, credit rating, fraud detection, click-stream Web mining, and component failure predictions.
OPIM 5671 Prerequisite

OPIM 5770 - Advanced Business Analytics and Project Management
This capstone course will involve a live data analytics project, where students will need to integrate their knowledge of data analytics and project management. Using the skill sets of predictive modeling, data management, process models, and data mining techniques, students will investigate a real problem through data analytics, and will use their project management skills to complete the project within time and budget constraints.
Prerequisite: OPIM 5604,5272,5270 and corequisite OPIM 5671. Open to MSBAPM and MBA students only.

OPIM 5771 - Enterprise Security, Governance and Audit
This course discusses the business risks arising from digital information processing and identifies ways to prevent, detect, and mitigate negative consequences of information security breaches. First, students will be introduced to the basic principles of information security, its role in reducing information risk exposure, and tools and solutions that can be used to prevent information loss or costly business interruptions. Second, students will explore the role of information technology governance in business organizations, discuss important relevant laws (for example, Sarbanes-Oxley Act of 2002), reporting requirements, and industry standards for IT Governance (for example, COBIT). Third, students will study the process of information systems audit, IT audit tools, and audit procedures to help in detection and prevention of fraud.
Open to MSBAPM and MBA students, others with permission.

OPIM 5894 - Seminar
Introduces many of the most exciting concepts emerging in the field of consumer oriented Internet-working, including high speed access [cable modem, satellites and digital subscriber lines (DSL)] and infrastructure developments such as gigabyte networking with asynchronous transfer mode (ATM). Evaluates the emerging directions in EC that are expected to shape both consumer and business applications in the coming decade. A "macro perspective" is used to examine the technical and managerial aspects of electronic commerce. Focus is on questions such as: What are or will be the key attributes of current and future digital products, payment systems, online retailing, and banking? How are these systems designed and implemented? What are the different mercantile processes and tradeoffs associated with these processes? What impact has global connectivity made on traditional supply-chain(s)?

OPIM 5895 - Special Topics in Information Management
Faculty-student interaction on a one-to-one basis involving independent study of specific areas of operations management, operations research and/or information management. Emphasis, selected by the student, may be on theoretical or applied aspects. A written report is required.

OPIM 6200 - Investigation of Special Topics
This course provides an in-depth investigation in special topics in Operations and Information Management.
Prerequisite: Open only to doctoral students (RG709).

OPIM 6201 - Research Methods for Operations and Information Management
Several advanced analytical methods that are relevant to students' areas of research will be studied in depth in this seminar. Topics may include special mathematical programming; complex decision making; linear models; advanced statistical analysis; and stochastic processes.

OPIM 6202 - Seminar in Operations Management
Introduces doctoral students to the current research concerns in the field of Operations Management. The course will also acquaint students with the variety of research tools used in the field, enable them to critically evaluate the research of other scholars in the field as well as to develop research skills in identifying potential research problems to be analyzed.

OPIM 6203 - Seminar in Management Information Systems
A topic on a significant applied or theoretical aspect of information systems will be chosen. Broadly, these aspects will encompass modeling, design, implementation, testing, and operation of computer information systems, and the implications of information technologies for the organization.

†GRAD 5930. Full-Time Directed Studies (Master's Level) (GRAD 397) 3 credits.

†GRAD 5950. Master's Thesis Research (GRAD 395) 1 - 9 credits.

†GRAD 5960. Full-Time Master's Research (GRAD 396) 3 credits.

GRAD 5998. Special Readings (Master's) (GRAD 398) Non-credit.

GRAD 5999. Thesis Preparation (GRAD 399) Non-credit.

†GRAD 6930. Full-Time Directed Studies (Doctoral Level) (GRAD 497) 3 credits.

†GRAD 6950. Doctoral Dissertation Research (GRAD 495) 1 - 9 credits.

†GRAD 6960. Full-Time Doctoral Research (GRAD 496) 3 credits.

GRAD 6998. Special Readings (Doctoral) (GRAD 498) Non-credit.

GRAD 6999. Dissertation Preparation (GRAD 499) Non-credit.

Chemical Engineering

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Department Head
Professor C. Barry Carter

Professors:
Cooper, Laurencin, M. Shaw, and Weiss

Associate Professors
Parnas, Srivistava, Willis, and Zhu

Assistant Professors
Lei, McCutcheon, Mustain, Smirnova, Srivastava, Wang, and Wilhite

Study and research programs leading to the degrees of Doctor of Philosophy (Ph.D.) and Master of Science (M.S.) in chemical engineering are offered. Areas of special interest include: environmental engineering, electrochemical engineering, biochemical engineering, polymer science and engineering, nanomaterials engineering, kinetics, catalysis and reaction engineering, computer simulation of chemical processes, process optimization, and process dynamics and control.

Requirements for the Ph.D. Degree

Ph.D. candidates must pass both written and oral qualifying examinations taken after the first semester of graduate study. The written exam covers the areas of thermodynamics, transport phenomena, and kinetics (CHEG 5301, 5315 and 5321 are required preparation for this exam). The oral exam involves the critique and discussion of a paper from the literature assigned to the student after passing the written exam. The doctoral plan of study developed jointly by the student and his/her advisory committee usually includes one year of full-time course work beyond the master's degree. Doctoral students also must fulfill a foreign language requirement of the Graduate School (which may be satisfied by courses in a related or supporting area such as math or computer science). In addition to the qualifying exams, the student must complete a General Examination and the writing of a Ph.D. dissertation proposal, which is defended orally. The Ph.D. dissertation must contain the results of original research in chemical engineering. An oral defense of the dissertation is required.

Special Facilities

Available are large, well-equipped laboratories. Facilities and research opportunities are available though a number of other departments and University Institutes as well, including Chemistry, the Institute of Materials Science, the Center for Environmental Science and Engineering, the Connecticut Global Fuel Cell Center, the Biotechnology Center, Booth Research Center and the Advanced Technology Institute. Examples of equipment available in these research laboratories include: clean room for surface and interface research, polymer preparation and characterization instrumentation, electron microscopes, atomic-force microscopes, surface analysis equipment, a wide variety of analytical and visualization equipment, electrochemical instrumentation and reactors, electrodialysis units, fuel cell lab, injection molding machine, and a variety of biological reactors. Computing resources are widely available, including those in the University Computer Center and the Booth Computer Applications and Research Center. Machine, glass and electronics shops provide services for the construction of specialized equipment.

Courses

CHEG 5301 - Chemical Engineering Thermodynamics I
An advanced study of classical thermodynamics with emphasis on phase and chemical equilibria and applications to the chemical process industries. Kinetic theory and statistical thermodynamics with emphasis on the prediction and correlation of physical and chemical properties of gases and liquids, including mixtures. Theory and application of flames, plasmas, and shock waves.

CHEG 5302 - Chemical Engineering Thermodynamics II
An advanced study of classical thermodynamics with emphasis on phase and chemical equilibria and applications to the chemical process industries. Kinetic theory and statistical thermodynamics with emphasis on the prediction and correlation of physical and chemical properties of gases and liquids, including mixtures. Theory and application of flames, plasmas, and shock waves.

CHEG 5311 - Transport Phenomena
An advanced study of transport phenomena and rate processes with emphasis on a differential balance approach. Designed for non-chemical engineers and chemical engineers with an inadequate background in

differential balances.

CHEG 5315 - Transfer Operations I
An advanced study of momentum, heat and mass transfer with application to complex problems. Cartesian tensors, non-Newtonian flow, statistical theory of turbulence. Mass transfer in multicomponent systems and with chemical reaction. Mass transfer in drops and bubbles; two-phase flow and fluidization.

CHEG 5316 - Transfer Operations II
An advanced study of momentum, heat and mass transfer with application to complex problems. Cartesian tensors, non-Newtonian flow, statistical theory of turbulence. Mass transfer in multicomponent systems and with chemical reaction. Mass transfer in drops and bubbles; two-phase flow and fluidization.

CHEG 5321 - Reaction Kinetics I
Chemical kinetics and reactor design.
An advanced study of chemical reaction engineering with emphasis on catalysis. Applications to stirred-tanks, fixed-bed, and fluidized bed reactors.

CHEG 5331 - Process Engineering
Applications of thermodynamics, kinetics, unit operations, mechanics, and economics to the design of process plant equipment and complete plant design.

CHEG 5336 - Optimization
Advanced topics in optimization such as linear and nonlinear programming, mixed-integer linear and non-llinear programming, deterministic and stochastic global optimization, and interval global optimization. Example applications drawn from engineering.

CHEG 5345 - Chemical Engineering Analysis I
Techniques for the solution of chemical engineering problems including the solution of ordinary and partial differential equations, numerical analysis, and computer simulation.

CHEG 5347 - Process Dynamics and Control I
Dynamic behavior of chemical process operations. Distributed parameter and non-linear processes. Specification of control systems. Stability analysis. Optimal operation of chemical processes. Design of feedback and feedforward control schemes for multiloop processes. Adaptive control.

CHEG 5351 - Polymer Physics
Modern concepts relating to glassy, rubbery and organized states of bulk polymers. Considers rubber elasticity, glass-to-rubber transitions, networks, elements of crystallization, blends and interfacial phenomena.

CHEG 5352 - Polymer Properties
Interrelationships between solid state structure, dynamics, and mechanical properties of non-crystalline and semi-crystalline polymers. Considers polymer viscoelasticity, diffusion, failure mechanism, and elementary polymer rheology.

CHEG 5355 - Polymer Structure and Morphology
A fundamental study of the various levels of structure and morphology in polymers from the molecular to the macroscopic level, and how this structure influences the overall material properties. The principle methods used to characterize morphology are described for the analysis of amorphous and crystalline homopolymers, polymer blends, and copolymers.
Prerequisite: CHEM 5381 (RG213).

CHEG 5356 - Adhesion
A study of both physical and chemical factors controlling adhesion behavior. Thermodynamics, surface energy and surface tension. Intermolecular forces. Surface roughness effects. Mechanical evaluation of bond strength. Factors controlling adhesion durability. Chemical coupling agents.
Prerequisite: CHEG 5351 (RG214).

CHEG 5358 - Composite Materials
An introduction to the mechanical properties of fiber reinforced composite materials. Included are discussions of the behavior of unidirectional composites, short fiber composites and laminates. Special topics such as fatigue, fracture and environmental effects are also included.

CHEG 5363 - Electrochemical Engineering
Principles underlying electrochemical processes. Transformation of chemical and electrical energy. Applications of fundamental electrochemical laws to industrial processes, energy conversion, and electrometallurgical operations.

CHEG 5367 - Polymer Rheology
Analysis of the deformation and flow of polymeric materials. Topics include non-Newtonian flow, viscoelastic behavior and melt fracture with application to polymer processing.

CHEG 5368 - Polymer Rheology and Processing Laboratory
Classical and modern experimental techniques for measuring the viscoelastic properties of polymers. Experiments include: creep, dynamic mechanical analysis, cone and plate viscometer, single-screw extruder, capillary rheometer, and extensional viscosity.
Prerequisite: CHEG 5367 (RG216).

CHEG 5373 - Biochemical Engineering
Principles and design of processes involving biochemical reactions. Nature of biological materials, biochemical kinetics, heat and mass transfer, application to fermentation and other biological processes. Also offered as BME 321. Formerly CHEG 383.

CHEG 5374 - Bioremediation
Application of engineering and biological principles toward remediation of hazardous wastes. Degradation of toxic chemicals using genetically-engineered microorganisms. Biological contacting devices for waste remediation.

CHEG 5375 - Fermentation and Separation Technology Laboratory
Introduction to techniques used for industrial mass culture of prokaryotic and eukaryotic cells, and methods used to extract useful products from these cultures. Metabolic processes, energentics, growth kinetics and nutrition of microorganisms. Synthesis of cellular material and end products. Heat exchange, oxygen transfer, pH control, sterilization and design of fermentors. Culture of eukaryotic cell mass. Immobilized enzyme and cell reactors. Product recovery methods of precipitation centrifugation, extraction filtration and chromatography. Formerly CHEG 384. Also offered as MCB 384.

CHEG 5381 - Water Purification Principles
An advanced study of the application of thermodynamics, transfer operations, and chemical kinetics to disposal and recovery of aqueous industrial and municipal wastes.

CHEG 5385 - Air Pollution
Sources and properties of air pollutants, atmospheric chemistry, dynamics of atmospheric pollution, analytical and sampling techniques, control and abatement processes and air pollutants.
Prequisites: CE 390 or ENVE 300 for non-CHEG majors (RG3027).

CHEG 5389 - Chemical Transport Processes in the Environment
Movement and fate of chemicals within the air, water, and soils in the environments. Emphasis on interfacial processes and exchange rates involving surface water, groundwater and air pollution problems.

CHEG 5393 - Seminar

CHEG 5394 - Seminar

CHEG 5395 - Investigation of Special Topics
This course is designed for special topics, or for individual students who desire to pursue investigations in a specialized field.

CHEG 5399 - Independent Study
Independent study under the supervison of a Chemical Engineering faculty member.

†GRAD 5930. Full-Time Directed Studies (Master's Level) (GRAD 397) 3 credits.

†GRAD 5950. Master's Thesis Research (GRAD 395) 1 - 9 credits.

†GRAD 5960. Full-Time Master's Research (GRAD 396) 3 credits.

GRAD 5998. Special Readings (Master's) (GRAD 398) Non-credit.

GRAD 5999. Thesis Preparation (GRAD 399) Non-credit.

†GRAD 6930. Full-Time Directed Studies (Doctoral Level) (GRAD 497) 3 credits.

†GRAD 6950. Doctoral Dissertation Research (GRAD 495) 1 - 9 credits.

†GRAD 6960. Full-Time Doctoral Research (GRAD 496) 3 credits.

GRAD 6998. Special Readings (Doctoral) (GRAD 498) Non-credit.

GRAD 6999. Dissertation Preparation (GRAD 499) Non-credit.

Chemistry

*****

Department Head
Professor Steven L. Suib

Program Head
W. Bailey, Basu, Birge, Bohn, David, Frank, Howell, Kumar, Mason, Michel, Papadimitrakopoulos, Rusling, M. Smith, Stwalley, and Sung

Associate Professor
Adamson, Brueckner, Fenteany, Seery, Sotzing, and B. Shaw

Assistant Professors
Asandei, Burdette, Gascon, Kasi, Leadbeater, Lin, T. Miller, Peczuh, Vlahos, and Yao

The Department of Chemistry offers course work and research in the areas of analytical, biological, chemical education, environmental, inorganic, organic, physical, and polymer chemistry leading to the M.S. and Ph.D. degrees in Chemistry. Research projects within these areas include: Analytical – atomic spectroscopy, biomedical sensors and microarrays, chemistry, proteomics, separations and mass spectrometry; Biological – bio-analytical, bio-inorganic, bio-organic, bio-physical, bio-polymer, and bio-materials; Inorganic – bioinorganic and coordination chemistry, catalysis, crystal growth and structure, organometallic and transition metal chemistry, physical methods, solid state chemistry, structure determination, synthesis and characterization, and surface analysis; Organic – bioorganic, medicinal and toxicological chemistry, natural products, synthetic and physical organic chemistry, and organic polymer chemistry; Physical – kinetics, biophysical chemistry, spectroscopy, physical methods, theoretical and computational chemistry, thermodynamics, x-ray crystal structure; and Polymer – organic and inorganic polymers, and synthesis and characterization of materials; and Chemical Education. A detailed description of the research programs of individual faculty members is available in a departmental brochure, which is available on the departmental Website http://chemistry.uconn.edu

In addition to the basic requirements for admission to the Graduate School, an applicant should submit scores from the General and the Advanced Test in Chemistry of the Graduate Record Examinations at the time of application. All entering graduate students must take comprehensive proficiency

examinations in analytical, inorganic, organic, and physical chemistry at the advanced undergraduate level. The results of these examinations are used to determine the appropriate course level for the student.

The student must qualify in the four areas listed above either by passing the proficiency examinations upon entry, or by earning a grade of B or higher (not B-) in a graduate course in the discipline(s) in which the examination was not passed. Students lacking undergraduate background in an area, may elect to take an undergraduate course or sequence and retake the proficiency examination. Students who do not qualify for admission to the Ph.D. program may be allowed to continue towards a master's degree.

Requirements for the Ph.D. Degree

There are no specific course requirements for the Ph.D. degree in chemistry beyond those established by the student's advisory committee. Students should confer with their advisory committees concerning those courses which are recommended as preparation for the doctoral General Examination in the various divisions. Ordinarily, students also are expected to demonstrate reasonable competence in an area or areas outside their major program emphasis.

After the successful completion of the qualification requirements (see above), the student must pass the General Examination for the Ph.D. degree, consisting of a written and an oral portion as determined by the student's chosen Division (analytical, biological, chemical education, environmental, inorganic, organic, physical and polymer). The General Examination (see the department's Graduate Student Handbook for details) usually is completed during the second or third year of graduate study.

The Ph.D. dissertation must contain the results of original research in chemistry and make a substantial contribution to the particular field. Upon completion of the dissertation, the student takes an oral examination in its defense.

Special Facilities

In addition to the standard equipment found in chemistry departments, the facilities available for research include: electrochemical instrumentation, electron spin resonance spectrometers, FT-IR and Raman spectrometers, high field NMR facility, gas and liquid chromatographs, flash photolysis apparatus, laser spectroscopy instrumentation (atomic and molecular), Mössbauer instruments, magnetic susceptibility balances, microscopes (including fluoresence and scanning electron microscopes), UV/visible and fluoresence plate readers, multimode digital imaging systems, nanocalorimeters, polymer preparation and characterization instrumentation, high-resolution mass spectrometry (MS facility for GC-MS and LC-MS with state-of-the-art mass spectrometers (QqTOF, QqQ, QqLIT) with various ionization sources, surface analysis equipment (Auger, SAM, XPS, ISS-SIMS), high throughput synthesis and screening facility, thermal analysis equipment, ultra-high temperature and pressure equipment, UV/visible spectrophotometers, spectrofluorimeters, and powder X-ray diffraction equipment. Advanced computing facilities and access to supercomputers are available within the department and university; computer services are also available at the University's Computer Center on campus. Some faculty members are also members of the University's Institute of Materials Science (IMS) or the Center for Environmental Science and Engineering (CESE) where additional research facilities are available, especially for polymer synthesis, characterization, and processing, or environmental analysis and research, respectively.

Courses

CHEM 5300 - Independent Study

CHEM 5310 - Seminar
Reports and discussion of topics of current interest in a variety of fields of chemistry.

CHEM 5324 - Advanced Inorganic Chemistry I
Synthetic methods in inorganic chemistry; the application of physical methods to the investigation of inorganic compounds.

CHEM 5325 - Advanced Inorganic Chemistry II
In depth study of general principles of inorganic chemistry; the structure of the elements and of inorganic compounds; group theory; different approaches to understanding the chemical bond.
Prerequisite: CHEM 5324 (RG218).

CHEM 5326 - Advanced Inorganic Chemistry III
Main group and transition metal compounds with inorganic and organic ligands; the study of the transition metals is in preparation for Chemistry 327.
Prerequisite: CHEM 5325 (RG219).

CHEM 5327 - Advanced Inorganic Chemistry IV
Transition metal chemistry; organometallic and coordination compounds of the transition elements, including the lanthanides and actinides; selected topics in bioinorganic chemistry.
Prerequisite: CHEM 5326 (RG220).

CHEM 5335 - Theoretical Analytical Chemistry
A problem oriented course, involving hands on computer use, which incorporates modern methods of analyzing data obtained from the various analytical techniques. Use of theoretical and empirical models and chemometrics is stressed.

CHEM 5336 - Electroanalytical Chemistry
A study of the theoretical and practical basis for electroanalytical methods. Topics include voltammetric methods of analysis (including polarography, cyclic voltammetry, rotating disk voltammetry, pulse and square-wave methods, and stripping analysis), coulometric, and chronoamperometric methods. Recent advances using micro- and modified electrodes, thin-layer and flow cells, electrochemical sensors and detectors, and bioelectrochemistry may be included.

CHEM 5337 - Optical Methods of Analysis
A discussion of fundamental principles, instrumentation and applications of some spectroscopic techniques of analytical chemistry including Raman spectroscopy, molecular fluorescence spectroscopy, atomic spectroscopy.

CHEM 5338 - Separation Methods
A study of the theoretical and practical basis for modern separation methods. Topics to be discussed include the various methods dealing with gas-liquid, liquid-liquid, liquid-solid, gas-solid, ion-exchange, size exclusion, chromatography, electrophoresis, and mass spectrometry.

CHEM 5340 - Electronic Interpretation of Organic Chemistry
Approaches to writing organic reaction mechanisms.

CHEM 5341 - Adv Organic Chem
This course will review the fundamentals of bonding, stereochemistry and conformations and basic reactions from undergraduate organic chemistry. These fundamental principles will then be elaborated to include more advanced concepts of reactions and reactivity.

CHEM 5343 - Organic Reactions
Nomenclature. Classes of compounds. A focus upon those reactions in which C-C bonds are formed. Emphasis on the fundamentals of each reaction, their utility and applications. A background of functional group exchanges; reaction control by steric, electronic, and topological considerations.

CHEM 5344 - Concepts in Organic Chemistry
Structure and mechanism. Such topics as chemical bonding, stereochemistry, conformation, molecular orbital theory and applications, acids and bases, and study of organic reaction mechanisms, including kinetics, substitutions, rearrangements and photochemical reactions.
Prerequisite: CHEM 5343 (RG221).

CHEM 5345 - Determination of Organic Structures
Structural problem solving using fundamental data including spectroscopic and wet chemical techniques.
Prerequisite: CHEM 5343 (RG221).

CHEM 5347 - Organic Synthesis
An investigation of efficient strategies for the synthesis of natural and unnatural organic molecules. Topics include: retrosynthetic analysis, synthetic strategies, common carbon-carbon bond formation reactions, multiple bond disconnection strategies (applications of pericyclic reactions), organometallic coupling reactions, radical and carbene reactions in organic synthesis, strategies to construct carbocyclic and heterocyclic ring systems.
Prerequisite: CHEM 5343 and CHEM 5344 (RG665).

CHEM 5350 - Advanced Physical Chemistry I
Not open to students who have passed any of CHEM 5351, 5352, 5353, 5355, or 5356.

CHEM 5351 - Quantum Chemistry I
The concepts of the quantum theory starting with an historical introduction and proceeding to the formulation of the Schr”dinger equation and its exact solutions. Other topics include group theory, angular momentum, and approximate methods with applications to atomic and molecular structure and spectroscopy.

CHEM 5352 - Quantum Chemistry II
Selected topics in quantum chemistry, building on the concepts developed in Chemistry 351.
Prerequisite: CHEM 5351 (RG223).

CHEM 5353 - Chemical Kinetics
The empirical and theoretical treatment of reaction rates. Experimental methods and treatment of data. Simple kinetic forms. Deduction of reaction mechanisms. Reaction energetics. Theories of elementary reaction rates. Diffusion. Homogeneous and heterogeneous catalysis. Extrakinetic probes of mechanism.

CHEM 5356 - Statistical Mechanics
Equilibrium properties of macroscopic systems from a molecular point of view.

CHEM 5360 - Biological Chemistry I
Recent advances in understanding the mechanisms of chemical processes in biological systems. Chemical perspectives or problems of biological significance at the interfaces of the various divisions of chemistry.

CHEM 5361 - Biological Chemistry II
Selected topics in Biological Chemistry building on the concepts developed in Chemistry 360.

CHEM 5370 - Environmental Chemistry I
Sources, transport, effects, fate, analytical chemistry, monitoring and management of chemical species; chemical principles, equilibria and reactions. Water and atmospheric pollution; acid rain, global warming,

CHEM 5371 - Environmental Chemistry II
Inorganic metals and organic chemicals in the environment; energy sources; fossil fuels, nuclear power, fuel cells, and alternatives.
Prerequisite: CHEM 5370 or 4370 (RG225).

CHEM 5380 - Polymer Synthesis
Chemistry of the formation of high polymers, including kinetics, mechanisms, and stereochemistry of step growth and addition polymerization. Recent advances in polymer synthesis.

CHEM 5381 - Polymer Physical Chemistry
A molecular description of the fundamental physico-chemical aspects of polymer solutions and solids. Considers thermodynamics, chain statistics, dynamics, and structure of polymer molecules.

CHEM 5382 - Polymer Characterization I
Experimental techniques for characterizing polymers on a molecular level, with emphasis on the provision of a working knowledge of instrumental analysis. Experiments include dilute solution viscosity, vapor pressure osmometry, gel permeation chromatography, chemical and spectroscopic analysis.

CHEM 5384 - Polymer Characterization II
Experimental techniques for characterizing polymers on a macroscopic scale, with emphasis on provision of a working knowledge of instrumental analysis. Experiments include calorimetry, mechanical analysis, surface characterization, and structure determination.

CHEM 5385 - Reactions of Polymers
A comprehensive coverage of theories of reactions of high polymers, as applied to reaction mechanisms and the relationships of structure with physical properties and reactivity. Topics include modification of polymers, degradation of polymers, polymer reagents and polymer catalysis.

CHEM 5388 - Infrared Spectroscopy of Polymers
The nature of the interaction of IR radiation with molecules, modern spectrometer design, non-conventional sampling techniques, and applications to polymer-related problems.

CHEM 5393 - Special Topics in Physical Chemistry

CHEM 5394 - Special Topics in Polymer Chemistry

CHEM 5395 - Special Topics in Analytical

Chemistry

CHEM 5396 - Special Topics in Inorganic Chemistry

CHEM 5397 - Special Topics in Organic Chemistry

Prerequisite: CHEM 5343 (RG221).

†GRAD 5930. Full-Time Directed Studies (Master's Level) (GRAD 397) 3 credits.

†GRAD 5950. Master's Thesis Research (GRAD 395) 1 - 9 credits.

†GRAD 5960. Full-Time Master's Research (GRAD 396) 3 credits.

GRAD 5998. Special Readings (Master's) (GRAD 398) Non-credit.

GRAD 5999. Thesis Preparation (GRAD 399) Non-credit.

†GRAD 6930. Full-Time Directed Studies (Doctoral Level) (GRAD 497) 3 credits.

†GRAD 6950. Doctoral Dissertation Research (GRAD 495) 1 - 9 credits.

†GRAD 6960. Full-Time Doctoral Research (GRAD 496) 3 credits.

GRAD 6998. Special Readings (Doctoral) (GRAD 498) Non-credit.

GRAD 6999. Dissertation Preparation (GRAD 499) Non-credit.

Civil Engineering

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Department Head
Professor Amvrossios C. Bagtzoglou

Associate Department Head & Graduate Program Director
John N. Ivan

Professors
Accorsi, Epstein, and Frantz

Associate Professors
Abboud, Anagnostou, Garrick, Liu, MacKay, and Malla

Assistant Professors
Basu, Bushey, Christenson, Chrysochoou, Gebremichael, Kim, Li, Lownes, and Zofka

The Department of Civil and Environmental Engineering offers graduate courses and research opportunities for students seeking the M.S. or Ph.D. Research areas include environmental, geotechnical, structural and transportation engineering. In addition, the Department participates in interdisciplinary programs in applied mechanics, environmental engineering and fluid dynamics.

Special Requirements for the Master's Degree

Master's degrees may be earned under either of two plans. Plan A requires not fewer than 21 credits of graduate program course work and the writing of a Thesis, while Plan B requires not fewer than 30 credits of graduate program course work and a final examination (but no thesis). For outstanding students who have completed six credits of approved graduate-level course work (5000's level or higher) as part of an undergraduate program (as electives and/or as professional requirements) prior to entry to the master's degree program (with grades of B+ or higher in all such courses) the advisory committee may reduce the course work to 15 credits for Plan A and to 24 credits for Plan B.

Special Requirements for the Ph.D. Program

By the end of the first year of study, the Ph.D. student must have passed a qualifying examination and have submitted evidence of his or her capacity for independent study in the form of a master's thesis or a comparable achievement. In many cases the final examination of the student's M.S. program serves as the qualifying examination (See also "Applied Mechanics" and "Fluid Dynamics.")

Special Facilities

The Department has fully-equipped, state-of-the-art laboratories for graduate research in applied mechanics, environmental, geotechnical, structural and transportation engineering. In addition to the typical laboratories, special departmental facilities include a 40' x 65' fully-equipped structures testing strong floor, state-of-the-art computer lab for computer aided design (CAD) and geographical information systems (GIS) laboratory, specialized asphaltic and bituminous materials laboratories and controlled environment rooms for both environmental and geotechnical research laboratories. Equipment is also available for conducting experimental research in the field. Specialized laboratories of the Center for Environmental Sciences and Engineering (CESI) are also available for research in environmental engineering. Departmental research is funded by national and state agencies and by the private sector.

Special Courses

For additional mathematical analysis and fluid mechanics courses students should consider ME 307, 308, and 312.

NOTE -- The following courses are part of the interdisciplinary Applied Mechanics program: CE 5122, 5124, 5126, 5128, 5160, 5164, 5166, 6810, and 6811.

Courses

CE 5010 - Civil Engineering Graduate Seminar
May be taken up to three times for credit.

CE 5020 - Independent Graduate Study in Civil Engineering
Special problems in civil engineering as arranged by the student with a supervisory instructor of his or her choice.

CE 5030 - Seminar in Transportation and Urban Engineering
Extended discussions on presentations contributed by staff, students and outside speakers. Required every semester for all full-time students in the Transportation and Urban Engineering Area of Concentration in the Civil Engineering Field of Study.

CE 5090 - Advanced Topics in Civil Engineering
Classroom or laboratory courses as announced for each semester. For independent, study see Civil Engineering 300.

CE 5122 - Advanced Mechanics of Materials
Stress and strain, combined stress, and theories of failure. Torsion of non-circular sections. Shear center, unsymmetrical bending, curved flexural members, and beams on elastic foundations. Energy methods.

CE 5124 - Applied Elasticity
Theory of elasticity; two-dimensional solutions of beams, wedges, disks, and rings under load; stress concentrations; strain-energy methods; torsion of bars; stresses in bodies of revolution.

CE 5126 - Plates and Shells
Stresses and deformations in flat plates and curved shells; bending of circular and rectangular plates; energy methods; buckling; shells of revolution.

CE 5128 - Elastic Stability
Buckling of elastic and inelastic columns; lateral buckling of beams; buckling of plates, rings and tubes; stability of frames.

CE 5130 - Numerical Methods in Civil Engineering
Solution of linear and nonlinear systems of equations and algebraic eigenvalue problems. Interpolation, numerical integration, and regression. Ordinary and partial differential equations by finite difference method. Computer programming.

CE 5140 - Classical Structural Analysis
Classical indeterminate analysis, displacement analysis, consistent deformations, energy methods, elastic center and column analogy, slope-deflection, moment and shear distribution, second order effects.

CE 5150 - Structural Vibrations
Vibrating systems; application to design; discrete and continuous systems, free and forced vibrations; response to periodic and non-periodic loads; analytical and numerical techniques; earthquake loading; response spectra.

CE 5151 - Experimental Structural Dynamics
Characteristics of random data; vibration test hardware; data acquisition and analysis; and experimental modal analysis and system identification. Laboratory experiments will be used to enhance understanding of taught concepts.

CE 5160 - Matrix Analysis of Structures
Matrix methods; force and displacement methods; energy principles; analysis of indeterminate structures, rigid frames, trusses and grids; settlement of supports, lack of fit, and temperature stresses; computer programming.

CE 5162 - Applied Finite Element Analysis
This course and CE 366 may not both be taken for credit.

CE 5163 - Fracture Mechanics
This course focuses on fundamental concepts and applications of fracture mechanics. Topics include linear elastic fracture mechanics, elastic plastic fracture mechanics, computational fracture mechanics, fracture mechanisms in metals and non-metals, fracture testing, dynamic and time-dependent fracture, fatigue crack growth, interfacial fracture, fracture in advanced materials, and engineering applications.

CE 5164 - Finite Element Methods in Applied Mechanics I
This course and CE 363 may not both be taken for credit.

CE 5166 - Finite Element Methods in Applied Mechanics II
Also offered as ME 381.

CE 5210 - Environmental Engineering Chemistry - I
Quantitative variables governing chemical behavior in environmental systems. Thermodynamics and kinetics of acid/base coordination, precipitation/dissolution, and redox reactions. Also offered as ENVE 300.

CE 5211 - Environmental Engineering Chemistry - II
Environmental organic chemistry: ideal and regular solution thermodynamics; linear free energy relations; estimation of vapor pressure, solubility, and partitioning behavior, abiotic organic compound transformations; chemical fate modeling. Also offered as ENVE 301.
Prerequisite: CE 5210 or ENVE 5210 (RG 241).

CE 5220 - Transportation& Air Quality
Mobile source emissions models in theory and practice. Regulatory framework. Emissions control technology. Field and laboratory measurement techniques. Roadway dispersion modeling. Current topics in mobile source emissions. Also offered as ENVE 305.

CE 5221 - Transport and Transformation of Air Pollutants
Transport and deposition of gaseous and aerosol pollutants; chemical formation and reactions of oxidants and acidic compounds. Also offered as ENVE 343.
Prerequisite: CE 5210 or ENVE 5210 (RG 241).

CE 5240 - Biodegradation and Bioremediation
Biochemical basis of the transformation of key organic and inorganic pollutants; quantitative description of kinetics and thermodynamics of pollutant transformation; impact of physiochemical and ecological factors on biotransformation. Also offered as ENVE 306.
Prerequisite: CE 5210 or ENVE 5210, and CE 5211 or ENVE 5211 (RG237).

CE 5250 - Environmental Physicochemical Processes

Reactor dynamics, applications of interfacial phenomena and surface chemistry, processes for separation and destruction of dissolved and particulate contaminants. Scholarly reviews. Also offered as ENVE 321.

CE 5251 - Environmental Biochemical Processes
Major biochemical reactions; stoichiometric and kinetic description; suspended and attached growth modeling; engineered biotreatment systems for contaminant removal from aqueous, gaseous, and solid streams; process design. Also offered as ENVE 322.

CE 5252 - Contaminant Source Remediation
Regulatory framework. Soil clean-up criteria. Treatment technologies: soil vapor extraction, solidification - stabilization, soil washing - chemical extraction, hydrolosis - dehalogenation, thermal processes, bioremediation. Risk analysis. Also offered as ENVE 5252.
Prerequisite: CE 5250 or ENVE 5231, and CE 5251 or ENVE 5311 (RG236).

CE 5253 - Ground Water Assessment and Remediation
Quantitative evaluation of field data in assessing nature and extent of groundwater contamination. Subsurface control and remediation. Case studies. Also offered as ENVE 320.

CE 5310 - Environmental Transport Phenomena
Movement and fate of chemicals: interfacial processes and exchange rates in environmental matrices. Also offered as ENVE 310.

CE 5320 - Environmental Quantitative Methods
Also offered as ENVE 5320. This course and NRME 5605 may not both be taken for credit.

CE 5330 - Probabilistic Methods in Engineering Systems
Common probabilistic models used in engineering and physical science design, prediction, and operation problems; derived distributions, multivariate stochastic models, and estimation of model parameters; analysis of data, model building and hypothesis testing; uncertainty analysis. Also offered as ENVE 304.

CE 5340 - Environmental Systems Modeling
Modeling pollutants in natural surface waters. Advective, dispersive, and advective-dispersive systems. Modeling water quality, toxic organic and heavy metals pollution. Also offered as ENVE 311.

CE 5370 - Environmental Monitoring
Also offered as ENVE 314.

CE 5380 - Bridge Structures
Common types of bridges; AASHTO bridge loads; design of composite plate girders; fatigue; design of bridge substructure; design project.

CE 5381 - Subsurface Contaminant Transport Modeling
Also offered as ENVE 5381.

CE 5394 - Seminar in Environmental Sciences and Engineering
Extended discussions on presentations contributed by staff, students and outside speakers. A certificate of completion will be issued from the Environmental Engineering Program. Also offered as ENVE 400.

CE 5530 - Advanced Soil Mechanics
Introduction of soil as a multi-phase material; stress and strain analysis in soil; soil compression and consolidation; shear strength of sand and clay; critical state soil mechanics; advanced topics in complex constitutive relationships; introduction to fracture mechanics; term paper.
This course and CE 4541 may not be both taken for credit.

CE 5541 - Advanced Soil Mechanics
Introduction of soil as a multi-phase material; stress and strain analysis in soil; soil compression and consolidation; shear strength of sand and clay; critical state soil mechanics; advanced topics in complex constitutive relationships; introduction to fracture mechanics; term paper.
This course and CE 4541 may not be both taken for credit.

CE 5542 - Earthquake Engineering
Global tectonics and earthquake sources, seismic wave propagation, strong ground motion analysis, seismic hazards, site effects and liquefaction, seismic load to slopes, retaining structures and foundations, structure response to dynamic loads; term paper.
This course and CE 4542 may not be both taken for credit.

CE 5543 - Advanced Foundation Design
Soil behavior in retaining systems, shallow foundations, deep foundations.

CE 5544 - Geosynthetics in Geotechnical Design
The properties of geotextiles, geomembranes, geocomposites, and geogrids and their use in road construction, retaining structures, drainage, hazardous waste sites, etc. Design, testing and selection.

CE 5545 - Earth Structures
Embankments, earth dams, earth and rock slopes, consolidation, vertical drains, soft deposits, landslides, subsurface investigations.

CE 5546 - Ground Water Flow and Drainage
Permeability, flow nets, ground water flow and filter design, excavation dewatering, foundation drains, slope stabilization, highway drainage.

CE 5547 - Soil Behavior
Clay mineralogy and interfacial properties, electro-osmosis, thixotrophy, shear strength, consolidation, permeability, frost heave, and swelling.

CE 5548 - Soil Settlement and Consolidation
Settlement predictions, theories of consolidation, secondary compression, numerical solutions, analysis of field data.

CE 5549 - Soil Shear Strength
Failure theories for particulate media, plastic equilibrium, laboratory testing and interpretation.

CE 5570 - Bituminous Materials
Properties, performance and design of bituminous materials for highway and airport paving; physical and chemical properties of binders; testing methods; specifications; production and construction.

CE 5610 - Advanced Reinforced Concrete Structures
Behavior and design of reinforced concrete for flexure, shear, torsion, bond, and axial loads; two way slabs; beam-

column joints; general flexure theory; seismic considerations; review of design specifications.

CE 5620 - Advanced Steel Structures
Metal plasticity; plastic hinging and plastic analysis of beams; bolted and welded connections; seismic lateral load resisting systems; prequalified moment-resisting connections; blast design considerations for steel structures, term project.

CE 5630 - Wood Design
Physical and mechanical properties of wood. Behavior of wood beams, columns, beam columns, connectors and fasteners; introduction to plywood and glued-laminated members; analysis and design of structural diaphragms and shear walls.

CE 5640 - Prestressed Concrete Structures
Analysis, design, and behavior of pretensioned and post-tensioned concrete; simple and continuous span structures; time dependent behavior; review of design specifications.

CE 5710 - Case Studies in Transportation Engineering
Analysis of transportation case studies in transportation design, and transportation and land use planning. Application of transportation engineering and planning skills. Oral and written group reports, group discussions, individual papers. Not open to students who have passed CE 255.
Prerequisite: Not open to students who have passed CE 4710 (RG655).

CE 5720 - Street and Highway Design
Urban street and highway design: vertical and horizontal alignment, cross-section elements, traffic barriers, interchanges and intersections, pedestrian and bike facilities, traffic calming, community and roadside elements
This course and CE 4720 may not both be taken for credit.

CE 5730 - Transportation Planning
Transportation economics, urban transportation planning process, local area traffic management, evaluation of transportation improvements, land use and transportation interaction.
This course and CE 4730 may not both be taken for credit

CE 5740 - Traffic Engineering Characteristics
Relationships among traffic flow characteristics; microscopic and macroscopic representations of traffic flow; capacity of highways; traffic stream models; shock wave analysis; queueing analysis; traffic simulation.
This course and CE 4740 may not both be taken for credit.

CE 5750 - Pavement Design
Analysis and design of flexible and rigid pavements; testing and characterization of paving materials.
This course and CE 4750 may not both be taken for credit

CE 5810 - Hydrometeorology
Global dynamics of aquatic distribution and circulation. Hydrologic cycle, atmospheric circulation, precipitation, interception, storage, infiltration, overland flow, distributed hydrologic modeling, and stream routing. Also offered as ENVE 385.

CE 5811 - Hydroclimatology
Also offered as ENVE 313.

CE 5812 - Ecohydrology
Also offered as ENVE 5812.

CE 5820 - Unsaturated Flow and Transport
Also offered as ENVE 315.

CE 5821 - Vadose Zone Hydrology
Also offered as ENVE 316.

CE 5830 - Groundwater Flow Modeling
Basics of modeling with Finite Difference and Finite Element Methods. Modeling flow in saturated and unsaturated zones. Model calibration and validation. Parameter estimation. Treatment of heterogeneity. Basic geostatistics. Modeling surface-groundwater interactions. Application to field sites. Also offered as ENVE 388.
Prerequisite: CE 5253 or ENVE 5250 (RG239).

CE 5840 - Open Channel Hydraulics
Unsteady, nonuniform flow; energy and momentum concepts; flow control; de St. Venant equations; unsteady flow modeling of channels and natural rivers. Also offered as ENVE 384.

CE 5841 - River Mechanics
Erosion and sedimentation, physical properties of sediment, dimensional analysis, mechanics of sediment laden flows, particle motion, incipient motion, bedforms, bed load, suspended load.

CE 6730 - Travel Demand Forecasting
Alternative formulations and calibration of trip generation, trip distribution and travel mode choice prediction models. Traffic network equilibrium and assignment.

CE 6740 - Traffic Engineering Operations
Driver, pedestrian and vehicle operating characteristics. Traffic data collection. Accident and safety analysis. Highway capacity analysis. Traffic signs and markings. Traffic signal timing and operation. Traffic management.

CE 6810 - Advanced Fluid Mechanics I
Dimensional analysis; vector analysis, circulation and vorticity; irrotational motion and velocity potential; two-dimensional flow and stream function; complex variable theory; conformal mapping; airfoils; sources and sinks; free streamline flow; water waves; three-dimensional flow. Also offered as ENVE382.

CE 6811 - Advanced Fluid Mechanics II
Turbulent boundary layer . Dimensional analysis. Free shear flows. Flows in pipes and channels. Boundary layers on smooth and rough surfaces. Also offered as ENVE 383.

CE 6820 - Hydraulic Machinery and Transients
Pumps and turbines. Surging, water hammer, cavitation, hydraulic machinery for hydroelectric plants, water supply, irrigation, and river navigation. Also offered as ENVE 386.

CE 6821 - Hydraulic Structures
River regulation and development. Hydroelectric plants, storage and turbines, canals, locks, and penstocks, dams, regulation of power, flood control, navigation and irrigation. Also offered as ENVE 387.

CE 6830 - The Flood Problem
Flood hazards. Preventing or alleviating damages. Flood frequency analysis. Effect of land-use/land-cover and soil moisture on flooding. Remote sensing in flood prediction. Flood and dam-break modeling. Multiple

purpose projects.

†GRAD 6930. Full-Time Directed Studies (Doctoral Level) (GRAD 497) 3 credits.

†GRAD 6950. Doctoral Dissertation Research (GRAD 495) 1 - 9 credits.

†GRAD 6960. Full-Time Doctoral Research (GRAD 496) 3 credits.

GRAD 6998. Special Readings (Doctoral) (GRAD 498) Non-credit.

GRAD 6999. Dissertation Preparation (GRAD 499) Non-credit.

Clinical And Translational Research

*****

Department Head
Associate Professor Anne Kenny and Professor Marie Smith

Professors
Brewer, Campbell, Cloutier, Ford, Kuchel, Litt, Mazzocca, Pendrys, Pilbeam, Rajan, Shelton and Tennen

Associate Professors
Burkey, McCullough, LaSala, Puddington, Tannebaum

Assistant Professors
Baker, Lalla, Uribe

Adjunct Professors
Orsey, Hagstrom, and Zucker

The M.S. program in Clinical and Translational Research is designed to prepare health care professionals with the academic and research skills needed to be competitive for independent research. The program focuses on the preparation of individuals with established, terminal degrees in a health related field (M.D., Ph.D., Pharm.D., D.D.S. or D.M.D.) to conduct independent research in translation of information from the basic sciences to the community as researchers, teachers, public health administrators, clinicians, and industry employees competent to carry out the broad health mission of the State of Connecticut.

The M.S. Program

The Master of Science (M.S.) degree program in Clinical and Translational Research is administered in the Department of Medicine. The program stresses clinical research methods and research practicum. The program is offered to individuals with a health related terminal degree (M.D., D.M.D. or Ph.D.) to provide practical research training to be prepared for independent research. The master program is based on both course work and research experience, but no research thesis is required. Students will be required to sit for a final examination, which may entail the oral defense of a grant application and a manuscript.

Entering students should have a terminal degree (M.D., D.M.D. or Ph.D. in a health-related field) or be involved in an M.D., D.M.D. or Ph.D. program in a health-related field and in good standing. A complete description of the program with recommended preparation and instructions for applying may be obtained from Ms. Lisa Godin, General Clinical Research Center, University of Connecticut Health Center, Farmington, CT 06030-3805; (860) 679-4145; e-mail <godin@nso.uchc.edu>.

Courses

CLTR 5000 - Graduate Seminar in Clinical and Translational Research

The Introduction to Clinical Research Course, utilizing lecture, the textbook Designing Clinical Research by Hulley and Cummings, et al. (Third Edition) and practical application writing a research proposal, provides training in the methods of clinical investigation to physicians and other health professionals.

CLTR 5020 - Statistical Methods in Healthcare

Quantitative procedures including descriptive and inferential statistics, non-parametric approaches to data, and parametric analyses through factorial analysis of variance. Cross listed with NURS 5020.

CLTR 5022 - Graduate Seminar in Clinical and Translational Research

Reading and discussion of methodological and statistical developments in various areas of clinical and translational research

CLTR 5099 - Indepenent Study in Clinical and Translational Research

A reading course for those wishing to pursue special topics in the clinical and translational research under faculty supervision.

CLTR 5252 - Cond/Trans Clin/Comm-Based Res to Improve Hlthcare Pol and Prac

Course learning objectives: Students taking this course will learn how to: 1.design effective investigations of healthcare practices and programs; 2.design, implement,

and translate effective clinical and health-related interventions; 3. design effective evaluations of clinical and community-based practices and programs; 4. develop competitive applications for external funding.

CLTR 5357 - Principles of Clinical and Translational Research I

This is the first core course in research methods, biostatistics and topics in clinical and translational research. In the methods section, the topics covered include Defining a Research Question, Cross-Sectional Studies, and Case-Control Studies. The Biostatistics section covers Probability Distributions, Sample Size Calculations, Hypothesis Testing, Odds Ratios and Logistic Regression. The major other topic is ethical issues in research, including specifically those related to the conduct of research with human beings.

CLTR 5358 - Principles of Clinical and Translational Research II

This is the second core course in research methods, biostatistics and topics in clinical and translational research. The methods section covers Observational Perspective Studies, Randomized Controlled Trials, and Information Synthesis. The biostatistics section covers Analysis of Variance, Survival Analysis, Analysis of Randomized Controlled Trials, and Methods of Meta-Analysis. The major other topics are data management and other informatics.

CLTR 5359 - Principles of Clinical and Translational Research III

This is the third core course in research methods, biostatistics and topics in clinical and translational research. The methods section includes Instrument Development, Cross Cultural Adaptation of Research Instruments, Genetic Epidemiology, Pharmacoepidemiology, Pharmacogenomics, and Secondary Data Analysis. The biostatistics section includes Handling Missing Data, Analysis of Genetic Epidemiologic Studies, Structural Equation Modeling, and Economic Analyses. The other topics include writing and presenting scientific information.

CLTR 5407 - Clinical and Translational Research Practicum

This course seeks to provide practical training in the formulation and conduct of clinical and translational research. Specific aspects that will be covered during the 9-12 total hours of the practicum will be: the identification of a specific research question and its specification as one or more aims, review of the relevant literature, and specification of the methods to be employed in the conduct of the study, including experience in recruitment and retention of subjects, an IRB application and HIPAA documents preparation. The student will initiate a research project and participate in data collection and analysis, culminating in a report of the findings. These activities will be monitored and mentored by a research advisor who is a member of the Graduate Faculty.

Prerequisite: CLTR 5407 Prerequisite

†GRAD 5930. Full-Time Directed Studies (Master's Level) (GRAD 397) 3 credits.

†GRAD 5950. Master's Thesis Research (GRAD 395) 1 - 9 credits.

†GRAD 5960. Full-Time Master's Research (GRAD 396) 3 credits.

GRAD 5998. Special Readings (Master's) (GRAD 398) Non-credit.

GRAD 5999. Thesis Preparation (GRAD 399) Non-credit.

Communication

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Department Head
Professor Carl A. Coelho

Professors
Atkin, Buck, Farrar, Lin, Musiek, and Snyder

Associate Professor
Cienkowski, D'Alessio, Grela, Hamilton, Jalbert, Nowak, Rios, Tufts, VanLear, and Wang

Assistant Professors
Myers, Ramanathan, Gaztambide-Geigel, Theodore and Spaulding

The field of communication deals with the process and analysis of human communication. The Department of Communication Sciences has two major sections: Communication Disorders and Communication, each of which offer graduate degree programs. The Communication Disorders Section offers M.A., Au.D., and Ph.D. concentrations in Speech, Language, and Hearing. The Communication Section offers an M.A. concentration in Communication and a Ph.D. concentration in Communication Processes and Marketing Communication.

The mission of this section is to study and teach about communication with areas of specialization that include interpersonal communication, persuasion, communication technology, nonverbal communication, and media effects. Our goal is to pursue theoretically grounded research and to disseminate knowledge by publishing our research and through teaching. Ample experimental and survey research facilities are available.

M.A. in Communication

Graduate work in the M.A. program emphasizes the empirical investigation of human communication. Students receive a basic foundation in communication theory and research methodology. Those pursuing the M.A. in communication prepare to carry out independent research in communication and to evaluate communication programs, either at institutions offering doctoral-level work in communication or in business or government. Areas of emphasis include: general communication theory; organizational communication; mass communication; interpersonal communication; marketing communication; and new communication technology (12-month course of study).

Ph.D. in Communication Processes and Marketing Communication

Graduate work in the Ph.D. program provides the student with strong theoretical and research skills to prepare for an academic career or professional research position. Areas of emphasis include: media effects, persuasion, emotional, intercultural, international, nonverbal, organizational, political, relational, and small group communication; public opinion, health communication campaigns, new communication technology, advertising, social marketing, and consumer research.

Admission Requirements

Applicants to both the M.A. and Ph.D. programs must present scores on the three parts of the general Graduate Record Examination. Applicants for the Ph.D. program must have an M.A. degree to be considered. The application form and instructions for applying are available at: <www.grad.uconn.edu>.

The application deadline for Communication is January 1. For questions regarding the Communication graduate programs, please visit our website: <www.coms.uconn.edu>, call (860) 486-2628, or send an e-mail message to <comsci3@uconn.edu>.

Courses

Communications

COMM 5001 - Introduction to Graduate Communication Research
An introduction to quantitative research methods and statistics. Issues of measurement and design of communication studies as well as basic descriptive and inferential statistics are covered.

COMM 5002 - Research Methods
Integrative approach to modeling theory, research design, and statistical analysis, including mathematical models, scale construction, measurement issues, correlation, regression, and analysis of variance. Formerly offered as COMS 302.

COMM 5003 - Advanced Communication Research Methods
Research techniques and procedures for the study of communication. Research design, multivariate statistics, and structural modeling. Formerly offered as COMS 306.
Prerequisite: COMM 5002 (RG242).

COMM 5010 - Theory Construction and Research Design
Conceptualization, theory construction, and review of communication methodologies. Students will write a proposal for independent research, thesis, or dissertation. Formerly COMS 325.
Prerequisite: COMM 5002 (RG242).

COMM 5100 - Persuasion Theory and Research
Evaluation of current and traditional theories of persuasion and attitude change from communication, social psychology, and related disciplines. Formerly COMS 319

COMM 5101 - Motivation
Theories of motivation considered in relation to their supporting data. Also offered as PSYC 340. Formerly COMS 340.

COMM 5120 - Communication Campaigns
Campaign theory and planning. Students learn how to conduct interviews and focus groups with members of a target audience, and work with non-profit organizations to design a campaign. Formerly offered as COMS 301.

COMM 5200 - Interpersonal Communication
Cognitive, emotional and behavioral interactions in specific contexts, including interpersonal relationships, groups, and work. Formerly COMS 308.

COMM 5220 - Group Communication Research
The group communication process with emphasis upon research methodologies for the study of interactions in a group setting. Formerly COMS 313.

COMM 5230 - Organizational Communication: Theory and Research
Relationship of prescribed and informal communication networks to organizational goal achievement and individual integration. Emphasis on frequently used research methodologies. Formerly COMS 322.

COMM 5300 - Mass Communication Theory
Introduction to major theories, with emphasis on the structure, function, and effects of mass media. Formerly COMS 309.

COMM 5310 - Seminar in Mass Communication Research
Recent theories of social and political effects of mass communication, and the cognitive processing of media messages. Formerly COMS 371.

COMM 5500 - Nonverbal Communication
The study of metacommunication: Kinesics, space, time and other concomitants of verbal messages. How the non-verbal band helps in the interpretation of verbal messages. Formerly COMS 312.

COMM 5501 - Seminar in Nonverbal Communication and Persuasion
Role of media nonverbal communication in persuasion and media preferences. Affective and analytic communications in attitude formation, structure, and change. Formerly COMS 374.

COMM 5650 - Communication Technology and Society: Theory and Research
Theory and research associated with the study of emerging communication technologies.

Provides a comprehensive foundation in the scholarly literature addressing the content, adoption, uses and effects of new media.

COMM 5660 - Computer Mediated Communication
Communication networks, human-computer interaction and interface design, social and collaborative communication via computer. Formerly COMS 314.

COMM 5670 - Computer Modeling in Communication Research
History, basic concepts, and minimal skills of computer simulation and mathematical modeling. Formerly COMS 321.

COMM 5680 - Seminar in Message Systems Analysis
Selected topics in information and communication; analysis of message elements in human communication; discussion of message factors as related to behavioral effects. Formerly COMS 307.

COMM 5770 - Health Communication
Overview of health communication, including health behavior change interventions, emergency communication, risk assessment, media influences, provider-patient communication, socialization and identity, stereotyping, social support, diverse populations, and new communication technologies.

COMM 5892 - Practicum in Research
May be repeated for credit. Formerly COMS 319.

COMM 5895 - Variable Topics in Communication
Instructor consent required. May be repeated for credit with a change in topic.

COMM 5899 - Independent Study in Communication Science
This course is an independent study course in which periodic conferences with the instructor are required. Formerly COMS 300.

COMM 6001 - Proseminar in Communication Research
Advanced topics in communication research presented by faculty and specialists. Topics include information theory, survey of sampling and data collection, time series analysis (time-domain and panel design), physiological measurement, interaction analysis, and meta analysis. Formerly COMS 401.
Prerequisite: COMM 5002, COMM 5003, and COMM 5010 (RG247).

COMM 6800 - Seminar and Directed Research in Communication
Open to graduate students in the Marketing Communication Program. May be repeated for credit for a maximum of 12 credits. Formerly COMS 404.
Open to graduate students in the Marketing Communication Program (RG248).

COMM 6850 - Seminar in Marketing Communication Research
Theories of emotional and cognitive processing of communications; cognitive mapping and message construction; design, implementation and evaluation of information campaigns. Formerly COMS 405.

COMM 6895 - Topics in Applied Communication Research
Investigation of special research techniques and findings in selected areas of applied communication research. Formerly COMS 402.

†GRAD 6930. Full-Time Directed Studies (Doctoral Level) (GRAD 497) 3 credits.

†GRAD 6950. Doctoral Dissertation Research (GRAD 495) 1 - 9 credits.

†GRAD 6960. Full-Time Doctoral Research (GRAD 496) 3 credits.

GRAD 6998. Special Readings (Doctoral) (GRAD 498) Non-credit.

GRAD 6999. Dissertation Preparation (GRAD 499) Non-credit.

†GRAD 5930. Full-Time Directed Studies (Master's Level) (GRAD 397) 3 credits.

†GRAD 5950. Master's Thesis Research (GRAD 395) 1 - 9 credits.

†GRAD 5960. Full-Time Master's Research (GRAD 396) 3 credits.

GRAD 5998. Special Readings (Master's) (GRAD 398) Non-credit.

GRAD 5999. Thesis Preparation (GRAD 399) Non-credit.

Computer Science and Engineering

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Department Head
Professor Reda Ammar

Professors
Barker, Cooper, Demurjian, Peters, Rajasekaran, Russel, Shin, and Shvartsman

Associate Professor
Bi, Cui, Gokhale, Greenshields, Huang, Kiayias, Mandoiu, McCartney, Michel, Shi

Assistant Professors
Wang, and Wu

Study leading to the Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) degrees in Computer Science and Engineering is offered. This study can involve courses selected from the fields of computer science, engineering, mathematics, statistics and the natural sciences. Current research activities are in the areas of software engineering, reusability, databases, data mining, programming languages, artificial intelligence, decision support, robotics, security, cryptography, theory of computing, algorithms, distributed computing, quantum computing, computer networks, parallel computing, cluster computing, grid computing, performance modeling, queueing theory, bioinformatics, scientific computing, pattern recognition, image processing, computer graphics, computational geometry, and optimization.

Admission to the M.S. Program

Normally it is expected that an applicant has a B.S. in Computer Science, Computer Engineering or a closely related field. Students with a degree in another area, but with a strong background in mathematics through calculus, extensive experience with one or more computer languages, and course work involving digital network design, computer organization, and programming systems also will be considered for admission. Students with little or no previous experience in the computer area will not be considered until they have acquired an adequate background. The following courses or their equivalents normally are expected:

(A) MATH 1131, 1132, 2110 (calculus), MATH 2410(differential equations), MATH 2210 (linear algebra), STAT 3025 (statistical methods);

(B) CSE 2100 (computing), CSE 2363 (digital systems organization), CSE 220 (microprocessor assembly language), CSE 4302 (computer organization), CSE 2102 (software engineering), CSE 3502 (automata);

(C) CSE 3504 (probabilistic performance analysis), CSE 4100 (compilers), CSE 4500 (parallel systems), CSE 2500 (mathematics of discrete systems), CSE 4300 (operating systems), CSE 3500 (algorithms).

Outstanding students who are missing some of this background may be admitted before all of it is acquired but the first 2 calculus courses and all of (B) MUST be completed before acceptance. Students admitted to the program without an undergraduate degree in the computer area normally must take a number of undergraduate courses as background before starting their graduate studies. Some of these courses may be available during the summer session. These additional courses will lengthen the period of study necessary to earn the M.S. degree.

Requirements of the Ph.D. Program

Decision for acceptance to the Ph.D. program is made by the graduate admissions committee in consultation with an advisor selected (if feasible) by the applicant. Admitted students must also submit evidence of capacity for independent study in the form of a master's thesis or comparable achievement.

Special Facilities

Graduate Computing Facilities -- The Computer Science & Engineering Department maintains several computing labs for graduate training and research. These include labs consisting of Sun Workstations running Unix and Pentium platforms running a mixture of Linux, Solaris for Intel, and Windows operating systems. The facilities are managed by the department and used for various research projects. This is in addition to 10 specialized research labs located in the Information Technology Engineering building, maintained by individual faculty members supporting different projects in the department.

Additional Research Facilities

The Taylor L. Booth Engineering Center for Advanced Technologies maintains a modern set of networked laboratory facilities available to Computer Science and Engineering faculty and graduate students conducting research. Facilities available include several high performance supercomputing systems (an Altix 3700 BX2 with 64 nodes and an Altix 350 with 8 nodes) and a 24-node cluster. In addition, there are numerous computing workstations which are available for small-scale and prototype research projects using platforms that range from Solaris to Windows to Linux.

For specific information with regard to the Computer Science and Engineering Program, fellowships, assistantships, and part-time instructorships, students should write to:

Chair, Computer Science Graduate Admissions Committee

Department of Computer Science and Engineering, Unit 2155

Storrs, Connecticut 06269-2155

Information concerning assistantships in the University Computer Center should be addressed to the Executive Director.

Courses

CSE 5095 - Special Topics in Computer Science and Engineering
Classroom courses in special topics as announced in advance for each semester.

CSE 5097 - Seminar
Presentation and discussion of advanced computer science problems.Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatistactory.)

CSE 5099 - Independent Study in Computer Science and Engineering
Individual exploration of special topics as arranged by the student with an instructor.

CSE 5101 - Advanced Software Engineering
An in-depth study of methodologies for the specification, design, implementation, verification, testing, and documentation of large complex software systems. Special attention is given to the impact of programming language constructs on the quality of complex software. Recommended preparation: CSE 230 and CSE 244 and CSE 258, or the equivalent.

CSE 5102 - Advanced Programming Languages
This course covers the theory and pragmatics of modern programming languages. Topics include syntax, semantics, type systems and control mechanisms. Key contributions from Functional and Logic Programming including first-order functions, closures, continuations, non-determinism and unification are studied. Study of declarative and operational semantics of recent entries in the field like Constraint Programming and Aspect Oriented Programming. Recommended preparation: CSE 233 and CSE 237 or the equivalent.

CSE 5103 - Software Performance Engineering
Study of performance engineering techniques for the development of software systems to meet performance objectives. Software performance principles, hierarchical performance modeling, and current research trends related to Software Performance Engineering. Methods for computer performance evaluation and analysis with emphasis on direct measurement and analytic modeling, including queuing networks, computation structure models, state charts, probabilistic languages, and Petri-nets. Case studies for the evaluation and analysis of software architecture and design alternatives. Recommended preparation: CSE 221 and CSE 228 or the equivalent.

CSE 5105 - Software Reliability Engineering
State-of-the-art as well as emerging reliability assessment techniques. Topics covered will include reliability modeling paradigms, software reliability growth models, software metrics and reliability, software testing and reliability, and architecture-based reliability assessment. Hands-on experience in the application of these techniques. Recommended preparation: CSE 221 and CSE 230 or the equivalent.

CSE 5107 - Distributed Component Systems
This course examines the methodologies, techniques, and tools that can be utilized to design, construct, and prototype a distributed application using a combined object- and component-based approach. Topics that are covered include object-oriented modeling, reusable components, software architectures, security, software agents, interoperation techniques, and deployment strategies. The role of emerging technologies in support of these topics will also be considered. Recommended preparation: CSE 244 and CSE 258 or the equivalent.

CSE 5300 - Advanced Computer Networks
This course covers advanced fundamental principles of computer networks.Topics include network design and optimization, protocol design andimplementation, network algorithms, advanced network architectures,network simulation, performance evaluation, and network measurement. Recommended Preparation: CSE 245 and CSE 221. This course and ECE 335 may not both be taken for credit.
This course and ECE 335 may not both be taken for credit (RG582).

CSE 5302 - Computer Architecture
This course provides an in-depth understanding of the inner workings ofThis course provides an in-depth understanding of the inner workings of modern digital computer systems. Traditional topics on uniprocessor systems such as performance analysis, instruction set architecture, hardware/software pipelining, memory hierarchy design and input-output systems will be discussed. Modern features of parallel computer systems such as memory consistency models, cache coherence protocols, and latency reducing/hiding techniques will also be addressed. Some experimental and commercially available parallel systems willbe presented as case studies. Recommended preparation: CSE 249 or the equivalent.

CSE 5303 - Introduction to High-Performance Computing
The course is an introduction to High-Performance Computing (HPC) with programming in SMP and Cluster Architectures using middleware such as MPI and OpenMP, for science and engineering. The course selects from the following areas: Simulation and Modeling in Engineering and Science; Relevant Issues in Sequential Algorithm Design; Performance Models; HPC Architectures: SMP, Vector, Distributed and Petascale Systems; Grids and Cloud Computing; Relevant Issues in Parallel Algorithm Design; and, Parallel Programming Models, including PVM/MPI and OpenMP. Specific Parallel Algorithms (Linear Algebra; Graph Theory; Handling of Data Structures in Parallel) will be explored.

CSE 5304 - High-Performance Parallel Computing
Models of parallel computations, fundamental parallel algorithms and applications, scalable parallel/distributed programming paradigms on clusters and grids, performance measures and analysis of parallel computers, data flow/ pipelined/multi-threaded/object-oriented processor design in parallel architectures. Recommended preparation: CSE249 and CSE 228 or the equivalent..

CSE 5306 - Advanced Operating Systems
Topics in modern operating systems with the focus on distributed computing, communication, and concurrency. Selected topics from current research in the theory, design, implementation, and verification of operating systems. Recommended preparation: CSE 4300 or the equivalent.

CSE 5500 - Advanced Sequential and Parallel Algorithms
Computational complexity measures. Survey of major techniques used to design an efficient algorithm. These include divide and conquer, greedy, dynamic programming, and branch and bound techniques. Randomized algorithms. General characteristics of parallel computation models. General

structure of parallel algorithms. Development techniques of efficient parallel algorithms. Recommended preparation: CSE 4500 or the equivalent.

CSE 5502 - Fundamentals of Automata
A rigorous treatment of automata and formal language theory. Emphasis placed upon finite state automata, regular languages, context-free languages, push-down automata, and Turing machines.

CSE 5504 - Probabilistic Methods in Digital Systems
Probabilistic methods used to describe random processes and queuing theory and their application to such areas as computer performance, scheduling algorithms, error correcting codes, and stochastic machines. Recommended preparation: CSE 3504 or the equivalent.

CSE 5510 - Distributed Computing and Fault Tolerance
Topics in the design and analysis of robust distributed algorithms that combine efficiency and fault tolerance. Models of distributed computation and failures. Inherent limitation in achieving fault tolerance in distributed systems. Basic problems considered include communication services, robust cooperation, agreement, consistent distributed memory. Recommended Preparation: CSE4300 and/or CSE4500

CSE 5512 - Introduction to Quantum Computing
This course will provide an introduction to quantum computing, quantum algorithms, and quantum information theory. We begin with a brief discussion of quantum mechanics including elementary aspects of its mathematical formalism. We then describe the quantum circuit model and survey the landscape of quantum complexity theory. Following this introduction, we'll develop and analyze several fundamental quantum algorithms, focusing on Grover's algorithm for database search and Shor's number-theoretic algorithms. The second half of the course covers the density matrix formalism of quantum mechanics, von Neumann entropy, quantum channels, and quantum error-correction. If time permits, some implementations of quantum computers and current progress will be discussed. Recommended Preparation: CSE3500, CSE3502, and MATH221Q

CSE 5514 - Computational Geometry
Curve and surface definitions emphasizing the interplay between those mathematical properties and efficient graphical display. Topics may include Bezier curves and surfaces, nonuniform rational B-spline (NURBS) curves and surfaces, Coons patches, Gordon surfaces, superquadrics, shape preservation, continuity/smoothness, differentiability, twist estimation, the convex hull property, and the treatment of supporting algorithms. Experimental projects are required. Recommended preparation: MATH 2110Q and MATH 2210Q or the equivalent.

CSE 5600 - Computer Science and Engineering Research Laboratory
Experimental investigation of current research topics in computer science. May be repeated for credit with a change in content.

CSE 5701 - Advanced Database Topics
Data models/languages including entity-relationship, functional, semantic, and object oriented. Database components including the different building blocks of a database system, concurrency, control, recovery, security, access methods, query optimization, and views. Database architectures including database machines, text-database systems, distributed database systems, multimedia systems, and performance metrics and methodologies. Database applications including CAD/CAM and CASE. Recommended preparation: CSE 255 and CSE 258 or equivalent.

CSE 5703 - Advanced Computer Graphics
Computer graphics as a tool for effective human-machine communications. Graphical input and output devices and their relation to human perception. Software systems for image generation, display and manipulation. Languages for description of both static and moving pictures. Solutions to visible-surface and related problems. Computer animation. Models and methodologies for the design of interactive systems for various graphics-oriented applications. Experimental projects are required. Recommended preparation: CSE 4703 or the equivalent.

CSE 5705 - Adanced Artificial Intelligence
Design and implementation of intelligent systems. Topics covered will include automated reasoning, natural language, learning, agents, probabilistic reasoning, and robotics. The course will include a substantial design project, and advanced independent study of at least one of the above topics. This course and CSE 4705 may not both be taken for credit.

CSE 5709 - Image Processing
A formal approach to continuous variable and discrete variable imaging. Continuous and discrete transforms. Image enhancement. Image analysis including multidimensional edge-primitive theories, shape analysis. Multispectral imaging and applications. Image modelling. Syntactical analysis, aspects of image database theories. The course involves exposure to multispectral and extraterrestrial imagery. A substantial programming project is assigned. Recommended preparation MATH 227 or the equivalent.

CSE 5711 - Distributed Database Systems
Architecture of distributed database systems and their major design problems. Topics include efficient data distribution, distributed views, query processing and optimization, and distributed synchronization. Particular attention is paid to the issue of concurrency control and reliability for distributed transaction processing. Backend database processors and database servers for local area networks are also discussed. Recommended preparation: CSE 255 and CSE 258 or the equivalent.
Prerequisite: CSE 5701 (RG249).

CSE 5713 - Data Mining
An introduction to data mining algorithms and their analysis. Application of and experimentation with data mining algorithms on real-world problems and domains, with a dual focus on addressing the solution quality issue and the time efficiency issue.

CSE 5715 - Semantic Data Models
Conceptual data models, semantic and object-oriented data base systems, formal representation methods for data and knowledge, models of active and passive information. Recommended preparation: CSE 3502 and CSE 4701.

CSE 5800 - Bioinformatics
Advanced mathematical models and computational techniques in bioinformatics. Topics covered include genome mapping and sequencing, sequence alignment, database search, gene prediction, genome rearrangements, phylogenetic trees, and computational proteomics.

CSE 5810 - Introduction to Biomedical

Informatics
Introduction to biomedical informatics theory and practice with an emphasis on data management for information classification (ontologies), collection, storage, analysis, dissemination, etc., applied to medical, clinical, and public health domains. Topics include: software architectures, security and privacy, interoperabilty and data exchange, standards and the semantic web, health care systems, clinical decision support, data mining, health care systems, monitoring and sensor devices, and cloud/grid computing. Recommended Preparation: CSE4102,CSE4701 or CSE4300

CSE 5815 - Systems Biology: Constructing Biological Knowledgebase
Design and architecture of biological knowledge base. Topics covered include biological/biomedical data modeling, knowledge representation techniques of biological and biomedical information, review of existing inference methods, methods of assessing evidence quality, design of inference-enabling genomics annotation system, various meta-data analysis methods involving genomics and biomedical data.

CSE 5820 - Machine Learning for Biomedical Informatics
Machine learning and its applications to biomedical informatics. Learning topics include: supervised learning, unsupervised learning and semi-supervised learning. Problems addressed include: complex, high dimensional data; imprecisely supervised learning problems; longitudinal behavior analysis; clinical decision support; and applications to real-world medical problems. Students will work on a term project with the goal of applying a studied technique to a biomedical informatics problem. Prerequisite: CSE 3500.

CSE 5840 - String Algorithms and Applications in Bioinformatics
Classic string matching algorithms (e.g. Knuth-Morris-Pratt, Karp-Rabin, suffix tree and arrays) and more advanced string algorithms (e.g. Burrows-Wheeler transform). With a particular focus on rigorous treatment of string processing algorithms and their analysis. Applications of string algorithms to bioinformatics problems. Students are expected to have basic prior knowledge of algorithm design and analysis.

CSE 5850 - Information and Data Security
Introduction to computer security and the design of secure systems. Security and threat modeling. Entity authentication and privacy, data integrity and confidentiality. Cryptographic tools: symmetric and asymmetric encryption, digital signatures, message authentication codes, hash functions. Security at the operating system level, access control, security enforcement, memory protec-tion. Network security, firewalls, internet worms and viruses, intrusion detection. Digital rights management, software security, program obfuscation, implementation flaws, buffer overflow attacks. Case studies in topical areas. Recommended preparation: CSE 255 and CSE 258 or the equivalent.

CSE 5852 - Modern Cryptography: Foundations
This course covers the foundations of modern cryptography introducingbasic topics such as computational hardness, one-way functions, computational indistinguishability, trapdoor permutations and interactive proof systems. The course will cover fundamental cryptographic constructions such as hard-core predicates, security amplification, and pseudorandom generators; these are applied to develop generic, secure public-key encryption schemes and zero-knowledge proof systems. Recommended preparation: CSE 3500, CSE 3502, and CSE 3504, or the equivalent.

CSE 5854 - Modern Cryptography: Primitives and Protocols
This course covers modern cryptography emphasizing provable security andconcrete constructions based on the hardness of specific computational problems. The cryptographic primitives that will be covered include various public and private key encryption schemes, hash functions and digital signature algorithms. The protocols include identification and key-exchange schemes, distributed key generation, e-cash, blind signatures and electronic voting systems. Recommended Preparation: CSE 3500, CSE 3502, and CSE 3504, or the equivalent.

CSE 5860 - Computational Problems in Evolutionary Genomics
Computational and algorithmic approaches for problems arising in evolutionary genomics. Topics may include phylogenetic trees inference, population evolutionary models and theory, understanding complex evolutionary processes and other related topics. Both combinatorial optimization and stochastic approaches will be covered. Prerequisite: CSE 5800 or consent of the instructor

CSE 5870 - Advanced Course on Reliability of Distributed Systems
This course is focused on reliability and troubleshooting aspects of distributed systems. Topics may include cloud computing, sensor fusion systems, data center applications, system configuration management, energy aware systems, storage systems, and mobile computing systems, along with fundamental concepts of distributed systems. Students are expected to work on projects with the goal of addressing challenging research problems in distributed systems.

CSE 6300 - Research Topics in Computer Networks
Current research issues in the Internet, wireless and mobile networks, aswell as emerging concepts such as sensor networks. Overview of the fundamental design principles underlying these networks. Discussion and exploration of the advanced research topics in these and other areas. Prerequisite: CSE 5300 (RG252).

CSE 6504 - Linear Algebraic Queueing Theory
Brief survey of Markov Chains, and their application to simple queues, with some emphasis on their transient behavior. Matrix operators are then introduced to represent the behavior of non-exponential servers. This algebraic structure is applied to the steady-state and non steady-state behavior of both open and closed M/G/1 queues. Then G/M/1 queues are examined in detail. As time permits additional advanced topics will be covered. Applications to computer and telecommunications system performance modeling will be studied.
Prerequisite: CSE 326 (RG3083).

CSE 6510 - Fault-Tolerant Parallel Computing
Advanced topics in fault-tolerant parallel algorithms. Shared memory and message-passing models of computation. Models of failure. Formal treatment of complexity measures, such as time, space, communication, work, and speedup. Lower bounds for parallel fault-tolerant computation. Design and analysis of efficient fault-tolerant algorithms. Combining efficiency and fault-tolerance in parallel and distributed algorithms.
Prerequisite: CSE 5304 (RG253).

CSE 6512 - Randomization in Computing
Introduction to the theory and practice of randomization and randomized algorithms

as a technique for science and engineering problem solving. Topics to be covered include: probability theory, types of randomization, sorting and selection, hashing and skip list, finger-printing, packet routing, geometry and linear programming, graph algorithms, combinatorial optimization, and external memory algorithms.
Prerequisite: CSE 5500 (361) (RG3877)

CSE 6514 - Computational Topology
Topology has traditionally generalized concepts of real analysis to metric spaces and set axioms. The new field of computational topology has great potential for encompassing abstractions to unify domain-specific techniques now used in computational geometry, geometric modeling, visualization, image processing, engineering analyses and molecular simulation. The course will include perspectives from traditional topology and show how these need to be modified for realistic use in modern computing environments. Topics and emphases will vary.
Prerequisite: MATH 5310 and 5311 (RG3085).

CSE 6705 - Natural Language Processing
An artificial-intelligence approach to computational linguistics. Representation of meaning and knowledge in computer-usable form. Understanding and generation of natural-language sentences and text. Theories of inference and application of world knowledge. Organization of large knowledge-based text-processing systems for applications in summary and paraphrase, question-answering, machine translation, conversation and computer-aided instruction. "Real" text-processing systems are demonstrated, and a term project is required.
Prerequisite: CSE 5705 (RG 3087).

CSE 6800 - Computational Genomics
Advanced computational methods for genomic data analysis. Topics coveredinclude motif finding, gene expression analysis, regulatory network inference, comparative genomics, genomic sequence variation and linkage analysis
Prerequisite: CSE 5800 (377) or BME 5800 (380) (RG3876)

†GRAD 6930. Full-Time Directed Studies (Doctoral Level) (GRAD 497) 3 credits.

†GRAD 6950. Doctoral Dissertation Research (GRAD 495) 1 - 9 credits.

†GRAD 6960. Full-Time Doctoral Research (GRAD 496) 3 credits.

GRAD 6998. Special Readings (Doctoral) (GRAD 498) Non-credit.

GRAD 6999. Dissertation Preparation (GRAD 499) Non-credit.

Dental Science

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Department Head
Professor Arthur Hand

Professors
Agar, Beazoglou, E. Eisenberg, Frank, Freilich, Goldberg, Gronowicz, Hand, Lurie, MacNeil, Meiers, Mina, Nanda, Nichols, Pilbeam, Reisine, Rossomando, Safavi,and Taylor

Associate Professors
D'Ambrosio, Dealy, Dean, Dongari-Bagtzoglou, Duncan, Kazemi, Kuhlberg, Pendrys, Wagner, and Zhu

Assistant Professors
Chun-Hsi, Diaz, Ioannidou, Jenkins, Jiang, Kalajzik, Kaufman, Kuhn, Rogina, Rungruanganunt, Schincaglia, and Thibodea

Master of Dental Science Degree Program (MDSc)

Students in residency and specialty training in the School of Dental Medicine may also pursue a Master of Dental Science degree in the Graduate School. This program offers an opportunity for study and research in dental science, the basic life sciences, and the allied health fields and leads to the degree of Master of Dental Science. It is designed to fill the gap between the Ph.D. program in Biomedical Science and the various residency and specialty training programs provided by the School of Dental Medicine. A major objective of the MDSc program is to provide instruction in dental science that will enhance the student's ability to instruct and undertake research in dental schools. Courses of study are flexible with major emphasis on the accomplishment of research. Possibilities for interdisciplinary research are enhanced by cooperative activities with several university departments. Students may combine their work in this program with advanced training in Endodontics, Oral and Maxillofacial Radiology, Oral Medicine, Orthodontics, Pediatric Dentistry, Periodontics, and Prosthodontics. Further information and an application may be obtained from the School of Dental Medicine, Office of Admissions, Room AG030, University of Connecticut Health Center, Farmington, Connecticut 06030-3905.

M.P.H. and M.S. in Clinical and Translational Research Degree Programs

As an alternative to the MDSc degree, students in residency and specialty training in the School of Dental Medicine may pursue either the Master of Public Health degree or the Master of Science degree in Clinical and Translational Research in the Graduate School. For further information, see the descriptions of these programs in this catalog.

Dual D.M.D./Ph.D. in Biomedical Science Degree Program

Program Director: Ming Mina

This program leads to the awarding of dual D.M.D. and Ph.D. degrees. It is designed for a small number of outstanding students who have clearly defined career goals of research and teaching in the general area of the biological and biomedical sciences and who have the motivation and ability to pursue a rigorous training program in this area. The program provides basic science and research training as well as the standard dental curriculum and is designed to produce individuals who are likely to make important contributions to the solution of problems of significance to the health sciences. The overall program is administered by the Graduate Programs Committee of the Health Center. The student applies as a dual-degree applicant to the Dual D.M.D./Ph.D. Committee of the Office of Admissions of the School of Dental Medicine. The Dual D.M.D./Ph.D. Committee operating in conjunction with the admission committee of the School of Dental Medicine reviews the application and admits the student. The student normally completes both programs, including the dissertation in a period of approximately eight academic years, including summers.

Ph.D. in Biomedical Science Degree Program

This is a rigorous academic program designed for students who have chosen career paths in research and teaching. The degree may be pursued independently or in conjunction with residency/specialty training in the School of Dental Medicine. For further information, see Biomedical Sciences.

Ph.D. Degree Program in Materials Science: Dental Materials

Students with research interests in the field of dental materials may pursue a Ph.D. degree in Materials Science. Similar to other special interdisciplinary programs in Materials Science, students study the broad areas of thermodynamics, kinetics, analysis and structure/property relations. The program also provides overviews of the structure of dental and oral tissues; the epidemiology, etiology and manifestations of dental diseases; and the treatment of dental diseases. These overviews are obtained in the formal course work at the Health Center. A primary objective of the program is to help the student develop an understanding of the manner in which the prevention and clinical treatment of dental disease is integrated with the limitations of the materials employed. The dissertation may involve study of any materials-related problem, but normally addresses a particular dental material or material-oral tissue interaction. Applicants would typically have backgrounds in materials science, metallurgy, polymer science or a related field and specific career goals in dentistry. For further information, see Materials Science.

Courses

DENT 5414 - Introduction to Biomaterials and Tissue Engineering
A broad introduction to the field of biomaterials and tissue engineering . Presents basic principles of biological, medical, and material science as applied to implantable medical devices, drug delivery systems and artificial organs.

DENT 5430 - Advanced Oral Histology
Oral tissues, their embryological orgin, histology and function. Structure of developing teeth, alveolar bone, temporo-mandibular joint, oral mucosa, gingiva and salivary glands. Lecture, slide review, and student-led discussions of papers from the research literature.

DENT 5431 - Adv Oral Path & Diag
Seminars on current developments in oral disease processes, with an emphasis on the clinical. Student presentations and lectures covering principles of Oral Diagnosis.

DENT 5432 - Biomaterials for Dental Graduates
Literature review/seminar covering various subjects of current interest in dental materials. Some prior knowledge of dental materials or of materials science is assumed.

DENT 5434 - Functional Oral Anatomy
Anatomic structures and relationships of the head and neck emphasizing surgical anatomy for oral, periodontal and endodontic surgery. Lectures and dissections.

DENT 5435 - General Pathology
General Pathology

DENT 5437 - Principles of Oral Microbiology & Infections
Oral flora with emphasis on recent research developments. Ecology of the oral cavity, dental caries and periodontal disease, viral and yeast infections. Prior knowledge of microbiology and biochemistry assumed. Lectures and discussions, term paper required

DENT 5438 - Craniofacial Growth and Development
Part of a core series in the postgraduate program of orthodontics. Provides systematic coverage of basics in growth and development of the human face. Review and critique of selected articles from the research literature of the following areas: Physiology of facial growth, theories in growth mechanisms, pre- and postnatal growth of the face, normal and abnormal courses of the facial growth.

DENT 5439 - Research Methods in Epidemiology and Behavioral Sciences
This course is intended to provide students with an applied understanding of behavioral science research methods, building off of concepts introduced in Biostatistics D456. Featured topics include: theoretical and methodological issues in research design; data collection strategies, focusing on survey measurement and the design and evaluation of survey questions; population sampling; data entry and variable construction; strategies for analyzing quantitative data, focusing in particular on regression analysis with dichotomous outcomes; and issues in analyzing longitudinal data. Prerequisite: DENT 5456 or equivalent.
Prerequisite: DENT 5456 (RG 3134)

DENT 5440 - Biodontics: Integrating Biotechnology with Clinical Dentistry
The goal of the Biodontics educational program is to explore the process of introduction of biotechnology based innovations into clinical dentistry. The course will focus on a variety of innovations, including those considered “disruptive”, and explore the laboratory and clinical studies underlying their translation from the bench to chairside. The course will also consider the process of “diffusion” of innovations into dental practice and examine the barriers to acceptance by dental office personnel. Students, working in teams, will be required to present a business plan for the development and marketing of a new dental product.

DENT 5441 - Biomechanics in Dental Science
Physics and engineering principles applied to clinical and research problems in dentistry. Principles of statics and mechanics of materials. Engineering analysis of orthodontic appliances. Lectures, seminars, and demonstrations.

DENT 5442 - Biomechanics in Dental Science
History and critical review of orthodontic appliance systems. The relationship between treatment planning and therapy is explored. Detailed biomechanical analysis of appliance therapy. Lectures, seminars and demonstrations.
Prerequisite: DENT 5441 (RG188).

DENT 5443 - Biology of Tooth Movement
Hard and soft tissue responses to tooth movement caused by orthodontic appliances; theory of related bone resorbtion and apposition from a morphological and biochemical standpoint. Seminars.
Prerequisite: DENT 5441 (RG188).

DENT 5444 - Epidemiology of Oral Diseases: Interpreting the Literature
The goal of this course is to provide the student with a basic understanding of epidemiologic principles to enable the critical review of the literature and to provide a methodological framework with which to better understand basic statistics. An overview of the specific epidemiology of oral diseases will be provided.
Open to dental residents in the MDentSci program (RG3215).

DENT 5448 - Periodontal Pathobiology I
The first of a two-part course spanning the full year covering the structure and function of the periodontal tissues and the pathogenesis of diseases affecting these tissues. Special emphasis is placed on the role of oral bacteria and the host response to these bacteria in the initiation and progression of inflammatory periodontal disease. Lectures and seminars.

DENT 5449 - Periodontal Pathobiology II
The second of a two-part course spanning the full year covering the epidemiology, natural history, diagnosis, prevention, treatment planning, and treatment of periodontal diseases.

DENT 5455 - Scientific Writing
This course provides the basics of effective scientific writing in a 6-week combined lecture and workshop format. Lectures cover scientific style, clarity in writing, development of hypothesis and organization of abstracts and manuscripts. Guest lectures and workshops provide specific direction in summarizing clinical, laboratory or social/biobehavioral research studies. Students are required to write and revise an extended abstract of their research and to present their abstract in small groups on the final class day.

DENT 5456 - Biostatistics
This course is intended to provide an

introduction to biostatistics and overview of key concepts. The student is introduced to concepts of data measurement and summarization, probability, populations & samples, drawing inferences, and specific statistical analyses for testing differences in means and proportions, correlation, regression, multivariate analysis, and survival analysis. Special attention is placed upon understanding how to evaluate the appropriateness of and best interpret specific statistical tests and measures. An introduction to study design and the critical review of the literature is provided with emphasis on interpretation of presented statistics.

DENT 5457 - Evid Based Dent-Crit Reading of Sys Reviews, Meta-Analyses and Expert Panel Rpt
The goal of this course is to provide the dental resident with the information necessary to (1) de-mystify the methods typically used under the heading of evidence based dentistry and (2) to be able to critically assess those methods, so as to best be empowered to integrate evidence based information into their day to day practices.
Prerequisite DENT 5444 & 5456

DENT 5495 - Independent Study
A reading course for those wishing to pursue special topics in dental science under faculty supervision.

DENT 5500 - Oral & Maxillofacial Diagnostic Imaging and Interpretation Part A
The first part of a 3-part seminar course examining the interpretation of images

DENT 5501 - Oral & Maxillofacial Diagnostic Imaging and Interpretation Part B
The second part of a 3-part seminar course examining the interpretation of

DENT 5502 - Oral & Maxillofacial Diagnostic Imaging and Interpretation Part C
The third and final part of a 3-part seminar course examining the interpretation

DENT 6461 - Clinical Radiation Sciences: Physics and Biology I
A continuous pair of semester lecture/seminar courses which examines the physical and biological principles underlying the uses of radiation and allied radiation sciences in clinical diagnosis and therapy. Characteristics of imaging systems, Nuclear Medicine, Radiation Therapy, biological effects of ionizing radiation, radiation measurement and dosimetry and quality assurance will be covered through critical readings in texts and the literature.

DENT 6462 - Clinical Radiation Sciences: Physics and Biology II
A continuous pair of semester lecture/seminar courses which examines the physical and biological principles underlying the uses of radiation and allied radiation sciences in clinical diagnosis and therapy. Characteristics of imaging systems, Nuclear Medicine, Radiation Therapy, biological effects of ionizing radiation, radiation measurement and dosimetry and quality assurance will be covered through critical readings in texts and the literature.
Prerequisite: DENT 6461 Prerequisite

Dramatic Arts

*****

Department Head
Professor Gary English

Professors
Crow, Hunter, McDonald, Molette, Sabatine, Roccoberton, Rose, Ryker, Saternow, and Stern

Associate Professor
McDermott and Nardi

The Department of Dramatic Arts offers two graduate degree programs: the Master of Arts (M.A.) and the Master of Fine Arts (M.F.A.).

The M.A. generally is considered a preparatory program for an advanced degree at a level between baccalaureate study and a terminal degree in Dramatic Arts. The department offers the Master of Arts degree in Production, an applied study program with two areas of emphasis: Puppetry and Costuming.

Pursuit of the M.A. in production (with either the Puppetry or the Costuming emphasis) requires fulfillment of the admission requirements of the Graduate School and three letters of recommendation. All applicants for the M.A. (which requires a minimum of 30 credits) should consult the Department concerning program availability, personal interview with the program director, and portfolio review. Further information may be obtained by contacting the Department of Dramatic Arts.

The M.F.A. generally is considered a terminal degree for students preparing for professional careers in commercial, regional, and educational theatre. Areas of concentration include: Acting, Design (Lighting, Costume and Scenery), Puppetry, and Technical Direction. Admission to this program requires fulfillment of the admission requirements of the Graduate School. Three letters of recommendation are required. Practical experience may be accepted in lieu of some course work. A personal interview on campus is required for residents of New England, New York and New Jersey. An audition is required for Acting applicants, and a portfolio is required for Design and Puppetry. Interview, audition and portfolio requirements can be fulfilled by applicants to the University Resident Theatre Association (U/RTA) finals in New York City, Evanston, Illinois, and Irvine, California. The Department admits a new class of M.F.A. students in Acting once every three years. Prospective applicants for the M.F.A. in Acting must consult the

Department concerning program availability prior to applying. The Master of Fine Arts is a three year process-oriented program requiring a minimum of 60 graduate credits. A final project to be determined by student and advisors is required in all areas. A production record-book is required in all areas. Further information may be obtained by contacting the Department of Dramatic Arts.

Curricular Opportunities and Special Facilities

Through practicums and independent studies, students in the Department may expand the area of training beyond that indicated by the list of course offerings. Supplemental course work may be taken in humanistic and scientific disciplines appropriate to the concentration. The production program of the Department affords ample opportunity for students to supplement their work with practical experience in the many productions offered the public throughout the year. Opportunities for students in particular programs to act, direct, design and technically produce are available in various facilities. Opportunities also are offered for original creative work.

The Department has at its disposal three well-equipped theatres. The Harriet S. Jorgensen and the Nafe Katter Theatres, seating 493 and 237 respectively, house the Main Stage Series productions. Both are air-conditioned. The Studio Works Series is presented in the Studio/Mobius Theatre, a 116 seat space that also provides additional opportunities for theatrical experimentation. In addition, there are facilities for film and television production work.

Courses

DRAM 5000 - Studies in Voice and Diction
Voice-related topics and skills not included in DRAM 5001-5007. May include work in specialized areas of applied speech such as (but not limited to) analysis of heightened text, spoken choral performance, and oral interpretation of poetry or narrative prose.

DRAM 5001 - Voice and Diction I
Development of breath support, vocal expressiveness, and basic diction, articulation, and phonetics skills.

DRAM 5002 - Voice and Diction II
Developing vocal range and intelligibility with text and emotional content. Continued work with consonant and vowel sounds.

DRAM 5003 - Voice and Diction III
Developing analytical and performance skills in heightened language and poetic text to be applied primarily to the works of Shakespeare and other classical playwrights.

DRAM 5004 - Voice and Diction IV
Applying diction and phonetics skills to specialized speech styles including accents and dialects.

DRAM 5005 - Voice and Diction V
Applying voice and diction skills to additional classical and contemporary dramatic forms.

DRAM 5006 - Voice and Diction VI
Exploring additional vocal skills and resources required for professional acting.

DRAM 5007 - Singing for Actors
Developing singing skills required for performance in musical theatre productions.

DRAM 5130 - Introduction to Graduate Studies in Stage Design
Projects in scenery, lighting and costume design for first-year graduate students in stage design and puppetry. Reading and discussion of various 20th century works on design theory for the theatre.

DRAM 5131 - Studies in Theatre History

DRAM 5134 - Design Drawing
Studio course in figure drawing and perspective drawing as foundation for students in theatre costume, scenic, and lighting design and puppetry arts.

DRAM 5159 - Practicum in Theatre Studies
Special projects in Theatre Studies, usually related to a production of the Department of Dramatic Arts/Connecticut Repertory Theatre.

DRAM 5189 - Field Studies Internship in Design/Technical Theatre
Supervised practical experience in professional/regional theatres or academic institutions.

DRAM 5190 - Internship in Dramatic Arts
Internships in acting, costuming, lighting, management, media, puppetry, pedagogy and technical theatre.
Prerequisite: Open only to Dramatic Arts graduate students holding a dramatic arts graduate assistantship (RG602).

DRAM 5192 - Independent Study in Theatre Studies
Independent study under the direction of an appropriate faculty member.

DRAM 5197 - Special Topics in Theatre Studies
A reading course under the direction of an appropriate staff member.

DRAM 5200 - Studies in Technical Production
Study of any topics in in Stagecraft, Technical Production, or sound not included in DRAM 5201-5213.

DRAM 5201 - Production Drafting
Emphasis on preparation of plans appropriate for scenic studio bidding procedures.

DRAM 5202 - Technical Direction
A study of the planning, management and execution of all technical aspects of production.

DRAM 5204 - Technical Analysis
Analysis of scenic structures and materials, including stress and vector analysis, static and dynamic loading of beams and battens, truss design, and time/cost studies.

DRAM 5205 - Audio Production
Audio recording and playback techniques used in the preparation of theatrical sound scores.

DRAM 5206 - Sound Technology
Application of signal processing devices and signal modification for specialized audio effects for production.

DRAM 5207 - Electricity and Electronics for the Theatre
Study of current electrical technology and applications, including AC theory and codes.

DRAM 5208 - Computer Applications

Survey of current software available for application to production management and technical design and production.

DRAM 5209 - Studies in Theatre Design
Investigates the physical problems and codes involved in integrating theatre technology into the architectural requirements of a performance facility.

DRAM 5210 - Properties Construction
Fabrication of unusual stage properties and study of the application of experimental materials.

DRAM 5211 - Advanced Rigging Techniques
Technology and materials used in conventional and specialized rigging systems.

DRAM 5212 - Shop Technology
Use of materials, equipment and processes required in special fabrication techniques.

DRAM 5213 - Stage Technology
Power sources and drive mechanisms for stage machinery including electro-mechanical, hydraulic and pneumatic systems.

DRAM 5292 - Independent Study in Technical Theatre
An independent project course under the direction of an appropriate staff member.

DRAM 5296 - MFA Project in Technical Theatre
A major technical direction project for a production in the Department of Dramatic Arts/Connecticut Repertory Theatre.

DRAM 5297 - Special Topics in Technical Production
A reading course under the direction of an appropriate staff member.

DRAM 5300 - Studies in Scenic Design
Study of any topics in Scenic Design not included in DRAM 5301-5320.

DRAM 5301 - Scenic Design: Single Set Plays
Exploration of the various methods of solving the scenic design for plays requiring only one location.

DRAM 5302 - Scenic Design: Multi-Set Play
Investigating the range of methods of solving the scenic design for plays with several locations.

DRAM 5303 - Scenic Design: The Musical I
Solutions for designing scenery for the Traditional American Musical. This topic will be looked at from both historical and contemporary points of view.

DRAM 5304 - Scenic Design: The Musical II
The examination and study of scenery-design solutions for complex musicals in unconventional spaces.
Prerequisite: DRAM 5304 Prerequisite

DRAM 5305 - Scenic Design: Art Direction for TV and Film
Developing skills for relating traditional scenic design to feature films and television with an emphasis on creating storyboards.

DRAM 5306 - Scenic Design: Opera and Ballet
Operas and Ballets from around the world will be analyzed and designed for various proscenium theatres.

DRAM 5310 - Scenic Design: Event Planning
Examining approaches to designing special events for unique spaces.

DRAM 5311 - Scenic Design: Design Drafting
The study of hand-drafting styles and conventions as they apply to American Scenographic Techniques.

DRAM 5312 - Scenic Design: Perspective Drawing and the Pencil Sketch
A study of one point, two point, three point and measured perspective in order to create pencil sketches for the theatre.

DRAM 5313 - Scenic Design: The Color Sketch
Techniques and skills for building a scale model for a scenic design using a variety of materials and methods

DRAM 5314 - Scenic Design: Model Building Techniques
Techniques and skills for building a scale model for a scenic design using a variety of materials and methods.

DRAM 5315 - Scenic Design: Rendering with Watercolor
The study of how to use watercolor to create the theatrical sketch.

DRAM 5316 - Scenic Design: Computer Rendering for the Theatre
The use of mainstream computer programs to create digital renderings and media for the theatre.

DRAM 5317 - Scenic Design: 3D Computer Rendering for the Theatre
The use of mainstream 3D programs to render and draft scenic designs for the theatre.

DRAM 5318 - Scenic Design: Creating a Portfolio On and Off Line
Students will create a dynamic, interesting portfolio for off-line presentations and then turn that portfolio into a web site.

DRAM 5319 - Scenic Design: Styles of Ornamentation
An exploration of architecture and period style from the earliest times to the present.

DRAM 5320 - Scene Painting
Scene painting using a variety of media and techniques. The student also explores a number of faux finish techniques.

DRAM 5329 - Technical Research and Writing
Application of writing techniques and research methods used in preparation of technical reports and project documentation.

DRAM 5355 - Studies in Television

DRAM 5392 - Independent Study in Scenic Design
Independent study under the direction of an appropriate faculty member.

DRAM 5396 - MFA Project in Scenic Design

The design of costumes for a production in the Department of Dramatic Arts/Connecticut Repertory Theatre.

DRAM 5397 - Special Topics in Scenic Dsgn
A reading course under the direction of an appropriate staff member.

DRAM 5400 - Studies in Costume Design
Study of any topics in Costume Design art and theory not included in DRAM 5401-5407. May be repeated with a change in topic.

DRAM 5401 - Costume Design: Poetic Realism
Focusing on a design style developed in NYC during the 70s and 80s. Applying the principles of realism with expanded color control and heightened poetic choices to the plays of Chekhov, Strindberg and ONeill.

DRAM 5402 - Costume Design: Comic Exaggeration
Design dealing with the comedic effects of body shape and exaggerated proportions¿generating wit and whimsy using styles from Commedia to Vaudeville to Modern Dress.

DRAM 5403 - Costume Design: Tragedy and Post Modernism
Focusing on light, shadow, and texture to create dramatic tragedy. Emphasis is specific to the post-modern form and character rather than being specific to any given period.

DRAM 5404 - Costume Design: Fantasy and Opera
Focusing on line and silhouette to enhance height and exaggeration when using the proportion and scale required for the opera stage and other very large theatre or coliseum spaces.

DRAM 5405 - Costume Design: Dance and Musicals
Using costume colors and shapes to pull focus to one figure among many. Balancing the musical stage with color groups.

DRAM 5406 - Costume Design: Performance Art
Exploring the role of the designer/director. Learning to conceive of non-scripted performance in terms of installation & design with human bodies and space.

DRAM 5407 - Costume Design: Film
Developing group plates and collages for large scenes and details of the costume, accessories and hair for close-ups. Additional focus on the terminology of the set, the shops, and jobs relating to Costume Design.

DRAM 5410 - Studies in Applied Costume Craft
Study of any topic in applied costume craft not included in DRAM 5411-5421. May be repeated with change in topic.

DRAM 5411 - Color Theory / Light & Fabric
Using the qualities of different fabrics for period and drape. Exploring color theory and the interaction of colored light on fabrics of varying colors and textures.

DRAM 5412 - Dyeing and Fabric Modification
Focusing on dyes and their interaction with various fabrics and selecting the correct dyes and the colors to achieve the desired effects. Investigating new fiber-modification technology.

DRAM 5413 - Computer Costume Rendering and Web-site Design
The use of mainstream computer programs to create digital renderings as part of the costume-design process. Learning how to use those images along with computer manipulated production photos for presentation on the web.

DRAM 5414 - Costume Design: Period Costume Rendering
Exploring rendering techniques with pencil, ink, and gouache while learning to describe period fabrics and styles using primary source images for research and inspiration.

DRAM 5415 - Advanced Make-up: Prosthetics and Wigs
Acquiring techniques for creating period effects in make-up and hairstyles. Learning proper wig ventilation and safe casting practices for gelatin and latex prosthetics.

DRAM 5416 - Costume Design: Millinery Techniques
Acquiring techniques for designing and constructing a different type and styles of men's and women's hats from various historic periods.

DRAM 5417 - Costume Design: Flat Pattern Costume Drafting
Focusing on the art and mathematical formulas that create a basic sloper for patterning garments. Understanding shaping through dart manipulation, curved seams, and inserted panels or shapes.

DRAM 5418 - Costume Design: Draping Patterns
Developing techniques, for draping shapes and patterns over a dress-maker¿s mannequin, using the drape of various fabrics and the straight of the grain (versus the bias) to create specific effects.

DRAM 5419 - Tailoring Period Costumes for the Theatre
Exploring the traditional art of tailoring and various patterning techniques for constructing garments from the major historical periods often depicted on the stage or screen.

DRAM 5492 - Independent Study in Costume Design
Independent study under the direction of an appropriate faculty member.

DRAM 5496 - MFA Project in Costume Design
The design of costumes for a production in the Department of Dramatic Arts/Connecticut Repertory Theatre.

DRAM 5497 - Special Topics in Costume Design
A reading course under the direction of an appropriate staff member.

DRAM 5500 - Studies in Lighting Design
Study of any topics in Lighting Design not included in DRAM 5501-5514. Course may be repeated with change in topic.

DRAM 5501 - Lighting Design: The Single Set Play
The development of lighting designs for single set dramas and musicals.

DRAM 5502 - Lighting Design: Opera
The design process for Operatic Theatre, emphasizing concepts and visual metaphors for the lighting of Opera.

DRAM 5503 - Lighting Design: Dance
The methods and process of creating a dance lighting design while learning how to document and communicate ideas, analyze movement, and understand the vocabulary of the dance world.

DRAM 5504 - Lighting Design: The Broadway Musical
The design process for Musical Theatre productions¿developing concepts and visual metaphors to be used in lighting Musicals.

DRAM 5505 - Lighting Design: Non-Proscenium Spaces
The design process for productions within Non-Proscenium and Non-Traditional spaces, emphasizing production concepts and visual metaphors for lighting thrust stages, black box spaces, hotel ballrooms, arenas, public spaces, and outdoor venues.

DRAM 5506 - Lighting Design: Angles and Systems
Tracing how, from initial concept to final plot, Lighting Concept and Visual Metaphor influence lighting angles, textures, and the positioning of fixtures. Using side light, back light, booms, ladders, box booms, coves, & cyc lighting to realize the range of designer choices.

DRAM 5507 - Lighting Design: Angles and Systems
Tracing how, from initial concept to final plot, Lighting Concept and Visual Metaphor influence lighting angles, textures, and the positioning of fixtures. Using side light, back light, booms, ladders, box booms, coves, & cyc lighting to realize the range of designer choices.

DRAM 5508 - Lighting Design: From Concept to Opening Night
Following a lighting design from its conception through to its opening night. Exploration of multiple genres of theatre including drama, musicals, dance, opera, events and concerts.

DRAM 5509 - Lighting Design: Concept Development
Importance of lighting concept and visual metaphor in developing a show¿s design. Tools and strategies (scene break-down, mood boards, concept statement, concept presentation, and others) for communicating with the director and other production personnel.

DRAM 5510 - Color Theory and Light
Examining the characteristics of color: hue, value, saturation, color perception, and the psychology of color to aid in the artistic choice of colors for theatrical productions.

DRAM 5511 - Digital Design for Projection and LED
Exploring the emerging world of digital media, video projection design and LED system design with emphasis on the philosophy, software, hardware and technology used to create digital imagery.

DRAM 5512 - Lighting Technology
Applying the technologies for lighting, dimming, video projection, and LED imaging design to the protocols used in contemporary lighting and projection design for theatre, live events, and architecture.

DRAM 5513 - Lighting Computer Applications
Developing skills in 2D and 3D digital animation using current media programs for theatrical, concert, corporate and architectural projection.

DRAM 5514 - Production Lighting Design and Business Practices
Advanced study of a lighting designer's role and the design process from interview through completed design. Additional focus on the marketing, financial, and personnel elements of the lighting-design business.

DRAM 5530 - Studies in Digital Media
Study of any topics in visual Digital Media not included in DRAM 5531-5535. Course may be repeated with a change in topic.

DRAM 5531 - Digital Design for Projections I
Advanced exploration of the philosophy, software, hardware, and technology used to create digital imagery, including video-projection and LED system designs. Special emphasis is on the aesthetics of media design and the systems for displaying digital imagery.

DRAM 5532 - Digital Design for Projections II
Building on ¿Projections I,¿ students conceive, design, and produce digital media for video projection using LED systems¿particular emphasis on exploring and developing aesthetics of digital media design.

DRAM 5533 - 2D Digital Animation I
With 2D animation and compositing programs currently used in film, television, commercial and corporate production, students will explore digital media development and design¿beginning with principles of composition, design, and production and moving on to the composition of 2D graphic elements.

DRAM 5534 - 2D Digital Animation II
Expanding on ¿2D Animation I,¿ students will explore 3D space (or the "Z dimension"), learning to manipulate the camera around objects in space. This study will focus on the basics of the digital camera, virtual lighting, and the value of shadow relative to image development and recognition.

DRAM 5535 - 3D Digital Animation I
Using professionally current 3D computer-animation programs, this study begins with virtual scene development. Students will then construct a 3-dimensional space, model 3D objects within that space, create and map textures and finishes onto that object, and then animate it.

DRAM 5592 - Independent Study in Lighting Design
Independent study under the direction of an appropriate faculty member.

DRAM 5596 - MFA Project in Lighting Design
The lighting design for a production in the Department of Dramatic Arts/Connecticut Repertory Theatre.

DRAM 5597 - Special Topics in Lighting Design
A reading course under the direction of an appropriate staff member.

DRAM 5597 - Special Topics in Lighting Design
A reading course under the direction of an appropriate staff member.

DRAM 5600 - Studies in Puppet Arts
Study of any topics in puppet design, construction, or performance not covered in DRAM 5601-5618. May be repeated for credit with a change in topic.

DRAM 5601 - Advanced Mask
Study of Mask design, construction and performance through practical work with face casting, neutral masks, exaggerated masks, and Commedia del¿Arte masks.

DRAM 5602 - Advanced Paper Sculpture
Practice in design, sculpting, patterning, and finishing techniques using the "Roser Papier Methode" for Puppetry leading to full realization and performance of the sculptures as puppets.

DRAM 5603 - Puppet Theatre Production
Strategies for developing and executing the skills involved in mounting Puppet Productions, includes planning, scripting, designing, scheduling, budgeting, and identifying appropriate personnel.

DRAM 5604 - Advanced Rod Puppet Theatre
Consideration of a world-wide range of design, construction, and manipulation techniques for several forms of Rod Puppets, with emphasis on Chinese performance skill development.

DRAM 5605 - Advanced Puppetry in Television
Research and practical exploration of techniques for presenting Puppet Arts on television¿includes planning, design, construction and performance of a short program and development using current video editing software.

DRAM 5607 - Advanced Materials Techniques
Puppet Character design using a full range of fabrication techniques (including sculpting, molding, cast-ing, painting, and carving) to design and fully realize a puppet character.

DRAM 5608 - Marionette Performance
Exploration and skill development with the pendular attributes of a string puppet using several different performance figures.

DRAM 5609 - Marionette Construction
Design, construction and performance of a full figure string puppet..

DRAM 5610 - Advanced Hand Puppet Theatre
Consideration of a world-wide range of design, construction, and manipulation methods for Hand Puppetry, Glove Puppetry, and mouth-moving skills.

DRAM 5611 - Advanced Ultraviolet Light/ Czech Black Theatre
Exploration of U.S. applications of UV (¿Black Light¿) and Czech Black Theatre (Curtain of Light) and its practical application to Puppet Theatre.

DRAM 5612 - ISM¿s: Art Movements of the Early 20th Century
Examination of Puppet Arts¿ contributions to the Art Movements of the Early 20th Century, including the production of a Puppet Arts event within a selected ¿ism.¿

DRAM 5613 - Advanced Shadow Theatre
Research and study of all design, story, construction, and performance elements within worldwide Shadow Theatre for both direct-screen and projected presentations.

DRAM 5614 - Puppet Production Seminar
Dramaturgical, directorial and design research and study related to current department productions using Puppetry.

DRAM 5615 - Puppet Arts Aesthetics
Research and study of the myriad forms of Puppet Arts expression and the aesthetics that guide them.

DRAM 5616 - Trends in Contemporary American Puppet Theatre
An in-depth study of Puppetry as it has been practiced in North America from pre-colonial days to the present.

DRAM 5617 - World Puppet Theatre
A worldwide survey of the Puppet Arts as they are practiced in religious expression, societal commentary, cultural celebration, and public entertainment.

DRAM 5618 - Production Planning & Development
Students independently research, conceptualize, and prepare preliminary scripts or designs for future performance projects.

DRAM 5692 - Independent Study in Puppet Arts
Independent study under the direction of an appropriate faculty member.

DRAM 5696 - MFA Project in Puppetry
Major artistic contribution(s), (writing, designing, building, directing) to a puppetry production or related theatre or film project in the Department of Dramatic Arts/Connecticut Repertory Theatre.

DRAM 5697 - Special Topics in the Puppet Arts
A reading course under the direction of an appropriate staff member.

DRAM 5700 - Studies in Professional Acting
Topics and skills not taught in DRAM 5701-5706. May include work with the techniques of specific master acting teachers such as (but not limited to) Sanford Meisner, Stella Adler, Tadashi Suzuki, and Utah Hagan. May be repeated with change of topic.

DRAM 5701 - Professional Acting I
Acquiring core tools and exploring skills required for professional acting. Applying basic skills to a full-length Shakespeare performance project.

DRAM 5702 - Professional Acting II
Exploring and applying the core techniques required for acting in realistic and naturalistic plays; including the principles of characterization.

DRAM 5703 - Professional Acting III
Developing and applying skills for acting through poetic language with particular attention paid to acting Shakespeare and the Folio's Guide for the Actor.

DRAM 5704 - Professional Acting IV

Working with techniques and styles for performing comedy; both in scripted plays and other performance modes.

DRAM 5705 - Professional Acting V
Additional work in analyzing and performing contemporary scripts written for both stage and screen.

DRAM 5706 - Professional Acting VI
Preparation for the world of professional theatre, including development of audition techniques, learning the workings of the industry, and establishing career connections.

DRAM 5711 - Studies in Directing

DRAM 5721 - Performance Techniques
Performance study and practice in selected areas of dramatic arts.

DRAM 5759 - Practicum in Performance
Special projects in performance, usually related to a production of the Department of Dramatic Arts/Connecticut Repertory Theatre.

DRAM 5792 - Independent Study in Performance
Independent study under the direction of an appropriate faculty member.

DRAM 5796 - MFA Project in Performance
Research and preparation for an assigned MFA performance project, usually acting a major role in a production of the Department of Dramatic Arts/Connecticut Repertory Theatre.

DRAM 5800 - Studies in Movement for the Actor
Topics and skills not normally included in DRAM 5801-5807. Content may include (but is not limited to) stage violence, armed or unarmed combat, gymnastics, and T¿ai Chi. May be repeated with changes in topic.

DRAM 5801 - Movement for the Actor I
Exploration of the actor's physical instrument.

DRAM 5802 - Movement for the Actor II
Physical conditioning and techniques of characterization.

DRAM 5803 - Movement for the Actor III
Exploration of theatrical styles in the dramatic space, including work in the Commedia form.

DRAM 5804 - Movement for the Actor IV
Physical expression for the actor through expressive mask work and physical storytelling.

DRAM 5805 - Movement for the Actor V
Developing styles of comedic physical movement, including the art of clowning.

DRAM 5806 - Movement for the Actor VI
Continued development of styles and techniques for expressive movement and their application to the world of Physical Theatre.

DRAM 5806 - Alexander Technique for the Actor
Body alignment, release, and constructive rest techniques developed by F. M. Alexander are applied to actors¿ posture, movement, and breathing.

DRAM 5807 - Alexander Technique for the Actor
Body alignment, release, and constructive rest techniques developed by F. M. Alexander are applied to actors¿ posture, movement, and breathing.

†GRAD 5930. Full-Time Directed Studies (Master's Level) (GRAD 397) 3 credits.

†GRAD 5950. Master's Thesis Research (GRAD 395) 1 - 9 credits.

†GRAD 5960. Full-Time Master's Research (GRAD 396) 3 credits.

GRAD 5998. Special Readings (Master's) (GRAD 398) Non-credit.

GRAD 5999. Thesis Preparation (GRAD 399) Non-credit.

Ecology and Evolutionary Biology

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Department Head
Professor Kentwood Wells

Professors
Adams, C. Jones, Caira, Chazdon, Colwell, Goffinet, Henry, Holsinger, Les, Schlichting, Schwenk, Silander, Simon, Thorson, Trumbo, Turchin, Wagner, Willig, and Yarish

Associate Professor
Bush, Coe, Crespi, Jockusch, L. Lewis, Elphick, P. Lewis, Rubega, Schultz, Taigen

Ecology and Evolutionary Biology (EEB) emphasizes the diversity and evolution of animals and plants; as well as their interactions with the environment. Research in the department covers a wide range of fields, including behavioral ecology of vertebrates and invertebrates, systematics and evolution of plants and animals, population and community ecology, functional morphology and development, and conservation biology. Faculty members and graduate students work on nearly all of the major group of organisms, including algae, mosses and lichens, aquatic plants, desert plants, tropical and temperate forest trees, the parasites of sharks and rays, insects, spiders, fish, amphibians, reptiles, birds, and mammals. Current research projects span the globe, with investigators working throughout North America, Costa Rica, Panama, Nicaragua, Brazil, Borneo, Madagascar, South Africa, Australia, New Zealand, Japan and many other countries.

Biodiversity and Conservation Biology

Biodiversity refers to the variation in life's forms, from genes to ecosystems. Conservation biology is the science of understanding and protecting the earth's biodiversity. Practitioners in this field require a solid grounding in ecology and evolutionary biology, combined with an understanding of the societal factors that influence ecological systems.

The B.S./M.S. Program

The Master of Science (M.S.) degree in Biodiversity and Conservation Biology is administered by the Department of Ecology and Evolutionary Biology. The Biodiversity and Conservation Biology M.S. is a Plan B degree, based primarily on coursework. Students are required to participate in a vocational internship and a research project as part of their plan of study, but no research thesis is required. The M.S. is designed to be earned jointly with the EEB B.S. degree, with M.S. level classes integrated into a student's plan of study during their final two years. Students who have already completed an equivalent B.S. degree may confine their study to the M.S. portion of the degree program. Coursework combines education in ecology, evolution, systematics, and natural history, with relevant training in public policy, economics, and ethics.

Students are prepared for a diversity of career tracks, ranging from conservation planning to endangered species management, environmental education to museum curation, ecological consultancy to environmental law.

Potential employers include non-governmental organizations, state and federal agencies, and environmental industries. More detailed information about the program is available at the EEB department's web site http://hydrodictyon.eeb. uconn.edu/department/BSMS/ .

INTERDISCIPLINARY STUDY

Plant Biology

Course work and research opportunities in plant biology are offered in three separate departments. Plant systematics and evolution, plant ecology, plant physiological ecology, plant morphology, and plant molecular systematics and evolution are offered in the Department of Ecology and Evolutionary Biology. Plant physiology, cellular and molecular biology are offered in the Department of Molecular and Cell Biology. Additional course offerings in plant biology are available in the Department of Plant Science.

Marine Sciences

Research and teaching facilities for marine sciences are located at the Avery Point campus of the University of Connecticut, and on the main campus in Storrs. Major areas of research include the ecology, physiology, behavior, and systematics of marine organisms; physical and chemical oceanography; sedimentology; and climatology. Recirculating sea water systems are available for maintaining marine organisms over extended periods for research. Direct inquiries to: Department Head, Marine Sciences, University of Connecticut at Avery Point, Groton, Connecticut 06340-6043.

Organization for Tropical Studies

The University of Connecticut is a member of the Organization for Tropical Studies, which offers graduate courses on tropical ecology in Costa Rica. Qualified graduate students in biology and related areas are eligible to participate in the February-March and July-August sessions. For information, write to Director of Graduate Studies, Department of Ecology and Evolutionary Biology, Unit 3043, Storrs, Connecticut 06269-3043.

Courses

EEB 5200 - Biology of Fishes
An introduction to the biology of fishes, with an emphasis on adaptation and evolutionary diversification. Topics include the evolution of major groups, morphology, physiology, behavior, and population and community ecology. Lectures, critical discussions of current journal articles, student presentations, and exercises in the field and laboratory. A research paper and class presentation are required on a topic pre-approved by the instructor.

EEB 5203 - Developmental Plant Morphology
Exploration and analysis of diversity in plant form using basic principles of plant construction and development. A research paper is required, in which the principles learned in lecture are applied to the analysis of the development of a plant from seed through reproductive maturity.

EEB 5204 - Aquatic Plant Biology
Field and laboratory-oriented study of the anatomy, morphology, ecology, physiology, systematics and evolution of vascular aquatic and wetland plants. A research paper and class presentation are required on a topic pre-approved by the instructor.

EEB 5209 - Soil Degradation and Conservation
Causes and consequences of soil degradation in agricultural and natural ecosystems, including salinization, erosion, nutrient impoverishment, acidification, and biodiversity loss. Historical perspectives and current strategies for soil conservation. Readings in original literature will be emphasized.

EEB 5215 - Physiological Ecology of Animals
Physiology of animals in an evolutionary context. Lectures and critical discussions of current journal articles. A research paper and

class presentation are required on a topic pre-approved by the instructor.

EEB 5220 - Evolution of Green Plants
Introduction to morphological, ultrastructural, and molecular characters used for inferring evolutionary relationships of green plants, from the green algae to the flowering plants, with emphasis on evolutionary changes involved in the transition from aquatic to terrestrial habitats.

EEB 5221 - Evolution of Green Plants Laboratory
Study of morphological and anatomical characters of extant and fossil plants. Phylogenetic inferences from morphological and molecular characters. Discussion of primacy literature.
Prerequisite: EEB 5220, which may be taken concurrently (RG 3169).

EEB 5240 - Biology of Bryophytes and Lichens
Diversity, evolution, ecology, development and taxonomy of the bryophytes (mosses, liverworts, and hornworts) and lichen-forming fungi.

EEB 5250 - Biology of the Algae
Laboratory and field-oriented study of the major groups of algae, emphasizing structure, function, systematics, and ecology.

EEB 5254 - Mammalogy
Lectures cover diversity, natural history (including behavior, ecology, reproduction, etc.), and evolution of mammals; readings from original literature are included. Laboratories cover anatomy, systematics, and distribution of major groups of mammals.

EEB 5265 - Herpetology
Lectures cover environmental physiology, ecology, and behavior of amphibians and reptiles. Emphasis is on readings from the original literature. Laboratories cover evolution, systematics, and distribution of major groups of the world.

EEB 5269 - Social Insects
Behavior, ecology, and evolution of social insects (especially wasps, bees, ants, and termites) with an emphasis on the evolution of social behavior and on the ecological impact of social insects.
Open to graduate students in EEB, others with permission (RG798).

EEB 5271 - Systematic Botany
Classification, identification, economic importance, evolution and nomenclature of flowering plants. Laboratory compares vegetative and reproductive characteristics of major families. A research paper and class presentation are required on a topic pre-approved by the instructor.

EEB 5301 - Population and Community Ecology
Overview of population and community ecology, including population regulation and dynamics, metapopulations, species interactions, biodiversity, community structure, and evolutionary ecology. Theoretical and case-history approaches, emphasizing plants,invertebrates, and vertebrates. Lecture, discussion, and exercises in analysis and modeling.
Open to graduate students in EEB, others with permission (RG798).

EEB 5302 - Organisms and Ecosystems
Overview of organismal and ecosystem ecology, including biophysical basics, resource utilization and allocation, life history patterns, energetics, matter and energy flow in ecosystems, and temporal and spatial dynamics at ecosystem and landscape scales. Theory, experiments, and computer modeling.
Open to graduate students in EEB, others with permission (RG798).

EEB 5307 - African Field Ecology and Renewable ResourcesManagement
An intensive, field oriented methods course conducted primarily in South Africa at the Basil Kent Field Station, Great Fish River Reserve in collaboration with the University of Fort Hare. An introduction to South Africa culture and history, ecology, and natural resources is provided in weekly meetings during the semester. This is followed by 3 weeks in South Africa. Topics covered include vegetation and faunal surveys, data collection and analysis, biodiversity monitoring, and conservation management. A research paper relating to an independent study conducted by the student in the field is required.

EEB 5310 - Conservation Biology
Case studies and theoretical approaches to conservation of biological diversity, genetic resources, plant and animal communities, and ecosystem functions. Topics emphasize ecological and evolutionary principles that form the scientific basis of this emerging, interdisciplinary field, as well as socio-political, legal, economic, and ethical aspects of conservation.

EEB 5333 - Evolutionary Developmental Biology
An advanced course in evolutionary biology, emphasizing the underlying developmental bases of evolutionary change. Concepts of homology, constraint, and heterochrony, with examples from both animal and plant systems.

EEB 5335 - Vertebrate Social Behavior
Lectures and discussions dealing with various aspects of vertebrate social behavior, including territoriality, mating systems, sexual selection, and group behavior. The emphasis is on reading and critical analysis of original literature.

EEB 5347 - Principles and Methods of Systematic Biology
The basic concepts and modern procedures employed in systematic biology: literature retrieval, species description, phylogenetic inference, nomenclature, and current conceptual issues. Laboratories include computer techniques in phylogenetic analysis.

EEB 5348 - Population Genetics
This course is designed to provide a theoretical background for studies in evolution. Emphasis is placed on understanding the conceptual foundations of the field and on the application of these concepts to an understanding of the roles of mutation, evolution of populations.

EEB 5349 - Phylogenetics
Estimation of genealogies at the level of species and above, and their application and relevance to various biological disciplines, including systematics, ecology, and morphological and molecular evolution. Surveys both parsimony and model-based methods, but emphasizes maximum liklihood and Bayesian approaches.
Prerequisite: EEB 5347 or consent of instructor (RG 3167).

EEB 5350 - Molecular Systematics
Exploration of key literature focusing on the practical aspects of incorporating knowledge of DNA sequence evolution into phylogenetic tree construction. Laboratory methods for collection of molecular data including management, extraction, amplification, and

sequencing.

EEB 5360 - Functional Ecology of Plants
Physiological, morphological, and structural responses of plants to the physical and biotic environment and to environmental change. Readings, lectures and discussions emphasize plant responses at all levels of organization, from cells to whole plants. Themes include: organismal integration, consequences and constraints in plant adaptation, and the functioning of plants within communities and ecosystems.

EEB 5369 - Current Topics in Biodiversity
Analysis and discussion of current literature on biodiversity.

EEB 5370 - Current Topics in Conservation Biology
Analysis and discussion of current literature on conservation.

EEB 5371 - Current Topics in Molecular Evolution and Systematics
Current concepts, ideas and techniques in the field of molecular evolution, and theoretical problems peculiar to the phylogenetic analysis of molecular data.

EEB 5372 - Computer Methods in Molecular Evolution
Practical aspects of molecular data analyses. Databank searches, sequence alignments, statistical analyses of sequence data. Parsimony, distance matrix, and spectral analysis methods. Students compile and analyze a data set of their choice.

EEB 5375 - Evolution and Ecology of Communities
The evolutionary consequences of ecological interactions between species and the role of evolution in shaping biological communities. Readings, lectures, and discussions emphasize the importance of descriptive, experimental, and theoretical approaches in community biology.

EEB 5445 - Advanced Invertebrate Zoology
The functional morphology, ecology and evolution of selected invertebrate groups. Field trips are required.

EEB 5447 - Mathematical Ecology
Theory and methods of mathematical modeling as applied to ecological systems. Modeling techniques developed around examples from ecological literature.

EEB 5449 - Evolution
A review of our current understanding of the patterns and processes of organic evolution. Class periods will include discussion and critical analysis of primary literature.

EEB 5452 - Field Ecology
A field of study of the biotic communities in selected areas of eastern North America.

EEB 5453 - Helminthology
Morphology, taxonomy, and physiology of the parasitic worms. Methods of culture, preparation for study, and experimental determination of life cycles.

EEB 5459 - Aquatic Insects
Taxonomic, habitat, and life history studies of aquatic insects.

EEB 5462 - Evolutionary Pattern and Process: Experimental Approaches
A rigorous introduction to the concepts and methods for systematic and evolutionary studies with an emphasis on genetic, molecular (proteins and DNA), and phylogenetic analyses. The laboratory portion provides the opportunity to gain experience in DNA extraction, amplification, sequencing, alignment, and phylogenetic analyses.

EEB 5463 - Plant Ecology
An advanced course in plant ecology with emphasis on the effects of environment on development of vegetation, metabolism of the ecosystem, cycling of nutrients, growth and succession. Principles of vegetation dynamics, classification and their ecological interpretation will be discussed.

EEB 5477 - Insect Phylogeny
A review of our current understanding of the evolutionary relationships of the major orders and families of insects, ncluding the phylogenetic position of Insecta within Arthropoda.

EEB 5889 - Research
Conferences and laboratory work covering selected fields of Ecology and Evolutionary Biology.

EEB 5891 - Internship in Ecology, Conservation, or Evolutionary Biology
An internship with a non-profit organization, a governmental agency, or a business under the supervision of Ecology and Evolutionary Biology faculty. Activities relevant to the practice of ecology, biodiversity, evolutionary biology, or conservation biology will be planned and agreed upon in advance by the job site supervisor, the faculty coordinator, and the intern. One credit may be earned for each 42 hours of pre-approved activities up to a maximum of nine credits.

EEB 5894 - Seminar
Study and discussion of current researches, books and periodicals in the field of Biology. Subtopic designations: Ec, Ecology; M, Mammalogy; Mec, Marine Ecology; Pr, Parasitology; En, Entomology; Bi, Biogeography; Ev, Evolution; Sy, Systematics.

EEB 5895 - Invest Sp Topics
Advanced study in a field within Ecology and Evolutionary Biology.

EEB 5899 - Independent Study
A reading course for those wishing to pursue special work in biology. It may also be elected by undergraduate students preparing to be candidates for degrees with distinction.

EEB 6480 - Seminar in Vertebrate Biology
Analysis and discussion of current literature in vertebrate biology.

EEB 6481 - Seminar in Biodiversity
Provides the opportunity for students to present research plans, reports of work in progress, and full-length seminars on completed research projects in ecology, systematics, and evolutionary biology to a supportive but critical audience.

EEB 6482 - Seminar in Spatial Ecology
Analysis and discussion of current literature in spatial ecology.

EEB 6483 - Seminar in Marine Biology
Analysis and discussion of current literature in marine biology.

EEB 6484 - Seminar in Plant Ecology
Analysis and discussion of current literature in plant ecology.

EEB 6485 - Seminar in Comparative Biology
Analysis and discussion of current literature in evolution and comparative ecology.

EEB 6486 - Seminar in Systematics
Analysis and discussion of current literature in systematic biology.

EEB 6487 - Seminar in Parasitology
Analysis and discussion of current literature in parasitology.

EEB 6490 - Seminar in Behavioral Ecology
Analysis and discussion of current literature in behavioral ecology. Students in this course receive a grade of S (Satisfactory) or U (Unsatisfactory).

†GRAD 5930. Full-Time Directed Studies (Master's Level) (GRAD 397) 3 credits.

†GRAD 5950. Master's Thesis Research (GRAD 395) 1 - 9 credits.

†GRAD 5960. Full-Time Master's Research (GRAD 396) 3 credits.

GRAD 5998. Special Readings (Master's) (GRAD 398) Non-credit.

GRAD 5999. Thesis Preparation (GRAD 399) Non-credit.

†GRAD 6930. Full-Time Directed Studies (Doctoral Level) (GRAD 497) 3 credits.

†GRAD 6950. Doctoral Dissertation Research (GRAD 495) 1 - 9 credits.

†GRAD 6960. Full-Time Doctoral Research (GRAD 496) 3 credits.

GRAD 6998. Special Readings (Doctoral) (GRAD 498) Non-credit.

GRAD 6999. Dissertation Preparation (GRAD 499) Non-credit.

Economics

*****

Department Head

Professor Dennis R. Heffley

Professors

Carstensen, Clapp, Cosgel, Cotterill, Hallwood, Knoblauch, Langlois, Miceli, Ray, Ross, Santerre, and Segerson

Associate Professor

Ahking, Alpert, Couch, Cunningham, Dharmapala, Harding, Harmon, Kimenyi, Landau, Lott, Minkler, Morand, Randolph, Tripathi, and Zimmerman

Assistant Professors

Aysun, and Matschke

Study leading to the Master of Arts (M.A.) and Doctor of Philosophy (Ph.D.) degrees is offered.

Requirements for the Master of Arts Degree.

The program of studies for the M.A. degree is not uniform for all students. The combination of courses depends on the candidate's objective. For some purposes, a broad spread of subject-matter courses may be advisable, while for other purposes a narrowly focused program may be appropriate. Economics 5201, 5202, 5301, 5311 and 5312 are required. Candidates with inadequate backgrounds in mathematics are required to take Economics 2301.

Requirements for the Doctor of Philosophy Degree

Students in the Ph.D. program are required to pass Economics 6110, 6201, 6202, 6211, 6212 6301, 6311, 6312, or their equivalents.

Each student must pass the preliminary examination in economic theory before taking the field examination. Students choose from among the following: Industrial Organizations, Macro/Money, Labor Economics, and Environmental and Resource Economics. This field is then augmented with other course offerings.

Special Facilities

Computer time and assistance are available at the University Computer Center. In addition, there are computers in the Department for use by graduate students. Research opportunities may be available in connection with faculty projects or at the Connecticut Center for Economic Analysis. Some students publish scholarly articles in partnership with faculty.

Courses

ECON 5101 - European Economic History
The economic development of Europe from the Industrial Revolution to World War I. Emphasis on the economic and social factors that led to the industrialization of Europe.

ECON 5102 - American Economic History
The growth and development of the American economy and the evolution of its economic institutions from the colonial period to the present. Assessment of agriculture, industry, transportation, commerce, finance, government, and population; and of their interaction with the physical environment, technology, public policy, and the world economy.

ECON 5110 - History of Economic Thought from 1890
The history and methodological underpinnings of modern economic theory. Topics include macroeconomics and business cycles; utility and demand theory; and industrial organization. Particular attention to Marshall and Keynes.

ECON 5128 - Economic Rights
Economic Rights include the right to an adequate standard of living, the right to work, and the right to basic income guarantees for those unable to work. These rights are grounded in international law - particularly in the Universal Declaration of Human Rights and the International Covenant on Economic, Social, and Cultural Rights. This class will explore the conceptual bases, measurement, and policy applications of economic rights. Specific topics will include: child labor, the right to development, non-governmental initiatives, and the institutionalization of economic rights (e.g., constitutionalization versus statutory implementation versus discretionary policies).

ECON 5198 - Topics in Economic History
Focuses on critical episodes and salient turning points in the history of European, American, and Third World economic development; emphasis on institutional and technological factors. Evaluates different approaches.

ECON 5201 - Microeconomics
Beginning graduate microeconomics

covering consumer and producer theory, price determination, economic efficiency, and welfare analysis.

ECON 5202 - Macroeconomics
Beginning course in graduate macroeconomics that introduces students to dynamic optimization problems and dynamic general equilibrium models.

ECON 5298 - Topics in Microeconomics
Topics in microeconomic theory. Students choose the material to be covered.

ECON 5301 - Mathematical Economics
Use of mathematical concepts such as matrix algebra, optimization, and

ECON 5311 - Econometrics I
Construction, estimation, and interpretation of economic behavioral and technical equations using data that are passively generated by a system of simultaneous, dynamic and stochastic relations.

ECON 5312 - Econometrics II
Model estimation and hypothesis testing when standard assumptions of the classical regression model are violated. Pooled cross section and time series
Prerequisite: ECON 5311

ECON 5348 - Economic Development Policy
The role of government in the economic development of underdeveloped countries. Topics include: alternative paradigms of development and the resulting place for government in the economy; the theory, institutions, and policies of government in planning, fiscal, and monetary concerns; analysis of policy instruments influencing international trade and financial flows; and the influence of international organizations on the development process.

ECON 5411 - Monetary Theory and Policy
Theoretical analysis of the role of money in the economy, including general equilibrium and monetarist frameworks, the demand for and supply of money, channels of monetary influence, and determinants of long-term and short-term interest rates. Problems of monetary policy, such as selection of instruments and targets, use of discretionary policy, and stability of the money multiplier.

ECON 5416 - Issues in Monetary Theory and Policy
Contemporary theoretical and policy issues in money, such as portfolio theory, the money supply process, the mechanics of policy implementation, “crowding out,” dynamic macro models, disequilibrium macro models, and rational expectations.
Prerequisite: ECON 5411 (RG796).

ECON 5421 - International Trade: Theory and Policy
The economic aspects of international relations, including the pure theory of international trade and the instruments of commercial policy. Topics include comparative advantage; international economic policies; and regional economic integration.

ECON 5422 - International Finance: Theory and Policy
Theoretical and historical analysis of international finance, including balance-of-payments adjustments, foreign-exchange markets, international capital flows, and the effectiveness of macroeconomic policies in open economies.

ECON 5433 - Federal Finance
Theories of government in the economy including general equilibrium, public choice and institutional economics. Government expenditures: budgeting, cost-benefit studies and analysis of specific expenditure programs. Taxation: equity and efficiency criteria for evaluating taxes, with application to major sources of revenue; public debt.

ECON 5434 - State and Local Finance
Taxes and expenditures in a federal system, with particular emphasis on intergovernmental relationships. Rationale for federalism, problems of public choice, and tax incidence analysis.

ECON 5439 - Urban and Regional Economics
Theoretical and empirical analysis of urban and regional systems in developed and developing economies. Special emphasis on the spatial characteristics and problems of metropolitan markets for housing, transportation services, productive factors, and final products; land-use controls, housing subsidies, public transit, and other forms of public sector intervention.

ECON 5441 - The Labor Market
A thorough examination of the labor market. Topics include human capital, wage determination, public policy, and money wage rates.

ECON 5461 - Industrial Organization
Survey of contemporary theory and models of the organization of industry. Topics include oligopoly; product differentiation; advertising; innovation; contestable markets; the financial theory of the firm; dynamic and evolutionary models; and transaction-cost economics.

ECON 5462 - Topics in Public Policy Toward Industry
Theories of economic regulation. U.S. antitrust policy. Regulation of natural monopolies in theory and practice. Health and safety regulation.

ECON 5463 - The Economics of Organization
Surveys the modern agency, transaction-cost, and evolutionary theories of organization. Topics include measurement and monitoring costs, asset specificity, incomplete-contracts theory, the dynamic capabilities approach, and alternative organizations.

ECON 5473 - Economic Development
An examination of the problems facing the less developed nations. Comparisons of alternative paradigms of economic development (orthodox to political economy) and the strategies and policies they imply.

ECON 5474 - Seminar in Development and Growth
A continuation of Economics 350. Topics include agriculture and industry in development, investment criteria, essentials of developing planning, the promotion of domestic saving and fixed investment, foreign aid, improvements in international trade, and human capital formation.

ECON 5479 - Economic Growth and Fluctuations
Economic growth and business cycles in the economically advanced countries, with emphasis on both theory and evidence.

ECON 5494 - Applied Research Seminar
A survey of research methods in economics

and development of individual research projects.

ECON 5495 - Topics in Economics

ECON 5499 - Independent Study in Economics

ECON 6110 - History of Economic Thought
Advanced treatment of material in 320W and 322W.

ECON 6201 - Microeconomics II
Microeconomic theory: contemporary economic analysis of decisions by consumers, producers, and other agents.
Prerequisite: ECON 5201 or ARE 5201 (RG260).

ECON 6202 - Macroeconomics II
A rigorous course in macroeconomic modeling with policy applications. Focuses primarily on developments in the current literature, analytical techniques, and macroeconomic models. Includes an introduction to stochastic dynamic models.
Prerequisite: ECON 5202 (RG263).

ECON 6211 - Microeconomics III
Markets, general equilibrium theory, efficiency, and advanced topics in microeconomics.
Prerequisite: Completion of ECON 6201 with a grade of B- or better (RG264),

ECON 6212 - Macroeconomics III
Stochastic modeling, recent developments in the literature, and policy applications. Topics may include real business cycle theory, new classical economics, neo-Keynesian theory and growth models.
Prerequisite: Completion of ECON 6202 with a grade of B- or better (RG265).

ECON 6301 - Advanced Mathematical Economics I
An introduction to advanced mathematical topics with applications to economics. Topics and applications may include set theory, logic, topology, difference and differential equations, game theory, preference theory and matching models.

ECON 6302 - Advanced Mathematical Economics II
Topics and applications may include: dynamic programming, fixed-point theorems, measure theory, Markov chains and processes, functional analysis, and advanced optimization.
Prerequisite: Completion of ECON 6301 with a grade of B- or better (RG661).

ECON 6311 - Econometrics II
Theoretical underpinnings of standard econometric methods of estimation and testing of single-equation models.
Prerequisite: STAT 5415 (RG261).

ECON 6312 - Econometrics III
Special topics from single-equation models; simultaneous equations models; full information maximum likelihood methods; and recent advances in econometrics.
Prerequisite: Completion of ECON 6311 with a grade of B- or better (RG262).

ECON 6400 - Independent Study
Students pursue an in-depth study of an area of interest under the guidance of a faculty member.

ECON 6411 - Advanced Monetary Theory and Policy I
Advanced treatment of material covered in ECON 346.
Prerequisite: ECON 6212 (RG663)

ECON 6412 - Advanced Monetary Theory and Policy II
Advanced treatment of material covered in ECON 347.
Prerequisite: ECON 6411 (RG664).

ECON 6421 - Advanced International Trade: Theory and Policy
Advanced treatment of material covered in ECON 342.
Prerequisite: ECON 6211 (RG662).

ECON 6422 - Advanced International Finance: Theory and Policy
Advanced treatment of material covered in ECON 343.
Prerequisite: ECON 6212 (RG663)

ECON 6435 - Government Expenditures
Theory and evidence of government expenditure policy.
Prerequisite: ECON 6211 (RG662).

ECON 6436 - Government Revenues
Positive and normative analysis of alternative government resource uses.
Prerequisite: ECON 6211 (RG662).

ECON 6441 - Advanced Labor Economics I
Labor supply with an emphasis on the family. Applications in the area of demography, development, and health.
Prerequisite: ECON 6211 (428) (RG3880)

ECON 6442 - Advanced Labor Economics II
Labor demand and other applied topics in labor economics.
Prerequisite: ECON 6211 (428) (RG3879)

ECON 6461 - Industrial Organization
Advanced treatment of material covered in ECON 381.
Prerequisite: ECON 6211 (RG662).

ECON 6463 - Economics of Organization
Advanced treatment of material covered in ECON 386.

ECON 6466 - Environmental Economics
Economic analysis of environmental problems and corrective policy instruments. Topics covered will include the theory of externalities and public goods, the role of uncertainty and imperfect information in policy design, benefit-cost analysis, and non-market valuation. Applications to various environmental problems (such as air and water pollution, hazardous waste, and occupational health and safety) will be discussed.
Prerequisite: ECON 5201 or ARE 5201 (RG260).

ECON 6494 - Graduate Seminar
Participation in departmental research seminars and presentation and discussion of original research projects. Students taking this course will receive a grade of Satisfactory (S) or Unsatisfactory (U).
Requirement Group: Prerequisite: ECON 6211 (RG662).

ECON 6463(3)
Economics of Organization
Advanced treatment of material covered in ECON 386.
Components: Lecture

ECON 6466(3)
Environmental Economics
Economic analysis of environmental problems and corrective policy instruments. Topics covered will include the theory of externalities and public goods, the role of uncertainty and imperfect information in policy design, benefit-cost analysis, and non-market valuation. Applications to various environmental problems (such as air and water pollution, hazardous waste, and occupational health and safety) will be discussed.

Components: Lecture
Course Equivalents: ARE 6466
Requirement Group: Prerequisite: ECON 5201 or ARE 5201 (RG260).

ECON 6494(1)
Graduate Seminar
Participation in departmental research seminars and presentation and discussion of original research
projects. Students taking this course will receive a grade of Satisfactory (S) or Unsatisfactory (U).
Components: Seminar

†GRAD 5930. Full-Time Directed Studies (Master's Level) (GRAD 397) 3 credits.

†GRAD 5950. Master's Thesis Research (GRAD 395) 1 - 9 credits.

†GRAD 5960. Full-Time Master's Research (GRAD 396) 3 credits.

GRAD 5998. Special Readings (Master's) (GRAD 398) Non-credit.

GRAD 5999. Thesis Preparation (GRAD 399) Non-credit.

†GRAD 6930. Full-Time Directed Studies (Doctoral Level) (GRAD 497) 3 credits.

†GRAD 6950. Doctoral Dissertation Research (GRAD 495) 1 - 9 credits.

†GRAD 6960. Full-Time Doctoral Research (GRAD 496) 3 credits.

GRAD 6998. Special Readings (Doctoral) (GRAD 498) Non-credit.

GRAD 6999. Dissertation Preparation (GRAD 499) Non-credit.

Education

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Department Head
Thomas C. DeFranco

Associate Dean
Associate Professor Marijke T. Kehrhahn

Assistant Dean
Associate Professor in Residence Yuhang Rong

The Neag School of Education offers graduate programs which lead to the degrees of Master of Arts, Doctor of Physical Therapy, Doctor of Education, and Doctor of Philosophy. In addition, the School of Education confers the Sixth-Year Diploma in Professional Education. Graduate courses in education are offered in the following academic departments: Curriculum and Instruction, Educational Leadership, Educational Psychology, and Kinesiology.

Master's degree study is available in most secondary school teaching areas as well as in agricultural, elementary, music, and special education teaching areas. In addition, the Teacher Certification Program for College Graduates (TCPCG) is a 45-credit program beginning with two summer sessions followed by a full year of additional work, which culminates in the award of the M.A. degree and the University's recommendation for certification. Additional information is available at <www.education.uconn.edu>.

Courses of study also are available for school service personnel in areas such as evaluation and measurement, gifted and talented education, educational technology, reading, school counseling, school psychology, special education, supervision and curriculum development.

Additionally, master's-level study is available in a variety of areas including adult learning, counseling, curriculum and instruction, educational administration, educational psychology, educational technology, kinesiology, and higher education and student affairs.

A program leading to the Sixth-Year Diploma in Professional Education provides an opportunity for advanced students who have the master's degree to increase their professional competence through further study under the guidance of a faculty member. For more information on Sixth-Year Diploma programs in EDCI, EDLR, and EPSY, see the department's section of the catalog.

The D.P.T. degree is offered in the field of Physical Therapy throguh the Department of kinesiology.

The Ph.D. degree is offered in the following fields of study: adult learning, curriculum and instruction, educational administration, educational psychology, educational technology, kinesiology, and special education. The Ed.D. degree is offered in the field of educational leadership.

Admission Requirements for the Master of Arts Degree

Applicants must have specific preparation for teaching adequate to meet the minimum professional requirements for obtaining a bachelor's degree through the Neag School of Education. College graduates with outstanding undergraduate records, but without such preparation, may apply for admission and if admitted, are expected to make up any deficiencies. Applicants wishing to specialize in elementary education must have completed an appropriate concentration of elementary education courses; applicants wishing to specialize in kinesiology should have an undergraduate major or the equivalent in kinesiology or related fields.

Applicants may be required to submit scores for the General Test of the Graduate Record Examinations and/or the Miller Analogies Test.

Admission Requirements for the Ph.D. Degree

The Doctor of Philosophy degree program is intended to give persons of unusual ability and promise the opportunity to become scholars in their areas of specialization. Only outstanding individuals whose experience and background will allow them to carry on a scholarly program and to work professionally at a level commensurate with the degree after its completion are accepted into the program.

Applicants to doctoral programs in education must submit scores for the Graduate Record Examinations General Test. In addition, applicants to some programs may be required to submit scores for the Miller Analogies Test. These tests must have been taken within the last five years. International students may have these test requirements waived by the Admissions Committee of a given program or deferred until after admission.

Special Facilities in the Neag School of Education

Several important services, facilities, and agencies contribute to the scholarship and research experiences of graduate students in education.

There are opportunities in the Reading-Language Arts center for graduate students to pursue research studies of the many problems affecting the teachers of reading at all grade levels. The Institute for Urban School Improvement works with students, educators, school communities, local and state governing bodies, and scholars to meet the needs of urban youth and schools through collaboration and evidence-based practices. The University of Connecticut Center for Educational Policy Analysis serves to inform educational and public policy leaders about the development, analysis, and implementation of educational policies. The Center on Postsecondary Education and Disability educates preprofessionals and professionals in acquiring knowledge and skills and developing state-of-the-art practices in disability services. The Department of Kinesiology has laboratory facilities available for research in these areas: sport biomechanics, exercise physiology, sport disabilities, sport social sciences, and athletic training. In addition, the local public schools of Connecticut cooperate closely with the University and provide opportunities for internships, practica, and field studies.

Graduate Courses

Education courses are listed under the sponsoring departments. Reference should be made to the offerings of the Departments of Curriculum and Instruction, Educational Leadership, Educational Psychology, Kinesiology, and Physical Therapy.

Education: Curriculum & Instruction

Department Head
Professor Mary Anne Doyle

Professors
DeFranco, Goodkind, Leu, Reyes, and Settlage

Associate Professor
Glenn, Irizarry, Kaufman, Levine, Marcus, Moss, Neelly, Staples, and Truxaw

Assistant Professors
T. Casa, Howard, and Rojas

Graduate programs in Curriculum and Instruction lead to degrees of Master of Arts and Doctor of Philosophy. The Neag School of Education also confers a Sixth-Year Diploma in Professional Education. Master's and doctoral study is offered in bi-lingual and bi-cultural education, curriculum development, elementary education, and in most secondary school teaching areas. In addition, master's study is offered in Music Education. Students should consult the statement under Education for information pertaining to admission requirements and special facilities available in the Neag School of Education.

Courses

Education: Curriculum & Instruction

EDCI 5000 - Teaching in the Affective Domain
Study in the relationship between the affective and cognitive domains of education and how the affective domain influences student behavior in the learning process, self-awareness, and self-concept. Classroom activities, materials, and methods are featured.

EDCI 5002 - History of Education in the United States
Development of educational ideas and practices in the United States from the colonial period to the present.

EDCI 5004 - History of Educational Thought
Leading educational ideas and how these ideas influence theory and professional practice. The contributions of key individuals in the ancient, medieval and modern worlds are the basis for course organization.

EDCI 5006 - Comparative and International Education
Education and educational systems in comparative and international perspective, with emphasis on the interaction of educational institutions with other social, cultural and political institutions in society.

EDCI 5008 - Philosophical Analysis in Education
Introduction to philosophical analysis of significant educational concepts.

EDCI 5040 - Popular Music and Informal Education
Exploration of how popular music intersects with education, including the production and
Open to students enrolled in the MA in Music Education and others with

EDCI 5041 - Theoretical Foundations of Music Education
Considers issues including music education programs, practices, curricula, and policies. Objectives for the course are to: (a) develop professional rationales for broadly used music education practices that involve information derived from relevant research in history, sociology, and philosophy, and critical theory; (b) analyze and critique selected music education programs, practices, curricula, and policies; (c) write a paper that reviews and critiques a broad area of practice in music education and recommends policy alternatives.
Open to students enrolled in the MA in Music Education and others with

EDCI 5045 - Supervision and Administration of the School Music Program
Programming, scheduling, housing as they apply to music in the schools; of community demands, public relations and legal commitments; of types of supervisory and in-service organization.

EDCI 5047 - Music Across the Curriculum
Strategies and theories for the integration of music experiences across the curriculum.
Open to students enrolled in the MA in Music Education and others with

EDCI 5050 - TCPCG Seminar I: Student Teaching Seminar
Analysis of instructional practice in the clinical setting. Relationship of instruction to theory, and implications for instructional evaluation, are emphasized.
Open to students in the Teaching Certification Program for College Graduates, others with permission (RG2794).

EDCI 5055 - TCPCGSeminar II: Teacher as Professional
Culminating seminar experience in the TCPCG program.
Open to students in the Teaching Certification Program for College Graduates, others with permission (RG2794).

EDCI 5060 - Social and Multicultural Foundations of Education
An introduction to the social and multicultural foundations of contemporary public education in U.S. society. Includes discussion of the nature, organization and purposes of public education in a democratic sociey, cultural diversity in U.S. schools and society, the role of the classroom teacher, professional ethics, and contemporary issues in U.S. education.
Open to students in the Teaching Certification Program for College Graduates, others with permission (RG2794).

EDCI 5062 - Evaluation in Vocational and Technical Education
Theories of evaluation; survey of practices and role of evaluation in educational programs; development of instruments and procedures for appraising educational programs and individual achievement.

EDCI 5063 - Occupational Experience Programs
Theory of occupational adjustment; design of experience programs; community cooperation; labor legislation, integration with school programs; and role of coordinator.

EDCI 5064 - Career Education: Theory and Practice
The need for and rationale of career education. Strategies and processes for implementing career education concepts and practices in schools and other educational settings.

EDCI 5065 - Learning Theories
Introduction to learning theories as they are applied to educational contexts. Topics include instructional objectives, behavioral analysis, social cognitive theory, cognitive psychology, social emotional development, and cognitive development.
Open to students in the Teaching Certification Program for College Graduates, others with permission (RG2794).

EDCI 5066 - Principles and Philosophy of Vocational and Technical Education
Descriptive and normative principles

of vocational and technical education with attention to their special, economic, psychological and political bases as a philosophical rationale.

EDCI 5067 - Administrative Applications in Vocational Education
The application of administrative theories to programs of vocational education.

EDCI 5068 - Instructional Strategies in Vocational and Adult and Human Resources Education
Innovative approaches to the improvement of learning; instructional techniques, materials and media.

EDCI 5070 - Methods of Instruction and Evaluation
Selection and organization of learning experiences, instructional activities and materials, and methods of instruction. Course activities include a combination of lecture and seminar experiences.
Open to students in the Teaching Certification Program for College Graduates, others with permission (RG2794).

EDCI 5071 - Program Planning and Curriculum Development in Vocational and Technical Education
Analysis of vocational/technical program planning and curriculum development theory, with emphasis on principles and current issues influencing program decisions.

EDCI 5072 - Business Office Automation
Business office automation. Word processing and related practices. Teaching techniques.

EDCI 5075 - Meeting the Needs of Exceptional Learners
Introduction to the characteristics of and educational programming for students with exceptionalities.
Open to students in the Teaching Certification Program for College Graduates, others with permission (RG2794).

EDCI 5080 - Reading and Literacy in the Content Areas
Effective use of reading and writing to help students learning content material. Includes selection of reading materials that are appropriate for individual students with diverse reading abilities, understanding reading diagnosis provided by other professionals, using reading material in ways that facilitate comprehension and learning, and using written asignments to increase understanding and recall.
Open to students in the Teaching Certification Program for College Graduates, others with permission (RG2794).

EDCI 5085 - Subject Area Methods
Selection and organization of learning experiences, instructional activities and materials, and methods of instruction related to the subject area. Course activities include a combination of lecture and seminar experiences, as well as extensive practice teaching.
Open to students in the Teaching Certification Program for College Graduates, others with permission (RG2794).

EDCI 5090 - TCPCG Directed Student Teaching
Supervised student teaching in a subject-specific content area.
Open to students in the Teaching Certification Program for College Graduates, others with permission (RG2794).

EDCI 5092 - Practicum
The implementation and application of theory in the student's area of specialization. Open primarily to master's and Sixth-Year students.

EDCI 5094 - Seminar
Analysis of the issues and research in the field of education. Open primarily to master's and Sixth-Year students.

EDCI 5099 - Independent Study in Education
Students requesting this course should have a significant background in education and should present to the instructor problems, well-defined and well laid out for investigation, which hold special interest for them and which will be pursued on the plan of advanced study.

EDCI 5100 - Teaching Reading and Writing in the Primary Grades
Processing unique to beginning reading and writing with emphasis on emerging literacy and promoting literacy development.

EDCI 5105 - Teaching the Language Arts
Teaching integrated language arts including oral and written communication, creative language, and spelling development with an emphasis on current research.

EDCI 5110 - Teaching Writing in the Elementary School, Grades K-6
A course for elementary teachers with emphasis on: teaching the writing process in persuasive, narrative and expository writing; evaluation of errors; developing appropriate curricular sequences; and research in the writing process.

EDCI 5115 - The Teaching of Reading
An overview of process and program; theoretical models of the reading, guidelines for a total school reading program, definition of terminology and principles of instruction. Analysis of available material made when appropriate. Intended as a background course for teachers with no previous course work or experience in teaching reading.

EDCI 5120 - Introductory Reading Clinic
Clinical practice in instruction of persons with corrective reading disabilities.

EDCI 5125 - Teaching Reading and Writing in Middle and Junior High School
Process and problems unique to reading and writing needs in the middle and junior high school. Emphasis on the development of reading and writing strategies as well as diagnostic teaching methods appropriate to this level.

EDCI 5130 - Teaching Children's Literature in the Elementary School
Literature for elementary school children, techniques for developing interest in independent and recreational reading.

EDCI 5135 - Literacy in the Secondary School
Process and problems unique to literacy needs in the secondary school. Emphasis on differentiated instruction for students with diverse backgrounds and abilities.

EDCI 5140 - Teaching Reading in the Content Areas
Emphasis upon the adaptation of materials, reading skills and study strategies applicable to the content areas; functional techniques for incorporating reading into subject matter instruction; the role of reading personnel within school settings.

EDCI 5145 - Classroom Assessment and Correction of Reading Difficulties

Types of reading difficulties and the remediation methods appropriate for use by the classroom teacher.

EDCI 5150 - Clinical Diagnosis and Correction of Reading Difficulties
Severe reading disabilities and clinical methods of remediation utilizing the case study approach.

EDCI 5155 - Advanced Reading/Language Arts Clinic
For prospective reading/language arts specialists. A laboratory course in planning and implementing remedial reading/language arts instruction for persons with severe or complex reading and writing disabilities. Prerequisite: EDCI 5150 (RG280).

EDCI 5160 - Design, Management, and Supervision of Reading Programs
Designing, supervising and evaluating reading programs on a school and systemwide basis.
Prerequisite: EDCI 5150 and EDCI 5155 (RG583).

EDCI 5250 - Teaching Literature to Adolescents
A study of competing theories of literary response with an emphasis on implications for the teaching of literature and research on the teaching of literature. Includes some reading of literature for young adults.

EDCI 5255 - Teaching Composition (7-12)
A study of composition theory, with an emphasis on implications for the teaching of writing and research on the teaching of writing.

EDCI 5350 - Teaching Elementary and Middle School Social Studies
A study of curriculum alternatives, techniques of individual and small-group instruction, evaluation and the development of teaching materials.

EDCI 5355 - Trends in Social Studies Curricula
New curriclua and developments. For teachers and supervisors of social studies.

EDCI 5360 - Education and Popular Culture
This course examines important and timely issues around popular culture and education with a focus on film/television/music and students/teachers. The class will explore popular culture images of students and teachers and how these influence societal views of teaching and learning, analyze classroom practices with popular culture and develop skills and understanding applicable to teaching, study the history of film and television, and investigate issues of media literacy both in and out of the classroom.

EDCI 5369 - The Teaching and Learning of Mathematical Problem Solving
This course will focus on the processes involved in mathematical thinking and mathematical problem solving. Classroom discussions will address those aspects associated with expert problem solving-domain knowledge, problem solving skills, metacognition (belief and issues of control), and aesthetic judgements. Students will have an opportunity to discuss and solve various types of mathematics problems and develop instructional strategies to teach and assess mathematical problem solving at the middle and secondary school levels.

EDCI 5450 - The Teaching and Learning of Mathematics in the Secondary School
An examination of current approaches to the teaching and learning of mathematics in the secondary school. Emphasis will be placed on issues surrounding content knowledge, curriculum, pedagogy, epistemology, assessment, and technology with respect to recent national initiatives and instructional techniques impacting on the secondary school mathematics curriculum.

EDCI 5455 - Curricula in Mathematics Education
Exploration of significant curricula in mathematics education for teachers and supervisors of mathematics. Emphasis is placed on research and development related to content and techniques.

EDCI 5460 - The Teaching and Learning of Mathematics in the Elementary School
This course will investigate the teaching and learning of mathematics in the elementary school. Emphasis will be placed on issues surrounding content knowledge, curriculum, pedagogy, epistemology, assessment, and technology with respect to national initiatives and instructional techniques impacting elementary school mathematics.

EDCI 5465 - The Teaching and Learning of Mathematics in the Middle School
This course will investigate the teaching and learning of mathematics in the middle school. Emphasis will be placed on issues surrounding content knowledge, curriculum, pedagogy, epistemology, assessment, and technology with respect to national initiatives and instructional techniques impacting middle school mathematics.

EDCI 5500 - Teaching Science in the Middle and Secondary School
Materials and advanced methods in the teaching of science in grades 7-12.

EDCI 5505 - Materials and Methods in the Teaching of Elementary School Science
A systematic examination of major science and curriculum program for the elementary school, the selection and design of materials, the development of teaching techniques.

EDCI 5550 - Problems in the Teaching of Science
Theories of teaching science with emphasis on studies of research related to current problems.

EDCI 5555 - Environmental Education
An exploration of state, national, and international environmental issues and instructional approaches for developing student awareness, knowledge, and concern for the environment, K-12. Includes classroom and field study.

EDCI 5600 - Methods for Teaching Foreign Languages in the Elementary Schools
An introduction to methods of teaching foreign languages in the elementary schools. Includes FLEX, FLES, and immersion approaches.

EDCI 5605 - Second Language Acquisition in the Elementary School-Age Student
An introduction to current research related to second language acquisition in elementary school-age children, with emphasis on implications for foreign language instruction.

EDCI 5700 - Foundations of Bilingual Education
Study of the political, social and legal aspects of bilingual education, including principles of second language acquisition.

EDCI 5705 - Curricular Issues in Bilingual Education
Current approaches, methods and techniques with respect to curricular issues in contemporary bilingual education programs.

EDCI 5710 - Spec Topics Bilingual Education
In-depth study of current topics related to bilingual education programs.

EDCI 5715 - Bilingualism and Second Language Acquisition
Developmental sequences and theories of first and second language acquisition.

EDCI 5720 - Bilingual Education and Biliteracy
Current methods, strategies and techniques of reading in the mother tongue (L1); transfer of reading skills into English (L2); and, evaluation and adaptation of L1 and L2 reading materials. Principles of second language acquisition.

EDCI 5740 - Latinos and U.S. Education
Conditions of schooling Latinos in the U.S. educational system via an historical and economic context, including principles of second language acquisition. Policy issues and theoretical discussions of underachievement. Relationship between dominant and subordinate cultures and their effect on classroom discourses.

EDCI 5742 - Sheltered English Instruction for English Language Learners
Current approaches and techniques with respect to academic language development in sheltered environments. This course attempts to disclose the most important issues surrounding content area teaching for English Language Learners (ELLs). Special attention is placed on the teaching of mathematics, science, and literacy in English for second language learners, including second language acquisition and development within the content areas.

EDCI 5745 - International Perspective on Bilingual Education
Education of speakers of non-dominant languages in comparative and international perspective. Emphasis on issues of educational policy, curricula, teacher education, and evaluation as these relate to the schooling of cultural and linguistic minority populations in different societies.

EDCI 5750 - Language Diversity and Literacy
Overview of issues and debates concerning the theory and practice of literacy development for non-native English speaking students in the United States. Includes principles of second language acquisition.

EDCI 5755 - Teaching English as a Second Language
An examination of current research on the acquisition and learning of English as a second language (ESL) in school settings. Critical issues in the application of research on ESL to the bilingual classroom are discussed.

EDCI 5760 - Research in Bilingual Education
Analysis of research in bilingual education, methods of research and design and implementation of research studies in bilingual education.
Prerequisite: EDCI 5705 (RG266).

EDCI 5765 - Assessment of Bilingualism
Principles of assessment for bilingual learners, including language proficiency and dominance, (bi)literacy development, and academic content knowledge. Current assessment approaches for bilingual learners in different context (e.g., bilingual, ESL classes) and for various purposes (e.g., screening, placement, evaluation). Principles of second language acquisition.

EDCI 5770 - Advanced Issues in Bilingual Education
Critical contemporary issues and topics related to bilingual education programs in the United States.
Prerequisite: EDCI 5705 (RG266).

EDCI 5775 - Advanced Issues in Second Language Acquisition
Advanced clinically-based seminar focusing on research issues and practice in second language acquisition.

EDCI 5780 - Social and Political Context Bilingual Educuation
Advanced seminar addressing the social and political context of contemporary bilingual education programs from a critical perspective.
Prerequisite: EDCI 5705 (RG266).

EDCI 5800 - Applied Learning Research for Instructional Leaders
A study of learning principles and their manifestations in classroom settings; design and application of goals and objectives; instructional methods and programming which complement and extend learning style preferences and collective and individual needs.

EDCI 5802 - Lectures in Education
A course in which staff members and authorities in education and related fields discuss selected problems.

EDCI 5804 - Curriculum Planning
Examines teachers' issues and problems from real-life cases with theoretical perspectives and pedagogical methods.

EDCI 5808 - Curriculum Development Processes
A study of the processes, strategies, and techniques used to bring about planned curriculum development in any educational setting.

EDCI 5810 - Workshop in Education
Professional personnel to work cooperatively on problems arising out of actual school situations. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatistactory.)

EDCI 5812 - Managing and Motivating Students in the Classroom
Classroom management from the perspective of motivation theory. Whole group, as well as individualized, interventions for increasing students' task-attentiveness and academic interest.

EDCI 5814 - Addressing Individual Needs and Talents in the Heterogeneous Classroom
Instructional and managerial techniques that can be used in the grade level classroom to meet the individual learning needs and talents of all students. Strategies for improving the effectiveness of large group, individual and small group instructional practices. Current and promising practices, as well as relevant research.

EDCI 5815 - Teaching the Elementary School Child

Study of the development of the elementary school child, the relationship between theory and practice, balancing traditional expectations with current concerns, and the selection and implementation of successful learning experiences in both school and non-school settings.

EDCI 5820 - Media Literacy in an Information Age
A study of the growing field of media literacy and the media's influence upon our culture and education. Includes major principles, development of media analysis skills, and integration with the school curriculum.

EDCI 5824 - Educational Ethnography
Methodology and content of socio-cultural case studies dealing with education in a variety of cultural contexts.

EDCI 5825 - Enhancing Classroom Curriculum with Computers and Electronic Media
Effective use of microcomputers and other electronic media to strengthen and enhance classroom instruction in the basic content and skill areas. Emphasis upon specific curriculum applications of technology rather than on its basic operation, mechanics, and programming.

EDCI 5830 - Curriculum Laboratory
Open to teachers and administrators seeking practical solutions to curriculum problems in elementary and secondary schools. Reorganization of courses, reorientation of the program of studies, articulation of administrative units, and development of new materials are considered in relation to the local situation. Students make individual studies of their specific problems, and group studies of related problems.

EDCI 5845 - Seminar in International Education
Concentrated study of culture and education in a major geographical region such as Africa, Asia, or Latin America; or cross-cultural studies of educational issues.

EDCI 5850 - Introduction to Curriculum
Philosophy, theory, and practice employed in curriculum development and change.

EDCI 5855 - Elementary School Curriculum
Analysis of the elementary school curriculum. Emphasis on curriculum development and educational alternatives.

EDCI 5870 - Curriculum Theory and Design
Elements and formation of theory and application in the curriculum field.

EDCI 5875 - Multicultural Education
Interrelationships between education and various sociocultural aspects of cultural diversity and cultural pluralism, including language acquisition and diversity.

EDCI 5880 - Contemporary Educational Theories
Examination of the work of selected major contemporary educational theorists, as well as of significant trends and developments in modern education.

EDCI 5885 - Introduction to Critical Pedagogy
Theory and practice in teaching for social justice with an emphasis on issues of class, race, gender and ethnicity.

EDCI 5890 - Educational Linguistics
Overview of the study of language and linguistics, and especially applied linguistics, with emphasis on their implications for classroom teacher. Includes principles of second language acquisition.

EDCI 5895 - Language Ideology & Education
Interrelationship among language, ideology, education and society, including examination of issues of social classes, ethnicity, gender, social context, power, and politics. Also covered are literacy, language prescriptivism and standardization, language policy and discourse in critical perspective. Principles of second language acquisition.

EDCI 6000 - Qualitative Methods of Educational Research
Purposes and nature of qualitative research, including selected techniques for conducting various types of qualitative and naturalistic research in educational settings.

EDCI 6005 - Advanced Methods of Qualitative Research
Field-based methods of collecting data in qualitative research studies in educational settings, coding and analysis of qualitative data, use of computer programs to analyze data, and methods and procedures for ensuring trustworthiness in qualitative research.

EDCI 6010 - Writing for Educational Publications
Designing, writing, editing, and marketing material for professional publication.

EDCI 6092 - Practicum
The implementation and application of theory in the student's area of specialization.

EDCI 6094 - Seminar
Cooperative study of developments and problems in the student's area of specialization.

EDCI 6200 - Theoretical Foundations of Teaching English
A sociocognitive perspective on teaching the English language arts, including the historical, sociological, linguistic, and psychological foundations of teaching English.

EDCI 6410 - Learning Theories for Mathematics Instruction
This course will examine various learning theories and their influence on mathematics instruction. In particular, this course will be concerned with understanding the processes involved in mathematical thinking, the impact of learning theory on mathematics instruction, expert-novice models of mathematical behavior, and ways to enhance mathematics learning in the classroom. Prerequisite: EPSY 5510 (RG702).

EDCI 6415 - Research in Mathematics Education
Analysis of research in mathematics education, methods of research, and design and research studies.

EDCI 6500 - Research in Science Education
An analysis of current research in science education. Emphasis on evaluation of research as well as the design and implementation of research.

EDCI 6855 - Sociocultural Theories for Educators

The study of selected sociocultural theories and their application in education

EDCI 6860 - Research in Multicultural Education
Advanced study in the processes and findings of research in multicultural education.

Education: Educational Leadership

Graduate programs in the Department of Educational Leadership lead to the degrees of Master of Arts and Doctor of Philosophy (Ph.D.) in the field of Learning, Leadership, and Education Policy and to the degree of Doctor of Education (Ed.D.) in the field of Educational Leadership. In addition, a Master of Arts is offered in Higher Education and Student Affairs (HESA). The Neag School of Education also confers a Sixth-Year Diploma in Professional Education and a Graduate Certificate in Adult Learning. Students should consult the statement under Education for information pertaining to admission requirements and special facilities available in the Neag School of Education.

The M.A. in in the field of Professional Higher Education Administration with an emphasis in Higher Education and Student Affairs (HESA) is designed to prepare students for professional careers in various higher education and student affairs positions. This full-time, two-year, cohort-based academic program combines traditional instruction with graduate assistantships and practicum experience. Major advisor and program coordinator: S. A. Saunders.

The Sixth-Year Diploma Program in Educational Administration – University of Connecticut Administrator Preparation Program (UCAPP) – is a special two-year administrator certification program preparing educators for school leadership positions. For additional information, contact the Department Office. UCAPP cohorts consist of students from various geographic regions across the state including: East Hartford, Farmington, Southeastern Connecticut, and Stamford. Director: D. Ullman.

The M.A. in Adult Learning program prepares individuals to critically assess learning needs of adults, groups, and organizations, design supportive learning environments and systems, facilitate learning activities to optimize adult learning, and evaluate learning outcomes at individual and organizational levels. Graduates can apply the skills, knowledge, and values they develop in the M.A. program to a wide variety of adult learning contexts. They are able to support decisions about how to best support adult learning using current theory and evidence-based best practices. The Graduate Certificate in Adult Learning is a 12-credit program for students interested in expanding their preparation in and understanding of workplace and organizational learning. Major advisors are S. Bell, R. S. Grenier, and M. T. Kehrhahn.

The Learning, Leadership, and Education Policy Ph.D. offers two concentrations in (a) Adult Learning and (b) Leadership and Policy. These two concentration areas provide Ph.D. students with the opportunity to link their professional and academic goals to scholarship, faculty resources, and curriculum that are designed to meet their interests in adult learning, educational leadership, education policy, and higher education. With one concentration primarily focusing on learning theory, and the other on theories of policy and leadership, students can maintain distinct academic identities while simultaneously applying lenses of social justice and organizational change to their work in and with complex organizations. The Ph.D. program is foremost a research degree designed for those who aspire to conduct and critically apply research in their careers. Students pursuing this degree take on roles as faculty members, researchers, government employees, policy scholars, or organizational leaders. Major advisors are S. Bell, C. D. Cobb, M. L. Donaldson, R. Gonzales, R. S. Grenier, M. T. Kehrhahn, A. P. Mayer, S. A. Saunders, R. L. Schwab, S. Woulfin.

The Ed.D. in Educational Leadership that is intended to address the increasing need for visionary school leaders. Students in this cohort program are currently employed professionals seeking a terminal degree that combines theory, problem solving, and skill development to change and enhance the work of schools. Course work focuses on the critical analysis of problems of practice through collaborative learning communities that bring students together with faculty, local school staff/administrators, and veteran school district employees. UConn's Ed.D. is an inquiry-based program that capitalizes on one of the most powerful learning forums available to full-time professional educators—their work settings. Throughout the program these settings become "laboratories of practice" in which participants inquire actively into problems of practice. Classes meet at times designed to accommodate working professionals. Major advisors are S. Bell, C. D. Cobb, M. L. Donaldson, R. Gonzales, R. S. Grenier, A. P. Mayer, R. L. Schwab, D. Ullman, R. M. Villanova, and S. Woulfin.

The Department of Educational Leadership offers the Executive Leadership Program (ELP) which is designed to provide aspiring individuals outstanding preparation for assuming the school superintendency and other central office positions. This cohort-based program is completed within 12-13 months and meets on dates designed to accommodate working professionals. This is a non-degree program that leads to endorsement for the Connecticut 093 (superintendency) certificate. Selected courses are eligible for transfer to UConn's Ed.D. program with the approval of the student's advisory committee. Director: R. M. Villanova.

Courses

Education: Educational Leadership

DLR 5001 - Lectures in Education
A course in which staff members and authorities in education and related fields discuss selected problems.

EDLR 5002 - Workshop in Education
Professional personnel to work cooperatively on problems arising out of actual school situations.

EDLR 5015 - Teacher Leadership and Organizations
Teachers' role in providing leadership that extends beyond the walls of the individual classroom and includes collaboration with other adults.

EDLR 5092 - Practicum: Administrative Field Experience
This course will provide an opportunity for educators who wish to become administrators of educational organizations to become familiar with the functions and tasks that certified administrators perform. It is intended primarily for Sixth-Year students.

EDLR 5094 - Seminar
Analysis of the issues and research in the field of education. Open primarily to Master's and Sixth-Year students.

EDLR 5099 - Independent Study in Education
Students requesting this course should

have a significant background in education and should present to the instructor problems, well-defined and well laid out for investigation, which hold special interest for them and which will be pursued on the plan of advanced study.

EDLR 5102 - Assessment, Evaluation, and Research in Student Affairs I
The role of assessment and evaluation to address current student affairs issues in higher education settings. Focus on skill development in problem identification, research question formulation, qualitative design, interview protocol development, and critique and applications of professional literature.
Open to students enrolled in the Higher Education and Student Affairs master's degree program (RG3454)

EDLR 5103 - Assessment, Evaluation, and Research in Student Affairs II
Application of assessment and evaluation research methodologies to address genuine problems in student affairs contexts. Focus on development of theoretical framework, quantitative methods, reporting results, and formulating recommendations for improving practice and policy.
Prerequisite: EDLR 5102 (302). Open to students enrolled in the Higher Education and Student Affairs master's degree program (RG3457).

EDLR 5105 - Structured Group Interventions in Student Affairs
Basic approaches to structured group work in relation to goals, objectives, and group dynamics. Implications of group approaches to the personal and educational development of students and staff in Student Affairs
Open to students enrolled in the Higher Education and Student Affairs master's degree program (RG3454)

EDLR 5107 - Resource Management in Student Affairs Administration
Analysis of higher education resource development and management with an emphasis on issues in student affairs administration; including, financial management and analysis, human resource management, and management of information technology resources.
Open to students enrolled in the Higher Education and Student Affairs master's degree program (RG3454)

EDLR 5108 - Leadership Challenges in Higher Education
Application of leadership theory to challenges faced by higher education professionals. By developing critical thinking and problem solving skills, students will learn to identify a crisis, provide leadership for crisis management, and utilize methods of managing communication regarding incidents.
Open to students enrolled in the Higher Education and Student Affairs master's degree program (RG3454)

EDLR 5112 - Alcohol and Other Drugs and their Influence on Higher Educatoin
Examination of alcohol and other drug issues in higher education, substance abuse, and modalities of intervention for individual students. Includes current research on the complexity of environmental, cultural, and political issues of alcohol and other drug uses on college campuses.
Open to students enrolled in the Higher Education and Student Affairs master's degree program (RG3454)

EDLR 5113 - College and University Environments
Seminar designed to explore various institutional types, missions, and cultures including private liberal arts colleges, community colleges, comprehensive, research-extensive and special purpose universities. Primary emphasis is on the effect of institutional structure on higher education and student affairs administration.
Open to students enrolled in the Higher Education and Student Affairs master's degree program (RG3454)

EDLR 5117 - The College Student
Characteristics of today's college students. Student behavior theory. Impact of college on students.
Open to students enrolled in the Higher Education and Student Affairs master's degree program (RG3454)

EDLR 5118 - Seminar in Higher Education
Seminar designed to promote the integration of the core curriculum and practitioner experiences of the Master's degree program in Higher Education and Student Affairs and to prepare students for their transitions to a professional position within student affairs upon graduation.
Open to students enrolled in the Higher Education and Student Affairs master's degree program (RG3454)

EDLR 5119 - The Law, Ethics, and Decision-making in Student Affairs
Survey of case law and statutory provisions related to higher education with a focus on student affairs administration. Students will develop an understanding of ethical decision making and its application to relevant student affairs scenarios.
Open to students enrolled in the Higher Education and Student Affairs master's degree program (RG3454)

EDLR 5121 - Introduction to Student Services in Higher Education
A survey of student services and personnel functions in higher education, including an examination of philosophies, goals, objectives and procedures.
Open to Students in Professional Higher Education Administration, others with permission (RG2077).

EDLR 5122 - College Student Development: Programs and Services
History and philosophy of student personnel work related to contemporary and projected student developmental programs and services. Rights, freedoms and responsibilities of students in relation to the college.
Open to students enrolled in the Higher Education and Student Affairs master's degree program (RG3454)

EDLR 5123 - Administration of Student Affairs in Higher Education
Administration of student affairs and services and applications of student development theory in the college community.
Open to students enrolled in the Higher Education and Student Affairs master's degree program (RG3454)

EDLR 5124 - Higher Education in Film
An exploration of the portrayals of higher education in film, this course will establish a theoretical base for evaluating film and apply the constructs as a means for understanding the college experience. Focus on applications of film as a tool for student learning and programming.
Open to students enrolled in the Higher Education and Student Affairs master's degree program (RG3454)

EDLR 5125 - Issues in Student Affairs Administration
An examination of issues which affect the new student affairs administrator. Topics vary per semester.
Open to Students in Professional Higher Education Administration, others with permission (RG2077).

EDLR 5126 - Leading Toward a Multicultural Educational Environment
American higher education continually struggles with issues of difference, particularly racial, ethnic, gender, ability,

religion, sexual orientation, and other cultural differences. Course participants are challenged to reflect on their personal experiences and examine their values, beliefs, and attitudes with regard to multicultural difference as a means to deepen a critical understanding of multicultural issues in higher education.
Open to students enrolled in the Higher Education and Student Affairs master's degree program (RG3454)

EDLR 5201 - Influences on Adult Learning
Interaction of person and environment. Culture. Role of environment. Situational barriers. Motivation. Self-regulation. Personality. Gender. Life transitions. Self-directed learning.

EDLR 5202 - Workplace Learning
Trends in workplace learning and workforce development. Conceptual models of performance improvement and transfer of training. Focus on individual, work team, and organizational variables related to learning, performance, and transfer of training.

EDLR 5203 - The Brain, Experience, and Adult Learning
Four learning systems within the brain. Role of experience in learning. Implications for adult learning and professional development programs.

EDLR 5204 - Organizational Learning
Group and collective learning in organizational settings, with an emphasis on adaptive and generative learning processes.

EDLR 5205 - Professional Development
Using research on how adults learn best and principles of human resource development to implement effective, job-imbedded professional development programs. Using professional development to advance organizational goals. Examination of best practices.

EDLR 5206 - Development of Programs for Adult and Human Resource Education
Program development for adult learners; emphasis on collaborative planning, needs assessment, effective learning strategies, transfer of training, evaluation, principles of good practice.

EDLR 5207 - Methods for Facilitating Adult Learning
Recommended preparation: EDLR 5201.

EDLR 5301 - The School Principalship (K-12)
Roles and functions of the principal, problem solving, decision-making, school culture, curriculum leadership.

EDLR 5302 - Program Evaluation for School Improvement
Program evaluation issues critical to effective school leadership.

EDLR 5303 - Supervision of Educational Organizations
Supervision models; teacher selection and induction; teacher evaluation; staff development and organizational change.

EDLR 5304 - Curriculum Laboratory
Open to teachers and administrators seeking practical solutions to curriculum problems in elementary and secondary schools. Reorganization of courses, reorientation of the program of studies, articulation of administrative units, and development of new materials are considered in relation to the local situation. Students make individual studies of their specific problems, and group studies of related problems.

EDLR 5305 - Legal Aspects of Education
Legal status of public schools; legal rights and responsibilities of administrators, parents, students, school board members, and teachers.

EDLR 5306 - School Leadership and Administration of Educational Organizations
This course will introduce students to concepts and skills which are fundamental to the successful administration of educational organizations. The overarching goal of the course is to provide pragmatic knowledge which will give students an understanding and appreciation of the complexity of educational organizations. The course will use Bolman and Deal's conceptual framework (multi-frame thinking) which borrows ideas from sociology, management science, psychology, political science as well as social and cultural anthropology.

EDLR 5307 - Contemporary Educational Policy Issues
Study of current educational policy issues.

EDLR 5308 - Psychological Foundations of Education
Learning and related psychological theories and their implications for curriculum, teaching methods, and other aspects of educational practices.

EDLR 5340 - Educational Planning
An overview of the educational planning process and its relationship to the concepts of systems and futurism. Attention will be given to specific planning models and techniques such as needs assessment, PERT, PPBS, MBO, delphi, ZBB, and cost benefit analysis.

EDLR 5342 - Effective Departmental Leadership
Concepts and practices required of departmental leaders in today's secondary schools.

EDLR 5343 - Women, Education and Social Change
Examination of the lives of girls and women as students, teachers and academics. Emergence of teaching as a hierarchically sex-segregated profession. Effect of gender on the status and organization of the profession. Changing women's roles and social ideologies as related to women's educational aspirations, career achievement and leadership.

EDLR 5344 - Time Management and Personal Organization
Principles and practices of time management. Including interdisciplinary studies relating time usage to organizational behavior and personal effectiveness.

EDLR 5346 - Personnel Evaluation
Issues critical to the design and implementation of effective personnel evaluation programs.

EDLR 5347 - Improving Teacher Evaluation Practice
Improving the teacher evaluation skills of principals and department heads through guided practice experiences that allow them to reflect on what they are doing now in light of promising alternatives.

EDLR 5349 - Issues in Teacher Assessment and Evaluation
Critical review and analysis of current issues and emerging methodologies in teacher assessment and evaluation.

EDLR 5351 - Budgeting and Resource Management
Analysis of educational budget formats: program, capital, function, objective and zero based; budget planning, procedures, forms, documents, codes; political-economic issues in educational budgeting; case studies of program budgeting and site-based budgeting in education; cost reduction and analysis; resource management research.

EDLR 5354 - Human Resources Administration
Study of personnel management in education, including current laws, policies, practices and problems such as recruitment, tenure, promotion, retirement; performance evaluation; motivation; salary, benefits, welfare; staff development; data collection; layoff procedures; grievances; contract administration.

EDLR 6050 - Dissertation Proposal/ Prospectus Development I
Open to students enrolled in doctoral programs. Systematic development of dissertation proposal components, including Introduction, Problem Statement, Conceptual Framework and/or Review of Literature, and Research Questions.

EDLR 6051 - Dissertation Proposal/ Prospectus Development II
Open to students enrolled in doctoral programs. Systematic development of dissertation proposal components, including Methodology, Methods, Procedures, Limitations, all related appendices, IRB application, and proposal defense.

EDLR 6052 - Qualitative Methods of Educational Research II
This course is a companion to EDCI 6000, Qualitative Methods of Educational Research. It provides the opportunity for students to more closely examine qualitative methodology and methods to ensure that students are able to synthesize an analysis of qualitative data. Specifically, students will generate credible units from narrative and visual data and develop categories from the units through comparing, contrasting, aggregating, and ordering data. Students will present findings in a chronological or thematic case example or case history, in an essay formulated around topics or theses, or in an alternative format appropriate to the analysis.
Prerequisite: EDCI 6000 (365) (RG4039)

EDLR 6054 - Inquiry and Research in Educational Leadership I: Foundations, Design, and Use
Explicates knowledge production through systematic inquiry in education, including processes, questions, and strategies used to conduct meaningful research in schools. Explores the intersection of theory and practice with emphasis placed on the critical analysis and interpretation of the research literature to the practice of school leadership.
Open to students in the Ed.D. program in Educational Leadership (RG2751).

EDLR 6055 - Inquiry and Research in Educational Leadership I: Implementation, Analysis, and Discovery
A continuation of Understanding, Inquiry and Research in Educational Leadership I. Elaborates the strategies and tools used to conduct meaningful research in schools with emphasis in the actual conduct of research in school settings. Explores the link between research findings and the improvement of practice.
Open to students in the Ed.D. program in Educational Leadership (RG2751).

EDLR 6092 - Practicum
The implementation and application of theory in the student's area of specialization.

EDLR 6094 - Seminar
Cooperative study of developments and problems in the student's area of specialization.

EDLR 6201 - Strategic Applications of Adult Learning
Case study analysis and live case study consultation to develop innovative approaches to adult learning to address the challenges of employee development in corporate, education, public sector, and private sector settings
Prerequisite: EDLR 5201, EDLR 5202, EDLR 5203, and EDLR 5204. Open to students in the Adult Learning graduate program (RG2750).

EDLR 6202 - Research Seminar in Adult and Vocational Education
Advanced research issues in adult learning.

EDLR 6301 - School District Executive Leadership
Seminar and practicum experiences focusing on leadership and policy issues facing school superintendents, central office administrators,and senior state education agency officials.

EDLR 6302 - School District Policy, Politics, and Governance
Study of educational policy and school governance; the politics of educational administration; reform; finance; and the processes of district policy formulation, implementation, and analysis. Specific school district policy and governance issues are examined.

EDLR 6303 - Data-Driven Decision Making for School Improvement and Policy Development
The purpose of this course is to provide school leaders with the knowledge necessary to improve instructional programs and improve policy by relying on data-driven strategies and tools. The course meets in seminar/lab format with students working on data-driven problems, analyses and developing action plans as a result. Students work on several case studies and a major project of personal, professional significance.

EDLR 6304 - Financial and Human Resources Management in Education
Study of human resources development practices in school systems, with emphases on central office and school unit responsibilities for attracting, selecting, developing, evaluating, and retaining competent faculty and staff. This course also includes the study of concepts in school finance and school business management. Attention is given to national, state, and local issues. Emphasis is also given to school support services including transportation, faculty planning and maintenance, food service, and risk management.

EDLR 6311 - Organizational Behavior in Educational Administration
Advanced course focusing on interdisciplinary research about organizations, leadership behavior, and management processes.

EDLR 6312 - Leadership for Teaching and

Learning: The Role of the Leader in School Improvement
Explores leadership skills required to imrpove instruction and student learning in the school and district. Students develop and apply models to address an instruction/achievement issue in practice.

EDLR 6313 - Educational Policy and Politics
Study of educational policy; the politics of educational administration; and the processes of policy formulation, implementation and analysis. Specific educational policy areas are examined.

EDLR 6314 - Legal Issues in Organizational Management
The legal process and understanding of legal issues in education involving students, teachers, and boards of education.
Open to students in the Ed.D. program in Educational Leadership (RG2751).

EDLR 6320 - Micro Theories for Policy Research
Theoretical perspectives on policy formulation and implementation. Case examples illuminate the origin, development, and interpretation of policies by various policy actors across a range of contexts.

EDLR 6321 - Evaluation Theory
Addresses conceptual underpinnings of contemporary approaches to evaluation. Major theories of evaluation in education policy are examined through a case study approach.

EDLR 6322 - Economics of Education and School Finance
Use of economic theory and statistical analysis to explore current issues in education policy. Topics may include school finance, school finance reform, standards, assessment, class size, charter schools, tuition tax credits, and vouchers. Open to all graduate students in the Neag School of Education.

EDLR 6323 - Seminar in the History of K-12 Education Reforms, 1890-present
Seminar examining the history of K-12 education reforms from the 1890s to the present day.

EDLR 6460 - Collective Bargaining in Education
This course concerns resolving conflict through self-help, negotiations and arbitration, understanding the Teacher Negotiations Law and methods of dealing with impasses under the law. The course also deals with preparing for negotiations by teacher unions and boards of education.

EDLR 6461 - Resources Management II
Students will apply the principles of financial and human resources management to advanced educational leadership positions.

EDLR 6462 - Legal Issues in Human Resources Administration for School Leaders
Provides legal bases for human resources decision-making through reading of primary source materials (statutes, administrative decisions, judicial decisions) and related materials, and related class discussion. Provides students with practical experience in analysis and advoccy in human resource disputes, through mock negotiations, writing model briefs and conducting mock hearings.

EDLR 6464 - Seminar: Leadership and School Organizations
Study of organizations and leadership from the perspective of the humanities and the social and behavioral sciences.

EDLR 6465 - Educational Administration Issues and Research
Designing educational research studies; current topics in school administration. This course ordinarily meets for ten full days for special research activities.
Prerequisite: EPSY 5605, EPSY 5607, and EPSY 6601 (RG289).

EDLR 6466 - Policies for Improvement: Mobilizing School and Community
Advanced seminar explores perspectives on the policy environment for school improvement. Students identify policy issues, collect data, conduct analyses, and propose actions.

EDLR 6467 - Social Justice Leadership, Equity and School Change
Exploration of various tenets, theoretical tensions, and transformative applications of social justice leadership in American education.EDLR6466(3 Credits)Instructor Consent Required Policies for Improvement: Mobilizing School and Community

Advanced seminar explores perspectives on the policy environment for school improvement. Students identify policy issues, collect data, conduct analyses, and propose actions. Components:Seminar

EDLR6467(3 Credits)Program Director Consent Reqd Social Justice Leadership, Equity and School Change

Exploration of various tenets, theoretical tensions, and transformative applications of social justice leadership in American education. Components:Seminar

Educational Psychology

Department Head
Professor Hariharan Swaminathan

Professors
Bray, Brown, Chafouleas, Karan, Kehle, Leu, O'Neil, Reis, Rogers, and Sugai

Associate Professor
Alfano, Britner, Colbert, Coyne, Gavin, Gubbins, Little, Madaus, McCoach, Pérusse, Siegle, Yakimowski, and Young

Assistant Professors
T. Casa, Faggella-Luby, Olinghouse, Sanetti, Simonson-Gaines, Stephens, and Welsh

Graduate study in the Department of Educational Psychology (http://www.epsy.uconn.edu) leads to the Master of Arts and the Doctor of Philosophy degrees in the field of study of Educational Psychology. In addition, the Department offers the Sixth- Year Diploma in Professional Education conferred by the Neag School of Education.

The Field of Educational Psychology

The M.A. and Ph.D. degrees in Educational Psychology may be taken with concentrations in the areas of Cognition, Instruction and Learning Technologies; Counselor Education and Counseling Psychology (Ph.D. only); Educational Technology (M.A. only); Gifted and Talented Education; Measurement, Evaluation, and Assessment; School Counseling (M.A. only); School Psychology; and Special Education.

The Concentration in Measurement, Evaluation and Assessment (MEA) prepares graduates to become leaders in educational measurement, program evaluation, large-scale and classroom-based assessment practice, educational statistics, and research methodology. The program integrates theory and practice to promote the scientific uses of measurement within the field of education and related disciplines. Coursework emphasizes the development of professional competencies within the area of MEA and focuses on current and emerging topics including instrument development, measurement theory and applications, multilevel modeling, item-response theory, sampling methods, latent variable modeling, and educational assessment. Faculty support strong student/faculty interactions to promote research excellence and the development of significant contributions to the field. Contact D. Betsy McCoach at Unit 3064 for more information.

The Ph.D. Concentration in Counselor Education and Counseling Psychology is intended to prepare Counselor Educators. Mandatory bi-monthly seminars including all the program's doctoral students and full-time faculty are an integral part of the program and are intended to promote a mutually supportive community of scholars that are actively addressing critical issues in the field. To build their credentials as future professors, all the program's Ph.D. students are expected to assist the faculty in teaching a minimum of two graduate courses in our master's degree program in school counseling; to make presentations at state, regional, and/or national professional conferences; and to collaborate with faculty and their peers on research studies resulting in publishable manuscripts. Doctoral students are involved in all aspects of our master's program. The mission of the master's program is to prepare professional school counselors to work with students of all age levels with special emphasis on poor and minority youth. It leads to state certification as a school counselor.

The doctoral program includes core academic requirements designed to enhance the students' research skills as well as a variety of specialty tracks from which students may choose the one that best meets their professional interests and career goals. The specialty tracks are in the following areas: (1) program evaluation, (2) qualitative research methodology, (3) primary prevention, (4) gifted and talented education, (5) positive behavioral supports, (6) licensure as a professional counselor, and (7) licensure as a counseling psychologist. Contact O. Karan at Unit 2064 for more information.

The Concentration in School Psychology is accredited by the American Psychological Association. The Master's/Sixth Year program also is approved by the National Association of School Psychologists. The program adheres to the scientist- practitioner model of graduate education which assumes that the effective practice of school psychology is based on knowledge gained from established methods of scientific inquiry. Emphasis is on the preparation of competent practitioners who are skilled and dedicated researchers who will contribute to the knowledge base in school psychology. In addition, the program is designed to acquaint students with the diversity of theories and practices of school psychology, allowing the student sufficient intellectual freedom to experiment with different delivery systems and various theoretical bases. The atmosphere is intended to foster student- faculty interaction, critical debate, and respect for theoretical diversity of practice, thus creating a more intense and exciting learning experience. The faculty believe that such an environment encourages and reinforces the student's creativity and intellectual risk-taking that are fundamental in the further development of the professional practice of school psychology. Contact T.J. Kehle at Unit 3064 for more information.

The Concentration in Cognition, Instruction and Learning Technologies links psychological theory with research and educational practice. The program emphasizes learning, cognition, instructional design, research, and theoretical perspectives on new literacies and instruction. Course work typically includes the study of instructional theories and models from cognitive psychology, motivation, emerging technologies and research methods. Additionally, research experiences are encouraged both at the University and in more applied settings. Contact S. Brown at Unit 3064 or visit http://www.epsy.uconn.edu for additional information.

The Concentration in Gifted and Talented Education prepares individuals for leadership roles as gifted education program coordinators, curriculum development specialists, regional or state gifted education agency directors, and for positions as teachers and researchers in higher education settings. The program of study includes course work on strategies and program models for developing student talent, field experiences in school settings, and research investigations that provide worthwhile and creative contributions to the literature. Contact E. J. Gubbins at Unit 3007 for more information.

The concentration in Educational Technology emphasizes the study of the use of various media to promote learning and instruction. Special emphasis is placed on research, and development and design of instruction based on the latest instructional technologies. Students completing the program may work in academic or in training settings.

The concentration in general Special Education is an individualized program, containing a number of emphases, including study in teacher education, transition, behavioral disorders, school reform, learning disabilities, literacy, developmental disabilities, and secondary and postsecondary education and services for students with disabilities, among others. Our commitment is to inspire and prepare professionals in special education to create and broaden opportunities for individuals with disabilities. Students are encouraged to develop their interests in educating learners at risk across a wide range of disabilities

incorporating a lifespan perspective. The doctoral program is designed to enhance independent thinking and leadership qualities through an individualized program embedded in a thorough knowledge of theory and the existing literature and culminating in active research to guide, direct, and inform the field. Contact M. Faggella-Luby at Unit 3064 for more information.

Courses

Education: Educational Psychology

EPSY 5092 - Practicum
The implementation and application of theory in the student's area of specialization. Open to master's and Sixth-Year students.

EPSY 5107 - Curriculum Issues in Special Education
Program and curriculum planning for students with moderate to mild disabilities with particular attention given to relating individual education plans to school curricula.

EPSY 5108 - Instruction for Students with Special Needs in the Mainstream
Focus on planning for and working with students with special needs in schools.

EPSY 5113 - Beginning Reading Supports for Students with Learning Difficulties
This course is designed to provide graduate level students with knowledge and skills related to supporting early reading success for students with disabilities and at risk for experiencing learning difficulties.

EPSY 5114 - Adolescent Reading Supports for Students with Learning Difficulties
This class will investigate research-based instructional interventions and infrastructure supports (e.g., SRBI, RtI) necessary to improve reading comprehension outcomes for struggling adolescent readers including students with high-incidence disabilities.

EPSY 5115 - Writing Supports for Students with Learning Difficulties
This course will investigate writing instruction and assessment designed to support K-12 students who are at-risk for or experiencing learning difficulties or disabilities, with an emphasis on incorporating evidence-based methods into a rich, engaging, and meaningful writing curriculum.

EPSY 5116 - Individual Pupil Assessment
Diagnosis and prescription for children with special learning and behavioral disabilities, including administration, scoring and interpretation of pupil assessment instruments.

EPSY 5119 - Policy, Law, and Ethics in Special Education
The impact of policy and law on the professional role of special educators.

EPSY 5121 - Developmental Foundations of Exceptionality
An exploration of the link between normative theory and research in child development with assessment, understanding, and intervention for children and youth with exceptionalities.

EPSY 5123 - Instructional Strategies and Adaptations for Students with Special Learning Needs
Principles and practices for the provision of effective instruction for students with special learning needs.

EPSY 5127 - Adm Supv Special Ed
Adm Supv Special Ed

EPSY 5135 - School-wide Proactive Discipline and Positive Behavior Supports
The purpose of this course is to give school administrators processes and practices for establishing and sustaining implementation of a systems approach to school-wide proactive discipline and positive behavior support (SWPBS). Emphasis is focused on the establishment, activities, and features of positive behavioral interventions and supports. Four elements will be emphasized: (a) data-based decision making, (b) research-validated practices, (c) meaningful outcomes, and (c) efficient systems.
Prerequisite: EDLR 5309 Prerequisite

EPSY 5138 - Responding to Violence in the Schools
Addresses how incidences of violence in the schools can be prevented, contained, and kept at a minimum with prevention programs, and immediate interventions to contain incidents of violence.

EPSY 5140 - Transition Planning for Students with Disabilities
An examination of relevant legislation and recommended practices related to person-centered transition planning for students with disabilities in post-school and adult life, including postsecondary education, employment, community participation, and independent living.

EPSY 5141 - Classroom and Behavior Management for Special Educators
An introduction to Positive Behavior Interventions and Supports (PBIS), including theoretical and empirical support, three-tiered model, and implementation strategies.

EPSY 5142 - Individualized Positive Behavior Support
Approaches for adapting programs to the behavioral, social and emotional needs of exceptional learners.
Prerequisite: EPSY 5142 Prerequisite

EPSY 5145 - Issues in Postsecondary Disability Services
An examination of issues relating to the assurance of equal educational access for students with disabilities in postsecondary settings.

EPSY 5160 - Considerations in the Provision of Assistive Technology
Emphasis will be on the consideration of assistive technology in the educational environment and will emcompass the scope of activities involved in considering whether assistive technology is needed for a student to receive a free and appropriate education. This course is a required prerequisite for all other course work in the assistive technology emphasis.

EPSY 5161 - Assistive Technology for Access
This course will provide an introduction to alternate access to the computer as a tool for the performance of educational tasks. Included will be an exploration of alternate and adaptive pointing and keyboard devices as well as software to enhance accessibility and productivity for persons with motor impairment, sensory challenges, and cognitive difficulties. Emphasis in the course will be on assistive technology solutions and applications for persons with significant disabilities in the educational environment.
Prerequisite: EPSY 350 (RG296).

EPSY 5163 - Assistive Technology for the Struggling Learner

This course will explore the use of assistive technology tools across a continuum of low to mid to high tech aid in the efficiency, organization, and productivity of the struggling learner.
Prerequisite: EPSY 350 (RG296).

EPSY 5183 - Lectures in Education
A course in which staff members and authorities in education and related fields discuss selected problems.

EPSY 5187 - Clinical Experiences in Integrated Settings
An intensive supervised clinical experience that provides opportunities for students to plan and deliver integrated programs for students with and without special needs. A cooperative venture between the School of Education and the Professional Development Centers (public schools).

EPSY 5188 - School-based Practicum in Communication Disorders
100 clock hours of practicum in assessment, treatment, and prevention of communication disorders in children PreK-Grade 12.
Prerequisite: Open only to MA COMDIS

EPSY 5194 - Seminar
Analysis of the issues and research in the field of education. Open to master's and Sixth-Year students.

EPSY 5195 - Workshop in Education
Professional personnel to work cooperatively on problems arising out of actual school situations.

EPSY 5198 - Curriculum Laboratory
Reorganization of courses, reorientation of the program of studies, articulation of administrative units, and development of new materials are considered in relation to the local situation. Students make individual studies of their specific problems, and group studies of related problems.

EPSY 5199 - Independent Study in Education
Students requesting this course should have a significant background in education and should present to the instructor problems, well-defined and well laid out for investigation, which hold special interest for them and which will be pursued on the plane of advanced study.

EPSY 5210 - Learning with Technology
Uses a problem-based design format to integrate learning theory and principles with educational technology to develop an integrated lesson plan in a content area. Students select meaningful authentic problems to integrate.

EPSY 5220 - Introduction to Educational Technology
Instructional applications of productivity software and educational technology.

EPSY 5230 - Web-Based Learning
Design, development, delivery and evaluation of web-based instruction.
Prerequisites: EPSY 5240, EPSY 5510, EPSY 5220, and EPSY 5520(RG706).

EPSY 5235 - Design and Production of Multimedia Presentations
Students will prepare presentations using slides, motion pictures, audiotapes and overhead transparencies; and will explore application of other technological developments to multimedia uses.

EPSY 5240 - Interactive Learning Environments
This course is a broad overview of the interactive learning environments (ILEs) that are being used in Education. It will introduce students to current research in development and implementation of ILEs.
Prerequisites: EPSY 5220 and EPSY 5510 (RG705).

EPSY 5250 - Software Design and Evaluation
This course provides students with the knowledge and experience in design and evaluation of educational software.

EPSY 5301 - Group Processes in Counseling
Experiential and theoretical introduction to group process and dynamics.

EPSY 5304 - Foundations and Contents of School Counseling
Basic philosophical and professional premises of the counseling profession. History of counseling profession, counselor's roles and functions, role of research/theory in counseling, and professional ethics. Individual group, and preventive counseling approaches.

EPSY 5306 - Principles of Career Development in Counseling
Career development and career psychology. Adolescents and adults.

EPSY 5307 - Professional Orientation of School Counseling
Principles and practices of pupil personnel work in educational institutions including all aspects of pupil personnel services; the role of the school counselor as a pupil personnel worker; and as a consultant on teacher-pupil relations.

EPSY 5308 - Counseling: Theory and Practice
Contemporary theories and practices of essential helping skills.
Prerequisite: EPSY 5307 (RG291).

EPSY 5309 - Gender Role Conflict Issues for Helping Professionals
Intensive review of gender role socialization in a workshop setting, emphasizing men's and women's gender role conflicts across the life span. Lectures, readings, discussions, self assessments, and media are used to explicate core concepts and themes.

EPSY 5313 - Multi-Cultural Parent-Professional Alliances
Alliance-building processes between helping professionals and parents. Multi-cultural relationship development.

EPSY 5314 - Appraisal Procedures in Counseling
Use of instruments for estimating abilities, achievements, interest and personality; interpretation of appraisal procedures in counseling.
Prerequisite: EPSY 5306 and EPSY 5602 (RG307).

EPSY 5315 - Counseling: Advanced Practice
Continuing the work begun in EPSY 316; to strengthen and extend helping skills.
Prerequisite: EPSY 5308 (RG308).

EPSY 5316 - Cross-Cultural Counseling
Theories, skills and practices of counseling with culturally different persons in mental health settings.
Prerequisite: EPSY 5308 and EPSY 5315 (RG311).

EPSY 5317 - Field Work in Counseling and Personnel
Supervised experience in counseling and related practices in schools and agencies with

a concurrent supervisory seminar.

EPSY 5318 - Human Growth and Development over the Lifespan: Implications for Counselors
A review of human growth and development over the lifespan using psychosocial theory with an emphasis on individual and family transitions, learning processes, personality, developmental crises, gender role conflicts and transitions, ethical issues, and strategies to optimize human potential.

EPSY 5319 - School Counseling Internship
Post practicum experience in school counseling under the supervision of a fully trained and certified professional school counselor for the duration of one school year along with an accompanying on-campus seminar. All core courses in the school counseling program must be completed prior to beginning the internship. This course may be repeated once for a maximum of 12 credits.

EPSY 5320 - Critical Issues in School Counseling
This course covers three main topics. These include an introduction to the broad profession of counseling; the ethical standards of the American Counseling Association and the American School Counseling Association; and a review and analysis of the critical and emerging issues/ incidents facing today¿s professional school counselors.

EPSY 5339 - Assistive Technology for Curriculum Access
This course will explore the range of assistive technology devices and software for curriculum access from the preschool through secondary environments.

EPSY 5396 - Directed Student Teaching for Students in the Teacher Certification Program for College Graduates
Supervised student teaching in special education.
Open to students in the Teaching Certification Program for College Graduates, others with permission (RG2794).

EPSY 5402 - Individual Differences in Learners
Foundations for individual differences among elementary and secondary school pupils.

EPSY 5403 - Intellectual Assessment
Administration of the standard instruments of intellectual assessment and synthesis of the test information into an assessment report. Prerequisite: EPSY 5602, which may be taken concurrently, and enrollment in the School Psychology program (RG293).

EPSY 5404 - Pupil Behavior: Studies in Clinical Diagnosis
Diagnosis of school problems, report writing for school purposes, and an analysis of needs for referral.

EPSY 5405 - Applied Behavior Analysis
Introduction to theories and application of behavioral techniques.

EPSY 5406 - Consultation Theories and Practices
Theories and practices of professional consultation with an emphasis on actual interventions in schools, corporations and social service agencies.

EPSY 5408 - Ethics in Educational and Professional Psychology
Explores the nature of professional virtue in psychology and related educational and human service disciplines.

EPSY 5491 - School Psychology Internship
Post practicum experience in School Psychology under the supervision of a fully trained and certified professional School Psychologist for the duration of one school year along with an accompanying on-campus seminar. All core courses in the School Psychology program must be completed prior to beginning the internship. This course may be repeated once for a maximum of 12 credits.

EPSY 5510 - Learning: Its Implic. for Education
Nature and types of learning, transfer of training, motivation, nature of instructional outcomes, with particular attention to individual differences among elementary and secondary school pupils.

EPSY 5515 - Professional Seminar in Cognition & Instruction
A professional seminar designed to present topics, paradigms, models, and theories in the various fields of educational psychology. The current research programs of the graduate faculty in Cognition and Instruction are presented for discussion in a seminar format.

EPSY 5520 - Instructional Design
Overview of the field of instructional design: instructional theories, prescriptive models, instructional strategies, issues and trends as they relate to the comprehensive development of instructional systems.

EPSY 5530 - Theories of Learning, Cognition and Instruction
Behavioral and cognitive psychology as it applies to instruction.

EPSY 5540 - Research Ethics in Education and Psychology
Ethical issues related to educational and psychological research, including working with institutional review boards, informed consent, deception research, conducting research, reporting research findings, sharing and storing data, record keeping, and APA, APS, ACA, and AERA ethics policies.

EPSY 5601 - Principles and Methods in Educational Research
Methods of research in education designed for Master's level students.

EPSY 5602 - Educational Tests and Measurements
The development of measurement and evaluation techniques.

EPSY 5603 - Methods of Inquiry
Fundamentals of qualitative and quantitative research in education.

EPSY 5605 - Quantitative Methods in Research I
Quantitative procedures and analysis of computer output including descriptive and inferential statistics through one-way analysis of variance.

EPSY 5607 - Quantitative Methods in Research II
Quantitative procedures and analysis of computer output including factorial analysis of variance, analysis of covariance, and multiple regression.

EPSY 5610 - Applied Regression Analysis for the Education Sciences
Multiple regression analysis and related techniques with applications to research in education. Topics include assumptions and inference; matrix representations; diagnostics and remedial measures; polynomial regression and interaction models; treatment of categorical independent variables, autocorrelation of errors in time series data, problems of missing values and selection bias, and logistic and ordinal regression models.

EPSY 5613 - Multivariate Analysis in Educational Research
An extension of EPSY 313. Practical emphasis on multiple regression, canonical correlation, multivariate analysis of variance and covariance, discriminant function analysis, and factor analysis.

EPSY 5621 - Construction of Evaluation Instruments
The theory and construction of assessment instruments in the affective domain.

EPSY 5645 - Computer Methods in Educational Research
Introduction to the UConn mainframe and microcomputers, data preparation and verification, Job Control Language, XEdit procedures, and SPSS-X.
Prerequisite: EPSY 5605 (RG785).

EPSY 5671 - School-Based Systems Interventions
Examination of current professional issues, theoretical models, and research related to the design interventions.

EPSY 5710 - Introduction to Gifted Education and Talent Development
Issues encountered in developing giftedness and talents in students: the nature of exceptional abilities, the history of special provisions, major scientific studies dealing with superior abilities, and contemporary educational systems and models.

EPSY 5720 - Developing Schoolwide Enrichment Programs
An overview of the theory and research behind and components within the Schoolwide Enrichment Model. Practical techniques for implementing the model in classrooms and school districts.

EPSY 5740 - Strategies for Differentiating the Grade Level Curriculum
Instructional and managerial techniques for use within or between classrooms to address learning differences among students. Strategies for improving academic achievement and success of diverse learners. Current and promising practices, as well as relevant research.

EPSY 5750 - Creativity
The identification of creative thinking and problem solving and the development and implications of creativity training materials and teaching strategies.

EPSY 5760 - Improving Students' Thinking Skills
Designed for teachers and administrators who wish to acquire more information about current research, trends and practices within the field of thinking skills instruction. An overview of the field, with special emphasis on research-based practices, major programs, and models for the improvement of thinking skills.

EPSY 5780 - Social and Emotional Components of Giftedness and Talent Development
Review of current research on affective growth and potential adjustment problems of gifted and talented youth. Vocational concerns, self-concept, self-esteem, and the teacher's role in preventing or remediating affective problems related to giftedness.

EPSY 6103 - Grant Writing
The grant procurement process is covered from identifying funding sources through initial grant management with a focus on actually writing a grant proposal.

EPSY 6194 - Doctoral Seminar
Cooperative study of developments and problems in the student's area of study.

EPSY 6220 - Video Design for Learning
Advanced principles of the video medium and its application to the learning process, instructional message design and the implementation of existing and emerging video delivery systems.

EPSY 6230 - Advanced Educational Technology
Readings, research and development of instructional materials using applications of advanced educational technology.

EPSY 6240 - Academic Motivation: Theory, Research and Practice
The purpose of this course is to examine theory, research and practice related to motivation, particularly the motivation to learn in academic settings. Specifically, the goals of this course are to introduce students to the field of the psychological study of motivation to learn in school settings; to explore the conceptual and practical value of framing of school and learning from a motivational and developmental perspective; to assist students in exploring how motivational theory and research may relate to their own areas of interest and help them in integrating motivational constructs into their research; and for participants to learn from each other and together read interesting new work on motivation to learn (a caring community is the crucible within which learning of enduring value unfolds). This course is designed for graduate students who are studying issues related to motivation to learn in school settings during the first two decades of life.
Prerequisite: EPSY 5510 (335) (RG4148)

EPSY 6301 - Advanced Group Processes
Participant/observers in a basic group course. Processing and analyzing of group processes.

EPSY 6302 - Prevention and Intervention in Schools, Education, and the Community
The theory, practice, and science of primary prevention of human problems in schools, education, and the community. Prevention concepts and case studies are presented by the faculty. Students give analysis and critique of course content and develop personal perspectives on prevention interventions and skills in the context of their careers.

EPSY 6304 - The Psychology of Men and Boys In Counseling and Education
The negative effects of men's socialization and gender role conflicts are reviewed from the theory and empirical research in the psychology of men. Lectures, discussions, experiential activities, and psychobiographies of famous men and women are used to promote personal learning and psychoeducational outcomes. Implications for counseling, teaching, and more positive views of men are explored.

EPSY 6469 - Single Subject Research in Education
Introductory and advanced content related to features, types, development, and use of "Single Subject Research Designs" to study of interventions and programs for improving the academic and social behavior outcomes for children and youth in schools.

EPSY 6491 - Doctoral Internship in School Psychology
Intensive, one year supervised experience in school psychology setting totalling 1,500 or 2,000 hours of service.

EPSY 6494 - Doctoral Practicum
The implementation and application of theory in the student's area of specialization.

EPSY 6550 - Situated Cognition
Theory, research and applications of situated cognition and situated learning.
Prerequisite: EPSY 5520, EPSY 5510, and EPSY 5530 (RG309).

EPSY 6560 - Instructional Psychology
An advanced course relating theories of cognition, behaviorism and instructional design. Topics include thinking, problem solving, the development of expertise and both automatic and controlled processing.
Prerequisites: EPSY 5602, EPSY 5520, and EPSY 5530 (RG314).

EPSY 6601 - Methods and Techniques of Educational Research
A survey of the principal methods employed in the investigation of educational problems, including problem formulation, stating hypotheses, sampling, instrument design, types of research methods and design principles.
Prerequisites: EPSY 5601 (341) (or master's level educational research class), EPSY 5605 (309), and EPSY 5607 (313) (RG3726)

EPSY 6611 - Hierarchical Linear Modeling
Theory and applications of hierarchical linear modeling, including organizational and longitudinal multilevel models.

EPSY 6615 - Structural Equation Modeling
This course provides an introduction to structural equation modeling. Students will learn to develop, modify, interpret a variety of structural equation models that are commonly used in social science research. To be covered are linear models with only observed variables (path analysis), latent variable models without causal paths (confirmatory factor analysis), and latent variable models with causal paths (structural equation modeling). The focus of the course is conceptual understanding, application, and interpretation of structural equation models.

EPSY 6621 - Program Evaluation
An overview of quantitative and qualitative procedures used in the evaluation of educational programs. Current trends and practical applications are stressed.
Prerequisite: EPSY 5605, EPSY 5607, and EPSY 6601 (RG289).

EPSY 6626 - Sampling Designs and Survey Research Methods in Education
Probability and non-probability sampling, single- and multi-stage sampling, sampling errors, design effects, unit-of-analysis concerns, confidentiality/anonymity issues, questionnaire design, interview procedures, item development, question format, ethics.
Prerequisite: EPSY 5607 (RG703).

EPSY 6635 - Measurement in Cognitive Psychology
Review of theory and research related to the measurement of variables in cognitive psychology such as domain knowledge, strategy knowledge, and motivation. Specific emphasis will be placed on the use of statistical theories and tools employed to study the reliability and validity of test scores. These tools include: generalizability theory, factor analysis, item response theory, and multidimensional scaling.

EPSY 6636 - Measurement Theory and Application
An advanced course in measurement and evaluation. The course emphasizes current issues in measurement and the scientific procedures reflected in the literature that suggest alternative solutions to these issues.

EPSY 6637 - Item Response Theory
An advanced course in educational and psychological testing theory. This course emphasizes the principles and processes of the most sophisticated approach to educational test construction and scoring available today.

EPSY 6638 - Advanced Topics in Item Response Theory
Applications of IRT to measurement problems such as equating, detection of differential item functioning, and adaptive testing. Extensions of unidimensional dichotomous models to polytomous responses and multidimensional tests. Extensive use of Monte Carlo data to investigate psychometric issues.
Prereq EPSY 6637

EPSY 6770 - Curricular Options for High Ability Learners
Curriculum theory and techniques with special attention to the development of instructional materials.

†GRAD 5930. Full-Time Directed Studies (Master's Level) (GRAD 397) 3 credits.

†GRAD 5950. Master's Thesis Research (GRAD 395) 1 - 9 credits.

†GRAD 5960. Full-Time Master's Research (GRAD 396) 3 credits.

GRAD 5998. Special Readings (Master's) (GRAD 398) Non-credit.

GRAD 5999. Thesis Preparation (GRAD 399) Non-credit.

†GRAD 6930. Full-Time Directed Studies (Doctoral Level) (GRAD 497) 3 credits.

†GRAD 6950. Doctoral Dissertation Research (GRAD 495) 1 - 9 credits.

†GRAD 6960. Full-Time Doctoral Research (GRAD 496) 3 credits.

GRAD 6998. Special Readings (Doctoral) (GRAD 498) Non-credit.

GRAD 6999. Dissertation Preparation (GRAD 499) Non-credit.

Electrical Engineering

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Department Head
Professor Rajeev Bansal

Professors
Anwar, Bar-Shalom, Enderle, Jain, Javidi, Luh, Pattipati, Taylor, Willett, and Zhu

Professor-in-Residence
DeMaria

Research Professor
Boggs

Associate Professors
Ayers, Bazzi, Chandy, Donkor, and Escabi, Gupta, Khan, Tehranipoor, Wang and, Zhou

Assistant Professor
Gokirmak, Park Silva, Zhang

The following areas of study and research leading to M.S. and Ph.D. degrees are offered: Electronics, Photonics, and Biophotonics; and Information, Communication, Decision, Biosystems. In addition, areas of emphasis in computer engineering (M.S. and Ph.D.) and nanotechnology (M.S.) are available. Students may also choose to pursue an M.S. degree in Electrical Engineering without a concentration.

The significant involvement of the Department of Electrical and Computer Engineering in interdisciplinary programs, e.g., Biomedical Engineering, is indicative of the broad scope of its basic interests and activities. Admission to one of the programs does not require an undergraduate degree in electrical engineering. It is quite common for graduate students with undergraduate degrees in other fields of engineering or in biology, mathematics, and physics to hold fellowships, assistantships, and part-time instructorships in the Department of Electrical and Computer Engineering. This mixing of faculty and graduate students with a variety of backgrounds integrates diverse ideas into departmental research projects.

Research and education in information, communication, decision, and biosystems includes human-machine systems, manufacturing systems, power systems, digital and optical signal processing, optical computing, image analysis and processing, optoelectronic neural networks computer-aided design, estimation theory, and stochastic communication and control. Activities in electronics, photonics, and biophotonics include research in diffractive optics, optoelectronics, biophotonics, nanostructure engineering, sensor technology, electro-optics, quantum electronics, semiconductor lasers, semiconductor heterojunctions with application to integrated circuits, electronic materials, antenna design, microwave technology, power electronics, and high voltage engineering. Research in computer engineering includes computer systems, trustable computing, VLSI design and testing, computer architecture, low power embedded systems, molecular computing, and high-performance computing. Separate listings should be consulted for information concerning biomedical engineering as well as for collaborative fields such as computer science and materials science.

Special Requirements for the Ph.D. Program

Admitted students must submit evidence of capacity for independent study in the form of a master's thesis or comparable achievement.

For information regarding fellowships, assistantships, and part-time instructorships, the applicant should address the chairperson of the Information, Communication, Decision, and Biosystems Graduate Admissions Committee, or the Electronics, Photonics, and Biophotonics Graduate Admissions Committee, depending upon the major interest of the applicant. The address in both cases is 371 Fairfield Way, Unit 2157, Room 450, Storrs, Connecticut 06269-2157. Further information about the Biomedical Engineering program is available from the Admissions Chair of the Biomedical Engineering field of study, 260 Glenbrook Road, Unit 2247, Storrs, Connecticut 06269-2247.

Special Facilities

Departmental facilities include the following research laboratories: Biomedical Instrumentation Laboratory, Cyber Laboratory, Electrical Insulation Research Laboratory, Central Laboratory for Imaging Research, Micro/Opto-electronics Research Laboratory, Nanotechnology Laboratory, Optical Signal Processing/Computing Laboratory, Manufacturing Systems Laboratory, and the Photonics Research Laboratory. These laboratories contain a variety of computers and workstations, interface facilities, a clean room with semiconductor growth and characterization facilities, MBE and MOVPE facilities, and other specialized equipment. Fellowships, assistantships, and part-time instructorships are available.

For more information, visit <www.engr.uconn.edu/ece/>.

Courses

ECE 5101 - Introduction to System Theory
Modeling and analysis of linear systems. Introduction to functions of a complex variable. Linear algebra with emphasis on matrices, linear transformations on a vector space, and matrix formulation of linear differential and difference equations. State variable analysis of linear systems. Transform methods using complex variable theory, and time-domain methods including numerical algorithms. Recommended preparation: ECE 202.

ECE 5121 - Multivariable Digital and Robust Control Systems
Analysis and design of robust multivariable control systems incorporating a digital computer as the controlling element. Topics include: Mathematical models of discrete-time systems, Discretization of continuous-time systems, Measures of control system performance, Classical single input-single output design methods, Compensator design via discrete-equivalent and direct design methods, State variable design via discrete equivalent and pole placement methods, Linear quadratic regulator (LQR) control, H2 and H-infinity optimal control, numerical optimization and nonlinear control.

ECE 5201 - Electromagnetic Wave Propagation
Engineering application of Maxwell's field theory to electromagnetic wave propagation in various media. Reflection, refraction, diffraction, dispersion, and attenuation. Propagation in sea water and in the ionosphere.

ECE 5211 - Semiconductor Devices and Models
Band theory, conduction in semiconductors, carrier statistics, deep levels, impurities with multiple charge states, heavy doping effects, non-uniform doping. Non-equilibrium processes, carrier scattering mechanisms, the continuity equation, avalanche multiplication, carrier generation, recombination, and lifetime. P-n junctions, non-abrupt junctions, various injection regimes, and device models. Metal semiconductor junctions, current transport mechanisms, and models. BJT, JFET, MESFET, and MOSFET, and device models.

ECE 5212 - Fundamentals of Opto-Electronic Devices
Absorption and emission mechanisms in direct and indirect semiconductors. Semiconductor optoelectronic devices such as light-emitting diodes, injection lasers, photocathodes, solar cells, and integrated optics.

ECE 5213 - MOS Device & VLSI Fundamentals
Physics of MOS capacitors and transistors, derivation of V-1 relation expressing subthreshold,threshold, and saturation region behavior; short-channel effects in scaled-down transistors; scaling laws; VLSI fabrication technologies; design and layout gates and gate arrays; physics, device layout and design of semiconductor memories including static and dynamic RAMs. Laboratory emphasizes introduction to nonvolatile RAMs; computer aids in VLSI design; schematic capture, SPICE simulation, layout of custom IC's, and VHDL.

ECE 5223 - Nanophotonics
Principles and applications of nanophotonics with focus on optical metamaterials, plasmonics, and photonic bandgap crystals. Topics covered include electric plasma, magnetic plasma, optical magnetism, negative index matematerials, localized and non-localized surface plasmon polaritons, photonic bandgap structures, superlens, optical cloaking, surface enhanced Raman spectroscopy, transformation optics, plasmonic sensors, plasmonic waveguides. Prerequisite: ECE 3223 or consent of instruc

ECE 5225 - Electron Device Design and Characterization
Recommended Preparation: ECE 4211 or equivalent course

ECE 5231 - Fund Of Photonics
Principles of optics including rays, waves, beams, electromagnetics, polarization and statistics. Basic postulates, simple optical components, graded index and matrix optics, monochromatic waves, interference, polychromatic light, Gaussian beams and propagation, diffraction, Fourier transforms, holography, dispersion and pulse propagation, polarizing devices and applications. Concepts of coherence and partial coherence as applied to various light sources in optical experiments and systems.

ECE 5232 - Optoelectronic Devices
Optoelectronic devices as applied to fiber optic communications, optical switching and interconnects. Semiconductor laser devices, including dc, ac smallsignal, ac large signal, and noise with emphasis upon analytical models. Vertical cavity devices and technology. Semiconductor optical amplifiers, waveguide and vertical cavity modulators, photodetectors, optical switches, receivers and transmitters. Techniques for OE integration and the relevance of bipolar and field-effect devices for monolithic integration. Technologies for optoelectronic integration for telecom and datacom optical interconnect. WDM techniques for optical networks.

ECE 5233 - Optical Systems Engineering
Design and analysis of paraxial optical systems, including stable and unstable laser resonators, and the propagation of geometric beams, Gaussian beams, and plane waves through complex optical systems. Topics include ray optics; ray matrices; polarization of light; diffraction theory; the connection between geometrical optics and diffraction; and performance analysis.

ECE 5234 - Optical Waveguides
Propagation of electromagnetic waves in dielectric slab and fiber waveguides as described by geometrical ray optics and normal mode analysis. Integrated optic guides, step and graded index fiber guides. Single mode vs. multimode transmission, coupling, and other system considerations.

ECE 5301 - Engineering Problems in the Hospital
Given in collaboration with staff from the University's School of Medicine and from hospitals in Hartford. Aim is to familiarize the student with engineering problems in a modern hospital. Role of the small computer in the hospital; implanted pace-makers; heart catheterization. Students are expected to investigate and solve an engineering problem associated with clinical medicine as a semester project.

ECE 5451 - Introduction to Hardware Security and Trust
This course and ECE4451 may not both be taken for credit.
Prerequisite: ECE3401; This course and ECE4451 may not both be taken for credit.

ECE 6094 - Seminar
Presentation and discussion of advanced electrical engineering problems.

ECE 6095 - Special Topics in Electrical and Systems Engineering
Classroom and/or laboratory courses in special topics as announced in advance for each semester.

ECE 6099 - Independent Study in Electrical Engineering
Individual exploration of special topics as arranged by the student with an instructor of his or her choice.

ECE 6101 - Linear Multivariable System Design
Observability and controllability. Application of canonic forms in system design. Methods of pole placement. Observer design. Noninteracting multivariable systems.
Prerequisites: ECE 5101 (RG330).

ECE 6102 - Optimal and Model Predictive Control
Optimal Control, including optimization techniques for linear and nonlinear systems, calculus of variations, dynamic programming, the Pontryagin maximum principle, and computational methods. Linear Model Predictive Control, including process models and model prediction methods of state space description, transfer matrix representation, and neural network representation; and optimization methods without and with constraints. Nonlinear Model Predictive Control.
Prerequisite: ECE 5101 and ECE 6111 (RG333).

ECE 6103 - Nonlinear System Theory
Stability of time-varying nonlinear systems. Liapunov's direct method. Describing functions. Popov's stability criterion. Adaptive control.
Prerequisites: ECE 5101 (RG330).

ECE 6104 - Info Control & Games
Problems of static and dynamic optimization where more than one decision maker is involved, each having own payoff and access to different information. Review of elementary decision and control theory, non-cooperative games, cooperative games, bargaining models, differential games, team decision theory, Nash games, Stackelberg games (leader-follower problems). Introduction to large-scale systems and hierarchical control.
Prerequisite: ECE 5101 and ECE 6111 (RG333).

ECE 6105 - Man-Machine Systems Analysis
Role of the human as a decision and control element in a feedback loop. Mathematical models of human control characteristics and instrument monitoring behavior. Effects of human limitations upon overall task performance. Parallel discussion of measurement and experimental techniques. Validation of theoretical results by comparisons with existing human response data.
Prerequisite: ECE 5101 and ECE 6111 (RG333).

ECE 6106 - Experimental Investigation of Control Systems
A study of experimental techniques and advanced design of control systems.
Prerequisite: ECE 6111 and ECE 6103 (RG334).

ECE 6107 - Stochastic Control
Methods of decision-making and control in a stochastic environment. Elements of utility theory. Principle of optimality and deterministic dynamic programming. Stochastic dynamic programming. Control of dynamic systems with imperfect state information. Certainty equivalence and the control's dual effect. Sequential hypothesis testing. Passive and active stochastic adaptive control algorithms. Decentralized control methods.
Prerequisite: ECE 5101 or ECE 6111 (RG343).

ECE 6108 - Linear Programming and Network Flows
Computational methods for linear programming with special emphasis on sequential and parallel algorithms for Network Flow Problems. Standard and canonical forms of linear programming, revised Simplex methods, basis updates, decomposition methods, duality, shortest paths, minimal spanning trees, maximum flows, assignment problems, minimum cost network flows, and transportation problems.
Prerequisites: ECE 5101 (RG330).

ECE 6111 - Applied Probability and Stochastic Processes
Statistical methods for describing and analyzing random signals and noise. Random variables, conditioning and expectation. Stochastic processes, correlation, and stationarity. Response of linear systems to stochastic inputs. Applications.

ECE 6121 - Information Theory
Basic concepts: entropy, mutual information, transmission rate and channel capacity. Coding for noiseless and noisy transmission. Universal and robust codes. Information-theoretic aspects of multiple-access communication systems. Source encoding, rate distortion approach.
Prerequisite: ECE 6111 (RG331).

ECE 6122 - Digital Signal Processing
Discrete-time signals and systems. The z-transform. The Discrete Fourier Transform (DFT). Convolution and sectioned convolution of sequences. IIR and FIR digital filter design and realization. Computation of the DFT: The Fast Fourier Transform (FFT), algorithms. Decimation and interpolation. Parametric and nonparametric spectral estimation. Adaptive filtering. Finite word length effects.

ECE 6123 - Advanced Signal Processing
Wiener filter theory. Linear prediction. Adaptive linear filters: LMS and RLS algorithms, variants, lattice structures and extra-fast implementation. Convergence properties. High resolution spectral estimation. Hidden Markov models, Monte-Carlo methods for signal processing. Multiresolution decomposition and wavelets. Blind methods.
Prerequisites: ECE 6111 and ECE 6122 (RG332).

ECE 6124 - Advanced Signal Detection
Focus on discrete-time detection of signals in noise which is not necessarily Gaussian. Topics include: classical Neyman-Pearson and Bayes theory, efficacy and asymptotic relative efficiency; some canonical noise models; quantized detection; narrowband signal detection; distance measures and Chernoff bounds; sequential detection; robustness; non-parametric detection; continuous-time detection and the Karhunen-Loève expansion.

ECE 6125 - Digital Image Processing
Problems and applications in digital image processing, two-dimensional linear systems, shift invariance, 2-D Fourier transform analysis, matrix Theory, random images and fields, 2-D mean square estimation, optical imaging systems, image sampling and quantization, image transforms, DFT, FFT, image enhancement, two-dimensional spatial filtering, image restoration, image recognition, correlation, and statistical filters for image detection, nonlinear image processing, and feature extraction.

ECE 6126 - Optical Information Processing
Two-dimensional signal processing using optical techniques. Topics include: review of

two-dimensional linear system theory; scalar diffraction theory, Fresnel and Fraunhofer diffraction; Fourier transforming and imaging properties of lenses; image formation; frequency analysis of optical imaging systems; modulation transfer function; two-dimensional spatial filtering; coherent optical information processing; frequency-domain spatial filter synthesis; holography, Fourier and nonlinear holograms.

ECE 6141 - Neural Networks for Classification and Optimization
This course provides students with an understanding of the mathematical underpinnings of classification techniques as applied to optimization and engineering decision-making, as well as their implementation and testing in software. Particular attention is paid to neural networks and related architectures. The topics include: Statistical Interference and Probabilty Density Estimation, Single and Multi-layer Perceptions, Radial Basis Functions, Unsupervised Learning, Preprocessing and Feature Extraction, Learning and Generalization, Decision Trees and Instance-based Classifiers, Graphical Models for Machine Learning, Neuro-Dynamic Programming.

ECE 6142 - Fuzzy and Neural Approaches to Engineering
Fuzzy sets, applications to fuzzy logic and fuzzy control, and concepts and methodologies for fuzzy optimization. Fundamental models of neural networks, learning rules, and basic recurrent networks for optimization. The integration of fuzzy systems with neural networks. Examples from engineering applications.
Prerequisites: ECE 5101 (RG330).

ECE 6143 - Pattern Recognition and Neural Networks
Review of probability and stochastic processes. Statistical pattern recognition. Nonlinear signal processing and feature extraction. Correlation filters. Metrics for pattern recognition. Baysian classifiers. Minimum probability of error processors. Supervised and unsupervised learning. Perception learning methods. Multilayer neural networks. Applications to security and encryption.

ECE 6151 - Communication Theory
Design and analysis of digital communication systems for noisy environments. Vector representation of continuous-time signals; the optimal receiver and matched filter. Elements of information theory. Quantization, companding, and delta-modulation. Performance and implementation of common coherent and non-coherent keying schemes. Fading; intersymbol interference; synchronization; the Viterbi algorithm; adaptive equalization. Elements of coding.
Prerequisite: ECE 6111 (RG331).

ECE 6152 - Wireless Communication
Introduces basic concepts in wireless communication and networks with emphasis on techniques used in the physical layer of current and future wireless communication systems. Covers channel modeling, modulation, spread spectrum techniques, multiuser communication theory, wireless network protocols, and current cellular and PCS systems. Special topics in equalization and array signal processing are included.
Prerequisite: ECE 6122 and ECE 6151 (RG344).

ECE 6161 - Modern Manufacturing System Engineering
Issues and methods in modern manufacturing systems. Integrated product and process development. Design for quality, on-line quality control and improvement, reliability during product development, and design for testability. Computer-aided production management, production planning and scheduling, and optimization-based planning and coordination of design and manufacturing activities. Targeted toward students, professional engineers, and managers who want to have an impact on the state-of-the-art and practice of manufacturing engineering, and to improve manufacturing productivity

ECE 6211 - Antenna Theory and Applications
Analysis and synthesis of antenna systems including electric- and magnetic-dipole, cylindrical, helical, reflector, lens, and traveling-wave antennas. Theory of arrays including patterns, self and mutual impedances.

ECE 6212 - Microwave Techniques
A theoretical analysis of microwave components, systems, and measuring techniques. Scattering matrix analysis is applied to microwave devices having two or more ports.

ECE 6221 - Transport in Semiconductors
Topics include theory of energy bands in crystals; carrier scattering; the Boltzman equation and its approximations; low field transport; high field effects; transport in heterojunctions; quantum effects; and Monte Carlo simulation.
Prerequisite: Physics 5401 (RG340).

ECE 6222 - Advanced Semiconductor Devices
Fundamental properties of heterostructures, strained-layer superlattices, NIPI structures, multiple quantum well, quantum wire, and quantum dot structures. Operation, modelling of the electrical characteristics, design, and applications of HBJT, HEMT, and resonant tunneling devices. Second-order effects in submicron MOSFETs and MESFETs.

ECE 6231 - Advanced Optoelectronics
Review of optoelectronic devices and integrated circuit (IC) technologies (analog and digital); logic gates; self-electro-optic devices (SEEDs), microlasers, Fabry-Perot (F-P) etalons and optoelectronic IC (OEICs); modulators: F-P modulators (absorptive and refractive), spatial light modulators (SLMs) and their applications; bistable devices; bistable laser amplifiers, resonant tunneling transistor lasers, and polarization bistability; optical interconnects; architectural issues and optical processors based on S-SEED, optical neural networks, and other devices.
Prerequisite: ECE 5212 (RG339).

ECE 6232 - Nonlinear Optical Devices
Wave propagation in nonlinear media, generation of harmonics in optical materials, optical parametric processes, stimulated emission and scattering processes. Device modeling and application of fiber and semiconductor lasers, optical amplifiers and modulators. Electro-optic, acousto-optic, and magneto-optic devices. Soliton generation and propagation.
Prerequisite: ECE 5231 (RG342).

ECE 6241 - Electronic Materials
Physical and electronic properties, and device applications of disordered materials including amorphous semiconductors, liquid crystals, bubble-memory magnetic materials. Applications of amorphous semiconductors including xerography and solar cells.
Prerequisite: MSE 5313 (RG335).

ECE 6242 - VLSI Fabrication Principles
Semiconductor materials and processing, emphasizing compound semiconductors, optoelec-tronic materials, shallow devices, and fine-line structures. Semiconductor material properties; phase diagrams; crystal growth and doping; diffusion; epitaxy; ion implantation; oxide, metal, and silicide films; etching and cleaning; and lithographic

processes.

ECE 6243 - Nanotechnology
Nanoelectronic and optoelectronic devices: Quantum confinement in 1D, 2D and 3D (quantum wells, wires, and dots) structures; density of states and carrier density in low-dimensional structures; fabrication methodology for quantum wire transistors and lasers; single-electron transistors/tunneling devices; growth and characterization of nanostructured materials with grain sizes in the range of 10-50 nm. Organic monolayers: Langmuir-Blodgett monolayers, Self-Assembled monolayers, Multi-layer structures, technological applications of organic thin films.

ECE 6244 - Nanotechnology - II (Laboratory Course)
Growth and characterization of carbon nanotubes using vapor phase nucleation; Growth of cladded quantum dots using liquid and/or vapor phase techniques; Characterization using AFM and TEM and Dynamic scattering techniques; Nano-device processing highlighting E-Beam lithography, and self assembly techniques; Project work involving fabrication of devices including LEDs, FETs and memor, detectors and sensors using quantum dots and nanotubes/wires.

ECE 6247 - Dielectric and Magnetic Materials Science
The macroscopic and microscopic views of dielectric and magnetic materials. Theories of spontaneous polarization and magnetization. Applications of anisotropic materials. Non-linear dielectrics at radio and optical frequencies. Superconductivity and superconducting magnets.

ECE 6301 - Biomedical Instrumentation I
Origins of bioelectric signals; analysis and design of electrodes and low-noise preamplifiers used in their measurement. Statistical techniques applied to the detection and processing of biological signals in noise, including the treatment of nerve impulse sequences as stochastic point processes. Methods of identifying the dynamic properties of biosystems.
Prerequisite: ECE 6111 (RG331).

ECE 6302 - Biomedical Imaging
Fundamentals of detection, processing and display associated with imaging in medicine and biology. Topics include conventional and Fourier optics, optical and acoustic holography, optical and digital image enhancement, ultrasonography, thermography, isotope scans, and radiology. Laboratory demonstrations will include holography and optical image processing.

ECE 6303 - Advanced Ultrasonic Imaging Technique
Introduction to advanced techniques of ultrasonic image formation for biomedical applications. Introduction to acoustic wave propagation. A,B,C,M and Doppler ultrasonic imaging modes. Interaction of ultrasound with biological tissues. Acoustical holography. Ultrasonic transducer design and calibration. Transducer arrays. Ultrasound detection modes. Laboratory demonstrations will include Schlieren visualization of ultrasound fields and transducer calibration techniques.
Prerequisite: EE 6302 or BME 6400 (RG345).

ECE 6304 - Biomedical Instrumentation Laboratory
Experimental investigation of electrodes, transducers, electronic circuits, and instrumentation systems used in biomedical research and in clinical medicine.

ECE 6305 - Medical Imaging Systems
Medical imaging principles and systems of x-ray, ultrasound, optical tomography, magnetic resonance imaging, positron emission tomography. The students are required to have the courses of instrumentation, signal analysis using Fourier Transform and Laplace transform. Students are also required to have advanced mathematics on differential equations and matrix calculations. Also offered as BME 360.

ECE 6311 - Communication and Control in Physiological Systems
Processing, transmission, and storage of information in nerve systems. Mechanisms of neuro-sensory reception, coding and signal-to-noise ratio enhancement. Analysis of invertebrate and vertebrate visual systems. Neural spatio-temporal filters in feature extraction and pattern recognition. Analysis of control systems and regulators associated with vision: e.g., gaze control, accommodation, pupil area, and intra-ocular pressure.

ECE 6421 - Advanced VLSI Design
Advanced concepts of circuit design for digital VLSI components in state of the art MOS technologies. Emphasis is on the circuit design, optimization, RTL design, synthesis, and layout of either very high speed, high density or low power circuits and systems for use in applications such as micro-processors, signal and multimedia processors, memory and periphery. Other topics include challenges facing digital circuit designers today and in the coming decade, such as the impact of scaling, deep submicron effects, interconnect, signal integrity, power distribution and consumption, and timing. Recommended preparation: ECE 249 and ECE 252 (or equivalent).

ECE 6422 - VLSI CAD Algorithms
Very large scale integrated circuit (VLSI) computer-aided design (CAD) tools, optimization techniques, and design automation algorithms, such as branch and bound, genetic algorithms, simulated annealing, and linear programing.
VLSI physical design process including partitioning, floorplanning, placement, routing, compaction, and pin assignment.

ECE 6431 - Advanced Computer Networks and Distributed Processing Systems
Design and evaluation of distributed computer communication and processing systems. Case studies, development of suitable queuing and other models to describe and evaluate design problems such as capacity assignment, concentration and buffering, network topology design, routing, access techniques, and line control procedures.
This course and CSE 330 may not both be taken for credit (RG581).

ECE 6432 - VLSI Design Verification and Testing
Introduction to the concepts and techniques of VLSI (very large scale integration) design verification and testing, details of test economy, fault modeling and simulation, defects, automatic test pattern generation (ATPG), design for testability (DFT), scan and boundary scan architectures, built-in self-test (BIST) and current-based testing. State-of-the-art tools are used for ATPG, DFT, test synthesis and power analysis and management.

ECE 6433 - Stochastic Models for the Analysis of Computer Systems and Communication Networks
Continuous and discrete-time Markov chains

and their applications in computer and communication network performance and reliability evaluation. Little's theorem and applications; review of stochastic processes; simple Markovian queues; open, closed, and mixed product-form networks; computational algorithms for closed and mixed product form networks; flow-equivalence and aggregation; M/G/1 queue with vacations and applications to time-division and frequency-division multiplexing; reservations and polling; multi-access communication; reliability and performability models of computer systems. Prerequisite: ECE 6111 (RG331).

ECE 6435 - Advanced Numerical Methods in Scientific Computation
Development, application and implementation of numerically stable, efficient and reliable algorithms for solving matrix equations that arise in modern systems engineering. Computation of matrix exponential, generalized inverse, matrix factorizations, recursive least squares, eigenvalues and eigenvectors, Lyapunov and Riccati equations.
Prerequisites: ECE 5101 (RG330).

ECE 6437 - Computational Methods for Optimization
Computational methods for optimization in static and dynamic problems. Ordinary function minimization, linear programming, gradient methods and conjugate direction search, nonlinear problems with constraints. Extension of search methods to optimization of dynamic systems, dynamic programming. Prerequisites: ECE 5101 (RG330).

ECE 6439 - Estimation Theory & Comp Alg
Estimation of the state and parameters of noisy dynamic systems with application to communications and control. Bayesian estimation, maximum-likelihood and linear estimation. Computational algorithms for continuous and discrete processes, the Kalman filter, smoothing and prediction. Nonlinear estimation, multiple model estimation, and estimator Kalman, multiple model estimation, and estimator design for practical problems.
Prerequisite: ECE 5101 and ECE 6111 (RG333).

†GRAD 5930. Full-Time Directed Studies (Master's Level) (GRAD 397) 3 credits.

†GRAD 5950. Master's Thesis Research (GRAD 395) 1 - 9 credits.

†GRAD 5960. Full-Time Master's Research (GRAD 396) 3 credits.

GRAD 5998. Special Readings (Master's) (GRAD 398) Non-credit.

GRAD 5999. Thesis Preparation (GRAD 399) Non-credit.

†GRAD 6930. Full-Time Directed Studies (Doctoral Level) (GRAD 497) 3 credits.

†GRAD 6950. Doctoral Dissertation Research (GRAD 495) 1 - 9 credits.

†GRAD 6960. Full-Time Doctoral Research (GRAD 496) 3 credits.

GRAD 6998. Special Readings (Doctoral) (GRAD 498) Non-credit.

GRAD 6999. Dissertation Preparation (GRAD 499) Non-credit.

Engineering

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Dean
Professor Kazem Kazerounian

Assistant Dean for Graduate Studies and Diversity
Associate Professor Jun-Hong Cui

Master of Engineering Degree Program

The School of Engineering, in addition to the master's and doctoral degree programs described elsewhere in this Catalog, offers the M.Engr. degree with areas of concentration in: Civil and Environmental Engineering, Chemical Engineering, Computer Science and Engineering, Electrical and Computer Engineering, Materials Science and Engineering, and Mechanical Engineering.

The M.Engr. degree is designed to meet the needs of practicing engineering professionals who are employed full-time. Work toward this degree program can be completed on-site at company or at other convenient locations. Distance learning is available in select areas. The required curriculum consists of 28 graduate credits and completion of a project.

In addition to the general admission requirements of the Graduate School, the following also are required: verbal, quantitative, and analytical scores from the Graduate Record Examinations; evidence of demonstrated competence in the discipline, including but not limited to undergraduate research or field experience; and, whenever possible, a personal interview by a potential graduate advisor.evaluating risk, developing the project team, project tracking and performing variance analysis. Case studies are used as class and homework assignments to focus the class on the topics presented. Components:Lecture Attributes:Taught at a local business

Courses

ENGR 5300 - Special Topics in Engineering

Classroom and/or laboratory course in special topics as announced in advance for each semester.

ENGR 5311 - Professional Communication and Information Management

Development of the advanced communication skills as well as information management required of engineers and engineering managers in industry, government, and business. Focus on (1) the design and writing of technical reports, articles, proposals and memoranda that address the needs of diverse organizational and professional audiences; (2) the preparation and delivery of organizational and technical oral and multimedia presentations and briefings; (3) team building skills with an emphasis on communications; and (4) knowledge management.

ENGR 5312 - Engineering Project Planning and Management

This course provides a methodology for managing engineering projects. Topics include project lifecycle, strategic planning, budgeting, and resource scheduling. Course work also includes work estimating, evaluating risk, developing the project team, project tracking and performing variance analysis. Case studies are used as class and homework assignments to focus the class on the topics presented.

English

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Interim Department Head
Wayne Franklin

Director of Graduate Studies
Charles Mahoney

Professors
Barreca, Benson, Biggs, Bloom, Breen, Cutter, Dulack, Eby, Franklin, Harris, Hasenfratz, Higonnet, Hogan, Hollenberg, Jones, MacLeod, Mahoney, Makowsky, Marsden, Peterson, Pickering, Recchio, Sonstroem, Tilton, and Winter

Associate Professors
Bercaw Edwards, Brown, Burke, Campbell, Coundouriotis, Cramer, Deans, Duane, Fairbanks, Hart, Hufstader, Jambeck, King'oo, Kneidel, Lynch, Manning, Pelizzon, Phillips, Roden, Sánchez-Gonzalez, Schlund-Vials, Semenza, Shaw, Shea, Smith, and Storhoff

Assistant Professors
Bailey, Bedore, Bystrom, Carillo, Codr, Gorkemli, Knapp, Litman, Salvant, Tonry, and Vials

The Department of English (Web site: www.english.uconn.edu) offers courses in English language and composition theory, criticism, and literature written in English. Special research projects and courses of study in comparative literature, medieval studies, American studies, and linguistics are available in course sequences administered cooperatively with other departments. Comparative literature courses of study are conducted in cooperation with the Department of Modern and Classical Languages. The Medieval Studies Program is conducted in cooperation with the language department and the Departments of Art, Dramatic Arts, History, and Philosophy. The area of concentration in American Studies is offered in cooperation with the Departments of History, Political Science, and Sociology.

English courses numbered in the 5000's series normally are broad studies of literary schools, periods, and topics and are open to both doctoral and master's candidates. Enrollment is limited to ten students. Seminars are numbered in the 6000's series and are designed primarily for doctoral students, although they are open to a limited number of master's candidates. Enrollment in the seminars is limited to eight students. Independent study is available under English 6000.

Admission to the M.A. and Ph.D. Programs

All applications for admission, together with letters, personal statement, writing sample and the Graduate Record Examination scores (for both General and Subject tests) should reach Storrs by January 1 to be competitive for teaching assistantships and fellowships. There is no special application for teaching assistantships.

The M.A. Program

M.A. students are required to complete 31 credits, usually in this pattern: Seven credits in the first semester (English 5100: Theory and Teaching of Writing. 3 credits and English 5150: Research Models, 1 credit, plus another three-credit course; nine credits in the second semester, six credits in the third semester, and nice credits in the fourth semester. English 5100 and 5150 are required. There are no specific distribution requirements. The MA Examination is taken in January of the second year.

MA/Ph.D Program

A six-year program for students with a BA who are confident that they want to pursue a PhD and that their areas of specialization correspond to the UConn program's strengths.Students are required to complete 45 credits of course work at UConn for the Ph.D. including English 5100, 5150, and 5160

The Ph.D. Program

Students are ordinarily required to complete 24 credits of course work at the Storrs Campus for the Ph.D., and at least 45 credits of total graduate work, including English 5160 and 5100, though 5100 may be waived with appropriate credentials. The usual course load for a full-time student in each semester is six-nine credits, (if the student is a teaching assistant), as approved y the Major Advisor. At least one course must be focused on a pre-1800 literary period or author, though ideally, students will enroll in more than one such. Before writing the dissertation, students take a doctoral examination, consisting of a field examination and a specialist examination.

Special Facilities

Library collections include "little magazines" and alternative press publications, the Charles Olson archives, and extensive Short Title Catalogue holdings. The English Department sponsors the Connecticut Writing Project, a program for teachers at all levels throughout the State. Funds endowing the Department's Aetna Professorship in Writing make possible a variety of innovative courses as well as prizes for outstanding student essays. Student creativity is encouraged in the yearly Wallace Stevens Poetry Prize competition, judged by a leading poet in a special presentation at Storrs. Faculty edit the journals The Eighteenth Century: Theory and Interpretation, LIT, MELUS (Multi-Ethnic Literature of the United States), Children's Literature Association Quarterly, and Journal of Medieval Relgious Cultures.

Courses

ENGL 5100 - The Theory and Teaching of Writing
An exploration of the relationship between the theories and practice of writing, with attention given to recent classroom practices in composition.
Open to graduate students in English, others with permission (RG803).

ENGL 5120 - Approaches to Literature
An introduction to practical criticism. The nature of literature; the use of biography, psychology, and other background subjects in literary criticism; problems in literary history and analysis.
Open to graduate students in English, others with permission (RG803).

ENGL 5150 - Advanced Research Methods
An introduction to advanced research in the humanities. History of and recent developments in humanities-based research; the use of electronic databases and traditional material resources; the collection and organization of materials; the formulation of an argument; the forms of professional academic writing.
Open to graduate students in English and Medieval Studies, others with permission (RG818).

ENGL 5160 - Professional Development in English
Advanced training in such activities as dissertation writing, attending conferences, publishing book reviews and scholarly articles, and seeking employment in academe. Includes practical instruction on revising a seminar paper for publication.
Open to graduate students in English and Medieval Studies, others with permission (RG818).

ENGL 5200 - Children's Literature
A study of Children's Literature from the aesthetic, historic, psychological and sociological points of view. Major themes and genres. Standards of literary criticism.
Open to graduate students in English, others with permission (RG803).

ENGL 5220 - History of the English Language
The development of the sounds, forms, order, and vocabulary of Standard English; an introduction to the methods of modern descriptive linguistics, and to the application of linguistic fact and theory to the teaching of English.
Open to graduate students in English and Medieval Studies, others with permission (RG818).

ENGL 5240 - The Bible as Literature
A study of major themes and literary characteristics of writing from the Hebrew Bible and New Testament. The Bible's relevance to modern literary criticism.
Open to graduate students in English, others with permission (RG803).

ENGL 5270 - Modern Poetry: Problems in Critical Analysis

Open to graduate students in English, others with permission (RG803).

ENGL 5280 - Modern Drama

Open to graduate students in English, others with permission (RG803).

ENGL 5310 - Old English
A study of the language and literature of pre-conquest England.
Open to graduate students in English and Medieval Studies, others with permission (RG818).

ENGL 5315 - Medieval Literature
A study of medieval literature, exclusive of Chaucer.
Open to graduate students in English and Medieval Studies, others with permission (RG818).

ENGL 5318 - Chaucer

Open to graduate students in English and Medieval Studies, others with permission (RG818).

ENGL 5320 - Shakespeare

Open to graduate students in English, others with permission (RG803).

ENGL 5323 - Renaissance Drama

Open to graduate students in English and Medieval Studies, others with permission (RG818).

ENGL 5325 - Renaissance I: 1485-1603
A study of major writers and literary traditions of the sixteenth century, exclusive of the drama.
Open to graduate students in English and Medieval Studies, others with permission (RG818).

ENGL 5326 - Seventeenth-Century Literature

Open to graduate students in English and Medieval Studies, others with permission (RG818).

ENGL 5329 - Milton

Open to graduate students in English and Medieval Studies, others with permission (RG818).

ENGL 5330 - Restoration and Eighteenth Literature

Open to graduate students in English, others with permission (RG803).

ENGL 5335 - Later Eighteenth Century Literature

Open to graduate students in English, others with permission (RG803).

ENGL 5340 - Romantic Literature
Open to graduate students in English, others with permission.
Open to graduate students in English, others with permission (RG803).

ENGL 5345 - Studies in Victorian Literature

Open to graduate students in English, others with permission (RG803).

ENGL 5350 - Modern British Writers

Open to graduate students in English, others with permission (RG803).

ENGL 5360 - Irish Literature

Open to graduate students in English, others with permission (RG803).

ENGL 5410 - American Literature to 1776

Open to graduate students in English, others with permission (RG803).

ENGL 5420 - American Literature 1776-1865

Open to graduate students in English, others with permission (RG803).

ENGL 5430 - American Literature 1865-1914

Open to graduate students in English, others with permission (RG803).

ENGL 5440 - American Literature since 1914

Open to graduate students in English, others with permission (RG803).

ENGL 5500 - Literary Criticism
A study of the major documents of literary criticism and theory from Plato and Aristotle to the present.
Open to graduate students in English, others with permission (RG803).

ENGL 5530 - World Literature in English
Selected works of colonial and post-colonial literature from Africa, South Asia, the Caribbean, Australia, New Zealand, Canada, etc.
Open to graduate students in English, others with permission (RG803).

ENGL 5550 - Rhetoric and Composition Theory
Classical and contemporary rhetorical theory, current research in composition.
Open to graduate students in English, others with permission (RG803).

ENGL 6000 - Independent Study
A reading course normally open only to doctoral candidates.

ENGL 6200 - Seminar in Children's Literature
Major authors, themes, or literary movements in American or British children's literature.
Open to graduate students in English, others with permission (RG803).

ENGL 6260 - Seminar in Modern Fiction

Open to graduate students in English, others with permission (RG803).

ENGL 6270 - Seminar in Modern Poetry

Open to graduate students in English, others with permission (RG803).

ENGL 6290 - Seminar in Non-Fiction Prose

Open to graduate students in English, others with permission (RG803).

ENGL 6310 - Seminar in Beowulf

Open to graduate students in English and Medieval Studies, others with permission (RG818).

ENGL 6312 - Seminar in Old Irish
Language and literature of Medieval Ireland.
Open to graduate students in English and Medieval Studies, others with permission (RG 4326).

ENGL 6313 - Seminar in Old Norse
Old Norse language and literature.
Open to graduate students in English and Medieval Studies, others with permission (RG 4326).

ENGL 6315 - Seminar in Medieval Literature

Open to graduate students in English and Medieval Studies, others with permission (RG818).

ENGL 6320 - Seminar in Shakespeare

Open to graduate students in English, others with permission (RG803).

ENGL 6325 - Seminar in Renaissance Literature
This course may be repeated for a total of six credits with a change in content.
Open to graduate students in English, others with permission (RG803).

ENGL 6330 - Seminar in Eighteenth-Century Literature
With a change in content, this course may be repeated for a total of six credits.
Open to graduate students in English, others with permission (RG803).

ENGL 6340 - Seminar in Romantic Literature

Open to graduate students in English, others with permission (RG803).

ENGL 6340 - Seminar in Romantic Literature
May be repeated for a total of six credits with a change in content.
Open to graduate students in English, others with permission (RG803).

ENGL 6345 - Seminar in Victorian Literature
May be repeated for a total of six credits with a change in content.
Open to graduate students in English, others with permission (RG803).

ENGL 6360 - Seminar in Irish Studies
Major authors, movements, or themes in Irish literature.
Open to graduate students in English, others with permission (RG803).

ENGL 6400 - American Ethnic Literature

With a change of content. this course may be repeated for credit.
Open to graduate students in English, others with permission (RG803).

ENGL 6410 - American Literature and Culture
An introduction to a particular literary era and the cultural influences on its literature. The course will also address the influence of a literary era on cultural change

ENGL 6420 - American Literary Movements
Introduction to a particular American literary movement.
Open to graduate students in English, others with permission (RG803).

ENGL 6450 - Special Topics in American Literature
With a change in content, this course may be repeated for credit.
Open to graduate students in English, others with permission (RG803).

ENGL 6500 - Seminar in Literary Theory

Open to graduate students in English, others with permission (RG803).

ENGL 6530 - Seminar in World Literature
Major authors, movements, or themes in world literature written in English.
Open to graduate students in English, others with permission (RG803).

ENGL 6540 - Seminar in Literature and Human Rights
The interdisciplinary study of literature and human rights discourse.
Open to graduate ENGL students only others with permisson

ENGL 6550 - Seminar in Rhetoric and Composition Theory
May be repeated for a total of six credits with a change in content.
Open to graduate students in English, others with permission (RG803).

ENGL 6575 - Seminar in Women and Literature
May be repeated for a total of six credits with a change in content.
Open to graduate students in English and Medieval Studies, others with permission (RG818).

ENGL 6600 - Creative Writing Workshop

Open to graduate students in English, others with permission (RG803).

ENGL 6700 - Seminar in Major Authors
May be repeated for a total of nine credits with a change in content.
Open to graduate students in English, others with permission (RG803).

ENGL 6750 - Special Topics in Language and Literature
This course may be repeated with a change in content.
Open to graduate students in English, others with permission (RG803).

†GRAD 5930. Full-Time Directed Studies (Master's Level) (GRAD 397) 3 credits.

†GRAD 5950. Master's Thesis Research (GRAD 395) 1 - 9 credits.

†GRAD 5960. Full-Time Master's Research (GRAD 396) 3 credits.

GRAD 5998. Special Readings (Master's) (GRAD 398) Non-credit.

GRAD 5999. Thesis Preparation (GRAD 399) Non-credit.

†GRAD 6930. Full-Time Directed Studies (Doctoral Level) (GRAD 497) 3 credits.

†GRAD 6950. Doctoral Dissertation Research (GRAD 495) 1 - 9 credits.

†GRAD 6960. Full-Time Doctoral Research (GRAD 496) 3 credits.

GRAD 6998. Special Readings (Doctoral) (GRAD 498) Non-credit.

GRAD 6999. Dissertation Preparation (GRAD 499) Non-credit.

Environmental Engineering

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Program Director
Associate Professor Guiling Wang

Professors
Anagnostou, Bagtzoglou, Boyer, Cetegen, Clausen, Noll, Robbins, Segerson, Strasser,Torgersen, Willig, Warner, and Yang

Associate Professors
Abboud, Bronin, Liu, MacKay, Parnas, and Wang

Assistant Professors
Agrios, Anyah, Atkinson-Palombo, Bushey, Chrysochoou, Cui, Gebremichael, Li, McCutcheon, Seth, Shor, Srivastava, Vadas and Zhou

Environmental Engineering is an interdisciplinary field concerned with the scientific and technological aspects of environmentally related processes and systems. Environmental engineers play a critical role in assessing the impacts of existing contamination problems, devising strategies for managing polluted ecosystems, developing new guidelines for the treatment and disposal of wastes, and modifying manufacturing and other activities to minimize the generation of pollutants. Environmental engineers apply scientific principles to these areas in order to improve environmental quality, to protect public health, and to promote the advancement of sustainable development.

The Environmental Engineering graduate program emphasizes the mastery of fundamental scientific and socioeconomic principles. Graduate education in Environmental Engineering provides students with a sound foundation in basic engineering concepts, and the technological training and research expertise necessary to apply these concepts to the solution of a variety of problems.

Environmental Engineering degree programs are offered as an interdisciplinary field of study through the School of Engineering. Because of Environmental Engineering's broad scope and association with other University departments and research institutes, it offers a wide range of academic focus areas based in the natural and engineering sciences. We offer three focus areas of study: (i) biogeochemical processes (BGC), (ii) atmospheric processes (ATM), and (iii) hydrogeosciences engineering

(HGS). Active research areas include:

• biochemical and physiochemical processes in environmental systems,

• combustion,

• environmental geophysical techniques,

• environmental interfacial processes,

• groundwater modeling and remediation,

• vadose zone hydrology,

• surface hydrological processes and land atmosphere interactions,

• pollution prevention, and

• environmental biotechnology

The graduate program offers Master of Science and Doctor of Philosophy degrees in Environmental Engineering. Student plans of study are flexible, comprehensive in nature, and are designed to meet the needs of the individual student.

Admission to Degree Programs

In addition to the basic admission requirements of the Graduate School, applicants must submit Graduate Record Examination scores with their application. Sound undergraduate preparation in science and/or engineering is required for entrance to the degree programs. Admission is offered on a competitive basis to highly qualified individuals who show promise for distinguished professional and/or academic careers. Limited remedial coursework for non-engineering prospective students is required. For more details, please visit our website at <http://www.engr.uconn.edu/environ>.

The M.S. Program

There are no special requirements for admission to the master's program beyond those of the Graduate School. Most entering students have an accredited engineering degree or have taken preparative engineering course work. Selection of the Plan A (thesis) or the Plan B (non-thesis) option is made after consultation with the advisory committee. The primary objective of the master's program is to develop the students' understanding of the subject matter either through an emphasis on research (Plan A) or through a comprehensive understanding of a more general character (Plan B).

The Ph.D. Program

Admission to the doctoral program is based upon a careful assessment of the student's potential for significant, creative research in Environmental Engineering. There are no special requirements for admission to the doctoral program beyond those of the Graduate School. The student's plan of study is arranged in consultation with an advisory committee. Doctoral students must pass a general examination by the end of the second year of study.

Facilities

Students in the Environmental Engineering program have access to numerous state-of-the-art laboratories and facilities through the School of Engineering and associated University departments and institutes. These resources include: the Biotechnology Center, the Center for Biochemical Toxicology, the Center for Environmental Health, the Combustion/Air Pollution Laboratory, the Center for Environmental Sciences and Engineering, the Environmental Processes Laboratory, the Geographic Information Systems Institute, the Hydraulics Laboratory, the Institute of Water Resources, the Marine Sciences Institute, the Pollution Prevention Research & Development Center, and the Unit Operations Laboratory.

The mission of the Center for Environmental Sciences and Engineering (CESE) is to develop technology-based solutions to existing and emerging environmental concerns – particularly regarding the management of hazardous wastes and the advancement of pollution prevention technologies. CESE contains well equipped analytical chemistry and environmental chemistry laboratories focused on methods development and advanced analyses.

Graduate students within the School of Engineering also have access to a wide range of computing facilities. A laboratory of Unix-based SUN computers including Sun Workstations and Sun SparcStations is available to students in the environmental field. Peripheral hardware includes line and laser printers, image scanners, slide makers and large plotters. The School of Engineering also houses a series of computing laboratories containing IBM PC and Apple Macintosh computers. Large scale computing facilities are available through the University mainframe system and the School of Engineering's supercomputer facility.

Courses

ENVE 5020 - Independent Graduate Study in Environmental Engineering
Special problems in environmental engineering as arranged by the student with a supervisory instructor of his or her choice.

ENVE 5090 - Advanced Topics in Environmental Engineering
Classroom or laboratory courses as announced for each semester. For independent study, see ENVE 5020.

ENVE 5094 - Seminar in Environmental Sciences and Engineering
Extended discussions on presentations contributed by staff, students and outside speakers. A certificate of completion will be issued from the Environmental Engineering Program. Also offered as CE 400.

ENVE 5210 - Environmental Engineering Chemistry - I
Quantitative variables governing chemical behavior in environmental systems. Thermodynamics and kinetics of acid/base coordination, precipitation/dissolution, and redox reactions. Also offered as CE 390.

ENVE 5211 - Environmental Engineering Chemistry - II
Environmental organic chemistry: ideal and regular solution thermodynamics; linear free energy relations; estimation of vapor pressure, solubility, and partitioning behavior, abiotic organic compound transformations; chemical fate modeling. Also offered as CE490.

ENVE 5220 - Transportation & Air Quality
Mobile source emissions models in theory and practice. Regulatory framework. Emissions control technology. Field and laboratory measurement techniques. Roadway dispersion modeling. Current topics in mobile source emissions. Also offered as CE 305.

ENVE 5221 - Transport and Transformation of Air Pollutants
Transport and deposition of gaseous and aerosol pollutants; chemical formation and reactions of oxidants and acidic compounds. Also offered as CE 408.

ENVE 5230 - Advanced Soil Chemistry
Physical chemical characteristics of soil minerals and soil organic matter, and their reactivity with compounds present in the aqueous and vapor phase. Topics include: modern spectroscopic surface analyses, soil organic matter and its interactions with metals, redox reactions, solubility, derivation of ion-exchange equations, and kinetics of soil reactions. Also offered as PLSC 378.

ENVE 5240 - Biodegradation and Bioremediation
Biochemical basis of the transformation of key organic and inorganic pollutants; quantitative description of kinetics and thermodynamics of pollutant transformation; impact of physiochemical and ecological factors on biotransformation. Also offered as CE 394.

ENVE 5250 - Ground Water Assessment and Remediation
Quantitative evaluation of field data in assessing nature and extent of groundwater contamination. Subsurface control and remediation. Case studies. Also offered as CE 410.

ENVE 5251 - Environmental Physicochemical Processes
Reactor dynamics, applications of interfacial phenomena and surface chemistry, processes for separation and destruction of dissolved and particulate contaminants. Scholarly reviews. Also offered as CE 387.
Prerequisites: CE 5310 or ENVE 5310, and CE 5210 or ENVE 5210 (RG235).

ENVE 5252 - Contaminant Source Remediation
Regulatory framework. Soil clean-up criteria. Treatment technologies: soil vapor extraction, solidification - stabilization, soil washing - chemical extraction, hydrolosis - dehalogenation, thermal processes, bioremediation. Risk analysis. Also offered as CE 5252.

ENVE 5253 - Combustion and Air Pollution Engineering
Review of thermodynamics and chemical equilibrium. Introduction to chemical kinetics. Studies of combustion processes, including diffusion and premixed flames. Combustion of gases, liquid, and solid phases, with emphasis on pollution minimization from stationary and mobile systems. Air pollution measurement and instrumentation. Also offered as ME 346.

ENVE 5254 - Industrial Waste Management and Regulation
Origin and characteristics of industrial wastes. Engineering methods for solving industrial waste problems. Also offered as CE 392.

ENVE 5270 - Advanced Environmental Engineering Laboratory
Analysis of water and waste water. Experimental laboratory and plant investigation of water, wastewater and industrial waste treatment processes. Also offered as CE 391.

ENVE 5310 - Environmental Transport Phenomena
Movement and fate of chemicals: interfacial processes and exchange rates in environmental matrices. Also offered as CE 389.

ENVE 5311 - Environmental Biochemical Processes
Major biochemical reactions; stoichiometric and kinetic description; suspended and attached growth modeling; engineered biotreatment systems for contaminant removal from aqueous, gaseous, and solid streams; process design. Also offered as CE 388.

ENVE 5320 - Quantitative Methods for Engineers
Also offered as CE 5320. This course and NRME 5605 may not both be taken for credit. Topics on data analysis: random variables and probability distributions, parameter estimation and Monte Carlo simulation, hypothesis testing, simple regression and curve fitting, wavelet analysis, factor analysis; formulation and classification of optimization problems with/without constraints, linear programming; models for time series; solution of ordinary differential equations with Laplace transforms and Euler integration; solution of partial differential equations with finite differences; basics of modeling.

ENVE 5330 - Probabilistic Methods in Engineering Systems
Common probabilistic models used in engineering and physical science design, prediction, and operation problems; derived distributions, multivariate stochastic models, and estimation of model parameters; analysis of data, model building and hypothesis testing; uncertainty analysis. Also offered as CE 304.

ENVE 5340 - Environmental Systems Modeling
Modeling pollutants in natural surface waters. Advective, dispersive, and advective-dispersive systems. Modeling water quality, toxic organic and heavy metals pollution. Also offered as ce 405.

ENVE 5370 - Environmental Monitoring
Also offered as CE 314.

ENVE 5381 - Subsurface Contaminant Transport Modeling
Also offered as CE 5381.

ENVE 5810 - Hydrometeorology
Global dynamics of aquatic distribution and circulation. Hydrologic cycle, atmospheric circulation, precipitation, interception, storage, infiltration, overland flow, distributed hydrologic modeling, and stream routing. Also offered as CE 383.

ENVE 5811 - Hydroclimatology
Also offered as CE 313.

ENVE 5812 - Ecohydrology
Also offered as CE 5812.

ENVE 5820 - Unsaturated Flow and Transport
Also offered as CE 315.

ENVE 5821 - Vadose Zone Hydrology
Also offered as CE 316.

ENVE 5830 - Groundwater Flow Modeling
Basics of modeling with Finite Difference and Finite Element Methods. Modeling flow in saturated and unsaturated zones. Model calibration and validation. Parameter estimation. Treatment of heterogeneity. Basic geostatistics. Modeling surface-groundwater interactions. Application to field sites. Also offered as CE 406.
Prerequisite: CE 5253 or ENVE 5250 (RG239).

ENVE 5840 - Open Channel Hydraulics
Unsteady, nonuniform flow; energy and momentum concepts; flow control; de St. Venant equations; unsteady flow modeling of channels and natural rivers. Also offered as CE 338.

ENVE 6210 - Advanced Combustion
Review of thermodynamic properties, transport properties, conservation equations of multicomponent reacting gas. Introduction to chemical kinetics. Classification of combustion waves. Deflagrations, detonations and diffusion flames. Ignition phenomena, droplet and spray combustion and some aspects of turbulent combustion. Also offered as ME 351.

ENVE 6810 - Advanced Fluid Mechanics I
Dimensional analysis; vector analysis, circulation and vorticity; irrotational motion and velocity potential; two-dimensional flow and stream function; complex variable theory; conformal mapping; airfoils; sources and sinks; free streamline flow; water waves; three-dimensional flow. Also offered as CE 332.

ENVE 6811 - Advanced Fluid Mechanics II
Turbulent boundary layer . Dimensional analysis. Free shear flows. Flows in pipes and channels. Boundary layers on smooth and rough surfaces. Also offered as CE 334.

ENVE 6820 - Hydraulic Machinery and Transients
Pumps and turbines. Surging, water hammer, cavitation, hydraulic machinery for hydroelectric plants, water supply, irrigation, and river navigation. Also offered as CE 384.

ENVE 6821 - Hydraulic Structures
River regulation and development. Hydroelectric plants, storage and turbines, canals, locks, and penstocks, dams, regulation of power, flood control, navigation and irrigation. Also offered as CE 385.

†GRAD 6930. Full-Time Directed Studies (Doctoral Level) (GRAD 497) 3 credits.

†GRAD 6950. Doctoral Dissertation Research (GRAD 495) 1 - 9 credits.

†GRAD 6960. Full-Time Doctoral Research (GRAD 496) 3 credits.

GRAD 6998. Special Readings (Doctoral) (GRAD 498) Non-credit.

GRAD 6999. Dissertation Preparation (GRAD 499) Non-credit.

†GRAD 5930. Full-Time Directed Studies (Master's Level) (GRAD 397) 3 credits.

†GRAD 5950. Master's Thesis Research (GRAD 395) 1 - 9 credits.

†GRAD 5960. Full-Time Master's Research (GRAD 396) 3 credits.

GRAD 5998. Special Readings (Master's) (GRAD 398) Non-credit.

GRAD 5999. Thesis Preparation (GRAD 399) Non-credit.

Fluid Dynamics

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Fluid dynamics is concerned with the engineering aspects of fluid mechanics in the broadest sense. It encompasses fundamental theory of perfect and viscous flows, compressible and heated flows, combustion, magnetohydrodynamics and plasma jets, free-surface flows in oceans and natural water courses, laminar and turbulent flows, and the vast number of practical applications which make fluid motions useful.

The Ph.D. Program. The student's plan of study is arranged in consultation with his or her advisory committee to develop competence in fluid dynamics. Since it is possible to emphasize theoretical, applied or experimental research, the student must develop a balance within his or her program consonant with his or her stated objectives. The remaining courses should be of an interdisciplinary nature from the departments in geological, biological, and marine sciences, engineering, chemistry, mathematics, physics, and others which the student and the committee feel are pertinent to the student's program.

About half the total credits should be taken in courses oriented toward the engineering aspects of fluid dynamics. The remainder of the program should consist of related courses preferably in two or more supporting areas considered appropriate in the student's objectives. These may include any courses in solid mechanics, including continuum mechanics, elasticity, plasticity, vibrations and structural or soil mechanics; also any courses in thermodynamics, heat transfer, power plants, process dynamics or reaction kinetics. Related courses in electrical engineering could include those in field theory, networks, computer science, and systems. Fundamental studies in chemistry, mathematics, physics, and statistics constitute an important part of the related course work.

This program is the joint responsibility of the Departments of Civil Engineering and Mechanical Engineering. Inquiries concerning the program may be addressed to these departments.

Geography

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Department Head
Professor Jeffrey P. Osleeb

Professors
Berentsen, Cromley, Hanink, and Cooke

Associate Professor
Seth and Zhang

Assistant Professors
Atkinson-Palombo, Ghosh, McCutcheon, Ouimet and Trumbull

The Department of Geography offers a program leading to the M.A. and Ph.D. degrees. The master's program provides study of the theory and methods of analysis of human and physical features of the earth's surface. Students take a limited number of core courses in research methods and design, and select an area of specialization for the remainder of their course work. Examples of common specializations include GIScience and computer graphics, global climate change, geomorphology, environmental management and planning, and urban and regional analysis. Other specializations in areas of the faculty's expertise are possible. Students, working with their advisors, select courses which best fit their intellectual interests and professional needs.

Candidates for the M.A. in Geography may pursue either Plan A, completion of 25 credits of course work (including no more than six credits of independent study/research), at least nine credits of Thesis Research (GRAD 5950), and a thesis, including its oral defense; or Plan B, completion of thirty-one credits of course work (including no more than six credits of independent study/research), a scholarly research paper, and a comprehensive final examination assessing mastery of the field and the ability to integrate the knowledge acquired. All M.A. students must complete a core curriculum that includes: one methods course, either GEOG 5500 (Fundamentals of GIScience) or GEOG 5600 (Spatial Data Analysis); GEOG 5000 (Research Design); and the one credit Proseminar (GEOG 5010). Students with an exceptional background may, with the approval of their advisor, replace the methods course with an alternative advanced methods course.

The Ph.D. in Geography requires a minimum 24 credits of course work (including no more than six credits of independent study/research) beyond the Master's degree, along with the completion

and defense of a dissertation. All Ph.D. students must complete a core curriculum that includes one methods course, either GEOG 5500 (Fundamentals of GIScience) GEOG 5000 (Research Design); and GEOG 6000 (Development of Geographic Thought).

In exceptional cases, equivalent graduate courses may be substituted with the approval of a student's advisory committee. Other required courses for the Ph.D. include one 6000 level Geography seminar (not including GEOG 6000), a one-credit teaching practicum course (GEOG 6800), a one credit Proseminar course (GEOG 5010), at least six credits of course work from a related field outside the department, and at least 15 credits of Dissertation Research (GRAD 6950 – not included in the 24 credit requirement).

As the student completes the required coursework, a general examination with both written and oral sections is administered. Doctoral degree students must also submit and present a dissertation proposal for approval by the department, and defend the finished dissertation in a departmental colloquium.

The Department recommends that applicants for admission to the graduate program have a background in Geography or a related discipline. Students must submit GRE scores and international applicants must also supply TOEFL scores.

Graduate Certificate in Geographic Information Systems

The Certificate Program is designed to recognize completion of a focused set of courses for graduate students and other professionals seeking expertise in the field of Geographic Information Systems (GIS). GIS are computer systems for integrating and analyzing spatial data. These systems, and the science behind their development and use, are the topics covered in the required coursework. GIS and related technologies are used in a wide range of applications in the public and private sectors. The elective coursework provides students with the opportunity for graduate study in fields where GIS are used. The Certificate is earned upon the completion of twelve credits of coursework beyond the B.A. or B.S. degree. Students in the Certificate Program are required to complete Geography 5500 and Geography 5510, plus additional courses in Geography or a related field. The additional courses must be taken at the graduate (5000 or 6000) level. A student's program of study for the Certificate may include only one course numbered 5810. Students develop a program of study with the assistance and approval of the Certificate Program

Coordinator.

To earn the Certificate, a student must pass all courses counted toward the Certificate with a grade of B- or better in each course and an overall GPA for the 12 credits of 3.0 or greater.

All coursework for the Certificate must be completed at the University of Connecticut.

Application to the GIS Certificate Program is made through the Graduate School of the University of Connecticut. Students applying for admission to or already enrolled in a graduate degree program in Geography or another field of study at the University of Connecticut may apply for admission to the Certificate Program. Non-degree students may also apply for the program. All students applying for admission to the Certificate Program must have a B.A. or B.S. degree from an accredited institution. Official transcripts and a personal statement of interest in the program must be submitted with the application. Information on the Graduate Certificate in Geographic Information Systems can be obtained from Graduate Certificate Program Coordinator, Department of Geography Unit 4148, University of Connecticut, Storrs,

Connecticut 06269-4148.

Special Facilities

The program is supported both by in-house facilities and external contacts. The department maintains two computer laboratories fully equipped with Windows-based workstations with statistical and GIS software such as ArcGIS, SPSS, SAS, and Adobe . These facilities are complemented by research and practicum opportunities in a wide range of external agencies with whom collaborative research projects have been established by means of the department's experience with internship programs.

The University's Map and Geographic Information Center (MAGIC), collects maps, atlases, aerial photographs, and digital geospatial data and digitizes public-domain and copyright free maps and resources in order to enable researchers to have digital access to these resources. The Connecticut State Data Center serves as the state's official liaison to the U.S. Census Bureau and provides data and project consultations, mapping and spatial visualization of data, and assistance with location U.S. Census and other Federal and State datasets. University researchers may also request access to the Connecticut Institute for Supercomputing and Visualization's supercomputing facilities.

Courses

GEOG 5000 - Research Design
A survey of research methods in geography. Topics include spatial sampling, hypothesis construction and testing and geographic modelling.

GEOG 5010 - Geography Proseminar
Presentation by geography faculty of current research topics.
Open to graduate students in Geography (RG354).

GEOG 5020 - Fundamental Geographic Concepts for Educators
Basic geographic concepts critical for effective teaching in the K-12 environment. Development of materials/curricula for the classroom.

GEOG 5100 - Location Analysis
Issues and approaches in location analysis. Topics include location theory and models; representation issues; use of geographic information systems (GIS) for data preparation, analysis and display; evaluation of service areas; land use allocation; accessibility and locational conflict; and implications for planning and public policy.

GEOG 5110 - Regional Development and Policy
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.

GEOG 5120 - Economic Geography of Environmental Issues
Seminar on theory and applications of economic geography to environmental issues. Location theories and spatial interaction models are considered from local to international scales of analysis.
Prerequisite: Not open to students who have passed GEOG 387 (RG605).

GEOG 5130 - GIS in Transportation
Discussion of the uses of Geographic Information Systems (GIS) for transportation rate establishment, for visualizing the results of transportation models for predicting flows, for exploring the impact of transportation on the location of economic activities, and for the planning of transportation facilities in cities.
Open to graduate students in Geography (RG354).

GEOG 5140 - Geographical Analysis of Social Issues
Focus on geographical perspectives toward research on selected social issues, with an emphasis on methods of behavioral analysis and relevant social geographical concepts such as social space, activity spaces and time-space budgets, and diffusion.

GEOG 5150 - Visualization in Geographic Information Systems
Design of spatial data displays and computer generated maps.

GEOG 5190 - Advanced Economic Geography
Problems involved in analyzing spatial variations of selected economic variables. Emphasis on location theory with view toward integrating geographic viewpoint and economic concepts.

GEOG 5210 - Planning and Land Use
Contrasting approaches to planning, with an emphasis on legal and political issues in communities and organizations.

GEOG 5220 - Geography of Sustainable Development
Conceptualizing international development; understanding theories,

GEOG 5230 - Advanced GIS for Remote Sensing for Geoscience Applications
Research methods for using Geographic Information Systems, remote sensing, and image interpretation to investigate problems in geoscience. Includes research techniques for data acquisition, processing and analysis of Digital Elevation Models and satellite imagery. Geologic materials, processes, landforms and landscapes. (CLAS C&C 4/26/11)
Prerequisite: Not open to GSC 4230

GEOG 5290 - Advanced Urban Geography
Analysis of social and economic patterns within urban areas, with emphasis on individualized research. The implications for planning are stressed.

GEOG 5310 - Adanced. Fluvial Geomorphology
Research methods for analyzing fluvial forms and processes. Theoretical discussion

of factors controlling open-channel flow, sediment transport, channel morphology, adjustments of rivers to environmental changes and human impacts. River management and restoration strategies. Requires one weekend field trip.
Prerequisite: Not open to students who have passed GEOG 3310 (RG 3166).

GEOG 5380 - Advanced Environmental Restoration
Research issues relating to restoration of natural environments including rivers, wetlands, coastal areas, grasslands and forests. Theoretical discussions of restoration ecology, as well as applied discussions of management and engineering concerns. History of environmental restoration; relevant policy debates; specific case studies of river, wetland, coastal, grassland, and forest restoration.

GEOG 5390 - Advanced Physical Geography
Problems involving the application of physical processes in our changing environment.

GEOG 5500 - Fundamentals of Geographic Information Science
An introduction to the theory and methods for representing, acquiring, storing, manipulating, displaying, and analyzing geographic features in relation to the surface of the earth.

GEOG 5505 - Remote Sensing of Marine Geography
Introduction to remote sensing applications in oceans and seas. Applications include image analysis of sea surface temperature, winds, altimetry, sea ice, chlorophyll, primary productivity, and bathymetry. Graduate section includes individualized projects.

GEOG 5510 - Application Issues in Geographic Information Systems
The study of operational and management issues in geographic information systems (GIS). Ways in which traditional planning and management theories and techniques can be implemented in GISs are examined. Topics include problems of data exchange standards, implementation of GIS in an institutional setting including benchmarking a GIS, applications of GIS in various fields, social impacts and legal aspects of GIS. Practical work includes analytical exercises using GIS culminating in an application project.
Prerequisite: GEOG 5500 or GEOG 4500C (RG352).

GEOG 5520 - GIS Modeling of the Urban Environment
Survey of GIS methods and spatial analysis for studying spatial patterns of land use and human activity in an urban environment

GEOG 5530 - GIS Applications in Health Research
Survey of GIS methods for health research, health care policy making, and planning.

GEOG 5560 - GIS and Environmental Geography
Applicability of Geographic Information Systems to solve environmental problems. Case studies address environmental assessment and monitoring, analysis and modeling, planning and management.
Recommended Preparation: GEOG 5500.

GEOG 5600 - Spatial Data Analysis
Univariate statistics focused on the use of spatial statistics, including geostatistics in geographical research. Problems specific to spatial data analysis are addressed.

GEOG 5610 - Spatial Statistics and Modeling
Advanced study in the methods and practice of multidimensional statistics and spatial modeling.
Prerequisite: GEOG 5600 (RG353).

GEOG 5620 - Computer Applications in Spatial Analysis
Advanced seminar in the design of Geographic Information Systems software for solving problems in spatial analysis.

GEOG 5700 - Contemporary Europe: A Geography
An introduction to the peoples, countries, and landscapes of Europe (excluding the 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.

GEOG 5710 - Geography of Latin America
Advanced integrative study of physical, historical, social, political and economic geography of Latin America. Particular emphasis on patterns, processes and problems of spatial economic change in the region.

GEOG 5810 - Special Problems in Geography

GEOG 5890 - Internship in Geography
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 three academic credits. A written report will be required.

GEOG 6000 - Themes in Geographic Thought
Examination of the historical development of geography since the early nineteenth century. Emphasis on the last century of intellectual developments that have led to the emergence of contemporary geography as a research discipline.

GEOG 6500 - Locational Models and Spatial Systems
Study of the locational models used to examine the arrangement of human and physical systems in space.

GEOG 6510 - Locational Methods and Spatials Systems
Study of the locational methods used to examine the arrangement of human and physical systems in space.

GEOG 6800 - Practicum in College Teaching in Geography
Guided development of college-level instruction. Drafting of course objectives, selection of texts, development of course and lecture outlines, selection of grading mechanisms, and incorporating feedback for improvement of instruction.
Open to graduate students in Geography (RG354).

GEOG 6810 - Adv Top Spat Analys

GEOG 6820 - Advanced Topics in Regional Analysis

GEOG 6830 - Advanced Topics in Population Geography

GEOG 6840 - Advanced Topics in Urban Geography

GEOG 6850 - Advanced Topics in Geography of Public Policy

GEOG 6860 - Advanced Topics in Economic Geography

GEOG 6870 - Advnced topics in Physical Geography

GEOG 6880 - Advanced Topics in Environmental Geography

†GRAD 5930. Full-Time Directed Studies (Master's Level) (GRAD 397) 3 credits.

†GRAD 5950. Master's Thesis Research (GRAD 395) 1 - 9 credits.

†GRAD 5960. Full-Time Master's Research (GRAD 396) 3 credits.

GRAD 5998. Special Readings (Master's) (GRAD 398) Non-credit.

GRAD 5999. Thesis Preparation (GRAD 399) Non-credit.

†GRAD 6930. Full-Time Directed Studies (Doctoral Level) (GRAD 497) 3 credits.

†GRAD 6950. Doctoral Dissertation Research (GRAD 495) 1 - 9 credits.

†GRAD 6960. Full-Time Doctoral Research (GRAD 496) 3 credits.

GRAD 6998. Special Readings (Doctoral) (GRAD 498) Non-credit.

GRAD 6999. Dissertation Preparation (GRAD 499) Non-credit.

Geological Sciences

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Program Director
Professor Pieter T. Visscher

Professors
Civco, Cormier, Joesten, McBrearty, Noll, Robbins, Thorson, Torgersen, and Visscher

Associate Professor
Byrne, Crespi, Liu, MacKay, Meyer, Noll, and Schultz

Assistant Professors
Bush, Day-Lewis, Dupraz, and Wang

Programs leading to M.S. or Ph.D. degrees in the Geological Sciences are offered.

Programs are designed to provide each student with a broad background in the physical sciences and with the specialization necessary for careers in geology, geophysics, and environmental geoscience.

Research opportunities are available in most of the traditional subdisciplines, including hydrogeology, geochemistry, marine geology, sedimentation, exploration geophysics, geomorphology, glacial geology, structural geology, mineralogy, petrology, geobiology, biogeochemistry, seismology, paleontology, and others.

Graduate research is often supported by the U.S. Geological Survey, the U.S. Environmental Protection Agency, the National Science Foundation, the Connecticut Department of Environmental Protection, and other government agencies. Students also benefit from program collaborations with the Center for Environmental Science and Engineeering (CESE), the Electron Microscopy Center, the Institute of Water Resources, Marine Sciences Institute, Institute of Materials Science, the Center for Environmental Health, and the Transportation Research Institute, among others. Scientists from outside the University frequently serve on graduate student advisory committees. Most graduate students in residence receive financial support. As Graduate Assistants, they either help support the teaching mission or assist with faculty research that is supported by external funds.

In addition to applicants with a bachelor's degree in geoscience, applicants with undergraduate degrees in related disciplines are encouraged to apply, provided that they have a broad undergraduate background in the physical and life sciences or engineering.

Students with degrees in the agricultural sciences, environmental management, and science education also are encouraged to apply. Students with an undergraduate degree in mathematics may wish to apply for admission to pursue study in geophysics.

Students working toward an M.S. degree have the option of following either Plan A (with thesis) or Plan B (non-thesis). Together with their graduate advisory committee, each student develops an individualized plan of study that is tailored to meet their needs and objectives. Students pursuing the Plan B option may do so either full-time or part-time.

Special Facilities

Equipment and facilities available for graduate student research include: fully automated electron microprobe, automated X-ray fluorescence equipment, optical emission and infrared absorption spectrographic instruments, gas chromatograph, single crystal and powder X-ray diffraction equipment, high pressure-high temperature experimental petrology laboratory, sedimentation laboratory, power auger, water-level monitoring gauges, field gas chromatograph, field flame ionization and photoionization detectors, full range of equipment for field water quality sample collection and analysis; geophysical equipment including a three component broadband digital seismograph, magnetometer, gravimeter, refraction seismograph, electrical resistivity unit, terrain conductivity meter, global positioning system, electronic total station, and extensive computing facilities including SUN workstations. The facilities of the Marine Sciences Institute (research vessels, ultra clean analytical chemistry laboratory), the Institute of Materials Science (transmission electron microscope, automated single-crystal x-ray diffractometer), the Center for Environmental Science and Engineering (Analytical Chemistry Laboratory), and the Computer Applications and Research Center also are available to graduate student research.

Courses

GSCI 5000 - Geoscience Core Course
Exposes students to a solid background in a variety of topics related to integrative geosciences, emphasizing interdisciplinarity. Development of speaking skills through oral presentations, and writing skills through preparation and defense of large, interdisciplinary grant proposals. Required of all first year graduate students in Geosciences.

GSCI 5050 - Special Problems in Geology
Advanced study and research in geology. May be repeated for credit up to six times with a change of content.

GSCI 5110 - Sediment Transport
The mechanics of sediment transport with particular emphasis on the processes governing transport in coastal and estuarine areas. Initiation of motion for cohesive and noncohesive materials, bed and suspended load transport, bed forms, sediment-flow interactions modeling considerations.

GSCI 5210 - Glacial Processes and Materials
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.

GSCI 5230 - Advanced GIS for Remote Sensing for Geoscience Applications
Research methods for using Geographic Information Systems, remote sensing, and image interpretation to investigate problems in geoscience. Includes research techniques for data acquisition, processing and analysis of Digital Elevation Models and satellite imagery. Geologic materials, processes, landforms and landscapes. (CLAS C&C 4/26/11)
Prerequisite: Not open to GSC 4230

GSCI 5310 - Advanced Structural Geology
Application of finite and incremental strain analyses using advanced geometric techniques. This course integrates field studies of deformed rocks with theoretical understanding and quantitative analysis.

GSCI 5320 - Advanced Plate Tectonics
The course introduces students to techniques used in analyzing plate motions on a sphere, including poles of rotation and instantaneous and finite motions. The course integrates geologic data and analytical techniques with a rigorous understanding of plate motions and provides students with a global understanding and appreciation of the Earth. (successor to GEOL 333)

GSCI 5410 - Igneous Petrology
Introduction to igneous rocks, 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 fluorescense, and electron microprobe analysis. Prepare a paper suitable for publication in a scientific journal. This course is not open for credit to students who have passed GEOL 214 or 335.

GSCI 5420 - Metamorphic Petrology
Interpretation of mineralogical, chemical, and textural features of metamorphic rocks in terms of the physical conditions and dynamic processes operating in the Earth's crust. Thermodynamic description of phase equilibria in fluid-rock systems. Kinetics, mass and energy transport in metamorphic processes. Petrographic and x-ray analytical techniques. (successor to GEOL 336)

GSCI 5510 - Applied Geophysics for Geologists and Engineers
Introductory survey of surface and borehole geophysical methods and their application to hydrogeologic, environmental monitoring, and geotechnical engineering studies. Laboratory involves geophysical field measurement, data reduction and geologic interpretation.

GSCI 5520 - Exploring and Engineering Seismology
Theory of elasticity applied to wave propogation: equations of motion; reflection and refraction of elastic waves; velocity analysis and fundamental petrophysics; and principles of detecting subsurface interfaces and structures.

GSCI 5530 - Applied and Environmental Geophysics
Potential theory (gravity, static electricity and magnetic fields), electromagnetic coupling, Maxwell's equations; electromagnetic wave propagation; principles of detection of subsurface interface and structures by

geophysical methods.

GSCI 5550 - Physics of the Earth
The composition, structure, and dynamics of the earth's core, mantle, and crust inferred from observations of seismology, geomagnetism, and heat flow.

GSCI 5560 - Fundamentals of Planetary Science
Evolution of the solar system, celestial mechanics, tidal friction, internal composition of planets, black-body radiation, planetary atmospheres.

GSCI 5680 - Applied Geologic Mapping
Advanced surveying and techniques of 3D mapping using electronic total stations, GPS and Geodetic-grade GPS instrumentation. Environmental field geophysics; GPR, resistivity, seismic, magnetic and microgravity surveys. Petrologic, geochemical and geophysical core logging for geotechnical and exploration applications. Field sampling for assay and environmental geochemistry. Detailed geological outcrop mapping. Mine and subsurface geologic mapping.

GSCI 5710 - Advanced Hydrogeology
Transport processes in groundwater systems. Mathematical methods in groundwater hydrology. Water quality and resource evaluation.

GSCI 5720 - Groundwater Modeling
Numerical techniques for modeling flow and contaminant transport in groundwater systems. Model design, calibration, visualization, verification and sensitivity analysis. Application to field sites.

GSCI 5790 - Field Methods in Hydrogeology
Field methods associated with ground water and contamination assessments.

GSCI 6130 - Seminar in Paleontology
Readings and discussions on recent advances in paleontology and paleobiology. May be repeated twice to a maximum of 6 credits with change of content.

GSCI 6330 - Seminar in Structural Geology
Readings and discussion of recent advances in structural geology.

GSCI 6340 - Seminar in Tectonics
Readings and discussions of recent advances in tectonics.

GSCI 6510 - Fundamentals of Seismology
Theory of elasticity applied to wave propagation; equations of motion; reflection and refraction of elastic waves; wave propagation in homogeneous media; surface waves.

GSCI 6520 - Advanced Seismology
Elastic wave propagation in plane layered media; seismogram synthesis by ray parameter integration, ray approximations, and mode summation; earthquake source representations.
Prerequisite: MATH 5410 and MATH 5411, which may be taken concurrently (RG355).

GSCI 6530 - Geophysical Inverse Theory
Fitting geophysical model parameters to data. Topics include model uniqueness, resolution, and error estimation.

GSCI 6540 - Seminar in Geophysics
Readings and discussions of recent advances in geophysics.

GSCI 6550 - Special Topics in Geophysics

Components:Seminar

†GRAD 5930. Full-Time Directed Studies (Master's Level) (GRAD 397) 3 credits.

†GRAD 5950. Master's Thesis Research (GRAD 395) 1 - 9 credits.

†GRAD 5960. Full-Time Master's Research (GRAD 396) 3 credits.

GRAD 5998. Special Readings (Master's) (GRAD 398) Non-credit.

GRAD 5999. Thesis Preparation (GRAD 399) Non-credit.

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†GRAD 6960. Full-Time Doctoral Research (GRAD 496) 3 credits.

GRAD 6998. Special Readings (Doctoral) (GRAD 498) Non-credit.

GRAD 6999. Dissertation Preparation (GRAD 499) Non-credit.

Graduate School Courses

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Courses

GRAD 5900 - Special Topics in Graduate Education
Special Topics in Graduate Education.

GRAD 5910 - Responsible Conduct in Research
The core principles pertaining to responsible conduct in research are covered through extensive use of case studies, along with readings and classroom instruction. Different sections of the course utilize case studies that emphasize discipline-specific issues. Satisfactory completion is based on participation in the discussions and completion of a case study presentation.

GRAD 5915 - Summer Institute in College Instruction
Required core course of the Graduate Certificate Program in College Instruction, intended for doctoral students in the early stages of their graduate careers. Course objectives include competencies in instruction, classroom management, use of technology, assessment and evaluation, and other pedagogical best-practices. The course is offered in residential format over a two week period in May. Instructor consent required.

GRAD 5924 - Part-Time Curricular Practical Training
Instructor and Graduate School consents are required.

GRAD 5925 - Full-Time Curricular Practical Training
Instructor and Graduate School consents are required.

GRAD 5930 - Full-Time Directed Studies (Master's Level)
This course denotes that the student is participating in a full-time internship, field work experience, or other course of off-campus study required as part of the student's Master's program. No other courses may be taken concurrently.
To be used by master's students only, not PhD students (RG 794)

GRAD 5950 - Master's Thesis Research
This course is associated with the research efforts of students pursuing a Plan A master's degree, and may be used to meet the nine-credit Master's research requirement.
Prerequisite: Open only to graduate students enrolled in a Plan A Master's Degree Program (RG43).

GRAD 5960 - Full-Time Master's Research
This course is to be used by those students who have completed all courses on the plan of study and who are performing master's level research on a full-time basis. It may contribute to meeting the nine credit Master's research requirement. No other courses may be taken concurrently. In the summer, this is a 12-week (Summer 4) course. Since this course denotes a full time commitment, students may not hold graduate assistantships while taking this course.
Prerequisite: Open only to graduate students enrolled in a Plan A Master's Degree Program (RG43).

GRAD 5998 - Special Readings (Master's)
This is a non-credit course for which master's degree students must register in cases where their regular program of course work for credit has been interrupted and they are not otherwise registered.
To be used by master's students who are not enrolled in a thesis (Plan A) track (RG789).

GRAD 5999 - Thesis Preparation
This is a non-credit course to be used to maintain registered status by Plan A master's students who have completed their coursework and who are not registered for any other credit-bearing course.
Prerequisite: Open only to graduate students enrolled in a Plan A Master's Degree Program (RG43).

GRAD 6930 - Full-Time Directed Studies (Doctoral Level)
This course denotes that the student is participating in a full-time internship, field work experience, or other course of off-campus study required as part of the student's doctoral program. No other courses may be taken concurrently.
Prerequisite: Open only to doctoral students (RG709).

GRAD 6949 - International Exchange Research
International Exchange Research

GRAD 6950 - Doctoral Dissertation Research
This course is associated with the research efforts of students pursuing a doctoral degree, and may be used to meet the fifteen-credit doctoral research requirement.
Prerequisite: Open only to doctoral students (RG709).

GRAD 6960 - Full-Time Doctoral Research
This course is to be used by those students who have completed all courses on the plan of study and who are performing doctoral level research on a full-time basis. It may contribute to meeting the fifteen credit doctoral research requirement. No other courses may be taken concurrently. In the summer, this is a 12-week (Summer 4) course. Since this course denotes a full time commitment, students may not hold graduate assistantships while taking this course.
Prerequisite: Open only to doctoral students (RG709).

GRAD 6998 - Special Readings (Doctoral)
This is a non-credit course for which doctoral students must register in cases where their regular program of course work for credit has been interrupted and they are not otherwise registered.
Prerequisite: Open only to doctoral students (RG709).

GRAD 6999 - Dissertation Preparation
This is a non-credit course to be used to maintain registered status by doctoral students who have reached candidacy for the doctoral degree and who are not registered for any other credit-bearing course.
Prerequisite: Open only to doctoral students (RG709).

Health Promotions

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Department Head
Professor Lawrence Silbart

Professors
Duffy and Faghri

Associate Professor
Coble and Kerstetter

Assistant Professors
Brown, Copenhaver, and Fridell

Adjunct Assistant Professor
Samos and Santamaria

The Master of Science degree in Allied Health Sciences emphasizes an interdisciplinary and individualized approach to graduate study for the student with a baccalaureate degree in the life sciences or a health-related field. In accordance with Graduate School's requirements concerning advisory committees (as published in this Catalog), a student's plan of study is developed in collaboration with the members of his or her advisory committee (comprising the major advisor and at least two associate advisors) to meet the student's professional, educational, and scholarly goals.

The Program of Study

Master's degrees in the Graduate Program in Allied Health (GPAH) may be earned under either of two plans, as determined by the advisory committee. Plan A (Thesis track) emphasizes research and requires not fewer than 24 credits of advanced course work and completion of a master's thesis. Plan B (Project and Practicum Track) requires a comprehensive understanding of the subject matter, not fewer than 26 credits of advanced course work, and completion of a project and a practicum. Students in both Plans must assemble a graduate advisory committee in conjunction with their major advisor to develop the plan of study and the research agenda culminating in the writing and oral defense of a thesis (Plan A) or in the project/practicum (Plan B). Students must satisfy the University standards and degree requirements, and pass a comprehensive examination administered under the auspices of the advisory committee.

Admission

The Graduate Program in Allied Health (GPAH) is open to students who hold a baccalaureate degree. Students ideally enter with a degree in a health related field and/or a strong life sciences background. All previous coursework must meet the general requirements of the University of Connecticut Graduate School. Information on the general requirements of the Graduate School can be found on the Graduate School link under information on Schools and Colleges on the main University website (www.uconn.edu). Competitive Graduate Assistantships may be available which provide a stipend, tuition waiver, and health benefits.

Candidates seeking admission to the GPAH program who wish to receive further information are encouraged to contact the Department of Allied Health Sciences Director of the Graduate Program: Dr. Pouran Faghri, by mail (Department of Allied Health Sciences, University of Connecticut, 358 Mansfield Road, Unit 2101, Storrs, CT 06269-2101), by telephone (860-486-0018), or by email (pouran.faghri@uconn.edu).

Graduate Certificate in Health Promotion and Health Education. The Graduate Program in Allied Health (GPAH) offers a Graduate Certificate Program in Health Promotion and Health Education. For more information, contact the Program Director, Professor Pouran Faghri or visit the GPAH Website at <http://www.alliedhealth.uconn.edu/gpah_program.php>. The GPAH has a number of highly qualified professionals researching a wide range of topics in the allied health sciences. Students are encouraged to review faculty websites and meet with program faculty for more information regarding possible research topics.

Courses

GPAH 5094 - Integrative Seminar in Allied Health Research
Examination of advanced topics in allied health research. Emphasis is on integrating and applying research concepts and methodology.

GPAH 5095 - Investigation of Special Topics
Advanced topics and investigations in the field of Allied Health Sciences. Topics and credits to be published prior to the registration period preceding the semester offering.

GPAH 5099 - Independent Study for Allied Health
Advanced study, project, or research of intensive, independent investigation in allied health consistent with the student¿s needs, interests and plan of study.

GPAH 5302 - Health Care Policy
Concepts of health policy with special emphasis on federal policy. Examination of current health policy models, agencies involved in policy development, and the impact of policy on providers and clients. Selected policy issues will be studied through case studies, readings, and discussions with policy makers and regulators.

GPAH 5309 - Health and Aging
Examination of the theoretical and applied issues in optimizing health for older adults. Focus is on the bio-psycho-social aspects of health; application of current research, and leadership skill building for program development.

GPAH 5314 - Professional Development Project
Prerequisite: At least 9 cedits in Allied Health; open only to non-thesis (Plan B) students.

GPAH 5317 - Professional Development Practicum
This course is open only to non-thesis (Plan B) master's students.
Prerequisite: GPAH 5317 Prerequisite

GPAH 5319 - Health Education and Behavioral Interventions for At-Risk Populations
The study and application of current learning theories, models, and strategies used by experienced health professionals to become effective interventionists within didactic, clinical, and community settings.

GPAH 5328 - Cancer Intervention for Allied Health Professionals
Introduction to cancer from the biologic, pathologic, Wellness Testing and Cancer Prevention, public education, professional education and policy issues perspectives. With this knowledge each student designs and implements a Cancer Intervention Program pertinent to their field of study. Development and use of media models is encouraged in each project emphasizing distant learning,

teleconferences and video conferences as a means to present Cancer Intervention Programs.

GPAH 5331 - Nutrition for Healthy Communities
Development of knowledge and skills in public nutrition including community assessment, development of prgram policies, and program planning, implementation, and evaluation.

GPAH 5350 - Advanced Medical Nutrition Therapy
This course is designed to provide the student with advanced nutrition therapy information for the effective treatment of complex medical problems. The course emphasizes all aspects of the nutrition care process as it relates to medical conditions. The research regarding the physiological, pathological and metabolic basis for nutrient modifications will be emphasized.
Prerequisite: Open only to Dietetics majors, others by consent of the Director of Dietetics.

GPAH 5351 - Contennporary Nutrition Issues and Research
Critical thinking and application of research to contemporary issues in food and nutrition applied to clinical nutrition and community/ public health nutrition. Learning occurs through classroom discussions, self-exploration through reading and applying scientific studies to issues, and participation in a research project.
Prerequisite: Open only to Dietetics majors, others by consent of the Director of Dietetics.

GPAH 5360 - Cross Cultural Health Care
Exploration of the relationships between culture/ethnicity and health status, health care beliefs and behaviors. Develops greater understanding of, and sensitivity toward the patient's way of life utilizing case examples from the United States and international settings.

GPAH 5366 - Environmental Health
Focuses on the environmental health consequences of exposure to toxic chemicals, food contaminants and radiation. Basic principles of environmental health are discussed, followed by lectures on specific topics such as: cancer and reproductive risks, occupational hazards, radiation, genetic biomontoring, risk assessment techniques, risk/benefit analysis, social/legal aspects of regulating toxic chemicals, and other related topics.

GPAH 5632 - Vaccines: Mechanisms of Immune Protection
The focus is on several different approaches to inducing prophylactic immunity in the host. Both traditional and modern molecular approaches to vaccine design will be discussed. In addition, the mechanisms employed by pathogenic microbes to avoid hosts' immune responses will be examined in the context of vaccine design. The students will gain an appreciation for the transition from basic research to practical applications. Also offered as PVS 306.

GPAH 5700 - Ethical Considerations in Genetics
Recommended preparation: a course in human genetics. Open by instructor consent. Conceptual and philosophical analysis of ethical issues specific and special to genetic testing and research. Presentations, case-studies and readings will cover topics such as world wide web genomics, access to genetic information, privacy and confidentiality, ownership, personal and societal perceptions, reproduction, utility and limitations of ge-netic data, education of physicians and patients, treatment versus enhancement, regula-tion and reimbursement, and other time-relevant issues.

GPAH 5710 - Genetics and Genomics of Health
First semester odd years. Required preparation: a course in human genetics. Open by instructor consent. The interaction of genetic, environmental, and behavioral factors in the predisposition to disease, onset of disease, response to treatment and maintenance of health. Genetics and genomics in health promotion and disease prevention will be examined through seminars and literature review.

GPAH 5715 - Current Topics in Clinical Genetics
Recommended preparation: a course in human genetics. Open by instructor consent. Exploration of current research and advances in clinical genetic diagnosis and testing through primary literature review.

GPAH 5720 - Chromosome and DNA Diagnostic Techniques
Either semester. One credit. Recommended preparation: a course in human genetics. Open by instructor consent. Molecular and cytogenetic techniques utilized in clinical diagnostics. Sections taught in a series of modules, each focusing on a different technique and a clinical case. With a change of content, this course may be repeated for credit.

GPAH 6094 - Health Promotion, Disease and Disability Prevention Research Seminar
Inquiry into the theory and nature of research in health promotion, disease and disability prevention. Students are encouraged to meet regularly with their major advisors.

GPAH 6305 - Program Evaluation for Health Professionals
A theoretical and practical introduction to program evaluation for health professionals who deliver health care services, manage departments and personnel, or provide training and continuing educational opportunities. Students apply the practical program evaluation framework for health-related intervention programs and document the impact of interventions within health promotion and disease and disability prevention programs. Skill development is facilitated.

GPAH 6306 - Research Methods in Allied Health
An inquiry into the nature of research with emphasis on the spirit, logic, and components of the scientific method. Health related research literature is used to aid the student in learning to read, understand, and critically analyze published materials. The preparation of research proposals and reports is emphasized.
Prerequisite: EPSY 5605 or a course in basic statistics (RG160).

GPAH 6324 - Critical Issues in Health Promotion, Disease and Disability Prevention
An in-depth study of health promotion, disease and disability prevention policies, programs and strategies.

GPAH 6405 - Exercise Intervention for Health Promotion in Persons with Chronic Disease & Disability
This course provides in-depth information for determining functional capacity and developing appropriate exercise programming for optimizing functional capacity of persons with chronic disease and/or disabilities. Understanding the effects of exercise on the disease process as well as the effects of disease on the exercise responses in chronic

disease and disability are explored.

GPAH 6409 - Geriatric Nutrition
This course provides in-depth information on nutritional problems and requirements for the healthy and ill older adult. The focus is on design and critique of research methodology in the nutrition literature. Development and presentation of a major nutrition-related research proposal is required of all students.

GPAH 6420 - Clinical Management Models for Health Promotion
Systematic design and analysis of the roles of health service managers and clinicians in the delivery of services for managed care are addressed. The course will analyze health care delivery from an integrated management-clinician perspective. Attention will focus on patient care and the use of clinical algorithms and critical pathways in health-care delivery.

GPAH 6421 - Design and Implementing Health Promotion Programs
Designed to assist students with the skill development necessary to design and implement health promotion programs via a settings approach. Various program development models will be presented. Experts from the field will be integrated into the course from various programmatic settings.

GPAH 6422 - Writing Successful Grant Proposal
Designed for the advanced graduate student in a health field to obtain experience writing a scientific research proposal. Students will be expected to enter the course with both a fairly well developed research topic and an actual Request for Proposal in hand. The final outcome from this class will be a grant proposal that is suitable for submission to a funding agency.

GPAH 6423 - Advanced Topics in Stress and Health Promotion
Selected topics in assessing and treating stress related disorders in health care delivery are examined. Emphasis on diagnosis,

GPAH 6424 - Principles and Practices ofAlternative/Complementary Medicine
The course is designed to critically review the evolving modalities of alternative therapies and mind-body interventions. The major components of alternative medicine, providing a review of the scientific basis, physiology and psychoneuroimmunology of the disciplines of holistic mind-body therapies will be presented. The role of energetics and spirituality in human health promotion and disease prevention will be discussed.

†GRAD 5930. Full-Time Directed Studies (Master's Level) (GRAD 397) 3 credits.

†GRAD 5950. Master's Thesis Research (GRAD 395) 1 - 9 credits.

†GRAD 5960. Full-Time Master's Research (GRAD 396) 3 credits.

GRAD 5998. Special Readings (Master's) (GRAD 398) Non-credit.

GRAD 5999. Thesis Preparation (GRAD 399) Non-credit.

†GRAD 6930. Full-Time Directed Studies (Doctoral Level) (GRAD 497) 3 credits.

†GRAD 6950. Doctoral Dissertation Research (GRAD 495) 1 - 9 credits.

†GRAD 6960. Full-Time Doctoral Research (GRAD 496) 3 credits.

GRAD 6998. Special Readings (Doctoral) (GRAD 498) Non-credit.

GRAD 6999. Dissertation Preparation (GRAD 499) Non-credit.

History

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Department Head
Professor Shirley A. Roe

Professors
Azimi, Buckley, Clark, Costigliola, Davis, Dudden, Goodheart, Gross, Ogbar, Shoemaker, and Silvestrini

Associate Professor
Baldwin, Blatt, Caner, Canning, Cobb, Cygan, Dayton, Dintenfass, Gilligan, Gouwens, Healey-Kane, Lansing, McElya, McKenzie, Meyer, Olson, Omara-Otunnu, Overmyer-Velázquez, Pappademos, Rozwadowski, Schafer, Simpson, Vernal, Wang, Watson, and Woodward

Assistant Professors
Blumenthal, Canedo, Chang, Eller, Forbes, McKenzie, and Van Isschot

The University of Connecticut offers both the M.A. and the Ph.D. in history. Small seminars comprise the bulk of course work in both M.A. and Ph.D. programs to provide maximum interaction between faculty and students. Students may also design special courses with individual professors and take a limited number of advanced undergraduate courses.

Admission to the M.A. and Ph.D. Program

Applicants for admission and financial aid are required to submit a personal statement concerning their intellectual interests and plans as well as their qualifications for the degree, an example of written work (preferably from a history course) demonstrating their analytic skills with both primary and secondary sources, and three letters of recommendation from college instructors. Graduate Record Exam (G.R.E.) scores on the aptitude tests are also required. Applications for fall admission must be received by January 1. Applications for spring admission are considered only under exceptional circumstances, and financial aid is generally not available. Please contact the Director of Graduate Studies for more information about spring admission.

The University of Connecticut offers Predoctoral Fellowships and Teaching Assistantships (which include tuition waivers) each semester. Aid is not normally available for master's students. Aid for doctoral students is usually renewable for between eight and twelve semesters. All awards are made on the basis of academic merit.

In addition to the more detailed information on the History Department website, all potential applicants should consult the Graduate School's website or write to the Graduate Admissions Office, U-1006-B 438 Whitney Road Extension, Storrs, CT 06269-1006.

The M.A. Program

The master's program is designed to give general training at the graduate level in preparation for doctoral study or work in schools, government service, law, or the private sector; it is broadly concerned with skills development (written and oral) and advanced learning. While the master's program does prepare students for entry into the doctoral program, it is equally aimed at enhancing the skills and historical perspective of teachers, museum and archive professionals, editors, lawyers, journalists, and others in both the public and private sectors. Applicants should have a bachelor's degree with a minimum of 21 credits in history above the freshman level and at least a "B" average in those courses; most successful applicants excelled in their undergraduate history courses. In exceptional cases, students who do not meet minimum requirements may be admitted provisionally and be required to meet certain conditions before receiving regular status.

The Ph.D. Program

The objective of the Doctor of Philosophy degree in History is primarily, though not exclusively, the training of academic scholars for college, university, and government service, with an additional focus on the practices of public history. Through a mixture of seminars, independent study, field examinations, language requirements, and a doctoral dissertation closely supervised by an advisor and faculty advisory committee, students develop the highest level of skills and command of information required for research scholarship and advanced teaching.

The doctorate is offered in Medieval European, Early Modern and Modern European, United States, and Latin American history with supporting areas in the History of Science and in Ancient, Asian, African, and Middle Eastern history. Supporting work in other disciplines is recommended. Applicants must demonstrate sufficient previous coursework in History at either the Bachelors or Masters level. All applicants must demonstrate potential for excellence, ability in writing historical prose, and preparation in a foreign language.

In order to develop teaching skills beyond the level of seminar presentations and oral examinations, Ph.D. students normally work as supervised teaching assistants and/or lecturers for at least one semester. Each fall, a TA training workshop is held prior to the beginning of the term, which is mandatory for all new teaching assistants and strongly encouraged for continuing TAs. In addition, workshops are held throughout each semester; these are led by talented instructors and provide a forum for exchanging ideas about classroom techniques and issues.

By the time a student completes a Ph.D., he or she will normally have submitted articles for publication, presented papers at scholarly meetings, written grant applications, and engaged actively in teaching.

Further information about specific requirements for both the M.A. and Ph.D. programs can be found on the department website, www.history.uconn.edu.

Special Facilities

The Homer Babbidge Library has in the past few years greatly expanded its materials in United States, Latin American, and European history. The Dodd Center, which houses the Archives and Special Collections Department of the Babbidge Library, has extensive holdings. These include the Hispanic History and Culture Collections (with Spanish and Latin American newspapers, and a unique Puerto Rican collection); the Alternate Press Collection, and the Nuremberg Trial papers (within the Thomas J. Dodd papers). The Department also has access to the library and facilities of the Munson Institute for Maritime History at Mystic Seaport. In addition to these resources, several major libraries and archives within a one-hundred-mile radius of the University are accessible for research purposes.

Web Site and E-mail

Web page--www.history.uconn.edu;

e-mail—history@uconn.edu.these resources, several major libraries and archives within a one-hundred-mile radius of the University are accessible for research purposes.

Web Site and E-mail. Web page--www.history. uconn.edu; e-mail--histadm1@uconnvm.uconn.edu.

Courses

HIST 5101 - Introduction to Historical Research
Introduction to the sources and methods of professional historians. Finding primary sources (qualitative and quantitative), evaluating them for accuracy and usefulness, organizing data, and writing exercises based on the sources. Students must produce a proposal (fully annotated) for a major research paper to be written in the subsequent semester.

HIST 5102 - Historical Research and Writing
A research seminar for students in the M.A. and Ph.D. programs in history.

HIST 5103 - Teaching History
A survey of the pedagogy and practice of history teaching, designed to prepare advanced graduate students for careers in colleges and universities, museums, and other educational settings. Seminar will explore the contemporary landscape of higher education; debates over the liberal arts and the place of history in the curriculum; diversity in the classroom; and challenges of designing syllabi, preparing and delivering lectures, leading discussions, advising and evaluating.

HIST 5140 - Introduction to Historical Museum Work I
A study of historical agencies and museums. Laboratory work and field trips are included.

HIST 5141 - Introduction to Historical Museum Work II
A study of historical agencies and museums. Laboratory work and field trips are included.

HIST 5142 - Administration of Archives and Manuscripts
An overview of the history and development of the American archival profession, including basic archival theory and methodology. Emphasizes principles of collection, organization, and reference service for historical manuscripts and archives.

HIST 5143 - Advanced Practice in Archival Management
Advanced practice in archival management, such as appraisal, records management, access, and public programs. Application of archival principles through specific projects

relating to processing, appraisal, public outreach, and reference service.
Prerequisite: HIST 5141 (RG356).

HIST 5195 - Special Topics in History

HIST 5199 - Independent Study in History

HIST 5201 - Theories of History
The principles and problems underlying the study of history; and a survey of the history of historical writing and of various schools of historical interpretation.

HIST 5205 - Collaborative Colloquium
Comparative/collaborative study of topics in different areas and/or periods.

HIST 5215 - Special Topics in the History of Science
May be repeated for credit with a change in content.

HIST 5218 - Historical Conceptions of Race and Science
Historical examination of the interplay between concepts of race and scientific naturalism as they emerged in the eighteenth, nineteenth, and twentieth centuries. Attention also paid to political and social contexts.

HIST 5227 - Topics in Imperialism

HIST 5235 - The Making of the African Diaspora
Theory and practice of African Diaspora history. Recent theoretical debates and cases of African Diaspora studies and history including: politics, culture, resistance; community formation; slavery; pan-africanism; transnationalism; black internationalism; African and black consciousness; Diaspora theory; gender, race, and class analyses.

HIST 5276 - War and Revolution in the Twentieth Century

HIST 5316 - Topics in Medieval History

HIST 5370 - Western Europe in the Fifteenth and Sixteenth Centuries

HIST 5373 - Europe in the Seventeenth Century

HIST 5374 - Europe in the Eighteenth Century

HIST 5410 - The French Revolution
An intensive study of the intellectual, social, economic, political, and military events of the period and of their impact upon the world, as well as upon French history.

HIST 5412 - Nineteenth Century France

HIST 5423 - State and Society in Europe since 1800
Relationship between social change and state formation in Western Europe from c. 1800 to the mid-20th century; industrialization, class, social identities, nationalism, and imperialism.

HIST 5424 - Europe in the Nineteenth and Twentieth Centuries

HIST 5425 - Social and Intellectual History of Europe in the Nineteenth and Twentieth Centuries

HIST 5451 - Topics in Russian History

HIST 5454 - Topics in Central European History, 1790-1918

HIST 5456 - Germany in the Nineteenth and Twentieth Centuries

HIST 5462 - Topics in Modern British History

HIST 5470 - Topics in Italian History

HIST 5475 - Histories of the Body: European Perspectives since 1500
Historical and interdisciplinary approaches to the study of the body and the European imagination since 1500. Topics include: representations of health and illness; the body as a site of law and sovereign power; sexed bodies; the body in social and political theory; the government of life and death; race and ethnicity.

HIST 5510 - Topics in Colonial American History

HIST 5515 - The American Revolution

HIST 5520 - United States in the Early National Period and the Age of Jackson, 1787-1840

HIST 5525 - Society and Culture in the Civil War Era, 1830-1880
The social, economic, political and cultural forces, including gender, race, and class, that shaped the Civil War and its aftermath.

HIST 5530 - United States in the Age of Reform, 1877-1924

HIST 5535 - The United States from the 1920s to the 1960s

HIST 5540 - Topics in American Social and Cultural History, 1600-1876
Major themes in the recent scholarship of social and cultural history: community and communication; family and gender; race, class, and industrialization; religion; and slavery.

HIST 5543 - Social Change in 19th Century America
Major sources of social change in 19th-century United States, including legacy of the American Revolution; fate of Native America; rural society; slavery; industrialization; immigration; class formation; race; the impact of Civil War and Reconstruction.

HIST 5545 - Topics in New England History

HIST 5550 - Topics in American Family History

HIST 5555 - Topics in the History of

American Women

HIST 5560 - Topics in the History of American Foreign Relations

HIST 5565 - Topics in the History of Urban America

HIST 5570 - Topics in Black History

HIST 5575 - American Maritime History
A study of the development of American mercantile enterprise from colonial times and its relationship to American political, economic, and cultural history. The course includes lectures, readings, and extensive use of the facilities at Mystic Seaport. It is given at Mystic Seaport under the joint auspices of the University of Connecticut and the Frank C. Munson Institute of American Maritime Studies.

HIST 5576 - Seminar in American Maritime Studies
A seminar involving reading and research on selected topics in American maritime studies. Open only to students who have previously taken History 332 or to advanced students who are concurrently enrolled in History 332. This course is given at Mystic Seaport under joint auspices of the University of Connecticut and the Frank C. Munson Institute of American Maritime History.

HIST 5610 - Empire, Nations, and Migration: History of Latino/as in the United States
The seminar explores the history of these diverse Latino/a populations in the United States, beginning with the nineteenth century wars that brought large portions of Mexico under U.S. control, and tracing the major waves of migration from Mexico, the Caribbean, and Central America. The course is divided into two sections, each with its own internal logic and progression. The first examines the historical origins of the broad, inter/trans-national and -disciplinary field of Latino studies and its relationship to its historiography. The second section examines political, economic, social, and cultural themes that transcend national and intercultural boundaries.

HIST 5621 - Topics in Latin American History

HIST 5622 - The Historical Literature of Latin America

HIST 5630 - The Historical Development of the Caribbean
Theories and case studies of Caribbean history. Recent theoretical debates and cases of Caribbean history including: economy, politics, culture, community formation; political mobilization; slavery and emancipation; nation and state formation; law; immigration and emigration; intellectual traditions; gender, race, and class analyses.

HIST 5836 - Topics in Twentieth-Century China

HIST 5837 - East Asian History
Topics in modern Chinese and Japanese history with emphasis on Chinese thought and politics.
n Chinese thought and politics.

†GRAD 6930. Full-Time Directed Studies (Doctoral Level) (GRAD 497) 3 credits.

†GRAD 6950. Doctoral Dissertation Research (GRAD 495) 1 - 9 credits.

†GRAD 6960. Full-Time Doctoral Research (GRAD 496) 3 credits.

GRAD 6998. Special Readings (Doctoral) (GRAD 498) Non-credit.

GRAD 6999. Dissertation Preparation (GRAD 499) Non-credit.

†GRAD 5930. Full-Time Directed Studies (Master's Level) (GRAD 397) 3 credits.

†GRAD 5950. Master's Thesis Research (GRAD 395) 1 - 9 credits.

†GRAD 5960. Full-Time Master's Research (GRAD 396) 3 credits.

GRAD 5998. Special Readings (Master's) (GRAD 398) Non-credit.

GRAD 5999. Thesis Preparation (GRAD 399) Non-credit.

Human Development & Family Studies

*****

Department Head
Professor Ronald M. Sabatelli

Associate Department Head for Graduate Studies
Professor Joann Robinson

Professors
Asencio, Blank, Britner, Ego, Harkness, Rigazio-DiGilio, Robinson, Sabatelli, Super, and Wisensale

Associate Professors
Bellizzi, Donorfio, Farrell, Sheehan, and Weaver

Assistant Professors
Adamsons, S.R. Anderson, Brenick, Brown, Csizmadia, Eaton, Halgunseth, Harvey, Russell and Tambling

Graduate courses and research opportunities are offered leading to the Master of Arts degree and Doctor of Philosophy degree in Human Development and Family Studies. Available study areas include: Couple Relationships, Gerontology, Health and Well-Being, Marriage and Family Therapy, Parenthood and Parenting, and Prevention and Early Intervention.

Students' individual programs of study may be developed in conjunction with faculty in related areas and include offerings from departments and schools throughout the University. Graduate students are encouraged to elect supervised fieldwork and research projects in nearby community agencies.

Students studying marriage and family therapy are required to complete clinical practicums in the Humphrey Center for Individual, Couple, and Family Therapy and in selected mental health and family therapy agencies. Such study is designed to fulfill the academic requirements needed to achieve Connecticut licensure and clinical membership in the American Association for Marriage and Family Therapy, which requires twelve continuous months of practicum placement. Students studying marital and family therapy at the doctoral level must have completed the necessary Master's level prerequisites before taking advanced course work and fulfilling the required 9-12 month internship in an approved agency.

Admission to the M.A. Program

It is desirable for applicants to have foundational coursework in the social sciences and a basic understanding of research procedures. Application for admission should be completed online at www.grad.uconn.edu. In addition, applicants must present results of the General Test of the Graduate Record Examinations (GRE), a personal statement describing themselves and their reasons for pursuing a degree in Human Development and Family Studies, and at least three letters of recommendation.

Admission to the Ph.D. Program

A prospective student must hold a bachelor's or master's degree from a college or university of approved standing. Successful candidates to the program usually have undergraduate or graduate study in to Human Development and Family Studies and related fields, such as psychology, sociology, anthropology, public health, nursing or education. Applicants must show promise of superior achievement in research. Application for admission should be completed online at www.grad.uconn.edu. In addition, applicants must submit the results of the General Test of the Graduate Record Examinations (GRE), a personal statement describing themselves and their reasons for pursuing a doctorate in Human Development and Family Studies, a curriculum vita, a scholarly writing sample, and at least three letters of recommendation from members of the academic profession. Complete applications and all supporting documents must be received no later than December 15. Students ordinarily are admitted to the program to start classes in the fall semester.

Special Facilities

The department has a number of centers and facilities for basic and applied research in HDFS. It includes five centers: the Center for Applied Research in Human Development, the Child Development Laboratories, Humphrey Center for Individual, Couple and Family Therapy, the Center for Study of Culture, Health, and Human Development, and the Ronald and Nancy Rohner Center on Interpersonal Acceptance and Rejection.

The Center for Applied Research in Human Development (CARHD) is a joint venture with the Cooperative Extension System. Its purpose is to provide assistance to state and community based agencies in the development, delivery, and evaluation of human service programs. The CARHD strives to create a supportive relationship with its clients and offers assistance at every level of the evaluation process. Technical assistance is provided by graduate students and faculty. The Center is also a research training facility. It offers opportunities for graduate students to learn about the research and publication process under the mentorship and guidance of experts in the field of human development, family studies and applied research.

The Child Development Laboratories (CDL) offer full-day and half-day programs for children who are typically developing or needing specialized educational experiences from age six weeks to five years of age. The CDL's mission is to train students who will be working with young children, facilitate faculty and student research in child development, and serve as a model center for providing quality care and education programs for young children. The CDL's laboratories provide facilities for observation, research, student projects, and field placements for the HDFS and other departments at the University.

The Humphrey Center for Individual, Couple, and Family Therapy is a training facility for graduate intern therapists enrolled in the M.A. and Ph.D. Program for Marriage and Family Therapy in Human Development and Family Studies. The Center offers a range of therapeutic services which are available to university faculty, staff and their families, undergraduate or graduate students, and any individual or family living in the greater northeastern Connecticut area. These services include individual therapy, family therapy, marital or relationship therapy, and therapy for parenting or child-related problems. The Center also offers seminars for mental health professionals, family life enrichment programs, and support and therapy groups. Consultation services and on-site training are available to other departments within the University, as well as to outside community agencies.

The Center for the Study of Culture, Health, and Human Development (CHHD) is a resource for faculty and graduate students from various disciplines including Allied Health, Anthropology, Education, Human Development and Family Studies, Nursing, Nutritional Sciences, Pediatrics, and Psychology. Focusing on the scientific understanding and active promotion of healthy human development in its cultural context, the Center houses several major research projects and manages the university-wide Graduate Certificate in Culture, Health, and Human Development.

The Ronald and Nancy Rohner Center for the Study of Interpersonal Acceptance and Rejection is a collaborative enterprise with the School of Social Work. Its mission is to conduct basic and applied research on the dynamics and consequences of interpersonal acceptance-rejection, with special emphasis on the parent-child relationship. Collaborative research with scholars around the world is a hallmark of the Center's activities.

In addition to the centers, the Department of Human Development and Family Studies is the locus for programming and resources specifically targeted to students and faculty across the Storrs campus interested in gerontology. It coordinates gerontology education programs, research, and service activities. The department offers a certificate in Gerontology which offers specialized training in gerontology. The Certificate program is open to students in masters and doctoral programs in a wide range of academic disciplines and professionals in the field of aging. Professionals working in the field of aging who have satisfactorily completed an undergraduate degree program also may apply to the certificate program. Students enrolled in HDFS M.A. and Ph.D. programs with an emphasis on adult development and aging will typically complete the certificate during their course work.

Space for applied activities is housed in the Human Development Center (HDC). The HDC affords students and faculty observation and videotaping facilities in its laboratories, therapy, and testing rooms. It also provides opportunities for conducting community-based program evaluation and data analysis services.

Courses

HDFS 5000 - Independent Study
Advanced study for qualified students who present suitable projects for intensive, independent investigation in human development and family studies.

HDFS 5001 - Seminar
Seminar in professional orientation to the field of human development and family relations.
Open to graduate students in Human Development and Family Studies, others with permission (RG842).

HDFS 5002 - Special Topics in Human Development and Family Studies
In-depth investigation of a recent issue of human development and family studies. With a change of topic, students may enroll up to four times for a maximum of 12 credits.
Open to graduate students in Human Development and Family Studies, others with permission (RG842).

HDFS 5003 - Research Methods in Human Development and Family Studies I
Family and human development procedures, research experience related to analyzing interpersonal interaction and developmental processes.
Open to graduate students in Human Development and Family Studies, others with permission (RG842).

HDFS 5004 - Research Methods in Human Development and Family Studies II
Advanced family and human development research methods; research design and underlying methodological issues in analyzing interpersonal interaction and developmental processes.
Open to graduate students in Human Development and Family Studies, others with permission (RG842).

HDFS 5005 - Qualitative Research Methods in HDFS
Philosophical bases of qualitative research in the social sciences; developing qualitative strategies; including: existential-phenomenological, intensive interviews, participant observation, and textual analysis.
Open to graduate students in Human Development and Family Studies, others with permission. Prerequisite: HDFS 5003 (RG346).

HDFS 5007 - Current Issues in Human Development and Family Studies
Focused presentation and discussion of an aspect of theory or methods related to advancing the field of human development and family studies. Open to graduate students in HDFS; others by permission. Repeatable for credit with change of topic for up to 12 credits

HDFS 5010 - Practicum in University Teaching of Human Development and Family Studies
Supervised teaching of undergraduate courses in HDFS.

HDFS 5020 - Culture, Health and Human Development
Introduction to current interdisciplinary approaches to the study of human development and health in the context of culture. An overview of theoretical approaches; presentations of current research by invited speakers, focusing on how to combine disciplinary perspectives and methods in order to build a new integrative science of health and development across and within cultures.

HDFS 5021 - Culture, Health and Human Development
Introduction to current interdisciplinary approaches to the study of human development and health in the context of culture. An overview of theoretical approaches; presentations of current research by invited speakers, focusing on how to combine disciplinary perspectives and methods in order to build a new integrative science of health and development across and within cultures.

HDFS 5030 - Research Practicum
Supervised research in Family Studies. May be repeated to a maximum of 24 credits.

HDFS 5031 - Culture, Health and Human Development Project
Group discussion and guidance through planning, implementation, and write-up of a publishable research project in fulfillment of a core requirement for the Graduate Certificate in Culture, Health, and Human Development.

HDFS 5032 - Research Seminar in Qualitative Methods
Discussion and application of qualitative methods as applied to students' individueal ongoing research projects. HDFS 5005 is strongly recommended, but not required, as a prerequisite for this course. Participants must be currently conducting research using qualitative methods. Permission of the instructor is required.

HDFS 5088 - Supervised Field Work in Family Development
Work in a community agency related to the field of family development. Open to graduate students in Human Development and Family Studies; others by permission. Prerequisite: HDFS 5088 Prerequisite.

HDFS 5101 - Infant and Toddler Development
Contemporary theories and research on infant and toddler development; evaluation of prevention and intervention programs designed to address contemporary social issues facing infants/toddlers and their families.

HDFS 5102 - Early and Middle Childhood Development
Theory and research related to early and middle childhood as a developmental period. Focus will be on topics such as executive functioning and cognitive development, language and literacy development, peer relations, gender roles, aggression, and prosocial behaviors, as well as on prevention and intervention programs designed to address contemporary social issues facing children and their families.

HDFS 5103 - Adolescent Development
Adolescent development; understanding the various forces related to adolescent behavior.
Open to graduate students in Human Development and Family Studies, others with permission (RG842).

HDFS 5110 - Families, Communities, and Positive Behavior Supports
Analysis of theory, research, systems, and curricula in Positive Behavior Supports (PBS) with emphasis on family and community partnerships. Interventions for problem behavior are examined across context and perspective.

HDFS 5115 - Cutural Issues in Child Development
An examination of the cognitive, social, and emotional development of children from a cultural perspective. Emphasis placed on infancy, socialization, theories of cognitive development, and schooling.
Open to graduate students in Human

Development and Family Studies, others with permission (RG842).

HDFS 5130 - Current Topics in Early Childhood Education
In-depth invesitigation 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 observation and laboratory observation. With a change of topic, may be be repeated once for credit.
Open to graduate students in Human Development and Family Studies, others with permission (RG842).

HDFS 5150 - Human Attachment Across the Lifespan
Theory and research on attachment, separation, trauma, and loss; lifespan approach to studying continuity or discontinuity from infant-parent attachment to peer-peer interactions to adult relationships.

HDFS 5215 - Models and Concepts of Lifespan Human Development
Overview of approaches to understanding human development across the lifespan. Emphasis on models that cross disciplinary boundaries to explore development in social and cultural contexts.
Open to graduate students in Human Development and Family Studies, others with permission (RG842).

HDFS 5216 - Advanced Seminar in Theories of Human Development
Theoretical positions influencing the field of human development and empirical evaluation of these positions.
Open to graduate students in Human Development and Family Studies, others with permission (RG842).

HDFS 5232 - Research Seminar in Adult Development and Aging
Research models and approaches specific to studying development in the latter half of the lifespan. Development of individual research project.

HDFS 5240 - Aging: Personality and Social Interaction
Patterns of adjustment to aging; continuity versus change in personality, role changes, and family relations of the elderly.
Open to graduate students in Human Development and Family Studies, others with permission (RG842).

HDFS 5242 - Aging in the Family
Theory, research and social issues affecting older families, developmental changes within aging families which impact on patterns of social interaction and support.
Open to graduate students in Human Development and Family Studies, others with permission (RG842).

HDFS 5244 - Housing for the Elderly
Housing types, adaptive accommodations, and emerging patterns of choice occurring in American society during middle-age and late adulthood; effects of economic and social changes as related to decision making by individuals about private and public living arrangements; design of research and evaluation methodology.
Open to graduate students in Human Development and Family Studies, others with permission (RG842).

HDFS 5247 - Social Gerontology
Societal aspects of aging, including the social psychological concomitants of adjustments, changing roles, and systems of social relationships.
Open to graduate students in Human Development and Family Studies, others with permission (RG842).

HDFS 5248 - Adaptation and Development in Adulthood
Young adulthood through middle-age with particular attention on transition episodes; stability and change in adult personality with attention to familial and other social relationships.
Open to graduate students in Human Development and Family Studies, others with permission (RG842).

HDFS 5250 - Close Relationships
Formation, maintenance, and dissolution of close relationships across the life span; relationships like courtship, marriage, parent-child, and friendships.
Open to graduate students in Human Development and Family Studies, others with permission (RG842).

HDFS 5255 - Living with Chronic or Life-threatening Illness
Chronic and/or life-threatening illness from diagnosis through long term management. Psychological, interpersonal, family, and ethical aspects of the chronic illness experience across the life span, in contexts for culture and health policy.

HDFS 5269 - Gender Role Transitions and Conflicts Over the Lifespan
The identification and study of men's and women's gender role transitions and conflicts over the lifespan using psychosocial theory. Developmental stages and tasks are critically analyzed using psychological, sociological, multicultural, and gender role theories and research.

HDFS 5277 - Human Sexuality
Human sexual behavior and attitudes.
Open to graduate students in Human Development and Family Studies, others with permission (RG842).

HDFS 5310 - Patterns and Dynamics of Family Interaction
Readings and research concerning the family, stressing interpersonal processes and communication.
Open to graduate students in Human Development and Family Studies, others with permission (RG842).

HDFS 5311 - Theories of Family Development
Concepts and theories in the area of family development.
Open to graduate students in Human Development and Family Studies, others with permission (RG842).

HDFS 5320 - Special Issues in Family Development
Theory, research and practice applied to special issues in human development and family relations over the life span.
Open to graduate students in Human Development and Family Studies, others with permission (RG842).

HDFS 5321 - Seminar on Parent-Child Relations in Cross-Cultural Perspective
Research and theory regarding the antecedents and effects of major dimensions of parental behavior on child development in the U.S.A. and cross-culturally, parental warmth, control, punishment, and their interactions.
Open to graduate students in Human Development and Family Studies, others with permission (RG842).

HDFS 5340 - Prevention, Intervention, and Public Policy
Survey course of the theory, practice and science of primary prevention of human problems. Prevention concepts and case studies are presented. Students give analysis and critique of course content and develop personal and professional perspectives on prevention practice and possible social policy initiatives.

HDFS 5341 - Gender Role Issues for Helping Professionals
Intensive review of gender role socialization in a workshop setting, emphasizing men's and women's gender role conflicts across the life span. Lectures, readings, discussions, self assessments, and media are used to explicate core concepts and themes.

HDFS 5342 - Parent Education
Planning, implementation, and evaluation of parent education programs for individuals and groups. Development and use of materials for such programs.
Open to graduate students in Human Development and Family Studies, others with permission (RG842).

HDFS 5442 - Latina/o Health Disparities
Overview of health and health care issues among Latina/os in the United States with particular focus on health disparities.

HDFS 5545 - Aging Policy and Programs
Existing programs at Federal, State, and Community levels as currently deployed under various Titles of the Older Americans Act, Social Security, Medicare, and Medicaid; program objectives, scope, costs, and levels of delivery as they relate to identified needs of present and future groups of the elderly; use of policy-determining data and program evaluation methodologies.
Open to graduate students in Human Development and Family Studies, others with permission (RG842).

HDFS 5550 - Social Policy, Law, & Child Welfare
Application of theory and research on child development, family relations, and intervention/prevention practices to legal, policy and child welfare contexts.

HDFS 5751 - Foundations of Marriage and Family Therapy
Theoretical foundations of marriage and family therapy; basic principles of therapy, interactional patterns of marital dyads and families under stress; professional and ethical issues relevant to the practice of marriage and family therapy.
Open to graduate students in Human Development and Family Studies, others with permission (RG842).

HDFS 5752 - Building Cultural, Contextual, and Integrative Competencies in Marriage and Family Therapy I
Conceptual and applied learning and community immersion experiences that address the cultural, contextual, and integrative competencies considered necessary to serve effectively as marriage and family-therapy scientist/practitioners in today's intercultural society.
Prerequisite: Co-requisite: HDFS 5751 (RG4319).

HDFS 5754 - Marriage Therapy
Marital interaction and therapy. Theory and technique of contemporary therapeutic approaches.
Open to graduate students in Human Development and Family Studies, others with permission. Prerequisite: HDFS 5751 which can be taken concurrently (RG348).

HDFS 5756 - Family Therapy
Contemporary clinical conceptualizations of family interaction, major contributions to the development of family therapy as a unique discipline. Issues and problems commonly confronted in conducting family therapy.
Open to graduate students in Human Development and Family Studies, others with permission. Prerequisite: HDFS 5751 which can be taken concurrently (RG348).

HDFS 5757 - Building Cultural, Contextual, and Integrative Competencies in Marriage and Family Therapy II
Conceptual and applied learning and community immersion experiences that address the cultural, contextual, and integrative competencies considered necessary to serve effectively as marriage and family-therapy scientist/practitioners in today's intercultural society.
Prerequisite: Co-requisite: HDFS 5756 (RG4318).

HDFS 5759 - Case Seminar in Marriage and Family Therapy
Specialized professional issues and professional problems in the practice of marriage and family therapy. Case material.
Prerequisites: HDFS 5751 and either HDFS 5754 or HDFS 5756. HDFS 5762 should be taken concurrently (RG349).

HDFS 5761 - Introduction to Clinical Practice and Professional Issues
Clinical practice in the Center for Marital and Family Therapy and in approved clinical training centers. Classwork and supervised clinical practice required. Professionalism, ethics, confidentiality, therapeutic techniques, and procedures required for clinical practice.
Open to graduate students in Human Development and Family Studies, others with permission. Prerequisite: HDFS 5751 which can be taken concurrently (RG348).

HDFS 5762 - Practicum in Marriage and Family Therapy
Supervised group experience in marriage and family therapy related to clinical practice in the Center for Marital and Family Therapy or other approved clinical training centers. May be repeated to a maximum of 24 credits.
Open to graduate students in Human Development and Family Studies, others with permission. Prerequisites: HDFS 5761 and either HDFS 5754 or HDFS 5756 (RG350).

HDFS 5763 - Individual Supervision in Marriage and Family Therapy
May be repeated to a maximum of 24 credits.
Open to graduate students in Human Development and Family Studies, others with permission. Prerequisites: HDFS 5761 and either HDFS 5754 or HDFS 5756 (RG350).

HDFS 5764 - Clinical Assessment and Practice
Diagnosis and treatment of dysfunctional marital and family relationship patterns, nervous and mental disorders; major family therapy assessment methods and instruments.

HDFS 5790 - Theories and World Views Informing Marriage and Family Therapy
Underlying theories and conceptualizations informing marriage and family therapy.

HDFS 6710 - Family Therapy Research
Family therapy research methods; research design and methodological issues in analyzing treatment interventions, family interaction processes, and change.
Open to graduate students in Human Development and Family Studies, others with permission. Prerequisite: HDFS 5003 (RG346).

HDFS 6720 - Family Therapy Supervision
Major models and methods of marriage and family therapy supervision; ethical and legal responsibilities faced by marital and family therapy supervisors. Development of perceptual, conceptual, and executive skills needed to supervise and train practitioners in the field of marriage and family therapy.

HDFS 6730 - Advanced Family Therapy
Current trends and issues in the field of family therapy; integration of clinical theory, research, and practice.
Prerequisite: HDFS 5751 and HDFS 5756 (RG351).

HDFS 6895 - Internship in Marital and Family Therapy
Nine to twelve month period of full-time clinical experience in a cooperating institution. Open only with consent of instructor to students of advanced standing in marital and family therapy. Offered at approved clinical training centers. The student assumes a full range of professional responsibilities associated with practice of marital and family therapy. Minimum of 500 hours of direct client contact and receipt of 100 hours of supervision.
Prerequisite: HDFS 5088 Prerequisite.
†GRAD 5930. Full-Time Directed Studies (Master's Level) (GRAD 397) 3 credits.

†GRAD 5950. Master's Thesis Research (GRAD 395) 1 - 9 credits.

†GRAD 5960. Full-Time Master's Research (GRAD 396) 3 credits.

GRAD 5998. Special Readings (Master's) (GRAD 398) Non-credit.

GRAD 5999. Thesis Preparation (GRAD 399) Non-credit.

†GRAD 6930. Full-Time Directed Studies (Doctoral Level) (GRAD 497) 3 credits.

†GRAD 6950. Doctoral Dissertation Research (GRAD 495) 1 - 9 credits.

†GRAD 6960. Full-Time Doctoral Research (GRAD 496) 3 credits.

GRAD 6998. Special Readings (Doctoral) (GRAD 498) Non-credit.

GRAD 6999. Dissertation Preparation (GRAD 499) Non-credit.

Human Rights Courses

HRTS5005(3 Credits)Instructor Consent Required Special Topics in Human Rights

In-depth investigation of an issue in human rights research. With a change of topic, students may enroll up to three times for a maximum of 9 credits. Components:Seminar

HRTS5301(3 Credits)Instructor Consent Required Contemporary Debates in Human Rights

Key Debates in Human Rights will introduce students to the main modern debates in the academic field of human rights. It is interdisciplinary in scope, including recent intellectual contributions from philosophy, law, political science, sociology, anthropology, literature and history. It will address a number of central issues and questions, including the normative philosophical foundations of human rights, whether human rights are universal or relative, whether human rights can be held collectively, and the justifications for women's rights and cultural rights. Components:Seminar

HRTS5390(3 Credits)Instructor Consent Required Economic Rights

Economic rights include the right to an adequate standard of living, the right to work, and the right to basic income guarantees for those unable to work. These rights are grounded in international law - particularly in the Universal Declaration of Human Rights and the International Covenant on Economic, Social, and Cultural Rights. This class will explore the conceptual bases, measurement, and policy applications of economic rights. Specific topics will include: child labor, the right to development, non-governmental initiatives, and the institutionalization of economic rights (e.g., constitutionalization versus statutory implementation versus discretionary policies). Components:Seminar Course Equivalents:POLS 5390, ECON 5128

HRTS5899(3 Credits) Seminar in Human Rights

Variable topics in the study of human rights. With a change of topic, students may enroll up to three times for a maximum of nine credits. Components:Seminar

International Studies

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Interim Executive Director
Associate Extension Professor Elizabeth Mahan

Emiliana Pasca Noether Professor of Italian History
Professor John Davis

UNESCO Chair for Human Rights Associate Professor
Amii Omara-Otunnu

Professors

Aschkenasy, Azimi, Berentsen, Berthelot, Boster, Boyer, Bravo-Ureta, Buckley, Celestin, Chazdon, Cosgel, Costigliola, Dalmolin, Dechant, Desai, Erickson, Fernandez, Gomes, Gordon, Guénoun, Handwerker, Healy, Langlois, Linnekin, López, Masciandaro, McBrearty, Roe, Schensul, Sheckley, Silander, Silvestrini, Stephens, Talvacchia, Wilson, Von Hammerstein and Zirakzadeh

Associate Professor

Bouchard, Caner, Chinchilla, Coundouriotis, Dintenfass, Gouwens, Greeley, Hertel, Kimenyi, Kingstone, Lefebvre, Loss, Mahan, Martínez, Overmyer-Velázquez, Pardo, Phillips, Randolph, Reyes, Schafer, Scruggs, Seda Ramirez, Snyder, Sterling-Folker, Travis, Watson, and Weidauer

Assistant Professors

Bayulgen, Bystrum Casamayor-Cisneros, Gaztambide-Geigel, Gebelein, Gilligan, Kane, Lansing, Libal, Medina, Mitoma, Pappademos, Rojas, Singer, Turcotte, Venator Santiagon, Vernal, Wogenstein

Study is offered leading to the degree of Master of Arts in the field of International Studies. Students may pursue a general program emphasis or pursue one of the following areas of concentration: European Studies or Latin American Studies. Offered also is a dual program which combines the master's degree in International Studies with the Master of Business Administration degree.

The M.A. in International Studies

The master's degree program is available in two plans: Plan A requires a minimum of 21 credits of course work plus a thesis; Plan B requires 30 credits of course work plus a comprehensive exam. Course work must be distributed over three academic disciplines.

Students are required to demonstrate proficiency in appropriate languages adequate both for conversation and research. Scores from the General Test of the Graduate Record Examination and three letters of recommendation are required for admission. As each program (European Studies, Latin American Studies, and the general program) has additional guidelines regarding required and elective courses, language proficiency, and comprehensive examinations, to fully understand program requirements students must contact area studies Centers or the Office of International Affairs.

Information concerning the general program and the European Studies concentration may be obtained from Dr. Elizabeth Mahan (Unit 1182). Information regarding the Latin American concentration may be obtained from Dr. Mark Overmyer-Velázquez, Director of the Center for Latin American and Caribbean Studies (Unit 1161).

M.A. in International Studies and M.B.A.

The dual M.A. and M.B.A. degree program consists of 72 credits of course work distributed between International Studies and Business Administration. The M.B.A. portion of the program consists of 42 credits in business, plus fifteen credits of electives. The M.A. portion of the program comprises 30 credits of course work, of which 15 credits count as electives in the M.B.A. portion.

The M.A. program is available in two plans: Plan A requires a minimum of 21 credits of course work, plus a nine credit thesis; Plan B requires 30 credits of course work, plus a comprehensive examination. M.A. students must also demonstrate language proficiency sufficient for conversation and to conduct research in an appropriate second language. Students in the M.A. program select either an area of concentration or an interdisciplinary field of study as the focus of their work.

When completing the application form, applicants to the joint M.A. in International Studies and M.B.A. must indicate clearly as Degree Sought that pursuit of the "Dual M.A. in International Studies and M.B.A. Program" is intended. Applicants are expected to provide three letters of recommendation and scores from both the Graduate Management Admissions Test (GMAT) and from the General Test of the Graduate Record Examinations (GRE).

For information about the M.B.A. program, students should write to the Director of the M.B.A. Program, School of Business Administration (Unit 1041-041MBA).

Special Facilities

Concerning the study of Latin America, library resources are especially strong for the study of Mexico, the Southern Cone, and the Caribbean. The Thomas J. Dodd Research Center has a number of special collections that are particularly strong in relation to the area studies programs. The Latin American Survey Data Bank in the Roper Center for Public Opinion Research maintains and acquires historical and current national-level surveys from throughout the region.

Courses

INTS 5000 - Seminar in International Studies
This seminar combines the various disciplines that constitute International Studies into three core units: (1) Social sciences; (2) Humanities; and (3) Development Studies (development economics and administration). Area Studies faculty from relevant departments will conduct the individual seminar sessions. The seminar has three goals: (1) to introduce concepts and theoretical issues of the fields in each of the core units; (2) to introduce research approaches and the formulation of research questions in each of the core units; and (3) to help students develop analytical thinking and writing skills in an interdisciplinary context. These goals form the basic structure of the three units and will be met through a combination of reading, discussion, short papers, presentations, and research exercises. Library research and on-line resources are also covered.

INTS 5110 - Independent Study
Instructor consent required. May be repeated to a maximum of 15 credits with a change of content.

Judaic Studies

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Director:
Professor Arnold Dashefsky

Associate Director
Professor Stuart Miller

Professor
Aschkenasy

Associate Professor
S. Johnson

Adjunct Professors
Berkovitz, Freund, Kassow, Kiener and Lang

Adjunct Associate Professor
Elukin

Adjunct Assistant Professor
Patt

Master of Arts (M.A.) in Judaic Studies is offered by the Departments of English, History, Modern and Classical Languages, and Sociology. This degree is administered by the Center for Judaic Studies and Contemporary Jewish Life, which is housed in the Thomas J. Dodd Research Center. Since the program in Judaic Studies is intended to provide a synthesis of broad areas of Jewish culture and thought as a basis for constructive research in specialized aspects of Jewish civilization, students normally are required to include in their programs courses offered by the supporting departments.

Admission to the Degree Program

The Judaic Studies Admissions Committee considers applications for admission to the master's program. An undergraduate major in the area is not necessarily required, but, before admission, students must show evidence of adequate preparation.

The M.A. Program

Work leading to the degree of Master of Arts in Judaic Studies may be undertaken either with Plan A (with thesis) or Plan B (without thesis). In either case, course work in Judaic Studies is to be distributed among several departments, and the student's advisory committee is composed of representatives of these departments. The M.A. degree is offered in consortial relationship with the University of Hartford and draws on faculty from neighboring colleges and universities.

Courses of Study

Course offerings and faculty are listed under Judaic Studies and Hebrew as well as the cooperating and supporting departments referred to above: English, History, Modern and Classical Languages and Sociology. The Committee for Judaic Studies organizes a number of colloquia featuring staff members and visiting lecturers and encourages graduate students to attend. Two years of college-level Hebrew language instruction (or its equivalent) is required in order to receive the Master's degree.

Support

Stipends are available through the Center for Judaic Studies and Contemporary Jewish Life.

Courses

JUDS 5300 - Topics in Biblical Studies
Topics in the historical, literary and philosophical study of the Bible with special emphasis on current methodological issues.

JUDS 5301 - Hebrew Wisdom Literature
Systematic examination of classical wisdom texts in the Hebrew Bible and Rabinic Literature focusing on their contribution to world ethical literature. Taught in English. Also offered as Hebrew 301.

JUDS 5303 - Religion of Ancient Israel
Significant aspects of the religion of ancient Israel: The God-human relationship, the origins of good and evil, law and covenant, kingship, prophecy, ritual and morality, repentance and redemption. Taught in English.

JUDS 5305 - Bible and Archaeology
Chronological and cultural structure of the Ancient Near East from the third millennium (3000 BCE) through the beginnings of the Byzantine period (4th century CE) with an emphasis upon the textual information presented by the Bible.

JUDS 5311 - History and Literature of Talmudic Palestine
A discussion of select topics and texts pertaining to religious, social, and political currents in Talmudic Palestine. Taught in English.

JUDS 5313 - Israel and the Ancient Near East
History, literature, religion and archaeology of the Ancient Near East emphasizing the role Israel played within the context of Mesopotamia and Egyptian history and culture.

JUDS 5315 - Ancient Jewish Fictions
Hellenistic Jewish Literature in the context of ancient fictions.

JUDS 5316 - Jewish Martyrdom in the Middle Ages
Open to graduate students in Judaic Studies, Medieval Studies, Religion, English, Comparative Literature; others with consent of instructor. Jewish martyrdom from Late

JUDS 5325 - Seminar on the Holocaust: Philosophical and Historical Issues
Study of philosophical and historical issues related to the occurrence and analysis of the Holocaust.
Prerequisite: at least 6 credits of Judaic Studies graduate courses (RG666).

JUDS 5326 - Translating Scripture
Open to graduate students in Judaic Studies, Comparative Literature and Cultural Studies, Medieval Studies, Classical and Mediterranean Studies, English, and Medieval Studies, others with permission; others with consent of instructor. The history of Bible translations, from the ancient Aramaic and Greek versions of the Hebrew Scriptures to modern English translations.

JUDS 5343 - Seminar on American Jewry
Applications of sociological theory and methods to the analysis of American Jewry.

JUDS 5351 - Seminar on Modern Jewish Philosophy
Study of the principal issues and figures in Jewish philosophy from the Enlightenment to the present. Topics considered include the nature (and possibility) of Jewish philosophy, the concepts of God, nature, and the world, the status of religious knowledge, law and practice, the concept of election in relation to the people and land of Israel. Thinkers to be considered and read include Moses Mendelssohn, Solomon Maimon, S.R. Hirsch, Hermann Cohen, Franz Rosenzweig, Ahad Ha'am, Martin Buber, Emanuel Levinas, A.J. Heschel, and Joseph Soloveitchik.
Prerequisite: at least 6 credits of Judaic Studies graduate courses (RG666).

JUDS 5353 - Modern European Jewish History
Selected topics in Modern European Jewish History between the Enlightenment and the establishment of the State of Israel.

JUDS 5355 - Topics in Jewish Ethics
Topics in Jewish ethics as reflected in literature and history, including social ethics, political ethics, economic and business ethics, sexual ethics, medical and bioethics, and others.

JUDS 5390 - Independent Study

JUDS 5397 - Special Topics in Judaic Studies

†GRAD 5930. Full-Time Directed Studies (Master's Level) (GRAD 397) 3 credits.

†GRAD 5950. Master's Thesis Research (GRAD 395) 1 - 9 credits.

†GRAD 5960. Full-Time Master's Research (GRAD 396) 3 credits.

GRAD 5998. Special Readings (Master's) (GRAD 398) Non-credit.

GRAD 5999. Thesis Preparation (GRAD 399) Non-credit.

Kinesiology

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Dean
Professor Thomas C. DeFranco

Department Head
Professor Carl M. Maresh

Professors
Armstrong, Bohannon, Casa, Denegar, Kraemer, and Pescatello

Associate Professor
Bruening, Burning, Fink, Kinsella-Shaw, Volek, and Zito

Assistant Professors
DiStefano, Bhat, Bubela, Joseph, and Mazerolle

Adjunct Professor
Lieberman, Kuchel

Adjunct Associate Professor
Nindl, Seip

Adjunct Assistant Professor
Lee

The Department of Kinesiology in the Neag School of Education offers graduate programs leading to the degrees of Master of Arts and Doctor of Philosophy in the field of Kinesiology and to the Doctor of Physical Therapy degree (D.P.T.). All information concerning the D.P.T. degree program can be found in this catalog under the heading Physical Therapy. All students should consult the statement under Education for information pertaining to admissions requirements.

The majority of graduate courses given during the academic year are taught afternoons or in the evenings. Full-time master's degree students must attend at least one summer session to accumulate in one calendar year the minimum of 30 credits required for graduation. Master's degree programs emphasizing exercise science are two-year programs and require a master's thesis.

Courses

EKIN 5085 - Research Project in Sport Management and Sociology
This course will require students to develop and present a semester-long research project in an area of sport management and sociology.
Restricted to master's students in Kinesiology (sport management and sociology concentration) who have completed all course work toward the degree and are in the final semester (RG 3375).

EKIN 5091 - Internship
The application and implementation in a work situation of theories and practices related to the student's area of specialization.

EKIN 5094 - Seminar
Issues and research in the biological and social science fields.

EKIN 5099 - Independent Study

EKIN 5300 - Management of Sport Services
Management processes and practices involved in operating sport organizations.

EKIN 5310 - Sport Marketing
This course examines the application of marketing principles to collegiate and professional sport, event promotions, and commercial and public organizations.

EKIN 5315 - Sport in Society
The structure and function of sport as an institution, including issues and controversies involving gender, race, and intercollegiate, professional, and children's sports.

EKIN 5320 - Psychological Aspects of Sport
The behavioral variables that affect an individual's performance in sport.

EKIN 5325 - Legal Aspects of Sport
Tort law principles specific to sport, fitness and recreational activities.

EKIN 5330 - Analysis of Amateur Sport
This course will acknowledge the complexity and scope of the sport inudstry while addressing all segments of amateur sport including, intercollegiate athletics, youth

sport, and community sport and recreation.

EKIN 5335 - Analysis of Professional Sport
This course will acknowledge the complexity and scope of the sport industry while specifically addressing professional sport.

EKIN 5340 - Sport Facility and Event Management
This course will examine all aspects of the management of sport facilities and events, including development, planning, staffing, operations, and evaluation.

EKIN 5345 - Theory and Methods of Research
Theoretical and empirical foundations of quantitative and qualitative research in sport and leisure science including research design, implementation and statistical analysis.

EKIN 5488 - Theory of Clinical Analysis
This course will provide an introduction to the principles and procedures of various tests performed in Clinical Chemistry. The course will present the physiological basis, principle and procedures and the clinical significance of test results, including quality control and reference values. Emphasis is placed on basic chemical laboratory technique, electrolytes, acid-base balance, proteins, carbohydrates, lipids, enzymes, endocrine function, TDM, toxicology, hematology, and coagulation.

EKIN 5500 - Research Techniques and Experimental Designs in Exercise Science
This course will give the student an understanding of research designs and methods in exercise science when examining different research topics related to human, animal and cell culture models.

EKIN 5507 - Exercise Prescription for Special Populations
An in-depth examination and application of the principles of exercise prescription in preventive medicine. Students will advance their knowledge in prescribing exercise for special populations that include groups with overweight and obesity; and cardiovascular, pulmonary, metabolic, and musculoskeletal diseases and conditions. In addition, normal populations with special considerations will be discussed including children and adolescents, older adults, and pregnancy among others.

EKIN 5510 - Exercise Metabolism
Influence of aerobic and anaerobic exercise on energy metabolism and the utilization of nutrients, as viewed from the perspectives of physiology, a variety of sports, heredity, maturation, and disease.

EKIN 5512 - Preventing Sudden Death in Sport
This course provides an in-depth examination of the causes of sudden death in the athletic/exercise environment. The most current evidence-based guidelines pertaining to the prevention, recognition, and treatment of these conditions will be explored and discussed.

EKIN 5514 - Legal Considerations of Sudden Death in Sport--Issues for Medical Staff and Athletic Administrators
A seminar style course, which is intended to provide Kinesiology graduate students with formal instrucation regarding legal aspects of sudden death in sport. The course will cover sport law concepts and will draw upon the case law of recent incidents of sudden death in sport to explore the various criminal and civil legal ramifications that arise when preventable deaths occur in domain of organized sport and physical activity.

EKIN 5515 - Scientific Presentations
Skills required for: writing scientific articles/abstracts, reviewing manuscripts, and presenting results at scientific meetings.

EKIN 5518 - Introduction to Sport Based Youth Development
This is a service learning course that requires both classroom participation and community involvement.

EKIN 5520 - Scientific Instrumentation
Scientific instruments in the Human Performance Laboratory. Development of skills necessary to perform analyses on these instruments.

EKIN 5525 - Laboratory Analytical Techniques
Analytical methods utilized in exercise science laboratories.
Prerequisite: Open only to graduate students in Kinesiology (RG3351).

EKIN 5530 - Physiology of Stressful Environments
Exercising and resting responses/adaptations/illnesses to high altitude, cold, hyperbaric, polluted, and zero gravity environments. The acute and chronic effects of electromagnetic radiation fields and sleep deprivation will also be studied.

EKIN 5533 - Current Research and Issues in Athletic Training
Acquaint students of athletic training with the recent research in the field, the components of conducting and publishing research in this field, and preparation for research endeavors at the graduate level. Also, we will cover relevant issues/policies/laws related to athletic training that are currently being regionally or nationally debated, discussed, and/or implemented.

EKIN 5534 - Advanced Clinical Care in Sports Medicine
A discussion/lecture-based class designed to explore advanced topics for graduate students in athletic training. The class is designed to further students' knowledge and skills regarding "hot" topics within the athletic training profession.

EKIN 5535 - Biomechanical Analysis of Sport Performance
Quantitative research in sport motion, two-dimensional and three-dimensional analysis, kinematic and kinetic analysis, instrumentation (videography, computer systems).

EKIN 5550 - Children and Physical Activity
Overview of systems physiology for pediatric individuals. The impact of physical activity and chronic training will be evaluated.

EKIN 6094 - Seminar
Cooperative study of developments and problems in the student's area of specialization.

EKIN 6100 - Data Analysis and Reporting in Kinesiology
This course prepares students to analyze data and critically appraise research literature using a broad variety of methods applicable to laboratory and clinical research. Students will gain experience using software to analyze data germane to exercise kinesiology and report results in a manner consistent with leading journals in the field .Knowledge of

basic statistical principles is assumed.

EKIN 6102 - Concepts and Principles of Clinical and Classroom Teaching in Athletic Training
A combination of lecture and discussion-based course, which is intended to provide the athletic trainer with formal instruction regarding clinical supervision and teaching. The course will cover both effective strategies and techniques for success in the classroom as well as in the clinical education setting.

EKIN 6300 - Organizational Theory in Sport
This course will expose students to some critical areas of management and the theories associated with these areas. Open only to doctoral students.

EKIN 6310 - Organizational Behavior in Sport
The course is a discourse on theories related to behavior of individuals and groups in sport and exercise organizations. Open only to doctoral students.

EKIN 6315 - Current Research in Sport Management
This course is focused on research in the field of sport management. Each week one or more researchers will present their completed work, studies in progress, or proposed research. Open only to doctoral students.

EKIN 6320 - Advanced Sport Sociology
Advanced topics in sport sociology and sport psychology with special emphasis on those models and theoretical perspectives that are associated with generating significant research in the area.

EKIN 6425 - Special Topics in Health and Wellness Across the Lifespan
An in-depth examination of health issues across the lifespan. The health issues addressed will involve perspectives from social and behavioral health science, occupational and environmental health science, and/or public health policy.

EKIN 6450 - Exercise Endocrinology
Overview of cellular endocrinology with a focus on the impact of acute and chronic exercise on these systems.

EKIN 6500 - Exertional Heat Stroke
An in-depth examination of pathophysiology, prevention, recognition, treatment, and return to play considerations for exertional heat stroke, with a secondary emphasis on all exertional heat illnesses.

EKIN 6505 - Teaching Strategies to Enhance Learning for Health Fitness & Sport Professionals
The course provided students with a "hands-on" approach to the translation of learning theories and styles and the principles of curriculum development, design and assessment into the practice of activities that enhance learning for health fitness and sport professionals.

EKIN 6510 - Physiology of Human Performance
Selected physiological principles related to exercise stress, including related laboratory experience.

EKIN 6512 - Advanced Resistance Training Physiology
Provides students with an in-depth overview of the physiological mechanisms

EKIN 6520 - Thermal Physiology
Detrimental effects which exercise in the heat and dehydration have on: cardiovascular function, strength, endurance, fluid-electrolyte balance, disposition, and heat tolerance.

EKIN 6525 - Muscle Physiology in Exercise and Sport
Structural, morphological and biochemical changes in muscle with exercise and training.

EKIN 6530 - Repair of Musculoskeletal Tissue
This course teaches fundamental processes necessary for the understanding of our physiologic response to injury stress, healing and recovery. This course is geared toward graduate education in the Department of Kinesiology. The scope of physiologic discussion will span from cell to organism. Discussion will center on systemic and tissue specific responses to injury. Some prior exposure to organ level physiology, endocrinology, and cell biology is recommended.

EKIN 6550 - Body Weight Regulation and Exercise
Overview course of factors impacting body weight, including neuroendocrine control of metabolism and body weight. The role of physical activity in the maintenance of body weight is also considered.

†GRAD 5930. Full-Time Directed Studies (Master's Level) (GRAD 397) 3 credits.

†GRAD 5950. Master's Thesis Research (GRAD 395) 1 - 9 credits.

†GRAD 5960. Full-Time Master's Research (GRAD 396) 3 credits.

GRAD 5998. Special Readings (Master's) (GRAD 398) Non-credit.

GRAD 5999. Thesis Preparation (GRAD 399) Non-credit.

†GRAD 6930. Full-Time Directed Studies (Doctoral Level) (GRAD 497) 3 credits.

†GRAD 6950. Doctoral Dissertation Research (GRAD 495) 1 - 9 credits.

†GRAD 6960. Full-Time Doctoral Research (GRAD 496) 3 credits.

GRAD 6998. Special Readings (Doctoral) (GRAD 498) Non-credit.

GRAD 6999. Dissertation Preparation (GRAD 499) Non-credit.

Linguistics

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Department Head
Associate Professor William Snyder

Dinstiguished Professor
Lillo-Martin

Professors
Calabrese, Van der Hulst, and Snyder

Associate Professor
Gajewski and Wurmbrand

Assistant Professor
Kaufmann

The Department of Linguistics offers study leading to the degree of Doctor of Philosophy, emphasizing theoretical research in syntax, semantics, phonology and experimental research in child language acquisition. (The degree of Master of Arts can also be awarded to students in the doctoral program, although students are not admitted to pursue it as a terminal degree.)

Admission Requirements

All applicants must submit a sample research paper (such as a thesis or term paper) written in English. It is strongly recommended that this paper be on a topic in linguistics. This research paper and three letters of recommendation are to be sent directly to the Department of Linguistics.

Application forms for admission may be obtained by writing to the Graduate Admissions Office.

Suitable undergraduate major fields include linguistics, cognitive science, computer science, languages, mathematics, philosophy, and psychology. Applicants are required, however, to have completed some prior course work in formal generative grammar.

Special Facilities

Resources for experimental research in child language acquisition include the excellent facilities at the University's Child Development Laboratories, as well as the Department's own Psycholinguistics Laboratory. Federal research grants to faculty members, and a long-standing association with Haskins Laboratories in New Haven, Connecticut, also provide significant research opportunities for doctoral students.

Courses

ING 5010 - Research Seminar in Language and Psychology
Also offered as PSYC 305.
Open to graduate students in Linguistics, others with permission (RG793).

LING 5110 - The Acquisition of Syntax
Relationship between the syntax of children's language and linguistic theory.

LING 5120 - Readings and Research in Acquisition
Lectures and discussion of classic and current articles in first language acquisition; presentation of ongoing student research.
Prerequisite: LING 5110 (RG364).

LING 5310 - Phonology I
The analysis of sound patterns in languages within a generative framework: distinctive features, segmental and prosodic analysis, word formation, the theory of markedness.
Open to graduate students in Linguistics, others with permission (RG793).

LING 5320 - Phonology II
The analysis of sound patterns in languages within a generative framework: distinctive features, segmental and prosodic analysis, word formation, the theory of markedness.
Prerequiste: LING 5310 (RG790).

LING 5410 - Semantics I
The bases of formal models of syntax and semantics. Compositionality; quantification; Logical Form.
Open to graduate students in Linguistics, others with permission (RG793).

LING 5420 - Semantics II
Theories of meaning and reference. Formal treatment of meaning in a generative grammar.
Prerequisite: LING 5410 (RG367).

LING 5500 - Advanced Introduction to Syntax
Concepts and tools of current syntactic theory. Syntactic features, lexical and functional categories, representation of phrase structure, argument structure, Case, movement, locality.

LING 5510 - Syntax I
Transformational analysis within a Chomskyan framework; deep structure, surface structure, universal conditions on the form and application of transformational rules.
Open to graduate students in Linguistics, others with permission (RG793).

LING 5520 - Syntax II
Transformational analysis within a Chomskyan framework; deep structure, surface structure, universal conditions on the form and application of transformational rules.
Prerequisite: LING 5510 (RG792).

LING 5799 - Directed Reading in Linguistics

LING 6010 - General Exam Workshop
Weekly forum for second-and third-year doctoral students to present and receive feedback on their research for General Examination papers. Regular presentations and participation in discussions required.
Open to graduate students in Linguistics, others with permission (RG 4106).

LING 6020 - Professional Methods
Practice in writing abstracts for academic conferences. Preparation for academic job market: C.V.s, letters of application, interviews, job talks. Previous completion of three semesters of full-time graduate course work in Linguistics recommended. Open to graduate students in Linguistics, others with permission.

LING 6040 - Structure of a Selected Language
Phonological and syntactic problems of a given language.
Prerequisites: LING 5310 and LING 5510 (RG366).

LING 6050 - Field Methods in Linguistics
Collection and analysis of linguistic data from native consultants.
Prerequisites: LING 5310 and LING 5510 (RG357).

LING 6060 - Historical Linguistics
Introduction to the theories and techniques of studying linguistic change. The comparative method of reconstructing languages. Internal reconstruction. Rule change.
Prerequisites: LING 5320 and LING 5520 (RG365).

LING 6110 - Methods in Acquisition
Experimental methods for first language acquisition research.
Prerequisite: LING 5110 (RG364).

LING 6120 - Topics in Acquisition
Current topics in first language acquisition

research.
Prerequisite: LING 5110 (RG364).

LING 6160 - Second Language Acquisition
Current research on theories of second language acquisition. Differences between first and second language development, including views on the availability of universal grammar. Linguistic input and the effect of age of immersion in a second language. Research methodologies and their validity will be discussed. Pedagogical implications derivable from this research will be addressed. Student research component.

LING 6210 - Morphology
Introduction to morphological analysis and to the methods of linguistic segmentation. The Lexicon. The relationships between Phonology and Morphology and between Syntax and Morphology. The nature of clitics.
Prerequisite: LING 5310 (308) or 5510 (321) (RG3507)

LING 6310 - Problems in Phonology
Advanced work in phonology.
Prerequisite: LING 5320 (RG360).

LING 6410 - Semantics Seminar
Classical and recent literature and current research in semantics.
Prerequisite: LING 5420 (RG368).

LING 6420 - Topics in Semantics
Current topics in semantic research.
Prerequisite: LING 5420 (RG368).

LING 6510 - Readings and Research in Syntax
Examination and discussion of classic articles in syntactic theory; presentation of ongoing student research.
Prerequisite: LING 5520 (RG362).

LING 6520 - Problems in Syntax
Advanced work in syntax.
Prerequisite: LING 5520 (RG362).

LING 6530 - Comparative Syntax
Cross-linguistic study of syntactic structure; implications for linguistic theory.
Prerequisite: LING 5520 (RG362).

LING 6798 - Special Topics in Linguistics
Topics in general linguistics at an advanced level.
Prerequisites: LING 5310 and LING 5510 (RG363).

LING 6799 - Independent Study in Linguistics
May be repeated for credit with a change of content.

†GRAD 5930. Full-Time Directed Studies (Master's Level) (GRAD 397) 3 credits.

†GRAD 5950. Master's Thesis Research (GRAD 395) 1 - 9 credits.

†GRAD 5960. Full-Time Master's Research (GRAD 396) 3 credits.

GRAD 5998. Special Readings (Master's) (GRAD 398) Non-credit.

GRAD 5999. Thesis Preparation (GRAD 399) Non-credit.
†GRAD 6930. Full-Time Directed Studies (Doctoral Level) (GRAD 497) 3 credits.

†GRAD 6950. Doctoral Dissertation Research (GRAD 495) 1 - 9 credits.

†GRAD 6960. Full-Time Doctoral Research (GRAD 496) 3 credits.

GRAD 6998. Special Readings (Doctoral) (GRAD 498) Non-credit.

GRAD 6999. Dissertation Preparation (GRAD 499) Non-credit.

Literatures, Cultures and Languages

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Department Head
Associate Professor Rosa Helena Chinchilla

Professors
Aschkenazy, Berthelot, Celestin, DalMolin, Einbinder, Gomes, Guénoun, Masciandaro, Miller, Shoulson, von Hammerstein, and Weidauer

Associate Professors
Bouchard, Caner, Finger, Irizarry, Johnson, Loss, Nanclares, Pardo, Seda, Travis, Urios-Aparisi, Wagner, and Wogenstein

Assistant Professors
Balma, Casamayor-Cisneros, Diaz-Marcos, Hershenzon, Ladha, Saugera, and Terni

Afiliated Members
English Professors Benson, Breen, Higonnet, Hogan, Peterson; Associate Professors Coundouriotis, Phillips, Sanchez, Winter; Assistant Professors Bystrom; Philosphy: Professor Kupperman

Department of Literatures, Cultures and Languages (LCL)

The Department of Literatures, Cultures and Languages offers the degrees of Master of Arts (M.A.) and Doctor of Philosophy (Ph.D.). The department offers courses of study leading to the Field of Study in Literatures, Cultures and Languages for both the Ph.D. and M.A, with areas of concentration in French and Francophone Studies, German Studies, Italian Literary and Cultural Studies, Spanish Studies, and Comparative Literary and Cultural Studies.

The M.A. Program

M.A. programs typically require two years of full-time study, and are offered in French and Francophone Studies, German Studies, Italian Literary and Cultural Studies, Spanish Studies, Comparative Literary and Cultural Studies, and Classics and Ancient Mediterranean Studies. The master's degree in any of these fields may serve as the initial, two-year segment of Ph.D. study in the department, or as a terminal degree. The M.A. degree can also provide the academic foundation for teaching at the secondary or primary school levels.

Master's degrees may be earned under either of two plans, as determined by the advisory committee. Either Plan A or Plan B may be used for completing the M.A. to enter the Ph.D. Plan A requires not fewer than fifteen credits of advanced course work and for students entering Fall 1998 or later, not fewer than nine additional credits of Master's Thesis Research (GRAD 5950 or GRAD 5960), and the writing of a thesis. Plan B requires not fewer than twenty-four credits of advanced course work, a final examination, but no thesis. In either case, advisory committees may require more than the minimum number of credits.

Students following either M.A. plan must complete the required number of course credits —including a course in Literary Theory and in Foreign Language Teaching Methodology, as approved by the student's committee. The Film Theory and History (LCL 5010) course may substitute for the Introduction to Literary Theory course (CLCS 5302) with the permission of the student's advisory committee. Students who seek state teaching certification should elect the Teaching Methodology course, and consult with the NEAG School of Education concerning other inclusions; further courses in Education are ordinarily required.

Admission to the M.A. and Ph.D. Programs

Prospective applications for admission to M.A. or Ph.D. study, together with letters of recommendation, a personal statement, and a critical and analytical original paper should reach Storrs by January 15 to be competitive for assistantships and fellowships for the Fall semester. Applications at other times may be considered for funding. There is no separate application for teaching assistantships. Admission is competitive, and qualifying graduate students are financially supported as teaching or research assistants.

The Ph.D. in Literatures, Cultures and Languages

The department offers a program of Ph.D. study that permits concentration in one of five primary fields: French and Francophone Studies, German Studies, Italian Literary and Cultural Studies, Spanish Studies, or Comparative Literary and Cultural Studies. Such Ph.D. study also permits, with approval, the incorporation of one of the following secondary departmental fields of study: Applied Linguistics, Classics and Ancient Mediterranean Studies, Digital Culture and Media Studies, or History and Theory of World Cinema; or a secondary field devised in collaboration with another university department or program such as Medieval Studies, Human Rights, Women's Studies and Judaic Studies.

The department prepares Ph.D. students to engage in the interdisciplinary study of literatures, cultures and languages by integrating various regional cultures, historical periods, and methodologies essential to literary and cultural scholarship. The areas of research of the department's faculty are complementary and interconnected in a broad range of research fields and allow for a design that simultaneously focuses on particular literatures, cultures and languages and interdisciplinary areas of study in the context of emerging global communities.

Formal acceptance into the Ph.D. program ordinarily assumes completion of M.A. requirements in this department or the achievement elsewhere of qualifications judged appropriate by the Ph.D. admissions committee. Students with an earned master's degree in a relevant field, or making substantial progress toward such a degree, and whose graduate record shows sufficient promise in analytical work, may apply for admission to the doctoral program.

Students in the Ph.D. program must complete, in one of the five primary fields listed below, at least 12 credits of graduate coursework, and at least six credits in a secondary field defined and approved by the candidate's advisory committee. Some requirements may be completed in the M.A. program. The secondary field should be formally identified early in the course of study. It can consist of one of the department's areas of expertise summarized below or another field approved in collaboration with another university department or program. Every plan of study is individually structured and monitored by a committee chosen by the student in consultation with his or her main advisor.

Further details on requirements for a specific field of specialization can be found in the Graduate Handbook of the Department of Literatures, Cultures and Languages, which can be obtained from the Graduate Catalog and other publications of the Graduate School. Additional information about the department is available on the departmental website: http://languages.uconn.edu/.

Primary Fields of Departmental Scholarly Expertise

These permit the development of graduate-level research programs that reflect substantial departmental groupings of both course offerings and faculty expertise and research interest in a variety of constituent areas.

French and Francophone Studies engages the diversity of French literary and cultural production from a multiplicity of viewpoints: from France to former French colonies in sub-Saharan Africa and the Caribbean; in the Muslim world from Senegal to Syria; and in Asia and the Americas, from Vietnam to Quebec. Seminars in the Department's core strengths – including Medieval Studies, Digital Culture & Media Studies, and Film – are central to the French and Francophone Studies Program, which stresses interdisciplinary, intercultural, and transnational approaches. Seminars in specialized topics include medieval literature, culture and languages; animal and environmental studies; fantasy and science fiction studies; poetry and philosophy; social and literary theory; postcolonial literatures, cultures and theories; literature and media; urban, material and consumer cultures; and contact linguistics. The faculty also supports a rigorous language and pedagogy program, which may lead to certification for secondary school teaching.

German Studies offers seminars in German literature, culture, and linguistics leading to the Ph.D. degree. Interdisciplinary studies in Comparative Literature, Linguistics, Women's Studies (WS Certificate), and Human Rights (HR Certificate), among others, are available in cooperation with other sections and departments. The graduate program strongly supports an interdisciplinary, intercultural, and transnational approach to German Literary and Cultural Studies, including trans-disciplinary literary and cultural theory, "interkulturelle Germanistik," applied linguistics, literature and other arts, and anthropological, historical and philosophical inquiries into literary studies, beginning with the 18th century. Additional expertise: Black-German Studies, Gender Studies, Film and Media Studies, German-Jewish Studies, Literature/Culture and Philosophy, and Interarts Studies.

Italian Literary and Cultural Studies offers graduate courses in all periods from the Middle Ages and Renaissance to the present. Their interdisciplinary, intercultural, and transnational approach encompasses the Italian Diaspora to the Americas, Mediterranean Studies, Ethnic and Gender Studies, and Film and Media Studies. Students are strongly encouraged to draw upon the resources associated with the Emiliana Pasca Noether Chair for Modern Italian History and interdisciplinary programs such as Medieval Studies, Women Studies,

and the program in Comparative Literary and Cultural Studies.

Spanish Studies offers graduate courses in Latin American, Peninsular and Latino literature, culture, film, and linguistics leading to the Ph.D. degree. The research program in Spanish includes Spanish Literary and Cultural Studies, Golden Age, Colonial, 18th-21st-century Peninsular, 19th-21st -century Latin American Studies, Latino Studies in U.S. and Caribbean Literary and Cultural Studies, and a diversity of theoretical fields such as Gender Studies, Film and Media Studies, Performance Studies and Applied Linguistics.

Comparative Literary and Cultural Studies

The graduate program offers students the opportunity to develop an interdisciplinary, transcultural study of literatures and the arts. Students design their own plan of study in consultation with a group of faculty from the program and/or other academic departments. Ph.D. candidates are expected to pursue studies in three different fields and demonstrate advanced proficiency in at least two languages in addition to English.

SECONDARY FIELDS

Applied Linguistics

Areas of pedagogical, interpretative and quantitative approaches to language, literature, media and cultural studies. Among others, the specialty areas are Second Language Acquisition; Applied Cognitive Linguistics; Humor studies; Language Contact; Bilingualism; Language Acquisition; Pragmatics and Semiotics.

Classics and Ancient Mediterranean Studies (an independent program for M.A. study)

This specialization provides students with the knowledge and skills necessary to study and teach the languages and cultures of the Ancient Mediterranean. Areas of faculty specialization include the Greek, Hellenistic and Roman worlds, Second Temple and Rabbinic Judaism, and the world of Late Antiquity.

Digital Culture and Media Studies

The secondary concentration in Digital Culture and Media Studies prepares students to work in a wide variety of interdisciplinary fields such as Game Studies and Media Philosophy and to undertake research projects in Media History. The application of media theory and history to the burgeoning digital culture presents a unique opportunity to merge practice with theory and to pursue work in the humanities with a scope that extends from the classical world through our immediate contexts. Ultimately, students learn to participate as scholars and teachers in the discourses springing from the integration of digital computer technology and multiple media into world culture.

Hebrew and Judaic Studies (an independent program for M.A. study)

This newly configured section of the department brings together faculty who are engaged in the teaching of Hebrew and Judaic Studies full-time as well as members of other sections who have teaching or research interests pertaining to the history, literature, languages, and cultures of the Jews. (See: Hebrew and Judaic Studies Section, Faculty).

The highly interdisciplinary graduate offerings of this section focus on historiographic, literary, and cultural issues that intersect with other literatures and cultures taught in the department, enabling graduate students pursuing a Ph.D. in LCL to develop a concentration or focus in a Judaic related area, especially regarding the Jewish experience in the Greco-Roman/Late Antique, Medieval, and Early Modern periods. (see: http://judaicstudies.uconn.edu/graduate.html).

History and Theory of World Cinema

This specialization provides students with the knowledge and skills necessary to study and teach world cinema through film history and theory in an interdisciplinary context. The analysis of film form and aesthetics as well as a cultural, economic and political phenomenon is this secondary field's objective.

Other secondary areas may be designed in consultation with programs outside the department such as Gender Studies, Human Rights, and Medieval Studies. Students may design additional secondary fields in consultation with their Ph.D. committee. Other secondary areas may include: World Cinema, Digital Culture and Media Studies and others to be designed in consultation with programs outside the department such as, Gender Studies, Human Rights, Judaic Studies, Medieval Studies. Students may design additional secondary fields in consultation with their advisor and Ph.D. committee.

Courses

Comparative Literary and Cultural Studies

CLCS 5301 - Variable Topics

Possible topics include literature and the other arts, the sociology of literature, literature and psychology, and themes. May be repeated for up to nine credits with a change of topic.

CLCS 5302 - Introduction to Literary Theory

Historical survey of theoretical paradigms or schools of literary theory. Topics may include literary representation, the relationship between literature and society, interpretation and meaning, ideology. Emphasis on the aims of theory, its object, and its status vis à vis other disciplines of the human sciences.

CLCS 5303 - Comparative Studies in the Novel

The novel as a modern literary form, its relation to society, its epistemological strategies; European and American texts, including detective fiction.

CLCS 5304 - Studies in Literary History

Periods, movements, and literary relations involving several national literatures. Possible topics include the Baroque, the Enlightenment, Symbolism, and the Avant-Garde.

CLCS 5305 - Comparative Studies in Romanticism

West European Romanticism, the Bildungsroman, the quest, stories of the fantastic, and the greater Romantic lyric. Includes works of Goethe, Coleridge, Poe, Hugo and Leopardi.

CLCS 5306 - Studies in Form and Genre

Aspects of epic, drama, poetry, or narrative, such as the classical epic, the historical drama, the pastoral poem, or the picaresque novel.

CLCS 5307 - Literature and Science

The impact of science on literary imagination and style.

CLCS 5308 - Marxist Literary Criticism

Introduction and survey of Marxist texts from Marx and Engels to Gramsci, Lukacs, Frankfurt School theoreticians, and contemporary theorists, feminists, and third-world practitioners.

CLCS 5310 - Psychoanalysis and Literature

Introduction to the literary and cultural application of psychoanalytic theory to the reading of literary texts; psychoanalytic interpretation from Freud to Lacan and feminist Lacanians.

CLCS 5311 - Introduction to Semiotics

Historical development and fundamentals of semiotics. Classical and structural models. Varying emphasis on a particular theory and its development.

CLCS 5312 - Third-World Narratives

The study of creative and critical writings from developing nations in Latin America, Africa, and Asia, including works of minorities in America.

CLCS 5313 - Theory and Practice of Translation

CLCS 5315 - Third-World Cinema

The cinema of developing countries studied as art and as cultural document; its relation to political and social realities and to film produced in the industrialized world.

CLCS 5316 - Literature and Linguistics

Literary texts studied in the light of modern linguistic theory.

CLCS 5317 - Studies in Comparative Culture

The intersection of ideas concerning urbanization and modernism through the medium of literature, architecture, fine arts, and film.

CLCS 5318 - Special Studies

French and Francophone Studies

FREN 5302 - The Seventeenth-Century Theatre

FREN 5304 - Seventeenth-Century French Thought

Religious and Libertin thinkers: Gassendi, Descartes; the Moralistes: Pascal, La Rochefoucauld, La Bruyère.

FREN 5306 - The Later French Enlightenment

FREN 5307 - Problems in French Literature or Philology

FREN 5309 - Provençal Language and Literature

FREN 5310 - Introduction to French Philology

FREN 5311 - Aesthetic Trends in Twentieth-Century French Literature

FREN 5352 - Old French Language

FREN 5353 - Old French Literature

FREN 5357 - The French Novel in the Eighteenth Century

FREN 5359 - Romantic Poetry and Drama

FREN 5361 - French Poetry in the Second Half of the Nineteenth Century

FREN 5362 - French Contemporary Poetry

FREN 5369 - The French Novel in the First Half of the Nineteenth Century

Stendhal, Balzac, and the romantic novelists.

FREN 5370 - The French Novel in the Second Half of the Nineteenth Century

Flaubert, Zola, and their contemporaries.

FREN 5373 - The French Contemporary Novel

FREN 5376 - The Prose of the French Renaissance

FREN 5377 - The Poetry of the French Renaissance

FREN 5380 - Seminar in Francophone Literature

The study of the literature from the French-speaking world outside of France (Quebec, the Antilles, West Africa, the Maghreb) against the background of colonial and post-colonial history. May be repeated for credit with change of topic.

FREN 5381 - Study of French Style

Problems of French style and writing of critical papers.

FREN 5401 - Seminar on Villon

Prerequisite: FREN 5353 (RG429).

German Studies

GERM 5305 - Studies in Germanic Philology and Linguistics

Study of a coherent body of material related to older Germanic languages; to diachronic or synchronic phonology, morphology, syntax, and lexicology of Germanic languages; or to other areas of theoretical or applied linguistics.

GERM 5306 - Topics in Germanic Philology and Linguistics

Focus on a specific topic, problem, controversy, research methodology, etc. in Germanic philology and linguistics.

GERM 5314 - German Studies

Exploration of the field of German Studies as an "interdiscipline"; analysis of a coherent body of material drawn from the social sciences, humanities, natural sciences, or other fields that helps to illuminate the German-speaking world.

GERM 5315 - Topics in German Studies

Focus on a particular theme (e.g. "revolution," or "family and society"), approach (e.g. critical theory, or feminist interpretations), genre (e.g. lyric, or autobiographical essay), skill (e.g. research methodology) or other aspect of German studies.

GERM 5322 - Studies in German Literature I

Study of a coherent body of texts drawn from the period from the beginnings of German literature to approximately 1700.

GERM 5332 - Studies in German Literature II

Study of a coherent body of texts drawn from the period from approximately 1700 to 1890.

GERM 5345 - Studies in German Literature III

Study of a coherent body of texts drawn from the period from approximately 1890 to the present.

GERM 5360 - Research Methodology

Introduction to the methods of literary research and bibliography.

GERM 5365 - German Film Studies

Study of a coherent body of films and related materials (e.g. fiction, theory, reviews) organized to illuminate particular themes (e.g. representations of postwar Germany), relationships (e.g. between films and literature or film and social context), cinematic styles (e.g. Expressionism), etc.

GERM 5368 - The German-Speaking World

Landeskunde of the German-speaking world. The physical geography as well as cultural heritage, traditions, and contemporary customs of Austria, Germany, Switzerland, and other German-speaking regions of the world.

GERM 5369 - Topics in Landeskunde of the German-Speaking World

Focus on a specific topic or problem related to diachronic or contemporary Landeskunde of Austria, Germany, Switzerland, or another German-speaking region of the world.

GERM 5375 - Advanced Conversation and Composition

Practice in oral and written expression, with an emphasis on current idiomatic usage, grammatical structure, and stylistics

GERM 5376 - Rhetoric and Writing

In-depth introduction to the rhetorical resources of the German language; extensive analysis of spoken and written language; application of knowledge in students' own writing and speaking.

GERM 5377 - Topics in Rhetoric and Writing

GERM 5378 - Preparation for Certification of Proficiency in German

Development of students' proficiency in speaking, listening, reading and writing German in preparation for either the Mittelstufenprufung or Oberstufenprufung.

GERM 5380 - German Language Methodology

Exploration and analysis of a range of theories, issues, and problems in German instruction. Focus on the nature of language acquisition, methods, and implications for practice.

GERM 5381 - Topics in German Language Methodology

Focus on such special areas as content-based instruction, language for specific purposes (LSP), instructional technologies, development of teaching materials, proficiency, testing techniques, etc.

GERM 5385 - German Literary Criticism and Theory

Systematic study of literary criticism, including such topics as the contributions of particular critical approaches to the understanding of significant German-language literary works; the philosophies, implicit or explicit, underlying various critical approaches; and the German contribution to international critical discourse.

GERM 5388 - Topics in German Literature

Focus on a specific topic, problem, controversy, methodology, etc. in German literature studies or criticism.

GERM 5390 - Independent Study

GERM 6410 - Seminar in Germanic Philology and Linguistics

GERM 6420 - Seminar in Medieval Literature

GERM 6430 - Seminar in Sixteenth- and Seventeenth-Century Literature

GERM 6450 - Seminar in Nineteenth-Century Literature

GERM 6460 - Seminar in Twentieth-Century Literature

GERM 6480 - Investigation of Special Topics

Italian Literary and Cultural Studies

ILCS 5315 - Introduction to Contemporary Literary Studies

Contemporary methods and fields of literary analysis. Paradigms of literary studies and overview of Marxist, Freudian, Feminist, Historicist, and Culturalist criticism.

ILCS 5330 - The Literature of the Origins

Poets and poetical schools of the Duecento from the Franciscans to the Sicilians and the "Dolce stil nuovo."

ILCS 5332 - Seminar on Petrarch

The works of Francesco Petrarca; their relevance to humanism and to subsequent European lyrical poetry.

ILCS 5333 - Seminar on Boccaccio

The Italian lyrics and narrative poems, the Decameron and its seminal importance for prose fiction, the scholarly Italian and Latin works.

ILCS 5334 - Seminar on Machiavelli

The principal objective of this course is twofold: 1) to analyze and assess the political thought and the theater of Machiavelli as represented, respectively, in the Prince and the Discourses, and in the comedies Mandragola and Clizia and in the Favola (Belfagor arcidiavolo); and 2) to discuss Machiavellis influence beyond Italy (e.g., on authors such as Christopher Marlowe, Shakespeare, Ben Jonson, and Francis Bacon). Special attention will be given to Machiavellis unique relation to Renaissance Humanism, to his unconventional concept of virtue and his redefinition of the ethics of politics, and to his of view of the statesman as artist.

ILCS 5335 - Baroque Literature

The beginnings of baroque literary style and its ramifications in the seventeenth century.

ILCS 5337 - Theories and Methods of Modern Criticism I

Aesthetic problems from Vico to the present day.

ILCS 5339 - Seminar on Modern Literature

One leading writer from the last two centuries.

ILCS 5340 - Divina Commedia

ILCS 5342 - Seminar on Italian Theatre from Renaissance to Romanticism

Major figures and developments from Poliziano and Machiavelli to Goldoni, Alfieri and Manzoni.

ILCS 5345 - Studies in Italian Literature or Philology

ILCS 5347 - Italian Chivalric Poetry

ILCS 5350 - Literature of the Settecento

Major figures of the eighteenth century enlightenment. Vico, Alfieri, Goldoni, Parini.

ILCS 5351 - Literature of Romanticism

Neoclassicists versus innovators: Monti, Foscolo, Leopardi, Berchet, Manzoni, De Sanctis.

ILCS 5352 - Modern Italian Poetry I

Post-romantic masters through the twentieth century experiments: e.g., the Crepuscolari, Futurists, Hermeticists.

ILCS 5354 - Masters of Twentieth-Century Fiction

Pirandello, Svevo, Moravia, Pavese, Vittorini.

ILCS 5355 - Introduction to Italian Philology

Italian linguistic geography, neo-linguistics of Bartoli, areal linguistics, Dante's De Vulgari Eloquentia, the "Questione della lingua." Croce's theory of language.

Literatures Cultures and Languages

LCL 5010 - Film Theory and History

Advanced study of world cinema through film history and theory in an interdisciplinary context. Discussion on all national cinemas, for example: French Cinema, German Cinema; and film genres: for example: Film Noir, The Western, Political Film, Documentary, among others.

LCL 5030 - Methods and Approaches to Second Language Acquisition

Open to graduate students in LCL, others with permission. Approaches to Foreign Language teaching and learning. Focus on the nature of language learning and methods and approaches to teaching.

Open to LCL Graduate Students Only

LCL 6010 - Fields and Research in Language, Culture and Literature Studies

Open to graduate students in LCL, others with permission. Theory and practice of research methods in the fields of literature, language and culture. (May be repeated for credit).

Open to LCL Graduate Students Only

LCL 6020 - Advanced Theory for the Study of Literatures, Cultures and Languages

Open to graduate students in LCL, others with permission. Historical interdisciplinary and contemporary theoretical parameters and models in literary, visual and cultural studies at the advanced level.

Open to LCL Graduate Students Only

LCL 6040 - Interdisciplinary Seminar

Prerequisite: admission to a graduate degree program in LCL, or permission of instructor (undergraduates may be admitted to the course with permission). An interdisciplinary LCL seminar team-taught by at least two faculty with different areas of specialization within LCL. Variable topics, depending on the interests of the faculty. Offered once a year (Fall or Spring) with change of topic. Although the course will taught in English in order to facilitate working across different languages, students will be expected to do research and and/or write seminar papers in the language(s) of their specialization, as appropriate. Candidates for the PhD in Literatures, Cultures and Languages will be required to complete at least one such interdisciplinary seminar before advancing to candidacy.

Open to LCL Graduate Students Only

Spanish Studies

SPAN 5320 - Independent Study

SPAN 5321 - Theatre of the Golden Age

A study of the origin, formation and development of the Spanish comedia. Representative works of Lope de Vega, Calderón, Tirso de Molina, and Alarcón will be analyzed with special emphasis on individual characteristics.

SPAN 5322 - History of the Spanish Language

The development of Castilian and its relation to its congeners in the Iberian Peninsula and Hispanic America.

SPAN 5323 - Concepts of Literary Criticism

A practical approach to the theories and methods of literary criticism with particular reference to Hispanic literature.

SPAN 5325 - Cervantes Studies

Don Quixote I and II and the critical corpus. The Novelas Ejemplares, Entremeses and other works.

SPAN 5328 - Medieval Spanish Literature (1100-1350)

Major works in prose and poetry from 1100-1350 in medieval Iberia.

SPAN 5329 - Medieval Spanish Literature (1350-1500)

Major works in prose and poetry written in Spain from 1350-1500.

SPAN 5332 - Poetic Traditions in the Spanish Renaissance

Topics may include courtly poetry, influence of Italian humanism, theory of imitation, genre theory, the folkloric and Castilian traditions.

SPAN 5333 - Spanish Poetry of the Golden Age

Poetry and prose in relation to the main poetic currents in Spain and in the Americas, 1580-1700.

SPAN 5334 - Modern Spanish-American Poetry

Selected poets and movements in Spanish America from the late nineteenth century to the present.

SPAN 5335 - The Theatre in Spanish America

The works of selected dramatists, with emphasis on the modern period.

SPAN 5336 - Colonial Latin American Literature

Study of particular aspects of colonial literary production: religious and secular historiography; humanist thought in the colonies, poetry, and society; literature and the Baroque city; political and scientific thought.

SPAN 5350 - The Essay in Spanish America

The Spanish-American essay as a literary genre and a vehicle of ideas. Reading in the works of the chief essayists of the Spanish-American nations.

SPAN 5351 - The Novel in Spanish America

The development of the genre in Spanish America and selected readings in the works of its chief exponents.

SPAN 5355 - The Nineteenth-Century Spanish Novel and Essay

A study of the essays of Larra and Ganivet, as well as the nineteenth-century novel. Special emphasis will be placed on the post-romantic novel.

SPAN 5356 - Twentieth-Century Novel and Essay

Selected works either of authors from 1895 to 1936, or of authors from 1936 to the present.

SPAN 5357 - Twentieth-Century Drama and Poetry

Selected works and authors from 1900 to the present.

SPAN 5359 - Special Topics in Early Modern Spanish Literature

The novel, the short story, and other prose genres in the early modern period.

SPAN 6339 - Seminar on Sixteenth or Seventeenth Century Studies

Open topics.

SPAN 6402 - Studies in Spanish-American Literature

SPAN 6403 - Studies in Spanish Literature

May be repeated for up to nine credits with a change of topic.

SPAN 6404 - Special Topics in Nineteenth-Century Spanish-American Literature and Cultural Production

Nineteenth century Spanish-American cultural production from Independence to the end of the nineteenth century. Emphasis on the interaction of literature and social thought, on the relations between literature and other forms of art, or on the role of artistic and intellectual practices in shaping the new nations.

SPAN 6405 - Special Topics in Twentieth-Century Spanish-American Literature and Cultural Production

Twentieth century Spanish-American cultural production. Emphasis on the interaction of artistic practices and social thought, or on the relations between literature, other forms of art, and social or political movements.

SPAN 6407 - Special Topics in Modern Spanish Cultural Production

Spanish culture from the Enlightenment to the present. Emphasis on the interaction of art and social thought, on the relations between art and the media, or on the role of intellectual practices in shaping or challenging notions of gender, ethnic, and national identity.

SPAN 6408 - Special Topics in Nineteenth Century Spanish Literature

Nineteenth century Spanish literature. Emphasis on the interaction of literature and social thought or the relations between literature and other forms of art.

SPAN 6416 - Theoretical Debates and the Hispanic Tradition

Aspects of methodology, theory, and history relevant to the study of cultural production in Hispanic societies.

century Spanish literature. Emphasis on the interaction of literature and social thought or the relations between literature and other forms of art. Components: Seminar

SPAN 6416(3) Theoretical Debates and the Hispanic Tradition Aspects of methodology, theory, and history relevant to the study of cultural production in Hispanic societies. Components: Seminar

Marine Sciences

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Department Head
Professor Ann Bucklin

Professors
Dam, Edson, Lin, Mason, McManus, O'Donnell, Shumway, Visscher, Ward and Whitlatch

Associate Professor
Bryne, Dierssen, Romano, Skoog, Tobias, Whitney, and Zhang

Assistant Professors
Dupraz, Fewings, Granger, Vaudrey, and Vlahos

The Department of Marine Sciences offers study and research programs leading to the degrees of Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) in the field of oceanography. Areas of special interest include biological, chemical, geological and physical oceanography and marine biology, geochemistry, and geophysics.

Because of the varied training of students and the interdisciplinary nature of marine sciences, plans of graduate study are flexible in focus and scope, and are designed to meet the needs of the individual student. The department offers several courses which serve as a core curriculum in the study of marine sciences, in addition to an array of other offerings in specific areas of the field.

Master of Science

For admission, a bachelor's degree in a related science normally is required; there are no special requirements for admission beyond those of the Graduate School. Selection of a Plan A (thesis) or Plan B (course work) degree normally is made after consultation with the student's advisory committee. Since the faculty conduct laboratory and field research programs, most students complete a research project.

Doctor of Philosophy

Students entering the doctoral program normally have a master's degree in a related science. Specific course requirements for the Ph.D. degree in oceanography are established by the student's advisory committee. Depending upon the student's committee, a foreign language or a related area of study (e.g., statistics, computer science) outside the student's major program emphasis is required. A written qualifying exam covering selected topics in oceanography must be passed for advancement to candidacy.

The Department also actively participates in several interdisciplinary academic programs at the M.S. and Ph.D. level:

Biological Sciences

Certain members of the faculty also are members of the Department of Ecology and Evolutionary Biology. Work in marine ecology, botany, and evolution is available.

Marine Geophysics

Appointments of several Department faculty allow work in marine geophysics, geology and sedimentology.

Special Facilities and Educational Opportunities

The Department maintains laboratories on the UConn Avery Point campus in Groton, Connecticut. Research vessels, an ultra-clean analytical chemistry laboratory and seawater facilities are available through the Marine Sciences and Technology Center. Additional research and education facilities are provided by Connecticut Sea Grant, the National Undersea Research Center, the Long Island Sound Resource Center, and the Avery Point campus.

Courses

MARN 5010 - Biological Oceanography

Not open to students who have passed MARN4010.

Prerequisite: Antipre MARN 4010

MARN 5011 - Biogenic Fluxes in the Oceans

Processes regulating the export of organic matter from the surface of the ocean to the sea bed. New and export production; role of the biotic and abiotic processes in downward transport of particulate and dissolved organic matter; current topics of research on the biological pump.

Prerequisite: MARN 5010 (RG372).

MARN 5012 - Ecology of Marine Invertebrates

Functional responses of organisms to abiotic factors in the marine environment (light, temperature, salinity, oxygen tension, intertidal exposure).

MARN 5013 - Marine Systems Ecology

Effects of biotic and abiotic parameters on the structure and function of marine ecosystems. Techniques for the analysis of energetics, nutrient cycles, and trophic characteristics in both theoretical and applied problems. Field trips are required.

MARN 5014 - Marine Phytoplankton Ecology and Physiology

The physiology of marine phytoplankton, environmental factors affecting their growth and photosynthesis in the ocean, the oceanographic processes responsible for the temporal and spatial distributions of phytoplankton biomass and production, and current topics in phytoplankton research.

MARN 5015 - Molecular Approach to Biol. Ocean

Principles and technology in nucleic acid purification and manipulation, DNA fingerprinting, gene cloning and sequencing, phylogenetic analysis, and detection of gene expression (mRNA and protein). Application examples in marine ecological studies.

MARN 5016 - Marine Zooplankton

Bioenergetics, life history, population and community ecology of zooplankton, and role of zooplankton in aquatic biogeochemical cycles.

Prerequisite: EEB 2244 or EEB 2245 or MARN 5010 (RG371).

MARN 5017 - Plankton Ecology

Recommended preparation: The equivalent of one year of biology, chemistry and physics course, or consent of instructor.

MARN 5020 - Marine Bioorganic Chemistry

Overview of the molecular basis of metabolic and bioenergetic pathways and processes with emphasis on life in the marine environment. Synthesis of marine natural products. Laboratory demonstrations of selected molecular and physiological techniques used in oceanography.

MARN 5030 - Chemical Oceanography

The role of the oceans in the major global

biogeochemical cycles of carbon, sulfur, nutrients, gases and trace elements. Studies include reaction rates, chemical speciation, equilibria, solubility, oxidation-reduction, absorption, complexation and their effects on the composition of sea water and the transfer of substances at the Earth's surface.

MARN 5031 - Aqueous Geochemistry

Application of chemical theory (thermodynamic equilibrium approaches and kinetics) to understanding the geochemistry of the Earth's aqueous systems, with a focus on the ocean and coastal ecosystems.

MARN 5032 - Coastal Pollution and Bioremediation

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.

MARN 5033 - Marine and Atmospheric Processes of Global Change

Fundamentals of marine and atmospheric processes in global biogeochemistry. Evaluation of atmospheric, biological and chemical processes that contribute to global change.

MARN 5036 - Marine Biogeochemistry

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.

MARN 5050 - Marine Geology

Relationships between physical and chemical processes and the occurrences and distribution of rock types and compositions in the oceanic environment.

MARN 5051 - Radiotracer Applications in Natural Systems

Applications of radiotracers in the environment for environmental engineers, environmental scientists, geologists, hydrologists and oceanographers. Use of radionuclides in the interpretation and quantification of aqueous transport processes. The interaction of geochemistry, mass transport and flux balances in Earth, ocean and environmental systems.

MARN 5060 - Dynamic Physical Oceanography

Global energy balance. General circulation in the oceans and atmosphere. Thermodynamics and stability. Fundamental fluid mechanics. Surface gravity waves. Geophysical fluid mechanics. Tides and other long waves. Theories of global circulation.

MARN 5061 - Advanced Dynamical Oceanography

Ocean thermodynamics; dynamics of rotating; homogeneous fluids; ocean circulation; western boundary currents; the thermocline, oceanic fronts.

Prerequisite: MARN 5060 (RG373).

MARN 5062 - Sediment Transport

The mechanics of sediment transport with particular emphasis on the processes governing transport in coastal and estuarine areas. Initiation of motion for cohesive and noncohesive materials, bed and suspended load transport, bed forms, sediment-flow interactions, modeling considerations.

MARN 5063 - Estuarine Circulation

The physical characteristics of estuaries, river and tidal interactions, turbulence and mixing, salt balance, circulation dynamics, mass transport and flushing, modeling considerations.

Prerequisite: MARN 5060 (RG373).

MARN 5064 - Ocean Waves

General methods of wave analysis; surface gravity waves; tidal wave dynamics; internal waves and tides; planetary, edge and topographic Rossby waves.

Prerequisite: MARN 5060 (RG373).

MARN 5065 - Physical Oceanography

Overview of physical properties and dynamics influencing the oceans and coastal waters. Descriptions of global water property distributions, surface mixed layer, pycnocline, surface heat fluxes, and major ocean currents. Introduction to dynamics of ocean circulation, waves, tides, and coastal circulation.

MARN 5830 - Seminar in Chemical Oceanography

Readings and discussions of current literature in chemical oceanography. For graduate and advanced students in oceanography or related fields.

MARN 5893 - Research

Conferences and laboratory work covering selected fields of marine sciences.

MARN 5895 - Independent Study

A reading course for those wishing to pursue special work in marine sciences. It may also be elected by undergraduate students preparing to be candidates for degrees with distinction. Designate the field of special interest by use of the appropriate section symbol.

MARN 5898 - Special Topics in Marine Sciences

MARN 6001 - Mathematical Models in Marine Sciences

Examples of the formulation of quantitative models of marine systems with a review of some particularly useful mathematical methods (differential equations, operational methods, numerical solution techniques), emphasizing the computation of predictions.

Prerequisite: 9 graduate credits in Marine

Science (RG374).

MARN 6002 - Mathematical Models in Marine Sciences: Practicum

Individual term projects relating to mathematical modeling in the marine sciences.

†GRAD 5930. Full-Time Directed Studies (Master's Level) (GRAD 397) 3 credits.

†GRAD 5950. Master's Thesis Research (GRAD 395) 1 - 9 credits.

†GRAD 5960. Full-Time Master's Research (GRAD 396) 3 credits.

GRAD 5998. Special Readings (Master's) (GRAD 398) Non-credit.

GRAD 5999. Thesis Preparation (GRAD 399) Non-credit.

†GRAD 6930. Full-Time Directed Studies (Doctoral Level) (GRAD 497) 3 credits.

†GRAD 6950. Doctoral Dissertation Research (GRAD 495) 1 - 9 credits.

†GRAD 6960. Full-Time Doctoral Research (GRAD 496) 3 credits.

GRAD 6998. Special Readings (Doctoral) (GRAD 498) Non-credit.

GRAD 6999. Dissertation Preparation (GRAD 499) Non-credit.

Materials Science

*****

Director
Professor Harris L. Marcus

Associate Director
Professor Fotios Papadimitrakopoulos

Distinguished Professors
Brody, Stwalley, Suib, and Weiss

Professors
Aindow, Braswell, Coughlin, Cutlip, Goldberg, F. Jain, Kattamis, Kessel, L. Shaw, M. Shaw and Sung

Associate Professors
Adamson, Alpay, Asandei, Burkhard, Dobrynin, Parnas, Rossetti, Seery, Sotzing, Wei and Zhu

Assistant Professors
Gao, Hebert, Huey, M. Jain, Kasi Lin, Ramprasad, and Wang

Research Professors
Boggs, Gell, and Scola

Assistant Research Professor
Smirnova

Work leading to the degrees of Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) is offered in the interdisciplinary field of Materials Science through the Departments of Chemical, Materials and Biomolecular Engineering, Chemistry, Electrical and Computer Engineering and Physics, as well as departments in the biological sciences.

The M.S. Program

There are no special requirements for admission to the master's program beyond those of the Graduate School. Selection of Plan A (thesis) or Plan B (non-thesis) is made after consultation with the advisory committee.

The Ph.D. Program

Admission to the doctoral program is based upon a careful assessment of the student's potential for creative research in materials science. There no special requirements for the doctoral program beyond those of the Graduate School.

Special Facilities

The Institute of Materials Science, organized in 1965, aids in the development and coordination of the graduate programs in materials science. In addition to the laboratories of the participating academic departments, the Institute provides special laboratories for alloy chemistry, optical studies, magnetic susceptibility, electron paramagnetic resonance, nuclear magnetic resonance, ion implantation, microprobe analyses, atomic force microscopies, electron microscopy, crystal growth, mechanical properties, optical microscopy, metallography, solidification, chromatography, low-temperature studies, X-ray diffraction, soft X-ray spectroscopy, surface studies, surface modification, ultrasonics, IR, UV, and VUV spectroscopy, nanotechnology, and polymer research. A multi-million-dollar building houses these and additional laboratories and facilities designed for graduate research in the materials sciences.

Extensive capability for computational materials science is available within the Institute of Materials Science and other University facilities.

Areas of concentration within the Materials Science field of study are offered in Alloy Science, Biomaterials, Corrosion Science, Crystal Science, Dental Materials, Metallurgy, and Polymer Science.

*Note: Course offerings are listed under the Departments referred to above.

Materials Science And Engineering

*****

Department Head
Professor Douglas Cooper

Program Director
Professor S. Pamir Alpay

Distinguished Professor
Brody

Professors
Aindow, Carter, Goldberg, Huang, Jordan, Kattamis, Marcus, Maric, Parnas, Potter, Shaw, Singh, and Wei

Associate Professors
Gao, Hebert, Huey, Nakhmanson, Ramprasad, Rossetti, and Willis

Assistant Professors
Dongare, Jain, Khan, Kuhn, Kumbar, McCutcheon, Nair, and Nukavarapu

Research Professor
Gell

Research Associate Professor
Molter

The goal of the graduate program in Materials Science and Engineering (MSE), through its coursework and research programs, is to provide students with a comprehensive understanding of modern materials and to prepare for positions of leadership in engineering, research and development. Graduate instruction is offered which leads to the degrees of Master of Science (M.S.) and Doctor of Philosophy (Ph.D.).

Emphasis is placed on the relationships between the structure and properties of engineering materials, thermodynamics of materials, phase equilibria, mechanical behavior, electronic behavior and microstructural characterization. The main aspects of these subjects are covered in 4 designated core courses (see the descriptions for courses MSE 5301, 5309, 5322, and 5334 below) offered by the Department of Chemical, Materials and Biomolecular Engineering. Several other departments in the University offer courses in related disciplines, and students are encouraged to include one or more of these courses in their plans of study.

Requirements for the M.S.

There are no special requirements for the admission to the master's program beyond those of the Graduate School. Selection of Plan A (thesis) or Plan B (course work) is made after consultation with the advisory committee. For Plan A, the student must successfully complete 5 graduate courses (15 credits), maintaining a GPA of 3.0 or above. At least 4 of these courses must be MSE courses. The student must also complete at least 9 credits of Master's Thesis Research (GRAD 5950). For Plan B, The student must successfully complete at least 8 graduate courses (24 credits), maintaining a GPA of 3.0 or above. At least 6 of these courses (18 credits) must be MSE courses.

Requirements for the Ph.D.

Admission to the doctoral program is based upon a careful assessment of the student's potential for creative research in materials science and engineering. Applicants for this program will normally have first completed an outstanding master's degree program. Students are required to complete all 4 of the graduate core courses as part of their coursework requirements, maintain a minimum GPA of 3.0 in these courses and to pass a General Examination.

Special Facilities

The MSE Program is housed within the Institute of Materials Science. A comprehensive range of modern research equipment is available, including facilities for melting and casting of alloys, mechanical processing and heat treating, mechanical testing, electrical testing, processing and testing of ceramics and composites, transmission electron microscopes, scanning electron microscopes, x-ray diffraction apparatus, surface analysis equipment, thermal analysis equipment, and extensive spectrometry facilities (nuclear magnetic resonance, infra-red / Raman and ultra-violet).

Courses

MSE 5301 - Thermodynamics of Materials
Classical thermodynamics with emphasis on solutions and phase equilibria. Applications to unary and multicomponent, reacting and nonreacting, homogeneous and heterogeneous systems, including development of phase diagrams.

MSE 5303 - Diffusion In Solids
Laws of Diffusion for binary and multicomponent systems, as well as for single and multi-phase systems. Diffusivity measurements and prediction. Modeling of interdiffusion with regard to diffusion couples, high temperature coatings, and gas-solid reactions using equation-solving and finite-difference software.
Prerequisite: MSE 5301 (RG425).

MSE 5305 - Phase Transformations in Solids
Thermodynamics, kinetics and crystallography of phase transformations. Nucleation and growth kinetics. Order-disorder, ferroelectric, and ferromagnetic transformations.

MSE 5307 - Solidification of Metals and Alloys
Thermodynamic and kinetic principles of solidification. Control of structure and properties of pure and multicomponent materials through casting and solidification processes. Application of solidification principles to shaped casting, continuous casting, crystal growth and particulate processes.
Prerequisite: MSE 5301 (RG425).

MSE 5308 - Plasticity of Solids
Basic concepts of dislocations and other defects; relationship between basic deformation, thermal processes, and observable macroscopic properties. Strengthening mechanisms, e.g., solid solution hardening, dispersion hardening, and work hardening.

MSE 5309 - Transport Phenomena in Materials Science and Engineering
Mechanisms and quantitative treatment of mass, energy, and momentum transfer will be discussed in the context of materials science and engineering applications. Increasingly complex and open-ended applications will be used to illustrate principles of fluid flow; heat conduction, radiation, and diffusion.

MSE 5310 - Modeling Materials
This course is intended to provide an overview of the theory and practices underlying modern electronic structure materials computations, primarily density functional theory (DFT). Students in-volved primarily/partially in materials computations, as well as those focused on experimental materials research wishing to learn about DFT techniques will benefit from this course.

MSE 5311 - Mechanical Properties of Materials
Mechanics of deformation and fracture; dislocation theory; strength of ductile and brittle materials; toughness; strengthening mechanisms; toughening mechanisms;

creep mechanisms; fatigue crack initiation and propagation; reliability and lifetime prediction.

MSE 5313 - Theory of the Solid State
Modern theory of metals. Review of quantum theory, elementary wave mechanics, the free electron theory of metals, and the elementary band theory of solids. Crystallography, specific heat, dielectrics, magnetism, electrical conductivity.

MSE 5316 - Fracture and Fatigue of Materials
Ductile and brittle fracture, fatigue, stress corrosion, and creep rupture. Failure analysis.

MSE 5317 - Electronic and Magnetic Properties of Materials
Crystal structures and interatomic forces, lattice vibrations, thermal, acoustic, and optical properties. Semiconductors, dielectric properties, magnetism, and magnetic properties, superconductivity. Device applications.

MSE 5320 - Investigation of Special Topics
Special courses or individual readings.

MSE 5322 - Materials Characterization
A review of the principal experimental methods used to reveal the microstructure and chemistry of materials. Diffraction techniques: x-ray, electron, neutron and proton scattering. Photon probes: photon microscopies, x-ray topography and XPS. Electron probes: SEM, TEM, EDX, EELS, AES. Atom and ion probes: RBS, SIMS, FIM, PIXE. Scanned probe microscopies.

MSE 5323 - Transmission Electron Microscopy
Electron beam-specimen interactions. Basics of electron microscopes. Diffraction: theory, types of patterns and interpretation. Imaging: diffraction contrast, phase contrast and other techniques. Spectrometry: x-ray microanalysis and electron energy-loss spectrometry.
Prerequisite: MSE 5322 or consent of instructor (RG426).

MSE 5325 - Equilibrium Relationships in Multi-Phase Systems
Thermodynamics of phase equilibria and phase diagram prediction for binary, ternary and n-component systems. Interpretation of phase diagram sections and projections. Application of multicomponent phase diagrams to alloy and process design..
Prerequisite: MSE 5301 (RG425).

MSE 5334 - Structure and Defects in Materials
Structure of amorphous and vitreous materials. Crystallography: translation symmetry and lattices, point and space groups, use of the International Tables for Crystallography, examples of simple crystal structures. Defects in materials: point defects, line defects, planar defects, homophase and heterophase interfaces. Distributions of structure and defects: an introductoin to microstructure.

MSE 5335 - High Temperature Materials
Strength-determining factors in advanced alloys, ceramics and composites. Role of material chemistry and microstructure. High temperature creep and crack growth. Oxidation. Thermomechanical behavior.

MSE 5337 - Materials Processing
Principles of powder preparation. Colloidal processing. Powder characterization. Consolidation and sintering of metals and ceramics. Microstructural evolution. Composites and coatings processing. Structure-property relations.

MSE 5343 - Corrosion
Mechanisms, characteristics and types of corrosion. Test methods and evaluation of corrosion resistance. Suitability of metals, ceramics, and organic materials in corrosive environments. Oxidation and other high temperature gas-metal reactions.

MSE 5345 - Theory of Electrochemical Processes
Theory and measurement of irreversible electrochemical processes at metal electrolyte interfaces. Mixed potential theory. Mass transport phenomena. Apparatus, techniques, and interpretation of experimental measurements. Applications to metallographic etching, phase extraction and electroanalytical techniques. Scientific development of corrosion-resistant alloys.

MSE 5364 - Advanced Composites
Mechanical properties, analysis and modeling of composite materials. The properties treated include stiffness, strength, fracture toughness, fatigue strength and creep resistance as they relate to fiber, whisker, particulate, and laminated composites.

MSE 5366 - Alloy Casting Processes
Principles and practices of alloy solidification and casting processes are discussed and applied in the context of sand, investment, permanent mold and die casting; continuous and direct chill casting; electroslag and vacuum arc remelting; crystal growth; rapid solidification; and laser coating.

MSE 5700 - Biomaterials and Tissue Engineering
A broad introduction to the field of biomaterials and tissue engineering. Presents basic principles of biological, medical, and material science as applied to implantable medical devices, drug delivery systems and artificial organs. Not open to students who have passed BME 4710. Also offered as BME 5700.
Prerequisite: Antipre BME 4710

MSE 6401 - Graduate Seminars in Materials Science and Engineering
Presentations by invited guest speakers on topics of current interest in various areas of Materials Science and Engineering. Students in this course receive a grade of S (Satisfactory) or U (Unsatisfactory).

†GRAD 5930. Full-Time Directed Studies (Master's Level) (GRAD 397) 3 credits.

†GRAD 5950. Master's Thesis Research (GRAD 395) 1 - 9 credits.

†GRAD 5960. Full-Time Master's Research (GRAD 396) 3 credits.

GRAD 5998. Special Readings (Master's) (GRAD 398) Non-credit.

GRAD 5999. Thesis Preparation (GRAD 399) Non-credit.

†GRAD 6930. Full-Time Directed Studies (Doctoral Level) (GRAD 497) 3 credits.

†GRAD 6950. Doctoral Dissertation Research (GRAD 495) 1 - 9 credits.

†GRAD 6960. Full-Time Doctoral Research (GRAD 496) 3 credits.

GRAD 6998. Special Readings (Doctoral) (GRAD 498) Non-credit.

GRAD 6999. Dissertation Preparation (GRAD 499) Non-credit.

Mathematics

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Interim Department Head:
Professor Jeffrey Tollefson

Director of Graduate Studies
Professor Ron Blei

Professors
Abikoff, R.F. Bass, Blei, Choi, DeFranco, Dey, Dunne, Giné-Masdeu, Glaz, Gui, Haas, Luh, Madych, McKenna, Nicholls, Olshevsky, Peters, Ravishanker, Teitelbaum, Tollefson, Turchin, Vadiveloo, Valdez, and Vitale

Associate Professors
Bridgeman, Conrad, Gordina, Hernandez, Lee, Leibowitz, Roby, Russell, Solomon, Teplyaev, Wang, and Yan

Assistant Professors
Bayer, Ben-Ari, Cardetti, Hering, Huber, Leykekhman, Lozano-Robledo, Rogers, and Schiffler

The Department of Mathematics offers graduate M.S. and Ph.D. degrees. In addition to graduate study in pure and applied mathematics, the Department also offers graduate study in actuarial science and financial mathematics. For admission requirements, which differ slightly for these options, write to the Department of Mathematics at gradadm.math@uconn.edu or see the website www.math.uconn.edu

The M.S. Program.

The Mathematics master's program permits a student to study pure and applied mathematics, including numerical methods, or actuarial science. A professional master's degree program in Applied Financial Mathematics is also offered. Some coursework can be taken in other departments if desired. The Department recommends that students select Plan B (without thesis). A sound undergraduate major in mathematics, including courses in modern algebra and advanced calculus, normally is required for entrance to the masters program. It is recommended that entering graduate students applying for financial aid take the GRE Subject Test in Mathematics. Further details concerning the M.S. program may be obtained by writing directly to the Department of Mathematics at gradm.math@uconn.edu or by visiting the website www.math.uconn.edu

The Ph.D. Program.

Advanced study at the Ph.D. level is offered in the areas of Actuarial Science, Algebra and Number Theory, Algebraic Geometry, Analysis, Applied Mathematics, Geometry and Topology, Mathematical Logic, Mathematics Education, Numerical Analysis, Partial Differential Equations, and Probability Theory. Students are admitted to the Ph.D. program only after demonstrating ability and evidence of special aptitude for research in mathematics in their prior work. Although no specified number of course credits is required for the Ph.D., usually at least 24 credits of coursework beyond the masters level is considered necessary. Students must satisfy the doctoral foreign language requirement of the Graduate School. Doctoral students also are expected to possess computer skills necessary for mathematics research. During the first two to three years of the students coursework, comprehensive examinations covering the major areas of mathematics must be passed. The Ph.D. dissertation contains results of original research in mathematics and makes a substantial contribution to the field. A student normally writes a dissertation in an area in which the Department has faculty actively engaged in research: actuarial science, algebraic geometry, analysis on fractals, approximation theory, combinatorics, commutative ring theory, complex analysis, differential geometry, discrete groups, Fourier analysis, functional analysis, harmonic analysis, homological algebra, inverse problems, logic and computability theory, low-dimensional topology, mathematical physics, mathematical biology, mathematics education, matrix theory, number theory, numerical analysis, numerical linear algebra, ordinary and partial differential equations, probability theory and stochastic analysis, representation theory, Riemann surfaces, tomography and wavelet theory. Further details concerning the Ph.D. program and faculty research interests may be obtained by writing directly to the Department of Mathematics at gradm.math@uconn.edu or by visiting the website www.math.uconn.edu

Special Facilities.

The Homer Babbidge Library has extensive holdings of mathematics books and journals. A weekly colloquium featuring visiting lecturers as well as several area-specific seminars are conducted during the academic year. Moreover, because of the easy access to colloquia and seminars at nearby institutions, there is a good potential for scholarly interaction.

Courses

MATH 5000 - Mathematical Pedagogy

The theory and practice of teaching mathematics at the college level. Basic skills, grading methods, cooperative learning, active learning, use of technology, classroom problems, history of learning theory, reflective practice. Open to graduate students in Mathematics, others with consent of instructor. May not be used to satisfy degree requirements in mathematics.

MATH 5010 - Topics in Analysis I

Advanced topics in analysis. With a change of content, this course is repeatable to a maximum of twelve credits.

MATH 5011 - Topics in Analysis II

Advanced topics in analysis. With a change of content, this course is repeatable to a maximum of twelve credits.

Prerequisite: MATH 5010 (RG385).

MATH 5016 - Topics in Probability

Advanced topics in probability theory, theory of random processes, mathematical statistics, and related fields. With a change of content, this course is repeatable to a maximum of twelve credits.

MATH 5020 - Topics in Algebra

Advanced topics chosen from group theory, ring theory, number theory, Lie theory, combinatorics, commutative algebra, algebraic geometry, homological algebra, and representation theory.

Prerequisite: MATH 5211.

MATH 5026 - Topics in Mathematical Logic

Topics include, but are not restricted to, Computability Theory, Model Theory, and Set Theory.

Prerequisite: MATH 5260

MATH 5030 - Topics in Geometry and Topology I

Advanced topics in Geometry and Topology. With a change of content, this course is repeatable to a maximum of twelve credits.

MATH 5031 - Topics in Geometry and Topology II

Advanced topics in Geometry and Topology. With a change of content, this course is repeatable to a maximum of twelve credits.

Prerequisite: 5030

MATH 5040 - Topics in Applied Analysis I

Advanced topics from the theory of ordinary or partial differential equations. Other possible topics: integral equations, optimization theory, the calculus of variations, advanced approximation theory.

MATH 5041 - Topics in Applied Analysis II

Advanced topics from the theory of ordinary or partial differential equations. Other possible topics: integral equations, optimization theory, the calculus of variations, advanced approximation theory.

MATH 5046 - Introduction to Complex Variables

Functions of a complex variable, integration in the complex plane, conformal mapping. Not open to students who have passed MATH 3146. Open for master's credit but not doctoral credit toward degree in Mathematics.

Prerequisite: Antipre MATH 3146

MATH 5050 - Analysis

Introduction to the theory of functions of a real variable. Not open to students who have passed MATH 3150. Open for masters credit but not doctoral credit toward degree in Mathematics.

Prerequisite: Antipre MATH 3150

MATH 5070 - Topics in Scientific Computation

MATH 5110 - Introduction to Modern Analysis

Metric spaces, sequences and series, continuity, differentiation, the Riemann-Stielties integral, functions of several variables.

MATH 5111 - Measure and Integration

General theory of measure and Lebesgue integration, L^p-spaces.

Prerequisite: MATH 5110

MATH 5120 - Complex Function Theory I

An introduction to the theory of analytic functions, with emphasis on modern points of view.

Prerequisite: MATH 5110

MATH 5121 - Topics in Complex Function Theory

Advanced topics of contemporary interest. These include Riemann surfaces, Kleinian groups, entire functions, conformal mapping, several complex variables, and automorphic functions, among others. May be repeated for credit with a change in content and consent of the instructor.

Prerequisite: MATH 5120

MATH 5130 - Functional Analysis I

Normed linear spaces and algebras, the theory of linear operators, spectral analysis.

Prerequisite: MATH 5111

MATH 5131 - Functional Analysis II

Normed linear spaces and algebras, the theory of linear operators, spectral analysis. With a change of content, this course is repeatable to a maximum of

Prerequisite: MATH 5111

MATH 5140 - Fourier Analysis

Foundations of harmonic analysis developed through the study of Fourier series and Fourier transforms.

Prerequisite: MATH 5111

MATH 5141 - Fourier Analysis on Groups

Prerequisite: MATH 5111

MATH 5160 - Probability Theory and Stochastic Processes I

Convergence of random variables and their probability laws, maximal inequalities, series of independent random variables and laws of large numbers, central limit theorems, martingales, Brownian motion.

Prerequisite: MATH 5111

MATH 5161 - Probability Theory and Stochastic Processes II

Contemporary theory of stochastic processes, including stopping times, stochastic integration, stochastic differential equations and Markov processes, Gaussian processes, and empirical and related processes with applications in asymptotic statistics.

Prerequisite: MATH 5160

MATH 5210 - Abstract Algebra I

Group theory, ring theory and modules, and universal mapping properties.

MATH 5211 - Abstract Algebra II

Linear and multilinear algebra, Galois theory, category theory, and commutative algebra.

Prerequisite: MATH 5210 (RG380).

MATH 5220 - Introduction to Representation Theory

Semi-simple rings, Jacobson radical, density theory, Wedderburn's Theorem, representations and characters of groups, orthogonality relations, Burnside's theorem.

Prerequisite: MATH 5210 (RG380).

MATH 5230 - Algebraic Number Theory

Algebraic integers, ideal class group, ramification, Frobenius elements in Galois groups, Dirichlet's unit theorem, localization, and completion. Further topics (zeta-functions, function fields, non-maximal orders) as time permits.

Prerequisite: MATH 5211.

MATH 5250 - Modern Matrix Theory and Linear Algebra

The LU, QR, symmetric, polar, and singular value matrix decompositions. Schur and Jordan normal forms. Symmetric, positive-definite, normal and unitary matrices. Perron-Frobenius theory and graph criteria in the theory of non-negative matrices.

MATH 5260 - Mathematical Logic I

Predicate calculus, completeness, compactness, Lowenheim-Skolem theorems, formal theories with applications to algebra, Godel's incompleteness theorem. Further topics chosen from: axiomatic set theory, model theory, recursion theory, computational complexity, automata theory and formal languages.

Prerequisite: MATH 5210 (RG380).

MATH 5310 - Introduction to Geometry and Topology I

Topological spaces, maps, induced topologies, separation axioms, compactness, connectedness, classification of surfaces, the fundamental group and its applications, covering spaces.

Prerequisite: MATH 5110, which may be taken concurrently.

MATH 5311 - Introduction to Geometry and Topology II

Smooth manifolds, vector fields, differential forms, de Rham cohomology, homology theory, singular (co)homology, Poincaré duality. With a change of content, this course is repeatable to a maximum of twelve credits.

Prerequisite: MATH 5310

MATH 5320 - Algebraic Geometry I

This course is an introduction to algebraic varieties: affine and projective varieties, dimension of varieties and subvarieties, algebraic curves, singular points, divisors and line bundles, differentials, intersections.

Prerequisite: MATH 5211 and MATH 5310, which may be taken concurrently (RG393).

MATH 5321 - Algebraic Geometry II

This course introduces further concepts and methods of modern algebraic geometry, including schemes and cohomology.

Prerequisite: MATH 5320 (RG394).

MATH 5360 - Differential Geometry

This course is an introduction to the study of differentiable manifolds on which various differential and integral calculi are developed. The topics include covariant derivatives and connections, geodesics and exponential map, Riemannian metrics, curvature tensor, Ricci and scalar curvature.

MATH 5410 - Introduction to Applied Mathematics I

Banach spaces, linear operator theory and application to differential equations, nonlinear operators, compact sets on Banach spaces, the adjoint operator on Hilbert space, linear compact operators, Fredholm alternative, fixed point theorems and application to differential equations, spectral theory, distributions.

MATH 5411 - Introduction to Applied Mathematics II

Banach spaces, linear operator theory and application to differential equations, nonlinear operators, compact sets on Banach spaces, the adjoint operator on Hilbert space, linear compact operators, Fredholm alternative, fixed point theorems and application to differential equations, spectral theory, distributions.

MATH 5420 - Ordinary Differential Equations

Existence and uniqueness of solutions, stability and asymptotic behavior. If time permits: eigenvalue problems, dynamical systems, existence and stability of periodic solutions.

Prerequisite: MATH 5111 (RG382).

MATH 5430 - Applied Analysis

Convergence of Fourier Series, Legendre and Hermite polynomials, existence and uniqueness theorems, two-point boundary value problems and Green's functions. Not open for graduate credit toward degrees in Mathematics.

Prerequisite: Not open to students who have passed MATH 3430. May not be used for credit for Mathematics graduate degrees (RG608).

MATH 5435 - Introduction to Partial Differential Equations

Solution of first and second order partial differential equations with applications to engineering and science. Not open to students who have passed MATH 3435. Not open for graduate credit toward degrees in Mathematics.

MATH 5440 - Partial Differential Equations

Cauchy Kowalewsky Theorem, classification of second-order equations, systems of hyperbolic equations, the wave equation, the potential equation, the heat equation in Rn.

Prerequisite: MATH 5120 (RG384).

MATH 5510 - Numerical Analysis and Approximation Theory I

The study of convergence, numerical stability, roundoff error, and discretization error arising from the approximation of differential and integral operators.

Prerequisite: MATH 5110, which may be taken concurrently.

MATH 5511 - Numerical Analysis and Approximation Theory II

The study of convergence, numerical stability, roundoff error, and discretization error arising from the approximation of differential and integral operators.

Prerequisite: MATH 5510 (RG379).

MATH 5520 - Finite Element Solution

Methods I

Numerical solution of elliptic, parabolic and hyperbolic partial differential equations by finite element solution methods. Applications.

MATH 5521 - Finite Element Solution Methods II

Numerical solution of elliptic, parabolic and hyperbolic partial differential equations by finite element solution methods. Applications.

Prerequisite: MATH 5520 (RG389).

MATH 5530 - Mathematical Modeling

Development of mathematical models emphasizing linear algebra, differential equations, graph theory and probability. In-depth study of the model to derive information about phenomena in applied work.

MATH 5540 - Computerized Modeling in Science

Development and computer-assisted analysis of mathematical models in chemistry, physics, and engineering. Topics include chemical equilibrium, reaction rates, particle scattering, vibrating systems, least squares analysis, quantum chemistry and physics.

MATH 5580 - Optimization

Theory of linear programming: convexity, bases, simplex method, dual and integer programming, assignment, transportation, and flow problems. Theory of nonlinear programming: unconstrained local optimization, Lagrange multipliers, Kuhn-Tucker conditions, computational algorithms. Concrete applications.

MATH 5620 - Financial Mathematics I

The mathematics of measurement of interest, accumulation and discount, present value, annuities, loans, bonds, and other securities.

Prerequisite: Not open to students who have passed MATH 2620 (RG606).

MATH 5621 - Financial Mathematics II

The continuation of MATH 5620. Theory and practice of mathematical models applied to corporate finance. Satisfies the Society of Actuaries' learning objectives for Validation by Educational Experience for Corporate Finance.

Prerequisite: Not open to students who have passed MATH 3650 (RG2754).

MATH 5630 - Actuarial Mathematics I

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.

Prerequisite: MATH 2620 or MATH 5620, which may be taken concurrently. Not open to students who have passed MATH 3630 (RG397).

MATH 5631 - Actuarial Mathematics II

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.

Prerequisite: MATH 5630. Not open to students who have passed MATH 3631 (RG398).

MATH 5633 - Survival Models

Analysis, estimation, and validation of lifetime tables.

Prerequisite: MATH 5630 or STAT 3445 (RG399).

MATH 5635 - Introduction to Operations Research

Introduction to the use of mathematical and statistical techniques to solve a wide variety of organizational problems. Topics include linear programming, project scheduling, queuing theory, decision analysis, dynamic and integer programming and computer simulation.

Prerequisite: Not open to students who have passed MATH 4735, STAT 4535, or STAT 5535 (RG607).

MATH 5637 - Risk Theory

Individual risk theory, distribution theory, ruin theory, stoploss, reinsurance and Monte Carlo methods. Emphasis is on problems in insurance.

MATH 5640 - Advanced Topics in Actuarial Mathematics I

Survival models, mathematical graduation, or demography.

MATH 5641 - Advanced Topics in Actuarial Mathematics II

Credibility theory or advanced theory of interest.

MATH 5660 - Advanced Financial Mathematics

An introduction to the standard models of modern financial mathematics including martingales, the binomial asset pricing model, Brownian motion, stochastic integrals, stochastic differential equations, continuous time financial models,

MATH 5710 - Tensor Calculus I

An introduction to tensor algebra and tensor calculus with applications chosen from the fields of the physical sciences and mathematics.

MATH 5711 - Tensor Calculus II

An introduction to tensor algebra and tensor calculus with applications chosen from the fields of the physical sciences and mathematics.

Prerequisite: MATH 5710 (RG390).

MATH 5720 - Vector Field Theory I

Vector algebra and vector calculus with particular emphasis on invariance. Classification of vector fields. Solution of the partial differential equations of field theory.

MATH 5721 - Vector Field Theory II

Vector algebra and vector calculus with particular emphasis on invariance. Classification of vector fields. Solution of the partial differential equations of field theory.

Prerequisite: MATH 5720 (RG396).

MATH 5800 - Investigation of Special Topics

Students who have well defined mathematical problems worthy of investigation and advanced reading should submit to the department a semester work plan.

MATH 5850 - Graduate Field Study Internship

Participation in internship and paper describing experiences.

MATH 6000 - Seminar in Current Mathematical Literature

Participation and presentation of mathematical papers in joint student faculty seminars. Variable topics.

MATH 6010 - Seminar in Analysis

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

MATH 6020 - Seminar in Algebra

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

Prerequisite: MATH 5211.

MATH 6026 - Seminar in Mathematical Logic

Prerequisite: MATH 5260 (RG3453).

MATH 6027 - Seminar in Set Theory

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

Prerequisite: MATH 5310 (RG402).

MATH 6030 - Seminar in Topology

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

Prerequisite: MATH 5321 (RG401).

MATH 6036 - Seminar in Geometry

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

Prerequisite: MATH 5360 (RG400).

MATH 6040 - Seminar in Applied Mathematics

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

MATH 6060 - Computers in Mathematical Research

†GRAD 5930. Full-Time Directed Studies (Master's Level) (GRAD 397) 3 credits.

†GRAD 5950. Master's Thesis Research (GRAD 395) 1 - 9 credits.

†GRAD 5960. Full-Time Master's Research (GRAD 396) 3 credits.

GRAD 5998. Special Readings (Master's) (GRAD 398) Non-credit.

GRAD 5999. Thesis Preparation (GRAD 399) Non-credit.

†GRAD 6930. Full-Time Directed Studies (Doctoral Level) (GRAD 497) 3 credits.

†GRAD 6950. Doctoral Dissertation Research (GRAD 495) 1 - 9 credits.

†GRAD 6960. Full-Time Doctoral Research (GRAD 496) 3 credits.

GRAD 6998. Special Readings (Doctoral) (GRAD 498) Non-credit.

GRAD 6999. Dissertation Preparation (GRAD 499) Non-credit.

Mechanical Engineering

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Department Head
Professor Baki Cetegen

Professors
Chiu, Choi, Faghri, Gao, Huang, Jordan, Kazerounian, Olgac, Sung, and Zhang

Professor in Residence
Barber, Cassenti

Associate Professors
Bzymek, Fan, Ilies, Murphy, Pasaogullari, Renfro, Sun, and Tang

Associate Professor in Residence:
Kumar

Assistant Professors
Cao, Lee, Lu, Lykotrafitis, Ren, and Zorluntuna

The Department of Mechanical Engineering offers study leading to the degree of Master of Science (Plans A and B) and Doctor of Philosophy in mechanical engineering. It also cooperates with other departments to provide doctoral study in other areas (see "Applied Mechanics," "Biomedical Engineering," and "Fluid Dynamics"). Non-degree students may register for courses in the Department of Mechanical Engineering with the approval of the department head. Financial support in the form of graduate teaching or research assistantships is offered to our top full-time graduate students on a competitive basis.

Masters and Doctoral Programs

Students working toward the M.S. and Ph.D. degrees in mechanical engineering may choose, in consultation with their advisory committee, from a wide selection of courses in this and other departments. Doctoral students are required to take a qualifying examination early in the program. Guidelines for course selection and the department's requirements for the Masters and Ph.D. degrees are explained in the Mechanical Engineering Graduate Handbook, <http://www.engr. uconn.edu/me/cms/prod/pdf/GraduateHandbook.pdf>.

The research and course offerings in the Systems and Mechanics area focus on new applications of the fundamental principles in the areas such as mechanics of materials, mechanical system dynamics and control, fuel cells, nonlinear dynamics and vibration, stability, automation, computer-aided design, kinematics, manufacturing, optimization, and nano structured materials and coatings.

The research and course offerings in the Thermofluids area include classical and statistical theories of thermodynamics, studies of conduction, convection, and radiation, compressible flow, advanced fluid dynamics, turbulence, multiphase heat transfer and fluid flow, and combustion. Engineering applications of the fundamental principles to many systems, processes, and devices, such as gas turbines, thermal manufacturing, fuel cells, micro- and nanoscale systems, and combustion, are treated.

For the latest on the faculty profiles and the research activities, visit the Department's website, http://www.engr.uconn.edu/me.

Facilities

The laboratories of the Department of Mechanical Engineering are equipped with several major facilities as well as ancillary equipment. A list of Mechanical Engineering laboratories and facilities may be found at the Department website, <http://www.engr.uconn.edu/me>.

Courses

ME 5105 - Basic Concepts of Continuum Mechanics
An introductory course in the theory of continuum mechanics. Development of physical principles using cartesian tensors. Concepts of stress, strain and motion. Basic field equation for the Newtonian fluid and the elastic solid.

ME 5110 - Advanced Thermodynamics
Microscopic view of thermodynamics: probability and statistics of independent events, thermodynamic probabilities and most probable thermodynamic distributions, molecular structure and partition function, Ensemble of microstates describing macroscopic behavior, with ideal gas as an example, Macroscopic descriptions of thermodynamic equilibrium and equilibrium states, Reversible processes, Heat and Work interactions, Mixtures of pure substances and chemical equilibrium, Stability and phase transitions, Irreversible thermodynamics, Onsager reciprocity relations and thermo-electric effects, Kinetic theory of gases.

ME 5120 - Advanced Thermo-Fluids I
Fluid as a continuum, Kinematics and decomposition of fluid motion, Conservation of mass and momentum, Navier-Stokes equations, Conservation of energy, Exact solutions to governing equations, Potential flows, Vorticity dynamics and low Reynolds number flows, Laminar boundary layers including heat transfer, Laminar free shear flows including heat transfer, Flow instabilities and transition.

ME 5130 - Advanced Heat and Mass Transfer
Review of thermophysical properties of matter including nanoscale effects. Exact and computational solutions of heat conduction equation. Dimensionless conduction rate approach for steady-state and transient conduction. Species diffusion equations with emphasis on stationary media and partitioning effects. Navier-Stokes equations and exact solutions for special cases. Correlation approach for treatment of single phase laminar, turbulent and two-phase flow. Radiative properties and treatment of surface radiation with spectral and directional effects. Emphasis on multimode heat transfer with applications in manufacturing, nanotechnology, information technology and biotechnology.

ME 5140 - Heat and Mass Transfer in Multiphase Systems
Presentation of basic principles for analysis of transport phenomena in multi-phase systems and how they can be applied to a wide variety of applications. The scope is limited to thermodynamics and heat and mass transfer fundamentals in solid <-> liquid, liquid <-> vapor and solid <-> vapor with emphasis in condensation, evaporation, sublimation, vapor deposition, boiling, two phase flow, melting and solidification.

ME 5150 - Analytical and Applied Kinematics
Analytical methods of coordinate transformation and two and three dimensional motion, analysis of relative motion and relative freedom through kinematics connections, study of finite and

instantaneous properties of motion, study of the geometry of single and multi-parameter engineering curves, surfaces and motions. Application in the analysis and design of linkages and mechanisms.

ME 5155 - Geometric Modeling
This course deals with the mathematical modeling, computer representations and algorithms for manipulating geometry on a computer. It focuses on the basic concepts of solid and geometric modeling from geometry and topology, and uses these concepts to develop computational techniques for creating, editing, rendering, analyzing and computing with models of physical objects, mechanical parts, assembly and processes.

ME 5160 - Theory and Design of Automatic Control Systems
Design features of a closed loop control system. Laplace domain analysis of electromechanical, pneumatic, hydraulic, thermal, and mechanical systems. Computer simulation of dynamic responses using software tools. Stability issues, Routh analysis, root locus, Bode and Nyquist analyses are addressed. An open-ended, hands-on design project from a current research topic is assigned.

ME 5180 - Dynamics
Three-dimensional particle and rigid-body mechanics. Particle kinematics. Newton's laws, energy and momentum principles. Systems of particles. Rigid body kinematics, coordinate transformations. Rigid body dynamics, Euler's equations. Gyroscopic motion. Lagrange's equations.

ME 5190 - Advanced Mechanics of Materials
This course covers the fundamental idealizations used in linear solid mechanics and the fundamental principles of the subject. Idealizations covered include beams, circular torsion, struts and thick cylinders. Basic principles include principle of minimum potential energy, principle of minimum complementary energy, virtual work, equations of static equilibrium and direct and potential methods of solving equilibrium equations. Example applications vary but may include, bounding of elastic properties of composites, derivation of finite elements, solution of plate problems by Green's functions and others.

ME 5210 - Intelligent Material Systems and Structures
Overview of piezoelectric materials and electrostrictive materials, shape memory alloys, magnetostrictive materials, and ER/MR fluids. Development of adaptive structure integrated with piezoelectric material, actuation and sensing, simultaneous optimal design/control of electromechanical integrated system, nonlinear and robust control. Design of shape memory alloy system for position control. Development of semi-active control using ER/MR fluids. Structural health monitoring and system identification research.

ME 5220 - Principles of Machining and Machine Tools
Theories and applications of machining. Fundamentals of machine tools and machining automation. Physics and mechanics in machining, machining forces and stresses, shear angle theories. Basic phenomena pertinent to process characteristics, such as tribology and tool life, machinability, surface integrity, and economics. Mechanisms of machining and machine tool errors. Machining error compensation with feedback sensors. Machining chatter and vibration analyses. Case studies.

ME 5301 - Macroscopic Equilibrium Thermodynamics I
Review of zeroth, first and second laws of thermodynamics, development of equilibrium thermodynamics from a postulatory viewpoint, examination of thermodynamic potentials and equilibrium states, stability of thermodynamic systems including implications on phase and chemical equilibrium. Thermodynamic availability analysis.

ME 5311 - Computational Methods of Viscous Fluid Dynamics
An advanced course on integral and finite-difference methods of solution of the parabolic and elliptic equations of viscous fluid flow. Method of weighted residuals; Crank-Nicolson; Dufort-Frankel; Peaceman-Rachford alternating direction method; truncation error analysis; stability. Applications to boundary layer and heat transfer problems. A background of FORTRAN programming and numerical analysis is necessary.

ME 5320 - Flow of Compressible Fluids I
Equations of motion of a compressible fluid. Quasi-one-dimensional flow including effects of friction, heat addition, and normal shocks. Two and three dimensional flows. Velocity potential and stream function. Small perturbation theory. Subsonic pressure correction formulas. Kelvin and Crocco Theorems. Method of characteristics for steady and unsteady, rotational and irrotational flows. Curved and oblique shock waves. Shock tube theory.

ME 5321 - Flow of Compressible Fluids II
Equations of motion of a compressible fluid. Quasi-one-dimensional flow including effects of friction, heat addition, and normal shocks. Two and three dimensional flows. Velocity potential and stream function. Small perturbation theory. Subsonic pressure correction formulas. Kelvin and Crocco Theorems. Method of characteristics for steady and unsteady, rotational and irrotational flows. Curved and oblique shock waves. Shock tube theory.
Prerequisite: ME 5320 (RG406).

ME 5340 - Conduction Heat Transfer
Mathematical development of the fundamental equations of heat conduction in the steady and unsteady state, with or without internal heat generation or absorption. Study of exact and approximate methods used in the solution of heat conduction boundary value problems. Analytical, graphical, numerical and experimental evaluation of the temperature field in conducting media.

ME 5341 - Radiation Heat Transfer
Fundamentals of radiative emission (black body behavior and Planck's law), surface properties (emissivity, absorptivity, reflectivity, and transmissivity), electromagnetic theory for prediciton of radiative properties, development of the methods of solution for radiant energy interchange between surfaces and in enclosures with and without absorbing, emitting, and scattering medi present.
Prerequisite: ME 5507 (RG407).

ME 5410 - Theory of Elasticity
The mathematical theory of linear elasticity. The theory of torsion of prismatic members. Two-dimensional elasticity problems. Thermal stress. Variational

methods.
Prerequisite: ME 5105 (RG415).

ME 5412 - Wave Propagation in Continuous Media
General dynamical equations for linear elastic media including both solids and fluids. Wave propagation in elastic rods, plates, cylinders, and semi-infinite and infinite solids. Rayleigh and Love waves; Layered media; reflection and refraction.
Prerequisite: ME 5105 (RG415).

ME 5415 - Advanced Dynamics
Variational principles of mechanics: Legranges equations, Hamilton's principle. Hamilton-Jacobi theory, canonical transformations, integrability. Introduction to special relativity, applications to orbital problems. Current topics in analytical dynamics.
Prerequisite: ME 5180 (RG416).

ME 5420 - Mechanical Vibrations I
Variational principles, Lagrange's equation. Equations of motion for multi-degree of freedom systems. Free vibration eigenvalue problem: modal analysis. Forced solutions: general soltions, resonance, effect of damping, and superposition. Vibrations of continuous systems: vibration frequencies and mode shapes for strings, bars, membranes, beams, and plates. Experimental methods and techniques.

ME 5421 - Mechanical Vibrations II
Variational mechanics, Hamilton's principle, and energy formulations for linearly inelastic bodies. Eigenvalue and boundary-value problems. Non-self adjoint systems. Approximate methods: Ritz and Galerkin. Gyroscopic systems. Nonconservative systems. Perturbation theory for the eigenvalue problem. Dynamics of constrained systems.
Prerequisite: ME 362 (RG417).

ME 5425 - Principles of Machine Tool Design
The basic principles and philosophies in the design of precision machine tools. Mathematical theory and precision machine tools. Mathematical theory and physics of errors. The building up of error budget and the mapping of geometric and thermal errors. Design case study of a precision machine tool. Discussion of various types of sensors and actuators, bearings, and transmissions. System design considerations.

ME 5430 - Mechanics of Composites and Laminates
Review of elasticity theory. Average theorems. Effective constitutive relations for heterogeneous media. Variational bounding. Isotropic elastic composites fiber reinforced and laminated materials.
Prerequisite: either ME 5410 or CE 5124 (RG418).

ME 5431 - Fatigue in Mechanical Design
Design calculation methods for the fatique life of engineering components, fundamentals of fracture mechanics. Crack initiation and crack propagation fatique lives. Neuber analysis, multiaxial stress, cyclic stress-strain behavior, mean and residual stress effects. Selected current research topics, advanced research and design projects.
Prerequisite: Not open to students who have passed ME 3228 (RG610).

ME 5432 - Tribology
The theory of fluid film lubrication, including hydrodynamic, externally pressurized and squeeze film mechanisms of load support in bearings. Fixed and pivot pad thrust bearings; air bearings; journal bearings. Elastohydrodynamic lubrication; boundary lubrication; liquid and solid lubricants. Direct solid contact and rolling element contact bearings. Theories of wear. Design considerations in lubrication and wear.

ME 5433 - Theory of Plasticity
Introduces the physical basis for inelastic behavior and various mathematical descriptions for non-linear deformation. Provides and overview of plastic deformation in metals, including the role of dislocation behavior in strain hardening and strengthening. Detailed topics include yield surfaces, flow rules, hardening rules and introduction to viscoplastic modeling; emphasis is on finite element computer-based implementation of the concepts and their use in predicting the behavior of structures.
Prerequisite: ME 5410 (RG419).

ME 5440 - Computer Integrated Manufacturing Systems
Topics in Computer Integrated Manufacturing (CIM) including the fundamentals of automated manufacturing systems; production economics; Just-In-Time (JIT) and Shop Floor Control (SFC) techniques; Computer Numerical Control (CNC) and off-line programming; Computer Aided Design (CAD), Computer Aided Manufacturing (CAM), and release and control of the engineering and manufacturing of new products. Advanced design and research projects.
Prerequisite: Not open to students who have passed ME 221 (RG611).

ME 5441 - Design and Engineering Production Systems
Design and engineering functions of production systems. Decision-Making Process, Economic Analysis, Demand Forecasting, Product and Process Design, Optimization and Linear Programming, Integrated Production and Inventory Control, Production Scheduling, Critical Path Methods (CPM), Program Evaluation and Review Technique (PERT), and Statistical Quality Control. Advanced design and research projects.
Prerequisite: Not open to students who have passed ME 222 (RG 612).

ME 5507 - Engineering Analysis I
Matrix algebra, indicial notation and coordinate transformations. Cartesian and general vectors and tensors, vector and tensor calculus. Partial differential equations: Fourier series, solution procedures to boundary value problems in various domains. Application to the mechanics of continuous media.

ME 5511 - Principles of Optimum Design
Engineering modeling and optimization for graduate students in all areas of engineering. Problem formulation, mathematical modeling, constrained and unconstrained optimization, interior and boundary optima constraint interaction, feasibility and boundedness, model reduction, sensitivity analysis, linear programming, geometric programming, nonlinear programming, and numerical methods in optimization.
Prerequisite: Not open to students who have passed ME 334 (RG609).

ME 5513 - Modern Computational Mechanics
An advanced course in Computational Mechanics with emphasis on modeling problems using Finite Differences and Finite Element techniques. Projects include initial value problems, ordinary differential equations and partial differential equations. Course evaluation is made by the successful completion of several assigned projects.

ME 5520 - Finite Element Methods in

Applied Mechanics I
This course and CE 363 may not both be taken for credit. This course and CE 366 may not both be taken for credit.

ME 5521 - Finite Element Methods in Applied Mechanics II
Also noffered as CE 367.

ME 5895 - Special Topics in Mechanical Engineering
Classroom and/or laboratory courses in special topics as announced in advance for each semester. The field of study or investigation is to be approved by the Head of the Department before announcement of the course.

ME 6110 - Statistical Thermodynamics
A microscopic development of thermodynamics including statistical ensembles, quantum statistical mechanics, and a comparison of various molecular models.

ME 6130 - Advanced Thermo-Fluids II
Review of governing flow equations, instability and transition, Reynolds averaging and closure approximations, Algebraic turbulence models, Two-equation turbulence models, Large eddy simulations, Turbulence statistics: probability density function and power spectral densities, Energy cascade and intermittency, Turbulent boundary layers including heat transfer, Turbulent free shear flows, Turbulent internal flows (pipes and channels) including heat transfer, Natural convection.

ME 6140 - Convection Heat Transfer
A study of heat transfer to laminar and turbulent boundary layers for both compressible and incompressible fluids. Free convection heat transfer is also investigated.

ME 6160 - Turbines and Centrifugal Machinery
Theory, design and performance of centrifugal and exial flow machinery including turbines, blowers, fans, compressors, superchargers, pumps, fluid couplings and torque converters. A detailed study of the mechanics of the transfer of energy between a fluid and a rotor.
Prerequisite: ME 5320 (RG406).

ME 6170 - Combustion and Air Pollution Engineering
Review of thermodynamics and chemical equilibrium. Introduction to chemical kinetics. Studies of combustion processes, including diffusion and premixed flames. Combustion of gases, liquid, and solid phases, with emphasis on pollution minimization from stationary and mobile systems. Air pollution measurement and instrumentation.

ME 6171 - Reaction Engines
Dynamics of gas flow, including heat addition of friction. Thermodynamic analysis of ram-jets, gas turbines and rockets and their components. Principles of propulsion systems. Nuclear, thermoelectric, ionic, and high energy propulsion devices.
Prerequisite: ME 5320 (RG406).

ME 6172 - Advanced Internal Combustion Engines
An analytical study of the factors influencing the operation and performance of the internal combustion engine. Spark-ignition and compression ignition engine theory. Emphasis on the latest analytical and experimental developments.
Prerequisite: ME 251 or ME 301 (RG411).

ME 6173 - Advanced Combustion
Review of thermodynamic properties, transport properties, conservation equations of multicomponent reacting gas. Introduction to chemical kinetics. Classification of combustion waves. Deflagrations, detonations and diffusion flames. Ignition phenomena, droplet and spray combustion and some aspects of turbulent combustion.
Prerequisite: either ME 234 and ME 250 or ME 346 (RG413).

ME 6174 - Seminar in Combustion Generated Pollution
A study of the mechanism of production of pollutants such as nitrogen oxides, carbon monoxide, sulphur dioxide, soot and unburned hydrocarbons from power plants such as stationary gas turbines, internal combustion engines, and jet engines. Emphasis will be placed on current research problems and recent advances in combustor designs.
Prerequisite: either ME 351 or ENVE 341 (RG414).

ME 6175 - Physical Acoustics
The basic principles of the generation and propagation of sound. Mathematical theory of vibration and sound, including single and multi-dimensional waves in stationary and moving media. Physical properties of sound waves; propagation of sound in confined and free space; refraction, reflection, and scattering from strong and weak inhomogeneities.

ME 6176 - Hypersonic Aerodynamics
Hypersonic small disturbance theory; similarity laws. Newtonian, shock-expansion and blast-wave theories of hypersonic flow. Aerodynamic shapes for minimum hypersonic drag. Physical properties of real gases; shock waves in real gas flow.
Prerequisite: ME 5320 (RG406).

ME 6177 - Aerothermal Analysis
High-speed, viscous compressible flow. Equations of motion. Thermodynamic and transport properties of high temperature gases. Blunt body heating. Boundary layer equations and transformations. Hypersonic boundary layers with heat and mass transfer. Reference enthalpy methods.
Prerequisite: ME 5320 (RG406).

ME 6178 - Applied Solar Energy
Study of the technology and economics of solar energy conversion to useful forms. Review of heat transfer and energy storage. Collector design and performance analysis. System design of water heaters and space heating/cooling systems. Review of wind power, wave power, ocean thermal energy conversion and satellite solar power systems.
Prerequisite: ME 321 and ME 242 (RG409).

ME 6179 - Underwater Sound
The propagation of sound in sea-water, including effects of temperature and salinity gradients. Transducers. Flow noise.

ME 6222 - Non-Linear Vibrations
Vibrations of non-linear single-degree-of-freedom systems. Singular points. Liapunoff function. Approximation techniques. Stability. Self-excited vibrations. Vibrations of non-linear multi-degree-of-freedom systems.

ME 6223 - Random Vibrations
Introduction to theory of sets. Statistical preliminaries. Fourier transforms. Random vibrations of single-degree-of-freedom and two-degree-of-freedom systems. Random

vibrations of systems with distributed mass. Theories of failure.
Prerequisite: ME 363 and MATH 231 (RG422).

ME 6250 - Advanced Analysis and Design of Mechanisms
Kinematic analysis and synthesis of planar and spatial linkages with lower pairs. Type and number synthesis. Finite position and higher order design. Unified treatment of position, path-angle and function generation problems. Approximation synthesis and optimization. Defect elimination and performance evaluation, introduction to commercial software.
Prerequisite: either ME 224 or ME 331 (RG420).

ME 6251 - Robotic Manipulators
Modeling of 3-D industrial robots; kinematic and dynamic analysis of manipulators. Manipulation techniques. Design workspace and performance criteria. Review of control techniques. Hardware requirements. On-line and off-line optimal trajectory planning.
Prerequisite: either ME 224 and ME 230 or ME 372 (RG421).

ME 6255 - Computer Graphics for Design
A practical study of interactive computer graphics as applied to engineering design. Graphics hardware, interactive techniques, transformations, remote graphic systems, and stand-alone minicomputer based systems are discussed emphasizing their application in engineering design. Practical experience is gained through assignments involving various graphics systems.

ME 6260 - Advances in Control Systems Design
Review of the state space design concepts for control systems. Mathematical modeling of dynamic systems. Lagrange's and Newton's representations. Decentralized or linearized control. Variable structure systems. Sliding mode control of nonlinear systems and discussions of constraint control cases. Time-delayed systems. Stability-based analysis and synthesis. Engineering applications. Open-ended control system design projects.
Prerequisite: ME 5160 or ME 5507 (RG423).

ME 6300 - Independent Study in Mechanical Engineering
Individual exploration of special topics as arranged by student and instructor.

ME 6301 - Macroscopic Equilibrium Thermodynamics II
Review of zeroth, first and second laws of thermodynamics, development of equilibrium thermodynamics from a postulatory viewpoint, examination of thermodynamic potentials and equilibrium states, stability of thermodynamic systems including implications on phase and chemical equilibrium. Thermodynamic availability analysis.
Prerequisite: ME 5301 (RG403).

ME 6303 - Macroscopic Non-equilibrium Thermodynamics I
A study of the laws and equations applicable to non-equilibrium processes of a very general nature; this will include the conservation laws, entropy law and entropy balance, the phenomenological equations. Onsager's relations and the fluctuation dissipation theorem. Selected application of the foundations will include heat conduction, diffusion and cross effects, viscous flow and relaxation phenomena, and discontinuous system processes.
Prerequisite: ME 302 (RG404).

ME 6304 - Macroscopic Non-equilibrium Thermodynamics II
A study of the laws and equations applicable to non-equilibrium processes of a very general nature; this will include the conservation laws, entropy law and entropy balance, the phenomenological equations. Onsager's relations and the fluctuation dissipation theorem. Selected application of the foundations will include heat conduction, diffusion and cross effects, viscous flow and relaxation phenomena, and discontinuous system processes.
Prerequisite: ME 303 (RG405).

ME 6320 - Environmental Engineering
Design and arrangement of heating, air conditioning and refrigeration equipment and controls to meet comfort and industrial process requirements.
Prerequisite: ME 250 or ME 301 (RG412).

ME 6330 - Advanced Measurement Techniques
A critical examination of measurement techniques. Principles of operation of various instruments. Estimates of accuracy, precision, and resolution of measurements. Intended primarily for students contemplating experimental theses. When possible, specific topics covered will be structured to the needs of the class.

ME 6340 - Graduate Seminar
Presentations by invited guest speakers on topics of current interest in various Mechanical Engineering and allied fields.

ME 6508 - Engineering Analysis II
Calculus of variations including transversality conditions, constraints, Lagrange multipliers, Rayleigh-Ritz and Galerkin methods. Integral transform techniques including Laplace, Fourier, Hankel, and Mellin transforms, Integral equations.

ME 6511 - Advanced Optimum Design
Advanced techniques in engineering design and process modeling optimization for graduate students in all areas of engineering. Review of theories of multi-variable constrained and unconstrained optimization, and computational techniques in nonlinear programming, structured programming, including integer programming, quadratic programming, genetic algorithms, theories of multivariable optimization from calculus of variations, computational techniques in functional optimization.
Prerequisite: MATH 3410 or ME 5511 (RG410).

†GRAD 5930. Full-Time Directed Studies (Master's Level) (GRAD 397) 3 credits.

†GRAD 5950. Master's Thesis Research (GRAD 395) 1 - 9 credits.

†GRAD 5960. Full-Time Master's Research (GRAD 396) 3 credits.

GRAD 5998. Special Readings (Master's) (GRAD 398) Non-credit.

GRAD 5999. Thesis Preparation (GRAD 399) Non-credit.

†GRAD 6930. Full-Time Directed Studies (Doctoral Level) (GRAD 497) 3 credits.

†GRAD 6950. Doctoral Dissertation Research (GRAD 495) 1 - 9 credits.

†GRAD 6960. Full-Time Doctoral Research (GRAD 496) 3 credits.

GRAD 6998. Special Readings (Doctoral) (GRAD 498) Non-credit.

GRAD 6999. Dissertation Preparation (GRAD 499) Non-credit.

Medieval Studies

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Advisors

J. Givens, Art History; D. Caner, S. Johnson, and R. Travis, Classics and Ancient Mediterranean Studies; C. D. Benson, F. Biggs, R. Hasenfratz, T. J. Jambeck, and K. A. Tonry, English; S. Olson, History; A. Berthelot, French; M. Masciardaro, Italian; E. Rice, Music; D. Baxter, Philosophy.

Interdisciplinary work leading to the degrees of Master of Arts (M.A.) and Doctor of Philosophy (Ph.D.) in medieval studies is offered by the Departments of Art and Art History, English, History, Modern and Classical Languages, and Philosophy. Since the program in medieval studies is intended to provide a synthesis of broad areas of medieval culture and thought as a basis for constructive research in specialized aspects of cultural and intellectual history, students normally are required to include in their programs courses offered by the supporting departments.

Admission to Degree Programs

The Medieval Studies Admissions Committee accepts students either to the master's or Ph.D. program. An undergraduate major in the area of study is not necessarily required, but before admission students must give evidence of adequate preparation to work in their proposed area of emphasis.

The M.A. Program

Work leading to the degree of Master of Arts in medieval studies may be undertaken under either Plan A (with thesis) or Plan B (without thesis). In either case, course work in medieval studies should be distributed among several departments, and the student's advisory committee is composed of representatives of three departments.

The Ph.D. Program

Approximately one half of the course work required for the degree of Doctor of Philosophy in medieval studies should be in the department of emphasis, the remaining half to be taken in two or more other cooperating departments. In addition to the Graduate School's requirements for the doctorate, reading examinations in three foreign languages, Latin and two languages significant to the student's program. It is expected that the student will pass these examinations immediately upon admission and in no case later than the end of the first year of study in the Ph.D. program. The student's advisory committee will consist of representatives of three different cooperating departments.

Courses of Study

Course offerings and staff are listed under the cooperating and supporting departments referred to above. The Committee for Medieval Studies organizes a number of colloquia open to graduate students, featuring staff members or visitors.

Support

University Predoctoral Fellowships and graduate assistantships for teaching or research are available through cooperating departments for qualified students in the medieval studies program. Other support available for graduate students is described under "University Fellowships and Other Aid."

Molecular and Cell Biology

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Department Head
Professor Michael A. Lynes

Associate Department Head for Research and Graduate Education
Associate Professor Joerg Graf

Associate Department Head for Undergraduate Education and Research
Professor Arlene D. Albert

Distinguished Professors
Gogarten and Marcus

Professors
Albert, Alexandrescu, Benson, Chen, Cole, Goldhamer, Knecht, Lynes, Noll, R. O'Neill, Reiter, Rumpho, Strausbaugh, and Teschke

Associate Professors
Burkhard, Gage, Giardina, Graf, Hoch, Lee, Nelson, M. O'Neill, Pask, Robinson, Zhang, and Zweifach.

Assistant Professors
Abbott, Adler, Bruno, Campellone, Feldman, May, Mellone, Nyholm, Papke, and Spurling

Molecular and Cell Biology offers graduate programs in the following fields of study:

(1) Biochemistry – protein transport through membranes, receptor/ligand interactions, biochemical signalling, transcriptional and translational regulation, protein folding, molecular chaperones and response to stress, plant cell molecular biology;

(2) Structural Biology and Biophysics – enzyme mechanisms, x-ray structural and kinetic analyses of enzymes, structure of membrane interactive peptides and proteins, macromolecular interactions, mechanisms of virus assembly;

(3) Cell Biology – signal transduction, cytoskeleton and cell motility, developmental and stem cell biology, molecular endocrinology, hormones and morphogenesis, mechanisms of immune function, stress responses, molecular virology and interferons;

(4) Genetics and Genomics – organization and regulation of genes and gene families in microbial, plant, virus and animal model systems; genome analysis; molecular evolution; chromosome structure and function; developmental genetics; transposable genetic elements and gene transfer; genetic responses to stress; applied genetics; and

(5) Microbiology – microbial diversity and ecology, evolution, genetics and physiology, microbial biotransformations, symbiosis.

INTERDISCIPLINARY STUDY

Applied Genomics

The professional M.S. degree program in Applied Genomics trains scientists with interdisciplinary competency in genetics, molecular biology, and computational analysis. The program provides substantial cross-training elements for successful performance in a business or corporate environment. The program has its foundations in the existing strengths of more than 20 faculty members, campus-wide, who conduct genomics-related research and training. Additional information is available at the Professional Science Master's website: <http://www.smasters.uconn.edu>.

Applied Microbial Systems Analysis

A professional M.S. degree program in Applied Microbial Systems Analysis is offered.

Materials Science

The Department of Molecular and Cell Biology also cooperates with other departments in offering masters' degree programs in materials science. Members of this department serve as advisors for the Ph.D. program in polymer science. For information, write to Dr. Peter Burkhard, Unit 3136, Storrs, Connecticut 06269-3136; peter.burkhard@uconn.edu.

Courses

MCB 5001 - Biochemistry
Metabolism of carbohydrates, lipids, amino acids, proteins, and nucleic acids, including regulation, and to the structure and function of biological macromolecules. Provides suitable preparation for advanced course work in biochemistry, biophysics, and other areas of molecular biology. Graduate students with considerable laboratory experience may arrange to take only the lecture portion of this course as Biology: MCB 396 with consent of instructor.

MCB 5002 - Biochemistry Laboratory
Theory and application of modern techniques for the separation and characterization of biological macromolecules, including several types of liquid chromatography, liquid scintillation spectrophotometry and SDS polyacrylamide gel electrophoresis. Each student will carry out individual projects using selected techniques.

MCB 5003 - Biophysical Chemistry I
Thermodynamics, electrostatics of polar molecules and ionic solutions, dielectric constants, conductance, acid-base equilibria, molecular interactions.

MCB 5004 - Biophysical Chemistry II
The physico-chemical behavior of biological macromolecules, their interactions, the forces involved, and the physical methods for studying such systems.

MCB 5007 - Biophysical Techniques
Laboratory experience in the characterization of macromolecules in solution. Methods such as velocity- and equilibrium-sedimentation, density determination, refractometry and light scattering are covered.

MCB 5008 - Techniques of Biophysical Chemistry
Theory and applications of biophysical methods for the analysis of the size, shape and interactions of proteins and nucleic acids. Topics include analytical ultracentrifugation, light scattering, X-ray scattering, calorimetry, surface plasmon resonance and single molecule approaches.

MCB 5010 - Biological Optical Spectroscopy: Practical Applications
If a student has taken MCB 5038, this course

may only be taken if the content is different.

MCB 5011 - Enzyme Structure and Function
Information at the molecular level derived from protein chemistry, equilibria, kinetics and X-ray diffraction.

MCB 5012 - Foundations of Structural Biochemistry
Comprehensive introduction to the molecular aspects and dynamics of structural biochemistry. Examination of nucleic acid, protein, and lipid structures including current topics in conformation and folding, enzyme kinetics, nucleic acid stability, ligand/receptor binding, and bioenergetics. Overviews of experimental strategies used to study macromolecular structure and interactions.

MCB 5013 - Structure and Function of Biological Macromolecules
Fundamentals of protein structure, and the forces that stabilize structure. Recurrent structural motifs, molecular ancestry/homology, and insights into proteins structure evolution. Protein folding and dynamics. Structure-function correlations, and structural basis of regulation. Techniques used to investigate structure: X-ray diffraction, NMR, TEM, AFM, structure prediction, computational simulations. Advanced topics: chaperones; structural genomics; role of misfolded proteins in disease.

MCB 5015 - X-ray Structure Analysis
The determination of three-dimensional atomic-level structure by diffraction methods. Small-angle solution scattering. Protein crystallography.

MCB 5019 - X-ray Diffraction Laboratory
Analysis of low- and high-angle X-ray data from both synthetic and biological macromolecules in amorphous and crystalline states.

MCB 5022 - Human Disease and the Development of Therapeutic Agents
Molecular basis of human disease and strategies for developing therapeutic treatments. Applications of genetic, cellular, and biochemical information in treating different disease states. Especially appropriate for students interested in biomedical research and the health professions.

MCB 5025 - Structure and Function of Biological Membranes
Overview of cell membrane structure and function based on a foundation of physical and biochemistry principles. Topics include lipid bilayers, vesicles and liposomes, cholesterol, membrane protein structure and function, transport, membrane fusion, receptors, drug/membrane interactions and membranes in cell regulation.

MCB 5034 - Human Metabolism and Disease
A thorough analysis of the inter-relationships of metabolic pathways in connection with human health and disease, including inherited metabolic diseases and the role of hormones in metabolic pathways.

MCB 5035 - Protein Folding
In-depth examination of protein folding in vitro and in vivo. Kinetics and thermodynamics of protein folding and assembly; chaperones in folding and misfolding; misfolding in human disease and biotechnology. Experimental methods used to study protein folding, including NMR, mutagenic and spectroscopic techniques.

MCB 5038 - Techniques in Structural Biology
Also offered as MEDS 338.

MCB 5076 - Biomolecular Nuclear Magnetic Resonance Spectroscopy
Open to undergraduate students with consent of instructor.

MCB 5099 - Graduate Seminar in Biochemistry

MCB 5210 - Molecular Endocrinology
This course will be devoted to discussing the molecular mechanism(s) of hormone action in vertebrates and invertebrates. The course will cover molecular cloning and characterization of peptide hormone genes, purification and molecular characterization of receptors, hormone actions at the molecular levels and signal transduction. In addition to regular lectures, part of the lecture time slots will be devoted to student presentation on selective papers taken from relevant literature.

MCB 5217 - Biosynthesis of Nucleic Acids and Proteins
Mechanisms of protein and RNA synthesis in prokaryotes and eukaryotes. Topics such as RNA processing, gene splicing, and control of protein and RNA synthesis are discussed.

MCB 5233 - Plant Metabolism
Biochemistry and physiology of the principal metabolic systems of plants.

MCB 5240 - Virology
Biological, biochemical, genetic, and physical characteristics of viruses, with an emphasis on molecular and quantitative aspects of virus-cell interactions.

MCB 5243 - Molecular Analysis of Development
An analysis of the mechanisms of morphogenesis and differentiation with special emphasis on molecular aspects.

MCB 5253 - Eukaryotic Molecular Biology
Considerations of the molecular and cellular biology of eukaryotes with emphasis on current literature. Presentations by faculty and students.

MCB 5255 - Cellular and Molecular Immunology
Genetic, biochemical, and cellular control of the immune system, addressing such topics as antigen recognition, immune regulation, stress and immunity, apoptosis, and signal transduction.

MCB 5256 - Animal Cell Culture Laboratory
Lecture and laboratory covering basic aspects of cell culture in vitro, including mammalian, avian, fish and insect cells. Laboratory procedures include: preparation of complex and synthetic media; mass and single cell culture; primary and established cell cultures; large scale growth of cells; culture contaminants; cell preservation; growth factors; measurement of cell growth and viability; cell cloning; cell synchrony; cell cycle analysis; karyotyping; mutant isolation; cell fusion/hybridomas; culture of specialized cells; virus propagation; production of specialized cell products; toxicity testing; cell transformation/immortalization; DNA transfection.

MCB 5280 - Advanced Cell Biology
Integrative approach to the study of eukaryotic cell biology emphasizing

structure, function, and dynamics of the cytoskeleton, membrane, and extracellular matrix.

MCB 5299 - Current Topics in Cell Biology
Discussion of papers from recent literature. Topics include cytoskeletal function, cell motility, gene expression, and signal transduction, with special focus on their relationship to development, the immune system, and cancer.

MCB 5426 - Genetic Engineering and Functional Genomics
Methods and applications of genetic engineering, including gene manipulation and transfer techniques in prokaryotes and eukaryotes. Emphasis on the application of recombinant DNA technology in the elucidation of gene function. Recent technological developments in molecular genetics and the societal issues related to these developments will also be addressed. Students will prepare a grant application or other written assignment.

MCB 5427 - Laboratory Techniques in Functional Genomics
Molecular biological techniques utilized in gene discovery and in the functional characterization of genes in animal development. Taught as a series of short modules, each focusing on a different set of techniques. With a change of content, this course may be repeated for credit.

MCB 5428 - Theory and Practice of Forensic Identification Methods
Advanced consideration of the theory, practice, and analysis of various techniques used in forensic identification strategies. Taught as a series of stand-alone, "executive format" modules with each focused on a different methodology and consisting of hands-on laboratory combined with lectures and data analysis, problem solving, and/or case studies. With change of content, may be repeated for credit.

MCB 5429 - Theory and Practice of High Throughput Sequence Analysis
Advanced training in experimental design, sample preparation, quality control, high throughput sequence acquisition and analysis of data sets for a variety of genomics applications. Taught as a series of modules with each focused on a different aspect of the practice of next-generation genome analysis.

MCB 5432 - Molecular and Genetic Approaches to Developing Systems
Topics of current interest in devlopmental biology are presented with related developmental and genetic background information.

MCB 5445 - Genome Dynamics and Epigenetics
An examination of the mechanisms of eukaryotic genome function and dynamics. Topics include, but are not limited to, chromatin organization, chromosome structure and function, and nuclear architecture.

MCB 5449 - Molecular Genetics
A course of lectures on the molecular basis of heredity. The nature and properties of hereditary materials, including replication, mutation, recombination, and repair.

MCB 5452 - Problems in Genetics of Eukaryotes
Consideration of such problems as chromosomal organization, mechanisms of meiotic drive, epigenetic inheritance, chromosome distribution, and transposable elements in model genetic organisms.

MCB 5454 - Molecular Aspects of Genetics
Integration of the biological effects, molecular structure, expression, and evolution of genes and genomes.

MCB 5459 - Genetics of Higher Plants
Use of tools of molecular genetics to address problems in the biochemistry, cell biology, and physiology of higher plants. Topics covered include organ development, signal transduction, carbon partitioning, plant-microbe interactions, and plant genome projects.

MCB 5470 - Current Advances in Epigenetics
Also offered as ANSC 370.

MCB 5471 - Current Topics in Molecular Evolution and Systemics
Current concepts, ideas and techniques in the field of molecular evolution, and theoretical problems peculiar to the phylogenetic analysis of molecular data.

MCB 5472 - Computer Methods in Molecular Evolution
Practical aspects of molecular data analyses. Databank searches, sequence alignments, statistical analyses of sequence data. Parsimony, distance matrix, and spectral analysis methods. Students compile and analyze a data set of their choice.

MCB 5490 - Industrial Insights
Instruction in the research and development, regulation, intellectual property protection, and production of commercial services and products from the vantage point of genomics-related industries. Taught as a series of specialized courses with each focused on a different topic related to the genomics, biotechnology, and pharmaceutical industries.

MCB 5499 - Special Topics in Genetics
Intensive reading and discussion in current topics in genetics.

MCB 5616 - Experiments in Bacterial Genetics
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. Each student conducts an independent project.

MCB 5621 - Molecular Biology and Genetics of Prokaryotes
Molecular genetics of bacteria, archaebacteria, and their viruses. Transcription and replication of DNA, transformation, transduction, conjugation, genetic mapping, mutagenesis, regulation of gene expression, genome organization. Recommended preparation: a course in general microbiology.

MCB 5636 - Industrial Microbiology
Biology of industrial microorganisms, including their physiology, selection, and biochemical and genetic manipulation. Primary and secondary metabolite biosynthesis and production. Pollution microbiology and biodegradation.

MCB 5650 - Genetics of Microorganisms
Basic genetic processes in microorganisms including homologous and nonhomologous

recombination, chromosome mechanics, and mutation; genome organization; transposable elements, their uses in genetic analyses and their role in microbal evolution.

MCB 5679 - Microbial Physiology
Topics in microbial cell organization, growth, and intermediary metabolism with emphasis on specialized physiological adaptations.

MCB 5681 - Mechanisms of Bacterial Pathogenicity
An in-depth examination of several host-parasite relationships as models of disease states.

MCB 5682 - Physiological Genetics of Bacteria
The use of mutants in investigating metabolic pathways and homeostic mechanisms in bacteria, with extensive reference to Escherichia coli and its genetic map.

MCB 5683 - Biotechnology Seminar
Current topics in biotechnology.

MCB 5684 - Fermentation and Separation Technology Laboratory
Introduction to techniques used for industrial mass culture of prokaryotic and eukaryotic cells and methods used to extract useful products from these cultures.

MCB 5699 - Seminar in Microbiology
Discussion of current topics in microbiology.

MCB 5893 - Special Topics in Cellular and Molecular Biology
Consideration of selected topics in cellular and molecular biology. Presentations are made by invited speakers. Each session is preceded by a discussion of readings related to the subject matter of the presentation.

MCB 5895 - Independent Study
A reading course for those wishing to pursue special work in biology. It may also be elected by undergraduate students preparing to be candidates for degrees with distinction.

MCB 5896 - Investigation of Special Topics
Advanced study in a field within Molecular and Cell Biology.

MCB 5899 - Graduate Seminar
Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatistactory.)

MCB 6000 - Rotations in MCB Laboratories
Open only to students in MCB graduate programs with permission of the instructor. Students taking this course will be assigned a final grade of S (satisfactory) or U(unsatisfactory). Provides entering graduate students with experience in three different
Prerequisite: MCB Graduate Students Only

MCB 6897 - Research
Conferences and laboratory work covering selected fields of Molecular & Cell Biology.

†GRAD 5930. Full-Time Directed Studies (Master's Level) (GRAD 397) 3 credits.

†GRAD 5950. Master's Thesis Research (GRAD 395) 1 - 9 credits.

†GRAD 5960. Full-Time Master's Research (GRAD 396) 3 credits.

GRAD 5998. Special Readings (Master's) (GRAD 398) Non-credit.

GRAD 5999. Thesis Preparation (GRAD 399) Non-credit.

†GRAD 6930. Full-Time Directed Studies (Doctoral Level) (GRAD 497) 3 credits.

†GRAD 6950. Doctoral Dissertation Research (GRAD 495) 1 - 9 credits.

†GRAD 6960. Full-Time Doctoral Research (GRAD 496) 3 credits.

GRAD 6998. Special Readings (Doctoral) (GRAD 498) Non-credit.

Music

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Interim Department Head
Professor Catherine Jarjisian

Professors
Bass, Frogley, Fuchs, Junda, Kaminsky, Miller, Mills, Renshaw, Stanley, and Stephens

Associate Professor
Lee, Neelly, Rice, Rock, and Squibbs

Assistant Professors
Hanzlik

The Master's Program

The Master of Music degree is offered with a concentration in performance (including an area of emphasis in conducting). Areas of concentration leading to the Master of Arts degree are historical musicology and theory.

Admission requirements in addition to those of the Graduate School are as follows: Applicants in historical musicology and theory are required to submit a writing sample, and Graduate Record Examination scores (General Test). All applicants must submit the University of Connecticut Graduate Theory Placement Exam. Applicants in applied performance and conducting are required to audition for admission. While a personal audition is preferred, a recorded audition may be submitted by applicants who find it prohibitive to travel to Storrs.

The M.A. degree programs require a minimum of 24 credits plus nine credits of GRAD 5950--Thesis Research and a master's thesis. M.Mus. programs require a minimum of 30 credits.

The D.M.A. Program

Areas of Concentration in conducting (instrumental, choral) and performance are offered. The program includes applied study, a minor field in theory or history, and electives suited to the student's objectives and needs. For specific information with regard to admission to the D.M.A. program, students should write to the Director of Graduate Studies in Music, Department of Music, Unit 1012, Storrs, Connecticut 06269-1012.

The Ph.D. Program

Concentrations in Music Theory and History. Plans of study are constructed through consultation between the student and advisory committee, so that the program is uniquely suited to the student's objectives and needs. For specific information with regard to admission to the Ph.D. program, students

should write to the Director of Graduate Studies in Music, Department of Music, Unit 1012, Storrs, Connecticut 06269-1012.

Graduate Performer's Certificate

For information concerning the Graduate Performer's Certificate, write to the Department of Music, Unit 1012, Storrs, Connecticut 06269-1012.

Special Facilities

The Music and Dramatic Arts Library maintains an extensive collection of books, scores, periodicals, audio and video recordings, and electronic resources. Listening facilities are available to students in the library. Unique research facilities include the department computer laboratory, the music recording studio, and the Professor Bruce Bellingham Collection of Period Instruments. The von der Mehden Recital Hall, seating 500, is used for student and faculty performances and houses digital recording facilities. A concert hall seating 3,000 provides a full season of concerts, including performances by major symphony orchestras, chamber musicians and internationally known solo artists.

Courses

MUSI 5300 - Investigation of Special Topics

Open to graduate students in Music, others with permission (RG812).

MUSI 5301 - Research Procedures in Music Education
Research methods and sources.

MUSI 5302 - Analytic Techniques
Structure and style in works from the 18th through the 20th Centuries.

MUSI 5305 - Graduate Performing Ensemble
Symphony Orchestra, Symphonic Wind Ensemble, Concert Band, Concert Choir, Chamber Singers, University Chorale, Voices of Freedom Gospel Choir, Jazz Ensemble, Jazz Lab Band.
Open to graduate students in Music, others with permission (RG812).

MUSI 5306 - Seminar in Opera Literature
Literature of the opera from the Early Baroque to the present. Course content can change from a general survey to a study of selected works by a composer, or works in a specific country or style period.
Open to graduate students in Music, others with permission (RG812).

MUSI 5309 - Seminar in Woodwind Literature
Historical development of the woodwind instruments; of representative solo and ensemble literature.
Open to graduate students in Music, others with permission (RG812).

MUSI 5315 - Seminar in Suzuki String Pedagogy
Philosophy, repertoire and pedagogy of the Suzuki Method, including guided observation and supervised teaching.
Open to graduate students in Music, others with permission (RG812).

MUSI 5319 - Notation and Performance Practice
Notation, ornamentation, and instrumentation from the middle ages through the classic period.
Open to graduate students in Music, others with permission (RG812).

MUSI 5322 - Experimental Research in Music
Investigation of the problems and techniques employed in experimental studies of music.
Open to graduate students in Music, others with permission (RG812).

MUSI 5323 - Applied Music
The Applied Music Fee fee is charged all students receiving private instrumental, vocal, or conducting instruction. Participation in an appropriate major ensemble, advanced standing in performance, recommendation by an instructor in this department, and consent of the department head are required.
Open to graduate students in Music, others with permission (RG812).

MUSI 5324 - Graduate Chamber Ensemble
Study and performance of chamber music for various ensembles.
Open to graduate students in Music, others with permission (RG812).

MUSI 5325 - Opera Theater
Study and performance of roles in major opera productions and/or work in production technique. May be repeated for credit.
Open to graduate students in Music, others with permission (RG812).

MUSI 5330 - Advanced Instrumental Conducting
Score study, conducting, and rehearsal techniques of selected instrumental literature.
Open to graduate students in Music, others with permission (RG812).

MUSI 5331 - Conducting Seminar
Special topics in instrumental and choral conducting.

MUSI 5333 - Foundations and Principles of Music Education
Historical, sociological and philosophical foundations of music education in American elementary and secondary schools.

MUSI 5340 - Musical Skills for Teachers
Aural, sight-singing and keyboard skills for public school music teachers.
Open to graduate students in Music, others with permission (RG812).

MUSI 5345 - Teaching Music at the College Level
Preparation for teaching music in higher education¿in the studio, classroom, or rehearsal hall--with attention to late-adolescent development; elements of effective teaching, including legal considerations; pedagogical approaches; institutional contexts; seeking, securing, and beginning work in a position; and procedures for attaining promotion and tenure. Open to students beyond first-year master¿s level.¿

MUSI 5348 - Schenkerian Theory and Analysis
Readings and analytical projects based on the theories of Heinrich Schenker and his followers.
Open to graduate students in Music, others with permission. Prerequisite: MUSI 5302 (RG813).

MUSI 5353 - Theory Seminar
Analysis of specific styles and the work of particular theorists: variable topics. With a change of content, this course may be repated to maximum of nine credits.
Open to graduate students in Music, others with permission. Prerequisite: MUSI 5302 (RG813).

MUSI 5354 - Advanced Analysis
Methods and models of music analysis applied to selected works from the Middle Ages to the 20th Century.
Open to graduate students in Music, others with permission. Prerequisite: MUSI 5302 (RG813).

MUSI 5359 - History of Music Theory
Speculative pedagogical and analytical thought on the music in theoretical treatises

from antiquity to the twentieth century.
Prerequisite: MUSI 5302 (RG430).

MUSI 5364 - Advanced Choral Techniques
Score study, conducting, and rehearsal techniques of selected choral literature.
Open to graduate students in Music, others with permission (RG812).

MUSI 5365 - Choral Literature to 1600
Historical-analytical study of choral compositions: c. 1000 A.D. to 1600.
Open to graduate students in Music, others with permission (RG812).

MUSI 5366 - Choral Literature from 1600 to 1800
Historical-analytical study of choral compositions: 1600 to 1800.
Open to graduate students in Music, others with permission (RG812).

MUSI 5367 - Choral Literature from 1800 to Present
Historical-analytical study of 1800 to the present.
Open to graduate students in Music, others with permission (RG812).

MUSI 5372 - Wind Band Literature
Historical-analytical study of music for wind ensemble and symphony band.
Open to graduate students in Music, others with permission (RG812).

MUSI 5373 - Orchestra Literature
Historical-analytical study of orchestral literature.
Open to graduate students in Music, others with permission (RG812).

MUSI 5379 - Atonal Theory and Analysis
Set theoretic concepts and operations in applied twentieth-century music.

MUSI 5391 - Procedures in Historical Research
A project-oriented approach to bibliographic tools and research methods applicable to the historical study of music.

MUSI 5397 - Recital

MUSI 6400 - Tutorial in Music
Concentrated individualized study and research.

MUSI 6411 - Seminar: The Life and Works of Individual Composers

Open to graduate students in Music, others with permission (RG812).

MUSI 6412 - Seminar: Style Periods in Music History

Open to graduate students in Music, others with permission (RG812).

MUSI 6413 - Seminar: History of Musical Forms
Sonata, concerto, madrigal, motet or other musical forms.
Open to graduate students in Music, others with permission (RG812).

MUSI 6491 - Seminar: Advanced Research Procedures in Musicology
Critical reading and original research in recent historical musicology.
Open to graduate students in Music, others with permission (RG812).

MUSI 6497 - Topics in Music Education
Principles and advanced methods in the teaching of music.
Open to graduate students in Music, others with permission (RG812).

†GRAD 5930. Full-Time Directed Studies (Master's Level) (GRAD 397) 3 credits.

†GRAD 5950. Master's Thesis Research (GRAD 395) 1 - 9 credits.

†GRAD 5960. Full-Time Master's Research (GRAD 396) 3 credits.

GRAD 5998. Special Readings (Master's) (GRAD 398) Non-credit.

GRAD 5999. Thesis Preparation (GRAD 399) Non-credit.

†GRAD 6930. Full-Time Directed Studies (Doctoral Level) (GRAD 497) 3 credits.

†GRAD 6950. Doctoral Dissertation Research (GRAD 495) 1 - 9 credits.

†GRAD 6960. Full-Time Doctoral Research (GRAD 496) 3 credits.

GRAD 6998. Special Readings (Doctoral) (GRAD 498) Non-credit.

GRAD 6999. Dissertation Preparation (GRAD 499) Non-credit.

Natural Resources

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Department Head
Professor John C. Volin

Professors
Civco, Clausen, Robbins, Warner, and Yang

Associate Professor
Meyer, Rudnicki, and Vokoun

Assistant Professors
Anyah

The Department of Natural Resources and the Environment offers study leading to the Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) degrees in Natural Resources: Land, Water, and Air.

The M.S. Program

The purpose of the program is to provide advanced study in one of the following specialty areas: atmospheric resources, earth resource information systems, fisheries management, forest resources, water resources, and wildlife management. Both thesis (Plan A) and non-thesis (Plan B) options are available.

The Ph.D. Program

The purpose of the Ph.D. program is to educate scientists with a broad experience in natural resources and to prepare them to do independent research in one of the following specialties: air resources, earth resources, fisheries resources, forest resources, water resources, and wildlife resources. The program requires at least 20 credits beyond the master's degree, exclusive of the related or supporting area. All Ph. D. candidates are required to take NRME 5800 and NRME 6000. Ordinarily, students enrolled in this program will have completed the master's degree. Students are required to have at least six credits of advanced work in a related or supporting area or have a competent reading knowledge of at least one foreign language appropriate to the general area of study. Candidates should be versed in natural resources management, science and technology, and analytical methods.

Special Facilities

The Department has state-of-the-art laboratories for atmospheric resources, aquatic resources, fisheries resources, terrestrial resources and the Laboratory for Earth Resources Information (LERIS). The Department also houses the Wildlife

Conservation Research Center, The Center for Landuse Education and Research (CLEAR), and the Connecticut Water Resources Institute. The Department manages the 2,100 Acre UConn Forest for teaching, research, and demonstration.

Courses

NRE 5105 - Micrometeorology I

Study of basic processes of the atmospheric boundary layer including turbulent flow and the exchanges of heat, water vapor, and pollutants.

NRE 5110 - Micrometeorology II

Study of current literature on processes in the atmospheric boundary layer

NRE 5115 - Field Methods in Hydrogeology

Field methods associated with ground water and contamination assessments. Not open to students who have passed GEOL 357.

NRE 5125 - Environmental Measurements and Instrumentation

Principles that govern the selection and use of both field sensors and recording data systems for field research and environmental monitoring.

NRE 5135 - Water Transport in Soils

Application of the principles of transport of water in soil for various physical properties of soils and fluids, initial conditions and boundary conditions. The differential equations describing the movement of energy and mass for both saturated and unsaturated flow conditions will be applied to soil evaporation and plant transpiration, infiltration and percolation of wetting fronts, and movement of tracers and chemical constituents of water. Both uniform flow and preferential flow will be examined.

NRE 5145 - Environmental Biophysics

Gas laws and transport processes. Radiation environment. Momentum, heat, and mass transfer. Steady-state and transient energy balance. Microclimate of plants and animals. Physical and physiological interactions between plants/animals and their environment.

NRE 5155 - Principles of Nonpoint Source Pollution

An advanced investigation of sources, impacts, modeling and management of nonpoint sources of water pollution.

NRE 5165 - Advanced Ground Water Hydrology

Covers ground water resource assessment, management and protection, understanding the flow of ground water in fractured rock, application of tracer studies in evaluating flow conditions. Not open to students who have passed GEOL 355.

NRE 5175 - Climate and Environmental Systems Modeling

Recommended preparation: Undergraduate Caculus I,II.

NRE 5252 - Physiology and Ecology of Trees

Also offered as PLSC 5252.

NRE 5325 - Wildlife Management

The application of ecological principles as practiced by natural resource agencies throughout North America.

NRE 5335 - Advanced Stream Ecology

Advanced Stream Ecology is intended to introduce graduate students to the current state of knowledge and research in rivers and streams. Topics will include both basic structure and function of stream habitats and biotic assemblages as well as branch into the management and conservation applications of ecological information. Term project and paper is required. Instructor consent required - students with previous stream ecology coursework (such as NRME 205) may take the course for 2 credits and attend the single weekly meeting. Students lacking a basic introduction to stream ecology may take the course for 3 credits and will attend NRME 205 lectures in addition to the weekly meeting.

NRE 5345 - Advanced Fisheries Management

Principles, practices, and current trends in fisheries science and management.

NRE 5461 - Landscape Ecology

Interdisciplinary focus on the effect of landscape pattern on environmental processes and conditions and the influence of disturbance and underlying geomorphology on landscape pattern. Consideration of landscape ecology principles in planning and management of pattern and processes in which conservation and production land uses are intermingled.

NRE 5555 - GPS Surveying

Theory and practice of global positioning system (GPS) surveying. Includes network design, control, geodectic coordinate systems, field collection of measurements, data processing, and interpretation of results.

NRE 5565 - Digital Terrain Modeling

Theory and practice of digital terrain modeling. Topics include topographic surveying , topographic surface modeling, derivative estimation, and selected applications of digital terrain models. Suggested preparation: NRME 252 (GIS), NRME 253 (Introduction to Geodesy) or equivalent.

NRE 5575 - Natural Resource Applications of Geographic Information Systems

The principles and applications of computer-assisted spatial data analysis in natural resources management will be covered. Both hypothetical and actual case studies of the use of geographic information systems (GIS) to solve natural resource problems will

be discussed. Raster- and vector-oriented, microcomputer-based GIS software will serve as the hands-on tools for students.

Prerequisite: Not open to students who have passed NRE 4575.

NRE 5585 - Geospatial Data Processing Techniques

Research approaches and techniques in geospatial analysis, enabling students to pursue integrated research in earth resources data geoprocessing applications. A variety of computer-based tools, including remote sensing, geographic information systems (GIS), and global positioning satellie (GPS), will be utilized in the acquisition, analysis, and presentation of digital earth resource data and information.

NRE 5605 - Environmental Data Analysis

Topics on natural resources and environmental data analysis, including: random variables and probability distributions, parameter estimation and Monte Carlo simulation, hypothesis testing, simple regression and curve fitting, wavelet analysis, factor analysis; formulation and classification of optimization problems with and without constraints, linear programming; models for stationary and non-stationary time series; solution of ordinary differential equations with Laplace transforms and Euler integration; solution of partial differential equations with finite differences; basics of modeling.

NRE 5610 - Technical Writing and LaTeX

Students learn how to write technical articles and theses using the LaTeX document preparation system. Subjects include grammar, punctuation, technical-writing style elements, citations and bibliographies, plagiarism, and LaTeX. Students are required to install LaTeX on a computer in order to complete assignments. English language learners may take the course for three units with permission of the in-structor.

NRE 5694 - Natural Resources Seminar

Active participation in weekly natural resources seminars given by invited speakers.

NRE 5695 - Special Topics in Natural Resources

Advanced topics in the field of natural resources. Topics and credits to be published prior to the registration period preceding the semester offerings.

NRE 5698 - Natural Resources Colloquium

Study and discussion of readings (journal articles, books, current research) on a selected topic in natural resources.

NRE 5699 - Independent Study

NRE 5800 - Graduate Seminar

The mechanism of presenting and moderating a professional presentation. Topics include: presentation, organization, speaking skills, use of media technology, formulation of questions, and moderator activities.

NRE 6000 - Research Methods in Natural Resources

General research techniques, writing scientific articles and grant proposals, problem solving approaches, experimental design and modeling concepts, and research ethics.

NRE 6135 - Small Watershed Modeling

Mathematical modeling of hydrologic processes in small watersheds and aquatic systems. Solutions of mass balance and flow relationships. Investigation of dynamic relationships among variables. Examples include: infiltration, overland flow, channel routing, chemical transport and transformations, surface-subsurface interactions and biotic growth and degradation.

NRE 6175 - Ground Water Modeling Applications

Application of Modflow to ground water flow and contaminant problems. Well head protection modeling. Not open to students who have passed GEOL 356.

NRE 6325 - Wildlife Ecology

A discussion of the principles upon which wildlife conservation is based.

NRE 6450 - Teaching Practicum

Doctoral students in the Natural Resources: Land, Water, and Air program take primary teaching responsibility for a course under the supervision of a faculty liaison. May be repeated once for a total of 6 credits

NRE 6695 - Special Topics in Natural Resources

Advanced topics in the field of natural resources.

†GRAD 5930. Full-Time Directed Studies (Master's Level) (GRAD 397) 3 credits.

†GRAD 5950. Master's Thesis Research (GRAD 395) 1 - 9 credits.

†GRAD 5960. Full-Time Master's Research (GRAD 396) 3 credits.

GRAD 5998. Special Readings (Master's) (GRAD 398) Non-credit.

GRAD 5999. Thesis Preparation (GRAD 399) Non-credit.

†GRAD 5930. Full-Time Directed Studies (Master's Level) (GRAD 397) 3 credits.

†GRAD 5950. Master's Thesis Research (GRAD 395) 1 - 9 credits.

†GRAD 5960. Full-Time Master's Research (GRAD 396) 3 credits.

GRAD 5998. Special Readings (Master's) (GRAD 398) Non-credit.

GRAD 5999. Thesis Preparation (GRAD 399) Non-credit.

Nursing

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Dean
Professor Regina Cusson

Associate Dean
Paula McCauley, Associate Clinical Professor

Professors
Bavier, Beck, Cusson, and Politroni

Associate Professors
Delaney, Engler, Kenefick, Long, McDonald, McGrath, Shellman, Van Hoof and Walsh

Assistant Professors
Cong, Judge, Newli Lew and Telford

Clinical Associate Professors
Bellini, Burger, McCauley and Miller

Clinical Assistant Professors
Diaz, Evans, Griffith, Kuhnly, Malcolm, Panosky and Reagan

Instructors
Cross, Fray, McNulty, Stolfi

The School of Nursing offers study leading to the Master of Science (M.S.), Doctor of Nursing Practice (D.N.P.), and Doctor of Philosophy (Ph.D.) degrees in nursing.

The M.S. Program

The plan of study includes nursing and supportive courses according to the plan of study for each specialty. The program is accredited by Commission on Collegiate Nursing Education.

The purpose of the master's program is to prepare advanced practice nurses with specialized knowledge, skills, and values. Graduates assume leadership roles in the health care system and advance practice and the discipline of nursing by applying existing knowledge and using a spirit of inquiry to examine and test knowledge. Areas of study include the following: clinical nurse leader, neonatal, Adult-Gero Nurse Practitioner or acute care.

Each student completes a core curriculum in theory, research, statistics, and legal, regulatory and policy aspects of advanced nursing practice. All students are required to follow either a full-time or part-time prescribed plan of study. Additional courses in the specialty area are also required. Students need 2,080 hours of clinical experience as an RN in direct patient care prior to beginning their first practicum course except in the nurse leader track. All master's specialty track programs are transitioning to the Doctor of Nursing Practice degree but the M.S. Degree will continue to be offered. The Clinical Nurse Leader Program prepares nurses as generalists in designing change at the micro systems level. It will remain at the master's level.

An accelerated master's program is available for nurses with diplomas or associate degrees or baccalaureate degrees in another field. No student may take more than six (6) credits as a non-degree student. The M.S. program requires a cumulative grade point average of 3.0 or above to earn the Master's in Nursing. Students must earn a B (3.0) or better in all nursing graduate courses in order to earn credit toward graduation. A student may only repeat one course with a NURS prefix throughout their graduate study. If a student does not earn a C+ or better on the first try, a collaborative decision between the advisor and the student is made to determine if a repeat of the course is appropriate.

Admission Requirements for the M.S. Program

In addition to those of the Graduate School, requirements for admission are: a baccalaureate in nursing or its equivalent and current nurse licensure in Connecticut, a three-credit undergraduate course in both statistics and research completed with a grade of C or better, and comprehensive health assessment knowledge for professional nursing PRAXIS including a three-credit course or its equivalent for students enrolling in individual specialty tracks. One or more years of experience as a professional nurse are recommended preparation for specialized graduate study. Contemporary nursing and related science knowledge is expected in order to be successful in the advanced courses within the graduate program. Evidence of tetanus immunization within the past ten years, one poliomyelitis booster following initial immunization, 2-step PPD test (chest x-ray required biennially for positive reactors), rubella, rubeola, varicella, hepatitis B titers (with vaccine if titer is negative) are required for clinical practicum coursework. CPR certification must remain current as well. A criminal background check may be required prior to placement in a clinical assignment. In certain circumstances evidence of a criminal record may prevent a student from fulfilling clinical requirements and/or requirements for professional licensure.

The D.N.P. Program

The Doctor of Nursing Practice Program offers a terminal degree in nursing practice for those interested in an advanced nursing practice role; either as a nurse practitioner or as a nurse executive. DNP-prepared advanced practice nurses will be well positioned to assume leadership roles as providers and administrators in healthcare settings, or as clinical faculty in educational settings. The D.N.P. program focuses on an education in the scholarship of application. This program has 2 entry/matriculation points: post bachelor's degree (BS-DNP) and Post-MS entry for those already holding APRN licensure and certification and MS preparation. The BS-DNP Program encompasses an APRN concentration leading to the conferral of an MS degree as part of the BS-DNP Program. This option allows students to begin APRN practice while continuing their doctoral studies. APRN options available include the Adult-Gerontology Primary Care or Acute Care concentrations, the Family Nurse Practitioner concentration, or the Neonatal Acute Care concentration. The BS-DNP Program options range in credits from 83-85 in total, depending on area of concentration, as well as a clinical practice dissertation and evidence of a minimum of 1,000 supervised clinical hours. The Post-MS Program of Study requires 38 credits, a clinical practice dissertation, and evidence of a minimum of 1,000 supervised clinical hours post-baccalaureate.

Admission Requirements

BS-DNP Program: Admission to the BS-DNP Program required a completed application with clear indication of area of concentration desired Family Nurse Practitioner, Adult-Gerontology Nurse Practitioner: Primary Care, Adult-Gerontology Nurse Practitioner: Acute Care, or Neonatal Nurse Practitioner (or neonatal CNS option), eligibility for licensure as a registered nurse in the state of Connecticut, and a cumulative undergraduate minimum GPA of 3.00. Additionally, three reference letters that address the applicant's level of commitment; leadership ability, clinical practice, professional involvement, and scholarly potential are required. A personal statement addressing the candidate's goals, accomplishments, clinical practice dissertation topic, commitment, leadership, practice, professional involvement, and timeframe for degree completion (FT or PT study). Submission of any published works or scholarly papers are requested as well as a personal interview.

Post-MS DNP Program: Admission to the D.N.P. Program at the Post-MS level requires an earned master's degree in nursing from an accredited college or university, a Master's degree level certification required in the applicant's area of specialty such as APRN, CNS, or Nurse Executive Advanced, and a minimum grade point average of 3.0

in all courses of record. (Alternatively, a student may present a grade point average greater than 3.0 for the last two years of undergraduate study coupled with other evidence of competence and accomplishment, particularly during their master's program). Under exceptional circumstances, a student may present an exceptionally strong grade point average for the most recent year's study, along with compelling evidence of potential for success. A personal statement from the applicant addressing his or her reasons for applying and his or her plans for the future. Additionally, three letters of reference from faculty or others who can address the candidate's potential for success in the graduate program and evidence of successful completion of a graduate level course in statistics within the previous five years are requested. Copies of all published and scholarly works are required. If not a native speaker of English, a TOEFL score of 550 or better. If the applicant is to hold a teaching assistantship, he or she must also present a Test of Spoken English (TSE) score of 50 or better.

Additional D.N.P Requirements

Evidence of tetanus immunization within the past ten years, one poliomyelitis booster following initial immunization, 2-step PPD test (chest x-ray required biennially for positive reactors), rubella, rubeola, varicella, hepatitis B titers (with vaccine if titer is negative) are required for clinical practicum coursework. CPR certification must remain current as well. A criminal background check is also required prior to placement in a clinical setting.

The Ph.D. Program

The purpose of the Ph.D. Program is to prepare nurse leaders who will advance the scientific body of knowledge that is unique to professional nursing practice. Educational experiences are offered in nursing theory development, philosophy of nursing science, qualitative and quantitative research methods, and in advanced statistics. Study in specialty areas further supports the individual's area of clinical interest.

Admission Requirements for the Ph.D. Program

In addition to those of the Graduate School, requirements for admission are: graduation from an accredited master's program; eligibility for licensure as a registered nurse in Connecticut; a cumulative master's grade point average of 3.25 or higher; submission of Graduate Record Examination scores; completion of a graduate level inferential statistics course; three reference letters; a personal statement; a personal interview; and submission of published works or scholarly papers. Additional information may be obtained by contacting the School of Nursing Office of Admissions and Enrollment Services, 231 Glenbrook Road, Unit 2026, Storrs, Connecticut 06269-2026.

Program information and information concerning the application process is located on the web at www.nursing.uconn.edu

Courses

NURS 5000 - Investigation of Special Topics

NURS 5010 - Nursing Science
Analysis of the current state of nursing science and the application of knowledge from this science and other disciplines to advanced nursing practice from historical, contemporary and futuristic perspectives. Open to non-degree students.

NURS 5011 - Nursing Science and Patterns of Knowing
An historical, contemporary and futuristic exploration of the art and science of nursing praxis including patterns of knowing: empirical, ethical, aesthetic, existential and emancipatory.
Prerequisite: NURS GRAD and CEIN Student only. Non-nursing majors may register with permission of the instructor.

NURS 5020 - Statistical Methods in Nursing
Quantitative procedures including descriptive and inferential statistics, nonparametric approaches to data, and parametric analyses through factorial analysis of variance. Open to MbEIN students only. Cross listed with CLTR 5020.
Prerequisite: NURS GRAD and CEIN Student only. Non-nursing majors may register with permission of the instructor.

NURS 5030 - Nursing Research in Evidence Based Practice
Analysis of qualitative and quantitative methods employed to answer questions in nursing practice based on available evidence. Emphasis on problem identification; design principles; and accessing, analyzing, disseminating and utilizing research.
Prerequisite: NURS 5020orEPSY5605/ NURS5010

NURS 5040 - Needs Assessment and Planning
An interdisciplinary survey course that prepares students to conduct a needs assessment on a selected population. Includes elements of epidemiology, identification of populations at risk and the development of plans to market, implement and evaluate programs to enhance the health and well-being of selected populations.
Prerequisite: NURS 5020 or EPSY 5605 and NURS 5030 (RG 4109).

NURS 5050 - Policy Aspects of Advanced Nursing Practice
Analysis and evaluation of legal, regulatory, policy and economic aspects of advanced nursing practice from historical, contemporary and futuristic perspective. Understand the interrelationships among change, power and politics.

NURS 5060 - Advanced Pathophysiology across the Lifespan
Advanced level analysis of the etiology and pathogenesis of diseases that alter the health status of adults. This analysis will be realted to adults' clinical and pathophysiologic manifestations of diseases.Course is designed for nurses studying for advanced nursing practice to care for adults with chronic, acute, and life-threatening diseases.

NURS 5062 - Advanced Health Assessment across the Lifespan
The clinical management of individuals experiencing common acute and chronic health problems, focusing on the cardiovascular and respiratory systems and mental health. Principles and techniques of advanced physical assessment are emphasized.
Prerequisite: Either NURS 5350 or NURS 5060, which may be taken concurrently (RG589).

NURS 5070 - Pharmacotherapeutics Across the Lifespan
Emphasis is placed on pharmacodynamics, on nursing measures that support desired drug responses or reduce side effects which must be tolerated, and on client teaching indicated by pharmacotherapy. Open to nondegree students.
Prerequisite: Either NURS 5350 or NURS 5060 (RG584).

NURS 5080 - Health Care Financing
An analysis of economic theory as it relates to health care. Incorporation of expert support systems in the design of nursing department and unit financial plans. Compare and contrast various budgeting systems. Open to non-degree students.

NURS 5089 - Quality and Microsystems
This course introduces both quality and Microsystems; and the role of the CNL as a leader, educator and advocate for safe, cost effective quality care. Practicum (100 hours required) for individual assessment of Microsystems using the 5-P approach emphasizing the aggregate.
Prerequisite: NURS Grad Majors only

NURS 5090 - Intellectual Leadership in Nursing Education and Practice
Study of the history, philosophy, and theory of nursing education from the Nightingale Training School to the initiation of the associate and baccalaureate degree nursing programs. Analysis of curriculum development with emphasis on professional practice. Consideration of the articulation of associate and baccalaureate education. Non-traditional, futuristic curricular models are examined. Evaluation of professional ethics, intellectual leadership behaviors and clinical practice skills.

NURS 5098 - Independent Study

NURS 5099 - Clinical Nurse Leader Role, Quality and Clinical Immersion
Utilization of ecological, global and social determinants of health to survey the history of quality, address quality improvement principles and concepts at the point of care, use of information systems/technology and patient care technology supportive of clinical and administrative decision-making and further understand the role of the CNL culminating in a 300-400 hour immersion experience which includes the management of the quality project identified in NURS 5089.
Prerequisite: NURS 5089

NURS 5150 - Advanced Physical Diagnosis
The diagnosis of patients with acute health problems with a focus on data collection through history, physical examination, laboratory, radiology, and electronic and hemodynamic monitoring.
Prerequisite: NURS 5062 (RG439).

NURS 5160 - Adult/Gerontology Acute Care: Management of Common and Chronic Problems
The focus of this course will be the introduction of critical thinking, analysis and application of theories and concepts to care for acutely ill clients.A strong emphasis will be placed on pathophysiology and assessment. Interpretation and management of treatment plans will be explored.
Prerequisite: NURS 5010 or NURS 5011, NURS 5060, NURS 5062

NURS 5169 - Adult/Gerontology: Acute Care Practicum I
The focus of this practicum will be critical thinking, assessment and diagnosis of acutely/critically ill patients. Database creation, formulating a plan of care, and evaluation of outcomes will be explored. Diagnostics and therapeutics will be emphasized.
Prerequisite: NURS 5010 or NURS 5011, NURS 5060, NURS 5062

NURS 5170 - Adult/Gerontology Acute Care: Management of Complex Problems
This course continues to refine the analysis and application of theories for the nurse practitioner and clinical nurse specialist in acute care. The focus is on role development, trends, issues and research into common problems of the acutely ill client.
Prerequisite: NURS 5010 or NURS 5011, NURS 5060, NURS 5062

NURS 5179 - Adult/Gerontology: Acute Care Practicum II
The focus of this practicum will be the refinement of pertinent management abilities and skill for the nurse practitioner student. The student will expand their management to multiple patients. Collaboration within a multidisciplinary team, providing holistic care and evaluation of current research will be explored.
Prerequisite: NURS 5160 and NURS 5169 and NURS 5010 or NURS 5011. NURS 5170 is taken concurrently.

NURS 5200 - Nursing Administration I
Introduction to the process of nursing administration. Emphasis is placed on theories of leadership, motivation, evaluation, organizational design and problem solving.

NURS 5215 - Nursing Administration II
Application of management theories to nursing administration focusing on staff development, labor relations, staffing and scheduling, patient classification systems, quality management, performance and program evaluation, and human resource management.
Prerequisite: NURS 5200. Co-requisite: NURS 5030 (RG445).

NURS 5220 - Health Care Outcome Management
An examination and utilization of variance analysis and outcome measurement skills to achieve cost effective quality health care delivery through outcome management. Open to nondegree students.

NURS 5225 - Nursing Administration III
Synthesis of nursing and multidisciplinary theories in the system of nursing administration. Strategic planning, ethics, marketing, entre/intrapreneurship, and multisystem corporations are analyzed and the role of the administrator examined.
Prerequisite: NURS 5010, NURS 5030, and NURS 5215 (RG447).

NURS 5250 - Community Health Nursing Theory: Enhancing Wellness
Theoretical formulations from nursing, public health, and related sciences are used to enhance the levels of wellness of selected population groups in the community. A needs assessment is conducted to develop a community diagnosis as the basis for developing a plan for health promotion.
Prerequisites or Co-requisites: NURS 5010 (350) and PUBH 5401. Both may be taken concurrently (RG3730).

NURS 5259 - Community Health Nursing Practicum I: Enhancing Wellness
Practicum experience in community care and consultation focusing on health promotion and disease prevention under the supervision of an advanced practice nurse. A weekly seminar addressing the teaching, coaching, and interdisciplinary collaboration elements of role development is incorporated.
Prerequisites: NURS 5250 (334), NURS 5010 (350), and PUBH 5401, which may be taken concurrently (RG4127)

NURS 5265 - Community Health Nursing Theory and Practice: Risk Reduction
Analysis of risk factors for selected populations/communities through an integration of nursing and public health theories. Opportunity for development, implementation, and evaluation of risk reduction interventions is provided.
Prerequisite: NURS 5250. Prerequisite or co-requisite: NURS 5080 (RG441).

NURS 5269 - Community Health Nursing Practicum II: Risk Reduction
Apply integrated knowledge of nursing and public health principles in the appraisal of health risks; development and implementation of risk reduction strategies; and evaluation of plans to promote self-care activities for a selected population

Prerequisites: NURS 5250 and NURS 5259. Co-requisite: NURS 5265 (RG4302)

NURS 5275 - Community Health Nursing Theory and Practice: Health Maintenance
Analysis of health maintenance issues and interventions for groups sharing a common health problem. Opportunity to apply integrated knowledge of nursing and public health principles in the development and evaluation of plans to maintain optimum levels of health is provided.
Prerequisite: NURS 5265 (RG442).

NURS 5279 - Community Health Nursing Practicum III: Health Maintainance
Provide interventions for groups sharing a common health problem. Identify, discuss, and apply various theories and methodologies related to the processes of behavior change.
Prerequisites: NURS 5265 and NURS 5269. Co-requisite: NURS 5275 (RG4303)

NURS 5350 - Advanced Neonatal Embryology/Physiology
This course examines fetal, transitional, and neonatal physiology. Embryology is also discussed, as the basis for neonatal development.

NURS 5362 - Neonatal Advanced Health Assessment
This course is designed to enable students to put into practice the principles and skills needed for advanced health assessment of the neonate.

NURS 5365 - Advanced Neonatal Nursing Theory I
The purpose of this first clinical course is to introduce the role of the neonatal nurse practitioner clinician in the management of normal and high-risk families and infants. The focus of the course is to develop skills in the physical and psychosocial assessment of high-risk childbearing families during all phases of the childbearing process: antenatal, intrapartum, postpartum, and the neonatal period. Special emphasis will be placed on events during the antenatal, intrapartum, and postpartum periods that impact the neonate.
Prerequisites: NURS 5010 or NURS 5011 and NURS 5350

NURS 5369 - Advanced Neonatal Practicum I
The focus of this practicum is the assessment and management of moderately ill infants and their families.

NURS 5370 - Neonatal Pharmacotheraputics and Implications for Nursing Action
Emphasis is placed on neonatal pharmacodynamics, on nursing measures that support desired drug responses or reduce side effects which must be tolerated.
Prerequisite: NURS 5350 or NURS 5060 (RG 4110).

NURS 5375 - Advanced Neonatal Nursing Theory II
Focuses on the acquisition and application of in-depth physiological and psychological knowledge to the nursing care of high-risk neonates and their families. Emphasis is placed on the role of the advanced practice nursing management of high-risk neonatal populations.
Prerequisite: NURS 5365 (RG433).

NURS 5379 - Advanced Neonatal Practicum II
The focus of this practicum is the assessment and management of high-risk neonates and families.
Prerequisite: NURS 5369 (RG 4111).

NURS 5385 - Advanced Neonatal Nursing III
This course focuses on the components essential for preparation of students for advanced practice in neonatal nursing.
Prerequisite: NURS 5375 (RG434).

NURS 5389 - Advanced Neonatal Practicum III
The focus of this course is the assessment and management of critically ill high-risk neonates and their families.
Prerequisite: NURS 5379 (RG 4112)

NURS 5400 - Manage. of Common Health Prob in Adult Geront. and Family Pop.
Focus is on the health promotion/disease prevention and the assessment and management of selected acute and chronic health problems, including respiratory, cardiovascular, and endocrine systems. Assessment skills applied to diagnosis and treatment of human responses to acute and chronic health problems are emphasized. Family theory is introduced.
Prerequisite: NURS 5010 or NURS 5011, NURS 5060, NURS 5062

NURS 5409 - APN Practicum I
Focus is health promotion/disease prevention and the clinical diagnosis and management of individuals/families experiencing common acute and chronic health problems. The role of the nurse in primary care is examined. Includes a seminar and clinical hours per week.
Prerequisites: NURS 5010 or NURS 5011, NURS 5060 and NURS 5062. NURS 5400 is taken concurrently.

NURS 5410 - Adult/Geron Prim Care: Management of Common & Chronic Health Problems
Assessment and management of selected acute and chronic health problems, focusing on endocrine, gastrointestinal, integumentary and genitourinary systems, women's health and behavioral health.
Prerequisite: NURS 5400. NURS 5419 is taken concurrently.

NURS 5419 - APN Practicum II
The focus of this practicum will be assessment and management of complex acute and chronic health problems. Includes a seminar and clinical hours per week.
Prerequisite: NURS 5400 and NURS 5409; NURS

NURS 5420 - Adult/Gerontology Primary Care: Management of Complex Problems
This final didactic course is a synthesis of assessment, management, and evaluation of adult-geriatric primary care conditions. Special focus will be on the assessment and management of adolescents and adults with complex health problems including sensory, neurological, immunological, oncological, women¿s health, and behavioral health problems. Violence, ethics, genetic counseling and use of complementary and alternative therapies will be addressed.
Prerequisite: NURS 5400 and NURS 5410. NURS 5429 is taken concurrently.

NURS 5429 - APN Practicum III
Builds on all previous primary care didactic and practicum courses focusing on clinical management of individuals experiencing complex health problems with special emphasis on problems of neurological, immunological, and sensory systems, women¿s health, oncology, violence, behavioral health and ethics. Additional practice in an area of special interest is encouraged.
Prerequisite: NURS 5420, which may be taken concurrently (RG591).

NURS 5430 - Management of Childbearing Women and Children
The focus of this course on health promotion/disease prevention and clinical diagnosis and management of management of childbearing women and children. In addition, common acute and chronic health problems will be addressed.
Prerequisite: NURS Grad Majors only

NURS 5450 - Psychopharmacology for

Advanced Practice Nurses
The neurobiology of psychiatric disorders and the complex biochemical interactions of treatment with psychotropic medication are addressed. Specific medications, side effects, polypharmacy, and nursing management of prescriptive practices are explored.
Prerequisite: NURS 5070 (311), NURS 5060 (329), and NURS 5062 (384) (RG 3731)

NURS 5460 - Advanced Psychiatric Nursing I
The advanced practice psychiatric nurse practitioner role in multiple settings and specific psychiatric disorders from a historical and contemporary perspective will be addressed, while detailing treatment models. The required course paper will focus on a developmental stage and the associated psychiatric issues that can effect that population.
Prerequisite: NURS 5450 (341) (RG3732)

NURS 5469 - Advanced Psychiatric Practicum I
The provision of psychiatric mental health care and consultation under the supervision of an APRN. A weekly seminar addressing the teaching and coaching and interdisciplinary collaboration elements of role development is incorporated. Enrollees select a modality of care and the experience is arranged to maximize learning and implementing this modality.

NURS 5470 - Psychiatric Treatment Modalities
This course addresses the treatment modalities available to advanced practice psychiatric nurses--individual, family, and group treatment. Case management is addressed. Students would focus the course paper on one treatment modality and do an in-depth analysis of the principles and practice associated with modality.

NURS 5480 - Advanced Psychiatric Nursing II
Specific advanced psychiatric disorders, etiology and treatment will be explored. The course project involves planning and implementing a primary mental health prevention project with a defined population.
Prerequisite: NURS 5460 (342) (RG3733)

NURS 5489 - Advanced Psychiatric Practicum II
The provision of advanced psychiatric mental health nursing care and consultation under the supervision of an APRN utilizing a new modality of care and enhancing the application of a previous modality of care. A weekly seminar addressing the case management and leadership elements of role development is incorporated .

NURS 5700 - Health Professions Education: Evaluation and Planning
This course will introduce students to important principles of adult learning, evaluation science, curriculum and instruction, diffusion of innovations research, and to evidence-based practices of health professions education. The course will focus on planning and evaluating educational activities for health care professionals.
Prerequisite: NURS Grad Majors only

NURS 5710 - Health Professions Education: Implementation
This course will introduce students to important principles of adult learning and curriculum and instruction, and to evidence-based practices of health professions education. The course addresses critical aspects of implementing educational activities for health care professionals.
Prerequisite: NURS5700;open to NURS

NURS 5811 - Application of Genetics to Healthcare
Open to graduate students in Nursing.
Prerequisite: NURS 5811 prerequisite

NURS 5845 - Health Services Statistics & Research Methods for the Scholarship of Application
This course will encompass elements of needs assessment, statistics, research methods/ design, and epidemiology/populations health serving as the foundation for subsequent development of clinical scholarship.

NURS 5850 - Scientific and Theoretical Underpinnings for the Scholarship of Application
This course explores foundational theories applicable to the practice arena. Topics include: Systems theory, organizational development theory, complexity theory, social worlds theory, nursing mid-range theory and nursing model¿s of evidence-based practice.

NURS 5855 - Evidence-Based Practice for the Scholarship of Application
his course focuses on the development of skills in the translation, application, and evaluation of research, with an emphasis on evidenced-based practice. Skills in the integration of knowledge from diverse sources and disciplines and its application to solve clinical problems and improve health outcomes will be emphasized

NURS 5860 - Quality and Organizational/ Systems Leadership for the Scholarship of Application
This course addresses assessment and diagnosis of organizations, facilitation of system-wide change, development of political skill for change, engagement in the process of quality and performance improvement methodologies, and application of leadership theory within organizations.
Prerequisite: NURS Grad Majors only

NURS 5865 - Information Systems for the Scholarship of Application
This course focuses on the evaluation and use of information systems/technology and patient care technology supportive of clinical and administrative decision-making relevant to patient care, care systems, and quality improvement.

NURS 5869 - Doctor of Nursing Practice Residency Elective
This course requires the student to complete a nursing practicum in the specialty area of their choice with hours as necessary for total of 1,000 post-BSN.

NURS 5870 - Health Policy and Populations-based Advocacy for the Scholarship of Application
This course focuses on the role of the advanced practice nurse in collaborative health care teams pertaining to health policy, health promotion, risk reduction, and illness prevention for population health. The role of the advanced practice nurse as advocate is explored. Educational strategies necessary for transformation of clinical education to decrease preventable deaths will be incorporated.
Prerequisite: NURS Grad Majors only

NURS 5875 - Advanced Pathophysiology and Diagnosis
This course provides an advanced level synthesis of the pathophysiology of diseases, the predicted trajectory of illnesses, and the therapeutic options for cure of diseases and control of illness. It is designed for nurses studying for advanced nursing practice to care for adults with chronic, acute, and life-threatening diseases.

NURS 5879 - Doctor of Nursing Practice Residency I

The first of 2 clinical courses, NURS 5879 requires the student to complete a nursing practicum in the specialty area of their choice. Students will select an area of specialization, develop individual objectives, and plan their project, which will be implemented during the subsequent clinical semester.

NURS 5880 - Advanced Pharmacodynamics
This course provides an advanced level systhesis of the pharmacotherapy of diseases and control of illnesses. It is designed for nurses studying for advanced nurisng practice to care for adults with chronic, acute, and life-threatening disease.

NURS 5885 - Leadership and Management for the Scholarship of Application
This course will encompass elements of leadership development, advanced practice management issues, and financial planning including budgeting and business planning.

NURS 5889 - Doctor of Nursing Practice Residency II
The second of 2 clinical courses, NURS 5889 requires the student to complete a nursing practicum in the specialty area of their choice. Students will select an area of specialization, develop individual objectives, and implement their project, which was designed in NURS 5879.
Prerequisite: NURS 5879 (RG4304)

NURS 5895 - Doctor of Nursing Practice Clinical Practice Dissertation Seminar
This recurring seminar is designed to assist students in the development of the DNP Clinical Practice Dissertation (CPD).

NURS 6000 - Special Topics in Doctoral Methods
Variable credit course in doctoral research methods.
Prerequisite: NURS 6000 Prerequisite

NURS 6100 - Philosophy of Science in Nursing
A critical examination of the meanings, methods, and logical structure of science. Contemporary and historical views pertaining to the nature of truth, explanation, law, theory and methodology will be analyzed and compared. Examples drawn from nursing epistemology as well as that of other disciplines will be utilized to depict the presuppositions of modern science.

NURS 6101 - Introduction to Grantsmanship
This course presents an introduction to the process of securing grants. Practical application is stressed to enhance the development of skills needed to secure funding for scholarly research endeavors.

NURS 6110 - Analysis of Contemporary Nursing Knowledge
Methods of analysis and evaluation of the concepts and theories in nursing both grand and mid range.
Prerequisite: NURS 410 (RG453).

NURS 6115 - Experimental Design and Analysis in Nursing Research
This course will focus on the study and application of quantitative research methods from design through statistical analysis for experimental designs in nursing and healthcare. Options for the structures of experimental designs and techniques of data analysis appropriate to experimental studies of varying complexity, including emerging research methodologies, will be addressed. Students will conduct a pilot study using the most appropriate experimental design.
Prerequisite: NURS 6115 Prerequisite

NURS 6130 - Introduction to Qualitative Methodology
This course is designed for students in nursing and other disciplines to achieve an introductory level of expertise in selected qualitative approaches. Expected course outcome is a completed qualitative project.

NURS 6135 - Exploring the Nature of Nursing Knowledge
The course is a critical examination of the development of nursing¿s disciplinary knowledge as it relates to the nature of nursing and its epistemic, ontologic, and ethical claims. This examination will include historical analysis and evaluation of nursing¿s meta-paradigm (meta language), conceptual models, and theories both grand and middle range.
Prerequisite: NURS 6135 Prerequisite

NURS 6145 - Quasi and Non Experimental Design and Analysis in Nursing Research
This course focuses on application of quantitative research methods from design through statistical analysis for quasi and non experimental designs in nursing and healthcare. Options for the structures of quasi and non experimental designs and techniques of data analysis appropriate to studies of varying complexity, including emerging research method innovations, will be addressed. Limitations to the justification/ feasibility of applying an experimental approach to human subjects will be included. Students will conduct a pilot study utilizing the most appropriate research design.
Prerequisite: NURS 6145 Prerequisite

NURS 6150 - Instrument Development in Nursing
A study of the theories and methods of instrument development as applied to nursing. The basic psychometric properties to be assessed and built into a useful measure for clinical or research applications are explored.

NURS 6160 - Advanced Qualitative Methods
This seminar is designed for students in nursing and other disciplines to achieve an advanced level of expertise in selected qualitative approaches. Expected course outcome is a completed qualitative project.
Prerequisite: NURS 6130 (RG460).

NURS 6165 - Mixed Methods in Nursing Research
This course presents mixed methods as a third paradigm that combines and complements the qualitative and quantitative approaches traditionally used in nursing research. Theoretical, paradigmatic, and programmatic issues, as well as practical application will be discussed.
Prerequisite: NURS 6165 Prerequistite

NURS 6175 - Advancing Nursing Knowledge Development
The course is a critical application of nursing knowledge to nursing research. Each student will identify and justify the epistemology, theoretical perspective, methodology, and methods that will provide a scaffold for his/ her dissertation topic.
Prerequisite: NURS 6175 Prerequisite

NURS 6180 - Research Internship in Nursing
The research internship will be completed under the mentorship of an experienced researcher. The course will meet in seminar format to provide direction and support during the internship.

†GRAD 6930. Full-Time Directed Studies (Doctoral Level) (GRAD 497) 3 credits.

†GRAD 6950. Doctoral Dissertation Research (GRAD 495) 1 - 9 credits.

†GRAD 6960. Full-Time Doctoral Research (GRAD 496) 3 credits.

GRAD 6998. Special Readings (Doctoral) (GRAD 498) Non-credit.

GRAD 6999. Dissertation Preparation (GRAD 499) Non-credit.

†GRAD 5930. Full-Time Directed Studies (Master's Level) (GRAD 397) 3 credits.

†GRAD 5950. Master's Thesis Research (GRAD 395) 1 - 9 credits.

†GRAD 5960. Full-Time Master's Research (GRAD 396) 3 credits.

GRAD 5998. Special Readings (Master's) (GRAD 398) Non-credit.

GRAD 5999. Thesis Preparation (GRAD 399) Non-credit.

Nutritional Sciences

*****

Department Head
Professor Sung I. Koo

Professors
Fernandez, Freake, Rodriguez, and Watkins

Associate Professors
Bruno, Kerstetter, Lee, and Volek

Assistant Professors
Bolling and Chunl

The degrees of Master of Science (M.S.) (Plan A thesis and Plan B non-thesis options) and Doctor of Philosophy (Ph.D.) in the field of Nutritional Science are offered.

Admission to Degree Programs

In addition to the standard requirements of the Graduate School, applicants also should submit scores from the Graduate Records Examinations (GRE). Prior study in the biological sciences and nutrition is required, however, some prerequisites may be taken after matriculation in the program. More detailed information can be obtained from the department.

Program of Study

There are three major areas of expertise within the Department: molecular nutrition, nutritional biochemistry and metabolism, and community nutrition and health. Molecular nutrition is based on laboratory studies utilizing molecular biological techniques to examine mechanisms of nutrient action and metabolism in the cell, tissue, and whole animal. Nutritional biochemistry and metabolism involves human and animal studies to examine nutrient metabolism in health and disease. Community nutrition and health focuses on public health areas of nutrition including community-level nutrition assessment, education and intervention programs. These areas are interdisciplinary in approach and are supported by other departments as well as by collaborative arrangements with other institutions. Opportunities for interdisciplinary research and study exist. All programs require a thesis, dissertation, or expanded paper, in addition to the successful completion of the appropriate graduate courses and examinations.

Courses

NUSC 5100 - Concepts of Nutrition
An introduction to the broad field of nutrition. Intended for entering graduate students, the course provides a conceptual framework for research and study in the nutritional sciences. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatistactory.)

NUSC 5200 - Macronutrient Metabolism
The function and metabolic pathways of energy, carbohydrates, protein and lipids; their interrelationships and factors controlling their metabolism. Methodologies for studying metabolism and assessing nutrient requirements in man and animals.
Prerequisite: MCB 5001 (RG462).

NUSC 5300 - Vitamins and Minerals
Comprehensive study of vitamins, trace elements, and selected macrominerals, including biochemical function(s), metabolic pathways, interactions, and toxicities.
Prerequisite: MCB 5001 (RG462).

NUSC 5312 - Assessment of Nutritional Status
This course is designed to discuss and critique the methodologies of nutritional status assessment, namely dietary, anthropometric and biochemical. Analysis of human blood and urine samples provides exposure to laboratory techniques and equipment used in nutritional assessment.
Prerequisite: NUSC 5200 (RG463)

NUSC 5314 - Nutrition for Healthy Communities
Development of knowledge and and skill in public nutrition, including community assessment, development of program policies, and program planning, implementation, and evaluation.

NUSC 5390 - Field Work on Community Nutrition
Supervised field studies of community nutrition problems and visits with community agencies and families. Readings, conferences and reports required.

NUSC 5394 - Seminar
Students develop the skills required for the analysis and presentation of current literature and research problems.
Prerequisite: NUSC 5100 (RG464).

NUSC 5398 - Special Topics in Nutrition
Advanced study in a given area of nutritional science.

NUSC 5399 - Independent Study in Nutritional Science
Research problems or critical review of literature in any area of nutrition.

NUSC 6313 - Nutrition and Gene Expression
Regulation of eukaryotic gene expression by specific nutrients, hormones, and metabolites. Transcriptional, post-transcriptional, and translational mechanisms.
Prerequisite: MCB 5001 (RG462).

NUSC 6315 - Lipid Metabolism in Health and Disease
Comprehensive study of lipid and lipoprotein metabolism. Influence of diet, drugs, exercise and obesity. Overview of relationship between genetics, lifestyle factors and chronic disease.

NUSC 6317 - Nutritional Epidemiology
Principles and applications of nutritional epidemiology with emphasis on research design.

NUSC 6365 - Advanced Clinical Nutrition
A study of topics of current clinical interest. Lectures, readings, reports and discussion.
Prerequisite: NUSC 5200 (RG463)

†GRAD 5930. Full-Time Directed Studies (Master's Level) (GRAD 397) 3 credits.

†GRAD 5950. Master's Thesis Research (GRAD 395) 1 - 9 credits.

†GRAD 5960. Full-Time Master's Research (GRAD 396) 3 credits.

GRAD 5998. Special Readings (Master's) (GRAD 398) Non-credit.

GRAD 5999. Thesis Preparation (GRAD 399) Non-credit.

†GRAD 6930. Full-Time Directed Studies (Doctoral Level) (GRAD 497) 3 credits.

†GRAD 6950. Doctoral Dissertation Research (GRAD 495) 1 - 9 credits.

†GRAD 6960. Full-Time Doctoral Research (GRAD 496) 3 credits.

GRAD 6998. Special Readings (Doctoral) (GRAD 498) Non-credit.

GRAD 6999. Dissertation Preparation (GRAD 499) Non-credit.

Pathobiology

*****

Department Head
Professor Herbert J. Van Kruiningen

Professors
Bushmich, Garmendia, Geary, and Khan

Associate Professor
De Guise, Frasca, French, and Smyth

Assistant Professors
Risatti and Tufts

Adjunct Assistant Professor
Borca and Smolowit

Graduate instruction leading to the M.S. and Ph.D. degrees is offered by the Department of Pathobiology and Veterinary Science. All M.S. degrees are granted in Pathobiology. Ph.D. degrees are granted in Pathobiology with areas of concentration in bacteriology, pathology, and virology. Standard admission requirements are maintained for these programs. There also is a study area offered in veterinary pathology, which is open only to Ph.D. students with the D.V.M. degree. In all of these areas, the accent is on basic sciences as related to diseases of animals.

Requirements

For the M.S. degree, generally 15 credits of course work and a thesis are required. No established sequence of courses is required for the Ph.D. degree. Since students possessing the D.V.M. degree usually have four more years of advanced education than the typical Ph.D. applicant, fewer courses may be required. In addition to graduate courses offered within the department, the candidate is expected to take graduate courses in biochemistry, nutrition, toxicology, immunology, pharmacology, cell biology, genetics, statistics, and molecular biology in appropriate departments.

Special Facilities

The department houses the Connecticut Veterinary Medical Diagnostic Laboratory which is equipped with a fully functioning mammalian and avian necropsy laboratory, histology laboratory and diagnostic microbiology, virology and serology laboratories. State of the art molecular biology facilities are present in the department for research on infectious, immunologic, toxic and metabolic diseases. The department also houses the Northeastern Research Center for Wildlife Diseases. Collaborative opportunities exist with the USDA Plum Island Animal Disease Center and the School of Pharmacy.

Courses

PVS 5094 - Pathobiology Seminar

PVS 5099 - Research and Independent Study in Animal Diseases

PVS 5201 - Microbiology of Atypical Bacteria
An in-depth presentation of current information on medically significant atypical bacteria, with emphasis on molecular aspects of pathogenesis.

PVS 5202 - Viral Pathogenesis
Disease processes of the virus and host at the organic and molecular levels. Various aspects of selected viral infections will be covered, including contemporary topics of interest. Active student participation through presentations and discussion of literature.

PVS 5300 - Disc of Pathobiology and Veterinary Science Literature
Weekly discussion of current peer-reviewed literature related to pathobiological basis of disease.

PVS 5303 - Veterinary Pathology Lecture Series
Lectures on veterinary and comparative anatomic pathology organized by animal species or disease classification utilizing lectures on electronic media in the context of a prescribed plan of study. May be repeated for credit with change in content

PVS 5331 - Toxicological Pathology
Principles of toxicological pathology are covered, with special attention to chemical carcinogenesis and systemic toxicological pathology. For the different systems, the particularities of structure and function of the system are reviewed, along with the particular mechanisms of toxicity to that system, the specific responses of that system to injury, and the methods to test for toxicity. The discussion of related scientific journal articles supplement the textbook information reviewed in lectures.

PVS 5392 - Practicum in Veterinary Anatomic Pathology
Open only to veterinarians accepted into the residency program in veterinary pathology.

PVS 5394 - Veterinary Pathology Seminar
Blinded examination of gross and histologic lesions with emphasis on lesion recognition, description and disease diagnosis, followed by group discussion of each case.

PVS 5401 - Immunobiology
Principles of basic and clinical immunobiology; phylogeny and ontogeny of the immune response, characteristics of the immune response, cellular and humoral immunity; central and peripheral lymphoid tissues; mechanisms of immunologic injury and immunologic diseases; comparative and veterinary immunology; transplantation and tumor immunology.

PVS 5431 - Avian Pathology
A comprehensive study of systemic avian pathology, stressing the correlation of pathological changes with clinical and microbiological findings.

PVS 5502 - Evaluation of Diagnostic Test
Sampling criteria and size determination, diagnostic test selection, diagnostic strategies, test result evaluation and interpretation.

PVS 5503 - Molecular Approaches to Disease Diagnosis and Prevention
Molecular aspects of disease, with emphasis on methodologies and strategies for diagnosis, analysis and prophylaxis.

PVS 5594 - Current Veterinary Pathology Literature
Detailed study of current veterinary pathology literature, with particular emphasis on lesions and mechanisms of disease.

PVS 5632 - Vaccines: Mechanisms of Immune Protection
The focus is on several different approaches to inducing prophylactic immunity in the host. Both traditional and modern molecular approaches to vaccine design will be discussed. In addition, the mechanisms employed by pathogenic microbes to avoid hosts' immune responses will be examined in the context of vaccine design. The students will gain an appreciation for the transition from basic research to practical applications. Also offered as ANSC 306.

†GRAD 5930. Full-Time Directed Studies (Master's Level) (GRAD 397) 3 credits.

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GRAD 5999. Thesis Preparation (GRAD 399) Non-credit.

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GRAD 6998. Special Readings (Doctoral) (GRAD 498) Non-credit.

GRAD 6999. Dissertation Preparation (GRAD 499) Non-credit.

Pharmaceutical Science

*****

Department Head
Professor Debra A. Kendall

Associate Department Head
Professor Amy C. Anderson

Professors
Anderson, Boelsterli, Burgess, Kalonia, Kendall, Pikal, Manautou, Morris and Wright

Associate Professors
Aneskievich, Bogner, Gianutsos, Grant, Hubbard, Rasmussen, Vinogradova and Zhong

Assistant Professors
Balunas, Chaudhuri, Hadden, Lu and Wiemer

Programs leading to the M.S. and Ph.D. degrees in Pharmaceutical Sciences are offered in three areas: (1) Medicinal Chemistry and Natural Products, (2) Pharmacology and Toxicology, and (3) Pharmaceutics. These programs make full use of courses offered by departments in such areas as organic, analytical, and physical chemistry; biochemistry; molecular and cell biology; neurobiology; biophysics; physiology; statistics; mathematics; microbiology; pathology; and materials science. A brief description and a statement of objectives for each program area are offered below.

Medicinal Chemistry

Medicinal chemists design, discover and optimize drug molecules for a desired biological activity. The sources of lead molecules stem primarily from natural products, including cofactors and secondary metabolites, as well as rational design using structures of drug targets. Optimization often includes synthetic chemistry methods to arrive at improved compounds that exert potency and specificity for the target. Medicinal chemists also study the molecular mechanisms of drug action, including interactions of the drug with the target biopolymers through which drug activity is induced. Although their major concern is with chemistry, medicinal chemists must be also familiar with the pharmacological and biochemical systems on which the drug molecules act.

The M.S. (Plan A) and the Ph.D. are offered in the area of medicinal chemistry. A strong background in chemistry is essential for admission. Required course work varies with the background and interests of the student. This includes advanced courses in

medicinal chemistry as well as courses from the following disciplines: organic, physical, and biophysical chemistry; spectroscopy; biophysics; biochemistry; molecular biology; pharmacology; microbiology.

Pharmacology and Toxicology

Scholarly laboratory research and the education of graduate students in all aspects of drug and chemical action are paramount activities of the pharmacology and toxicology faculty. Therapeutic and toxic reactions to drugs and chemicals and their physiological and biochemical mechanisms of action are emphasized in this program. Emphasis is also placed in the areas of biochemical toxicology, inhalation toxicology, molecular toxicology, molecular pharmacology of nuclear receptors, hepatotoxicology, and immunology.

The Ph.D. is offered in the concentration of pharmacology and toxicology. For admission to the graduate program, a strong background in biology as well as proficiency in chemistry, mathematics, and physics are essential. Course requirements for the Ph.D. degree are individualized, although advanced courses in pharmacology, physiology, and biochemistry are uniformly required.

Pharmaceutics

Pharmaceutics deals with those factors bearing on the design of drug delivery systems that are safe and efficacious. Understanding the stability of the drug molecule in a multitude of environments, the release of the drug from various dosage forms, surface and colloid chemistry, and the subsequent absorption, metabolism, and excretion of the drug requires a diversified educational and research experience. Faculty interests and graduate plans of study may emphasize kinetics, thermodynamics, transport phenomena, biopharmaceutics, pharmacokinetics, biopharmaceutics of proteins, and biotechnology. Moreover, each of these exposures entails an emphasis on quantitative appraisals which demand grounding in advanced mathematics. While individual dissertation problems usually are sharply focused, the overall thrust of the graduate program in pharmaceutics is the education of a generalist in drug delivery systems.

The M.S. (Plan A) and the Ph.D. are offered in the concentration of pharmaceutics. In particular, course work in advanced pharmaceutics, physical chemistry, and mathematics is required.

Special Facilities

The Department has well-equipped laboratories in diverse research areas. Major equipment includes a high-throughput screening facility, Rigaku X-ray diffractometer for protein crystal diffraction and nuclear Magnetic Resonance Facility with Bruker Avance 300, 400, and 500 MHz spectrometers and a Varian Inova 600 MHz spectrometer equipped with a cryoprobe. Other equipment available includes ultra-violet, F.T. infrared, dual wavelength, and fluorescence spectrophotometers, liquid scintillation spectrometers, analytical and preparative gas-liquid chromatographs, high-pressure liquid chromatographs, preparative and ultra centrifuges, low and high voltage electrophoresis apparatus, differential thermal analytical and scanning calorimeter, thermal gravimetric and analytical equipment. Langmuir film balance, atomic absorptometer, gas chromatography-mass spectrometry unit, mass spectrometers and electron microscopes are available on campus. Animal quarters and cold rooms are also located in the School of Pharmacy.

Courses

PHAR 5215 - Pharmaceutical Biotechnology
A survey of medicinal chemistry and pharmaceutics of pharmaceutical products derived from modern methods of molecular biology. This course will consider products in use or in clinical trials to emphasize the conceptual basis, design, and synthesis of biotech products in the context of current practical applications.

PHAR 5216 - Dosage Forms I
Introduces the student to the principles of thermodynamics, ionic equilibrium, chemical kinetics and diffusion. Application of these principles to formulation, stability and dissolution of a drug product, and release from the dosage form for optimum therapeutic outcome. Required of entering graduate students in Pharmaceutics who do not have a Pharmacy background as well as those who do not pass the qualifying examination within the first year of the program.

PHAR 5217 - Dosage Forms II
Covers the basic principles of the surface and colloid chemistry and rheology, as these relate to the performance of dispersed system dosage forms including colloids, suspensions, emulsions, suppositories, aerosols, ointments, and transdermals. Required of entering graduate students in Pharmaceutics who do not have a Pharmacy background, and those who do not pass the qualifying examination within the first year of the program.

PHAR 5219 - Biopharmaceutics and Pharmacokinetics
Basic principles of biopharmaceutics, bioavailability, and pharmacokinetics, including their application to the rational design of both dosage forms and maximally effective dosing regimens. Intended for graduate students who may not have sufficient previous exposure to biopharmaceutics and pharmakokinetics.

PHAR 5239 - Current Literature in Pharmaceutics
Designed to familiarize students with current pharmaceutics literature and to educate students in critical peer revirew in the pharmaceutics literature.

PHAR 5293 - Seminar in Pharmaceutics
Reports and discussions.

PHAR 5295 - Special Problems in Pharmaceutics
Individualized course for students desiring research experience in any of the areas of pharmacy other than the area chosen by the student for thesis research.

PHAR 5297 - Special Topics in Pharmaceutics
Includes topics not presently covered in courses which are pertinent to current departmental research and areas of recent development in the literature.

PHAR 5301 - Drug Design
A cooperative presentation of the fundamentals of medicinal chemistry.

PHAR 5302 - Chemical Biology and Drug Design
The overall goal of this course is to introduce students to the emerging field of chemical biology with a particular focus on the role it plays in understanding cellular signaling, drug design, and drug development.

PHAR 5303 - Small Molecule Structure and Function
Small organic molecules continue to be the preeminent form of therapeutic agents. The small molecules that constitute clinically used agents are developed through a highly interdisciplinary process involving chemists, biologists and healthcare workers in a process commonly referred to as drug discovery. The purpose of this course is to provide the student with a broad view of drug properties, drug function and the drug discovery process.

PHAR 5308 - Structure and Function of Biological Membranes
Overview of cell membrane structure and function based on a foundation of physical and biochemistry principles. Topics include lipid bilayers, vesicles and liposomes, cholesterol, membrane protein structure and function, transport, membrane fusion, receptors, drug/membrane interactions and membranes in cell regulation.

PHAR 5393 - Seminar in Medicinal Chemistry
Reports and discussions.

PHAR 5395 - Special Problems in Medicinal Chemistry
Individualized course for students desiring research experience in any of the areas of medicinal chemistry other than the area chosen by the student for thesis research.

PHAR 5397 - Special Topics in Medicinal Chemistry
Current developments in Medicinal Chemistry. A course for students needing exposure to topics not covered in other department offerings.

PHAR 5403 - Current Toxicology Literature
Designed to familiarize students with current toxicology literature and to educate students in critical peer review of this toxicology literature.

PHAR 5454 - Principles of Safety Evaluation
Introduction to toxicologic risk assessment. Fundamentals of dose-response relationships and risk characterization, and their application in the establishment of permissible exposure limits for drugs and other chemicals in the environment or workplace.

PHAR 5458 - Analytical Toxicology
Qualitative and quantitative determination of xenobiotics. Isolation techniques; principles of chromatography and spectrometry; theory, instrumentation and analysis of data.

PHAR 5471 - Advanced Pharmacology I: Basic Principles
Molecular mechanisms of drug action including occupation and rate theories. Characterization of receptors in-situ and in-vitro.

PHAR 5472 - Advanced Pharmacology II: Drug Disposition
Drug absorption, distribution, excretion, metabolism, interaction, allergy, resistance, tolerance, idiosyncrasy and toxicity.

PHAR 5475 - Toxicology Scholars Colloquium
Reviews, discussions and seminars focused on the research of scientists who have made significant contributions to the science of toxicology.

PHAR 5493 - Seminar in Pharmacology and Toxicology
Reports and discussions on journal and review articles and presentation of personal research results.

PHAR 5494 - Seminar in Immunology
Reports and discussions.
Prerequisite: PHAR 393 (RG466).

PHAR 5495 - Special Problems in Pharmacology I
The course is individualized for students desiring research experience in any of the areas of pharmacology.

PHAR 5496 - Special Problems in Toxicology
Individualized course for students desiring research experience in any of the areas of toxicology.

PHAR 5497 - Special Topics in Pharmacology
Includes topics not presently covered in courses, which are pertinent to current departmental research and areas of recent development in the literature.

PHAR 5498 - Special Topics in Toxicology
Basic principles of toxicology as emphasized by recent developments in the biochemical toxicology literature.

PHAR 5746 - Introduction to Managed Care Pharmacy
A study of managed care pharmacy within the United States health care system, with emphasis on managed care organization and control, pharmacy benefits design and management, outcomes measurement, pharmacoeconomics, health care provider and client education, benefits plan financing and marketing, and legal issues of managed care pharmacy.

PHAR 5764 - Advanced Pharmacy Administration
A study of modern management techniques applicable in terminal drug distribution. Special emphasis is placed upon quantitative methods and the utilization of electronic data processing.

PHAR 5793 - Seminar in Pharmacy Administration

Reports and discussions.

PHAR 5795 - Special Problems in Pharmacy Practice
Individualized course for students desiring research experience in pharmacy administration or hospital pharmacy administration.

PHAR 5797 - Special Topics in Pharmacy Administration
Current developments in Pharmacy Administration. A course for students needing exposure to topics not covered in other Department of Pharmacy Practice offerings.

PHAR 6234 - Advanced Biopharmaceutics
Overview of physico-chemical, biopharmaceutic, and physiologic factors controlling the delivery of drug and their sites of action.

PHAR 6241 - Advanced Kinetics and Mechanisms of Drug Degradation
An advanced treatment of the physical organic chemistry critical to the characterization and understanding of stability in pharmaceutical products. Prerequisite: PHARM 6288 (RG 3063).

PHAR 6242 - Freeze Drying of Pharmaceuticals
The science and technology of freeze drying, including fundamentals of heat and mass transfer gas systems, process design considerations, and formulation strategies with emphasis on stabilization of therapeutic proteins.

PHAR 6285 - Complex Equilibria
A study of the physico-chemical and mathematical treatment in pharmaceutical systems. Topics center on thermodynamics, activity coefficients, acids and bases, solubility, complexation solubilization and protein binding.

PHAR 6286 - Transport Processes
Emphasis is on the application of the laws of diffusion to dissolution, membrane transport and release of drugs from dosage forms.

PHAR 6288 - Kinetics and Mechanisms of Drug Degradation and Stability
A study of the kinetics and mechanisms of drug degradation in the solid and liquid states and drug stabilization.

PHAR 6289 - Pharmacokinetics
A discussion of absorption, distribution, and clearance mechanisms, and their impact on concentration-time profiles and drug response.

PHAR 6290 - Colloid Chemistry and Interfacial Phenomena
Interfacial phenomena, colloid chemistry.

PHAR 6452 - Toxicology of the Respiratory System
Anatomic and functional aspects of toxic injury to the respiratory tract with an emphasis on biochemical and physiologic mechanisms of toxic pulmonary injury. Lectures and student presentations. Prerequisite: PHAR 6455 (RG465).

PHAR 6455 - Advanced Toxicology
A study of the harmful effects of toxic chemicals on biological systems. Emphasis is on mechanisms of toxicant action and on practical applications of modern techniques to assess toxicity and hazard.

PHAR 6459 - Immunotoxicology
Demonstrates the detrimental effects on the immune system and/or inflammatory response, by a variety of physical and chemical xenobiotics. Emphasis is placed on the mechanisms of chemical and drug-induced immunosuppression, autoimmune response, and allergic response.

PHAR 6465 - Pharmacology of the Circulatory System
A study of the cardiovascular system. Both physiological and pharmacological responses of the cardiovascular system are reviewed. Emphasis is placed upon the biochemical and physiological changes associated with atherosclerosis.

PHAR 6473 - Function and Dysfunction of Brain Synapses
This course covers the functional and structural regulation events that influence synaptic activity, as well as corresponding ideas related to memory encoding. In addition, pathogenic processes are addressed which have a negative influence on brain circuits. These include age-related changes, stroke, and Alzheimer-type pathogenesis. Lastly, new and future therapeutic strategies are discussed in regard to the enhancement of memory mechanisms and repair systems. The format of the course is formal lectures and journal article discussions by students.

PHAR 6475 - Mechanistic Toxicology I
Mechanistic toxicology describes the processes of how chemicals exert their toxic effects in biological systems. Therefore, understanding of the underlying mechanisms of toxicity, together with exposure estimates, provides key information that links the toxic hazard of a chemical with the actual human health risk. This first course explores some fundamental cellular and molecular mechanisms of toxicity and integrates them into a larger picture; reactive intermediates, oxidative and nitrative stress, and mitochondria-mediated toxicity will be covered. The basic concepts will be illustrated with specific examples (drugs and environmental chemicals).

PHAR 6484 - Cutaneous Differentiation: Molecular Mechanisms and Cellular Processes
This course examines mammalian skin structure, keratinocyte, immune and pigment cells, mechanisms of mesenchymal-epithelial induction, replication- and cytoskeletal-based diseases, stem cell identification and plasticity, and transcriptional regulation of differentiation-dependent gene expression.

†GRAD 5930. Full-Time Directed Studies (Master's Level) (GRAD 397) 3 credits.

†GRAD 5950. Master's Thesis Research (GRAD 395) 1 - 9 credits.

†GRAD 5960. Full-Time Master's Research (GRAD 396) 3 credits.

GRAD 5998. Special Readings (Master's) (GRAD 398) Non-credit.

GRAD 5999. Thesis Preparation (GRAD 399) Non-credit.

†GRAD 6930. Full-Time Directed Studies (Doctoral Level) (GRAD 497) 3 credits.

†GRAD 6950. Doctoral Dissertation Research (GRAD 495) 1 - 9 credits.

†GRAD 6960. Full-Time Doctoral Research (GRAD 496) 3 credits.

GRAD 6998. Special Readings (Doctoral) (GRAD 498) Non-credit.

GRAD 6999. Dissertation Preparation (GRAD 499) Non-credit.

Philosophy

*****

Department Head
Professor Crawford L. Elder

Professors
Beall, Baxter, Clark, Kupperman, Lynch, and Wheeler

Associate Professor
Bloomfield, Bontly, and Hiskes

Assistant Professors
Parekh, Rossberg and Shapiro

The Department of Philosophy offers study leading to the degree of Master of Arts (M.A.) and Doctor of Philosophy (Ph.D.). The department is primarily an Analytic Philosophy department. Courses of study typically focus on philosophy of psychology and mind, philosophy of language and philosophical logic, or on ethics. However, students can plan a dissertation on metaphysics, history of philosophy, Asian philosophy, or other areas. The instruction is broad enough to make students versatile undergraduate instructors,and concentrated enough to enable students to do significant research.

Students are able to work closely with the faculty at every stage of progress from the initial construction of a plan of study to the completion of a dissertation.

Admission

After reviewing the basic requirements for admission to the Graduate School, applicants should present to the Philosophy Department their scores for the General Test of the Graduate Record Examinations, three letters of recommendation from individuals (preferably philosophy professors) familiar with their academic work, and a philosophical writing sample. Students admitted to the program normally are awarded full graduate assistantships.

The M.A. Program

The Department generally offers only Plan B (non-thesis) for the M.A. Thus a student must have 24 credits in Philosophy in order to take the M.A. examination. First year students must satisfy a formal logic requirement, normally by taking Philosophy 5307. First year students also should take Philosophy 5301 unless they have a strong background in contemporary analytic philosophy.

The M.A. examination consists of turning in two papers written for seminars in philosophy at UConn. On the basis of these papers, the students record, and recommendations from professors under whom the student has worked, the student is either passed with a promise of funding (given satisfactory progress) for three years in the Ph.D. program, passed without such funding, or failed.

The Ph.D. Program

The Ph.D. degree requires eight graduate seminars beyond the M.A. level. Students who enroll in the Ph.D. program with an M.A. from another institution are reviewed after one year, at which time funding for another two years is either awarded or not.

The General Examination consists of three papers, normally seminar papers, in the three areas of philosophy we have defined, namely (1) Metaphysics and Epistemology, (2) Social and Political Philosophy and Ethics, and (3) History of Philosophy. The papers are read by the examining committee and the student is either passed or failed. General examination papers may be turned in to the Director of Graduate Studies at any time. See the Guide to Graduate Students on the Philosophy Department website <www.philosophy.uconn.edu/grad> for further details and a definition of satisfactory progress.

Special Facilities

The holdings of the Homer Babbidge Library are adequate for the pursuit of scholarly research in most fields of philosophy. The Library subscribes to all major philosophical journals and has a complete collection of past issues of most journals. The Department conducts informal weekly seminars at which graduate students and faculty discuss current research with their colleagues. It runs a program of colloquia featuring distinguished philosophers from around the country, and presents the yearly Ruth Evelyn Parcells Lecture in ethics. Students interested in logic may participate in the University's Logic Group (http://logic.uconn.edu).

Courses

PHIL 5300 - Independent Study for Graduate Students

Open to graduate students in Philosophy, others with permission (RG799).

PHIL 5301 - Seminar in Contemporary Philosophy
An introduction to contemporary philosophers such as Russell, Carnap, Ayer, Quine, Putnam, and Kripke.
Open to graduate students in Philosophy,

others with permission (RG799).

PHIL 5305 - Seminar in Aesthetics
A consideration of some of the basic problems in aesthetics.
Open to graduate students in Philosophy, others with permission (RG799).

PHIL 5307 - Logic

Open to graduate students in Philosophy, others with permission (RG799).

PHIL 5311 - Properties of Formal Systems
The development of formal deductive systems. The completeness and consistency of logical systems adequate for the expression of parts of mathematics. A consideration of aspects of the foundations of logic and mathematics.
Open to graduate students in Philosophy, others with permission (RG799).

PHIL 5312 - Seminar in the Philosophy of Science
A discussion of selected current, methodological issues in the philosophy of science. Topics may include scientific realism versus nonrealism; theories of scientific explanation; the nature of scientific revolutions; theories of the lawfulness of nature; and feminist theories of science.
Open to graduate students in Philosophy, others with permission (RG799).

PHIL 5313 - Seminar in the Philosophy of Physics
Examination of philosophical issues associated with physical concepts of space, time, and matter. Topics may include relational versus absolute theories of space and time, and philosophical implications of quantum mechanics.
Open to graduate students in Philosophy, others with permission (RG799).

PHIL 5314 - Action Theory
Examination and analysis of the concept of "action" and related concepts such as "agent" and "intention".
Open to graduate students in Philosophy and to others with instructor consent (RG 3641).

PHIL 5315 - Seminar in Moral Philosophy
A discussion and analysis of significant problems in ethical theory.
Open to graduate students in Philosophy, others with permission (RG799).

PHIL 5316 - Seminar in the Philosophy of Social Science

Open to graduate students in Philosophy, others with permission (RG799).

PHIL 5317 - Seminar in the Philosophy of Psychology
Philosophical examination of contemporary issues in the philosophy of psychology. Topics may include a philosophical analysis of the nature of behavior, consciousness, perception, cognition, and emotion; the nature of psychological explanation; comparison of the science of human psychology with ethology and other biological sciences, the physical sciences, and computer science.
Open to graduate students in Philosophy, others with permission (RG799).

PHIL 5318 - Seminar on Plato

Open to graduate students in Philosophy, others with permission (RG799).

PHIL 5319 - Seminar on Aristotle

Open to graduate students in Philosophy, others with permission (RG799).

PHIL 5320 - Seminar in the History of Philosophy

Open to graduate students in Philosophy, others with permission (RG799).

PHIL 5321 - Seminar on the British Empiricists

Open to graduate students in Philosophy, others with permission (RG799).

PHIL 5327 - Seminar on Kant

Open to graduate students in Philosophy, others with permission (RG799).

PHIL 5330 - Seminar on Theory of Knowledge
Problems in the foundations and nature of knowledge. A critical study of recent treatments of the problem of mind. Issues such as the mind-body problem, our knowledge of the existence of other minds, the existence of private languages, will be dealt with in detail.
Open to graduate students in Philosophy, others with permission (RG799).

PHIL 5331 - Seminar in Philosophy of Mind
A critical study of recent treatments of the problem of mind. Issues such as the mind-body problem, our knowledge of
Open to graduate students in Philosophy, others with permission (RG799).

PHIL 5333 - Seminar on Nietzsche

Open to graduate students in Philosophy, others with permission (RG799).

PHIL 5340 - Seminar on Metaphysics

Open to graduate students in Philosophy, others with permission (RG799).

PHIL 5342 - Seminar in Philosophy of Language

Open to graduate students in Philosophy, others with permission (RG799).

PHIL 5344 - Seminar in Philosophical Logic
Topics in the philosophies of logic and mathematics. May include completeness results for non-classical logics, higher-order languages and logics, diagonalization, limitative theorems (Tarski, Godel), paradoxes, and formal theories of truth. Open to graduate students in Philosophy, others with permission. This course may be repeated to a maximum of nine credits.
Philosophy Grad only

PHIL 5350 - Seminar in Recent Social and Political Philosophy

Open to graduate students in Philosophy, others with permission (RG799).

PHIL 5352 - Seminar in Feminist Theory
The focus of inquiry might be the history of feminist theory, a school of contemporary feminist theory, an issue or a selection of issues in feminist theory, or feminist approaches to major texts or themes in the history of philosophy.
Open to graduate students in Philosophy, others with permission (RG799).

PHIL 5360 - Seminar in Recent Continental Analytic Philosophy
Critical reading of selected texts of recent European philosophers such as Derrida, Irigaray, Kristeva, Heidegger, and Foucault; along with related work of analytic philosophers such as Davidson, Quine, Rorty, and Kripke.
Open to graduate students in Philosophy, others with permission (RG799).

PHIL 5397 - Seminar

Open to graduate students in Philosophy, others with permission (RG799).

†GRAD 6930. Full-Time Directed Studies (Doctoral Level) (GRAD 497) 3 credits.

†GRAD 6950. Doctoral Dissertation Research (GRAD 495) 1 - 9 credits.

†GRAD 6960. Full-Time Doctoral Research (GRAD 496) 3 credits.

GRAD 6998. Special Readings (Doctoral) (GRAD 498) Non-credit.

GRAD 6999. Dissertation Preparation (GRAD 499) Non-credit.

†GRAD 5930. Full-Time Directed Studies (Master's Level) (GRAD 397) 3 credits.

†GRAD 5950. Master's Thesis Research (GRAD 395) 1 - 9 credits.

†GRAD 5960. Full-Time Master's Research (GRAD 396) 3 credits.

GRAD 5998. Special Readings (Master's) (GRAD 398) Non-credit.

GRAD 5999. Thesis Preparation (GRAD 399) Non-credit.

Physical Therapy

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Dean
Professor Thomas C. DeFranco

Department Head
Professor Carl M. Maresh

Program Head
Professor Craig R. Denegar

Professors
Bohannon and Smey

Associate Professors
Kinsella-Shaw

Assistant Professors
Bhat , Bubela, Joseph

Director of Clinical Education:
Ward

The Physical Therapy Program in the Department of Kinesiology at the Neag School of Education offers a post-baccalaureate Doctor of Physical Therapy (D.P.T.) degree program. A description of all other graduate programs in the Department of Kinesiology is found in this Catalog under the heading Kinesiology. The program in Physical Therapy is accredited by the Commission on Accreditation of Physical Therapy Education (CAPTE). The three-year program integrates didactic preparation in clinical sciences and clinical practice with 32 weeks of full-time clinical practicum. The Physical Therapy program is committed to the advancement of evidence-based clinical practice and developed around practice in acute care, musculoskeletal care and neurological rehabilitation. Through the development of the skills and abilities needed for excellence in clinical practice including interpersonal communication, time and resource management, and problem solving skills students are prepared to practice across the spectrum of physical therapy in an ever-changing health care environment. A commitment to professionalism and life-long learning is valued by the faculty and expected of the students and graduates.

Academic Plan

The D.P.T. program begins in late May each year and requires nine semesters (summer, fall, spring for three years) to complete. The academic plan is found at <www.pt.uconn.edu>.

Admission

In addition to the standard requirements of the Graduate School (found in this Catalog under the Heading Admission), applicants must (1) have completed the following pre-requisite courses prior to matriculation: biology, anatomy, and physiology (8 credits), general chemistry (8 credits), general physics (8 credits), psychology (2 courses), pre-calculus or calculus, and statistics; (2) meet the Technical Standards established for the program which can be found at <www.pt.uconn.edu>; and (3) completion of the supplemental admissions requirements found at <www.education.uconn.edu/howtoapply/dpt.cfm>. Applicants to the D.P.T. program are expected to demonstrate outstanding ability and to show on the record of previous scholarship and experience that they are likely to do superior work in their professional preparation. Meeting minimum requirements does not assure acceptance into the program

Transfer Credit

Transfer of credit for coursework completed at other instituions is approved only if (1) the course(s) were completed in a CAPTE accredited Physical Therapy Education program, (2) a grade of B (not B -) was earned in each course being considered for transfer, and (3) the coursework being considered for transfer is substantially similar to coursework offered in the D.P.T. program at the University of Connecticut.

Tuition and Fees

In addition to the standard graduate student tuition and fees, a tuition differential of $1,750 is required for physical therapy students for the fall and spring semesters of each year of enrollment in the program.

Scholarships

Scholarship assistance is available to students in the D.P.T. program. A listing is available at <http://www.education.uconn.edu/students/scholarships/pt%20scolarships/scholarships_pt.cfm>. The amount of scholarship awards varies and is dependent on available funds.

Clinical Education

The role of clinical education in the preparation of Physical Therapy professionals cannot be overstated. The Physical Therapy Program is committed to excellence in this most important area. Clinical sites are selected based on a known history of superior patient care and a clear statement of dedication to the learning process. The costs of travel, housing and other expenses related to clinical education are the responsibility of the student.

Health Policies and Insurance

Physical Therapy students must be free of communicable disease and in good health in order to be admitted to clinical experiences and complete the PT program. Health services are provided through Student Health Services. All students are required to carry personal health insurance throughout the program. All students are required to provide the University with documentation of well being and good health prior to any course work that may require direct, or indirect, patient contact. Information regarding Student Health Services is found at <http://www.shs.uconn.edu/>.

Physical Therapist Licensure

Under the provisions of N 19a-14(a) of the Connecticut General Statutes, as amended by Public Act 86-365, <http://www.cga.ct.gov/2007/pub/Chap368a.htm#Sec19a-14.htm >,the Department of Public Health of the State of Connecticut may deny licensure to applicants who have been convicted of a felony or are addicted to drugs or alcohol. Students are responsible for being aware of what the licensure requirements are in the State in which they intend to apply for a license.

Performance Evaluation

The members of the Physical Therapy faculty regularly monitor the performance of each student in all facets of the program (classroom, laboratory and clinic) at the close of each semester of their graduate education to determine their readiness to progress in the program. Performance evaluations are conducted by the Physical Therapy faculty in advance of each clinical practicum experience specifically to determine the adequacy of each student's knowledge, proficiency level and their preparedness to interact safely with patients and clients during the clinical education experience. If at any time, a student's level of performance, progress in completing the academic requirements for the degree, or professional development/or suitability is considered to be unsatisfactory, the faculty and the program/student advisory committee may require remedial action on the part of the student or recommend dismissal to the Dean of the Graduate School.

Courses

PT 5307 - Integrative Seminar I

One of a series of seminars which integrate application, assessment and intervention knowledge and experience across multiple courses. Focus is on the acute, sub-acute and long-term nursing home patient population. Students develop competency in critical thinking, problem-solving, clinical decision making and best practice recommendations for the acute, sub-acute and long-term nursing home patient population groups. Students demonstrate critical reading skills of the professional literature that reflects an understanding of the problems and functional limitations of the acute, sub-acute and long-term nursing home.

Open only to students in the Program in Physical Therapy (RG 467).

PT 5308 - Integrative Sem II

One of a series of seminars which integrate application, assessment and intervention knowledge and experience across multiple courses; and develops the research project--professional paper. Focus is on the acute, sub-acute and long-term nursing home and musculoskeletal patient population. Students identify and discuss professional issues generated by observations made in the acute, sub-acute and long-term nursing home practicum setting. Students develop competency in critical thinking, problem solving, clinical decision making and best practice recommendations for the musculoskeletal patient. Students demonstrate critical reading skills of the professional literature that reflects an understanding of the problems and functional limitations of the musculoskeletal patient population. Students submit a research project proposal that includes a comprehensive literature review, research hypotheses and methods. Includes a writing component.

Prerequisite: PT 5307. Pre-Physical Therapy majors only.

PT 5308 - Integrative Seminar II

One of a series of seminars which integrate application, assessment and intervention knowledge and experience across multiple courses; and develops the research project--professional paper. Focus is on the acute, sub-acute and long-term nursing home and musculoskeletal patient population. Students identify and discuss professional issues generated by observations made in the acute, sub-acute and long-term nursing home practicum setting. Students develop competency in critical thinking, problem solving, clinical decision making and best practice recommendations for the musculoskeletal patient. Students demonstrate critical reading skills of the professional literature that reflects an understanding of the problems and functional limitations of the musculoskeletal patient population. Students submit a research project proposal that includes a comprehensive literature review, research hypotheses and methods.

PT 307. Physical Therapy majors only.

PT 5309 - Integrative Seminar III

One a series of seminars which integrate application, assessment and intervention knowledge and experience across multiple courses; and develops the research project--professional paper. Focus is on the musculoskeletal and neuromuscular patient population. Students identify and discuss professional issues generated by observations made in the musculoskeletal practicum setting. Students develop competency in critical thinking, problem solving, clinical decision making and best practice recommendations for the neuromuscular patient. Students demonstrate critical skills of the professional literature that reflects an understanding of the problems and functional limitations of the neuromuscular patient population. Students collect data and prepare preliminary results of their findings.

Prerequisites: PT 5308 and PT 5318 (RG469).

PT 5310 - Integrative Seminar IV

One of a series of seminars which integrate application, assessment and intervention knowledge and experience across multiple courses. Focus is on the neuromuscular patient population. Students identify and discuss professional issues generated by observations made in the neuromuscular practicum setting. Students meet identified standards on competency in critical thinking, problem solving, clinical decision making and best practice recommendations for all patient populations in this culminating course.

Prerequisite: PT 5309 and PT 5320 (RG470).

PT 5311 - Integrative Seminar V

One of a series of seminars which develops the research project-professional paper. Focus is to complete and present the research project-professional paper in this culminating

course.

Prerequisite: PT 5309 (RG471).

PT 5314 - Principles of Rehabilitation

Explores the role of physical therapists in the rehabilitation of patients with complex problems and multi-system dysfunction. Students develop competency in assessment, treatment planning and implementation, and evaluation of treatment outcomes in the areas of functional mobility and accessibility, patient education and prevention of complications.

Prerequisite: PT 212 (RG472).

PT 5316 - Acute Care Practicum

In a supervised acute care setting, sub-acute care setting or long-term nursing home, students apply a variety of patient care procedures and techniques leading to the development of entry level competency. Clinical teaching facilities are located throughout the United States.

Prerequisites: PT 212 (RG473).

PT 5318 - Principles of Musculoskeletal Rehabilitation

Focus is on the physical therapy care of patients with existing or potential musculoskeletal dysfunction. The student learns to establish physical therapy diagnoses, identify realistic goals, plan and implement programs for patients with musculoskeletal problems, giving full consideration to their physical, social and psychological well being.

Prerequisites: PT 5308 (RG474).

PT 5320 - Principles of Neuromuscular Rehabilitation

Through comprehensive problem solving, students analyze patient situations where neuromotor dysfunction is a complicating factor. Students develop neurophysiological sound evaluation and treatment skills integrating physical and psychological patient considerations.

Prerequisites: PT 5308 (RG 475).

PT 5330 - Lifespan Growth and Development

Provides an overview of motor development, individual development and family development from a lifespan perspective as they relate to the practice of physical therapy. The impact of disease and disability on the individual and the family is explored with a focus on recognizing dysfunction and facilitating effective coping and adaptation.

Prerequisites: PT 5308 (RG478).

PT 5343 - Physical Therapy Issues Seminar

Through discussion of current issues and problems in the professional field of physical therapy, students explore the possible solutions to those problems from their own perspective as aspiring professionals, the professional organization's perspective and from the perspective of the consumer of their services.

Prerequisites: PT 5308 (RG479).

PT 5384 - Balance and Postural Control

This course will explore historical and contemporary perspectives on human balance and sway while standing. The interplay between Center of Mass and Center of Pressure will be examined. Conceptual models of balance strategies and the theoretical basis for different "approaches" to balance will be discussed. Different strategies for analyzing data will be discussed with regard to normal and physically challenged individuals.

PT 5410 - Human Anatomy Trunk and Upper Extremity

Discussion of the conceptual and structural basis of osteology, myology, neurology, human development, and basic kinesiology and biomechanics. Selected anatomical and physiological dysfunctions of the trunk and upper extremity will also be discussed .

PT 5412 - Human Anatomy Pelvis and Lower Extremity

Discussion of the conceptual and structural bases of osteology, myology, neurology, human development, and basic kinesiology and biomechanics. Selected anatomical and physiological dysfunctions of the pelvis and lower extremity will also be discussed.

PT 5414 - Clinical Human Physiology

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 using patient cases. (NSOE C&C 5/18/11)

PT 5416 - Neuroanatomy and Clinical Neurology

This course is designed to provide healthscience professionals an up-to-date comprehensive investigation into the human nervous system. Complex interrelationships between structure and function of the nervous system are being clarified. This course will relate these facts into information of clinical significance. Clinical examples in each area will offer opportunities for practice in neurophysiological analysis that health professionals use daily. (NSOE C&C 5/18/11)

PT 5418 - Clinical Pharmacology

This course is designed to integrate and summarize the essentials of medical pharmacology. The main molecular and cellular actions of drugs will be emphasized as well as the principles governing the use and actions of drugs in the treatment off disease. (NSOE C&C 5/18/11)

PT 5420 - Foundation in Clinical Pathology

A comprehensive presentation of the general principles of disease with an emphasis on general pathology. Focus is on the mechanisms underlying disease and their management as a basis for therapeutic program planning in physical therapy.

PT 5422 - Cardiopulmonary Pathology

A comprehensive presentation of cardiopulmonary diseases. Focus is on the mechanisms underlying disease and their management as a basis for therapeutic program planning in physical therapy.

PT 5424 - Musculoskeletal Pathology

Mechanical properties of musculoskeletal tissues will be described. Growth and maintenance mechanisms of the different tissues will be detailed. Diseases and disorders of the musculoskeletal system will

be covered. The underlying tissue pathology and clinical symptoms will be addressed from the orthopedic and physical therapy perspective. Therapeutic interventions will be presented.

PT 5426 - Neuromuscular Pathology

This course introduces students to basic mechanisms of neuropathology, the neurological examination and tests, and specific pathologies they are likely to encounter in physical therapist practice. The course will emphasize the medical and surgical diagnosis and management of patients with neurologic pathology.

PT 5430 - Functional-Biomechanical Relationships

Students will receive detailed descriptions and analyses of structures of the musculoskeletal system in general as well as within individual functional regions. Students will also examine how structure affects function within each region. Lastly, they will also examine the forces sustained by the various regions during function, in normal and pathological conditions thus preparing them to apply knowledge of normal anatomical structure and function to therapeutic intervention. (NSOE C&C 5/18/11)

PT 5431 - Prevention, Health Promotion, Fitness and Wellness

This course prepares the student to provide culturally competent evidence based physical therapy services for prevention, health promotion, fitness and wellness to individuals, groups, and communities.

PT 5432 - Motor Control and its Clinical Application

Introduction to and discussion of contemporary theories of motor control, research evidence on normal, abnormal, developmental, and aging-related processes governing motor control will be provided. These ideas will be applied to understand the various impairments of neurological populations and their treatment using the model of evidence based practice. (NSOE C&C 5/18/11)

PT 5433 - Management for the Physical Therapist

This course will introduce the student to the field of disability studies. Physical, cognitive, emotional, social, and cultural factors related to the presence of disability and chronic illness throughout the life span will be explored. Emphasis is placed on those aspects of disability that affect the practice of physical therapy assessment and treatment. (NSOE C&C 5/18/11)

PT 5434 - Foundations for System Review

A foundations course for Physical Therapy Majors in Differential Diagnosis. The course scope covers a broad spectrum of clinical sciences and provides training in screening (i.e. history taking) of a culturally diverse patient/client population across the lifespan for appropriate healthcare management.

PT 5435 - Health Care Issues for Physical Therapists

A course for Physical Therapy students with a focus on health care issues related to the individual, community, and health care institutions.

Open to to students enrolled in the D.P.T. program and to others with departmental consent (RG 4104).

PT 5436 - Disability Studies

This course will introduce the student to the field of disability studies. Physical, cognitive, emotional, social, and cultural factors related to the presence of disability and chronic illness throughout the life span will be explored. Emphasis is placed on those aspects of disability that affect the practice of physical therapy assessment and treatment. (NSOE C&C 5/18/11)

PT 5437 - Education and Communication for Physical Therapists

This course covers fundamental aspects of education and communication as they relate to physical therapy as described in the Guide to Physical Therapist Practice. Students will be introduced to learning theories and theories of change. Learner assessment and strategies for communication and instruction will be covered. Students generate written and oral communications and will plan and deliver an educational unit relating to physical therapy. (NSOE C&C 5/18/11)

PT 5438 - Professionalism for the Physical Therapist

Through readings, lecture, personal investigation, and discussion of current issues, “hot topics” and problems in the profession of physical therapy, students will demonstrate an understanding of their environment of practice. Students learn selected laws, rules, regulations, guidelines and ethical codes governing the practice of physical therapy and will explore possible solutions to common professional problems. Emphasis is placed on the importance of ethical and legal practice.

PT 5440 - Evidence-Based Practice in Physical Therapy

A foundations course in research, statistical analyses, and evidence-based clinical-decision for Physical Therapy students. Students will develop skills for conducting literature searches, critically appraising clinical research and developing research questions. Applications will fall within the Physical Therapy Profession Patient/Client Management Model. (NSOE C&C 5/18/11)

PT 5446 - Evidence-Based Practice Seminar

A course for Physical Therapy students focusing on clinical research related to diagnosis, and prevention / treatment outcomes with emphasis on musculoskeletal and neuromuscular physical therapy. Students will participate in meetings and discussions to facilitate their research projects. (NSOE C&C 5/18/11)

PT 5448 - Capstone Scholarly Report Preparation

Students in the Doctor of Physical Therapy program are required to participate in a scholarly project (original research, systematic review or clinical case report) with one or more faculty mentors and students. Course requirements are met by

the preparation of a manuscript meeting professional standards for form and content, culminating in a document appropriate for submission to a refereed journal. (NSOE C&C 5/18/11)

PT 5450 - Fundamentals of Physical Therapy Examination

This course covers the fundamentals of physical therapist examination in the context of overall practice as described in the Guide to Physical Therapist Practice. Students will be introduced to basic tests and measures as well as to information relevant to their selection and interpretation. Students will apply the tests in laboratory and clinical settings and will learn to appropriately document their findings.

PT 5451 - Acute Care Management

An exploration of the practice of Physical Therapists in the acute care setting. Students will develop competency in clinical evaluation of impairments and functional limitations, identification of appropriate intervention options, and implementation of a plan of care to improve performance of functional activities for patients commonly encountered in acute care practice settings. This course encourages problem solving and critical thinking through the integration of knowledge and skills in the laboratory and clinic and through a written assignment and presentation. (NSOE C&C 5/18/11)

PT 5452 - Therapeutic Exercise and Physical Agents

An exploration of interventions commonly used by physical therapists in both inpatient and outpatient settings. Students will develop competency in selection and implementation of therapeutic exercise and physical agents as interventions to improve performance of functional activities for patients commonly encountered in a variety of settings. The assessment of therapeutic effects, and modification of the interventions is an integral components of this course.

PT 5453 - Musculoskeletal Rehabilitation - The Spine

A course for Physical Therapy students focusing on the management of musculoskeletal conditions affecting the spine. Elements of patient management consist of: examination, evaluation, diagnosis, prognosis, and intervention with attention to outcomes, differential diagnosis, and screening strategies. Evidence-based practice is reinforced. Applications will consider client populations across the life span.

PT 5454 - Musculoskeletal Rehabilitation - The Extremities

A course for Physical Therapy students focusing on the management of musculoskeletal conditions affecting the extremities. Elements of patient management consist of: examination, evaluation, diagnosis, prognosis, and intervention with attention to outcomes, differential diagnosis, and screening strategies. Evidence-based practice is reinforced. Applications will consider client populations across the life span.

PT 5455 - Essentials of Rehabilitation Practice

An exploration of the practice of Physical Therapists in the area of orthotics prosthetics, Diabetes and Spinal Cord Injury. Students will develop competency in clinical assessment of functional limitations, specifically in locomotion, identification of appropriate treatment options and implementation of interventions, through the use of orthotics and prosthetics, to improve performance of functional activities for patients with a variety of deficits.

PT 5456 - Neuromuscular Rehabilitation

Through comprehensive problem solving, students will learn to manage adult patients with neuromuscular dysfunction. Students will develop neurophysiologically sound examination and inter-vention skills integrating physical and psychological patient considerations. The skill set for examination and treatment will be consistent with foundational movement science under the evidenced based practice model.

PT 5458 - Pediatric Physical Therapy

A required course for Doctorate of Physical Therapy students that covers normal motor development, childhood conditions that are commonly served by pediatric physical therapists, and general examination and intervention methods used for pediatric populations.

PT 5460 - Introduction to Clinical Education

This one-week course is intended to provide students with a foundation for all future full time practical experience courses. Students will learn how evaluation methods and tools will be implemented during full time practica. Roles and responsibilities of persons associated with practicum courses will be explored. Through lecture and discussion, students will develop an understanding of the importance of professional behaviors, self-evaluation and personal reflection. (NSOE C&C 5/18/11)

PT 5461 - Acute Care Practicum

Under close supervision by an experienced, licensed Physical Therapist, students will perform patient management functions for patients in a hospital. The course is held off campus at individually assigned clinical facilities throughout the country. Each student is assigned one or two clinical instructors who are physically present and immediately available for direction and supervision. (NSOE C&C 5/18/11)

PT 5462 - Internal Integrated Musculoskeletal Clinical Practicum I

A clinical experience that provides students the opportunity to integrate interventions learned in PT 5452 in an outpatient setting. Students will develop and administer plans of care that include therapeutic exercise and physical agents for outpatients with various musculoskeletal conditions.

PT 5463 - Internal Integrated Musculoskeletal Clinical Practicum II

A clinical experience that provides students the opportunity to integrate interventions learned in PT 453 and PT 454 in an outpatient setting. Students will utilize examination and manual therapy skills in the development and implementation of plans of care for

outpatients with various musculoskeletal conditions.

PT 5464 - Musculoskeletal Practicum

Under close supervision by an experienced, licensed Physical Therapist, students will perform all patient management functions for patients in an outpatient orthopedic setting. The course is held off campus at individually assigned clinical facilities throughout the country. Each student is assigned one or two clinical instructors who are physically present and immediately available for direction and supervision. Through this experience, students learn to apply their didactic education to the management of patients with musculoskeletal conditions. (NSOE C&C 5/18/11)

PT 5465 - Public Engagement in Prevention, Health Promotion, Fitness and Wellness

This course is designed to provide experiences for students in the development and delivery of service related to prevention, health promotion, fitness, and wellness in settings that support supervised interaction with the surrounding community. (NSOE C&C 5/18/11)

PT 5466 - Internal Integrated Neuromuscular Clinical Practicum

A clinical experience that provides students the opportunity to integrate interventions learned in PT456 and PT 457 in a clinical setting. Students will utilize examination and intervention skills in the development and implementation of plans of care for patients with various neuromuscular conditions.

PT 5467 - Neuromuscular/Rehabilitation Practicum

Under close supervision by an experienced, licensed Physical Therapist, students will perform all patient management functions for patients in a setting where the team approach is used to improve functional abilities and prevent disability. The course is held off campus at individually assigned clinical facilities throughout the country. Each student is assigned one or two clinical instructors who are physically present and immediately available for direction and supervision. Through this experience, students learn to apply their didactic education to the management of adult patients with neurological conditions, amputations, spinal cord injuries and other diagnoses requiring relatively lengthy rehabilitation services. (NSOE C&C 5/18/11)

PT 5468 - Individualized Practicum

Under supervision by an experienced, licensed Physical Therapist, students will perform all patient management functions for patients in a facility chosen by the student because of his/her special interest and site availability. The course is held off campus at individually assigned clinical facilities throughout the country. Each student is assigned one or two clinical instructors who are physically present and available to supervise all patient/client management performed by the student. Since the learning experience is intended to allow the student to gain clinical experience in an area related to their individual professional interests, any type of caseload is allowed for the course. (NSOE C&C 5/18/11)

PT 5469 - Integrated Acute Care Practicum

This course provides students with clinical experience at hospitals and sub acute health care facilities. Students will observe and will assist as appropriate with patient care under the supervision and direction of a licensed physical therapist. The course allows students to integrate and apply the didactic component of the curriculum in an acute or sub acute environment. It is designed to foster the student's appreciation for the multidisciplinary nature of hospital care. (NSOE C&C 5/27/2011)

PT 5471 - Manual Therapy in the Management of Musculoskeletal Disorders

A course for Physical Therapy students focusing on the manual therapy examination and treatment of patients with musculoskeletal conditions. Instruction will be primarily case based and integrate various manual therapy approaches across body regions. Concepts introduced in the PT 5453 and 5454 courses will be explored in greater depth with a focus on improved proficiency in delivery of soft tissue and joint manipulation techniques including thrust. Evidence-based practice will be reinforced. Applications will consider diverse patient/client populations across the life span.

PT 5472 - Advanced Pediatric Physical Therapy

An elective course for Doctorate of Physical Therapy students that covers the specialized practice of pediatric physical therapy. The course provides in depth information about pediatric conditions for which physical therapy services are typically provided. Specialized pediatric assessments and inter-ventions are reviewed and clinical opportunities are provided to integrate and apply the academic information.

†GRAD 5930. Full-Time Directed Studies (Master's Level) (GRAD 397) 3 credits.

†GRAD 5950. Master's Thesis Research (GRAD 395) 1 - 9 credits.

†GRAD 5960. Full-Time Master's Research (GRAD 396) 3 credits.

GRAD 5998. Special Readings (Master's) (GRAD 398) Non-credit.

GRAD 5999. Thesis Preparation (GRAD 399) Non-credit.

†GRAD 6930. Full-Time Directed Studies (Doctoral Level) (GRAD 497) 3 credits.

†GRAD 6950. Doctoral Dissertation Research (GRAD 495) 1 - 9 credits.

†GRAD 6960. Full-Time Doctoral Research (GRAD 496) 3 credits.

GRAD 6998. Special Readings (Doctoral) (GRAD 498) Non-credit.

GRAD 6999. Dissertation Preparation (GRAD 499) Non-credit.

Physics

*****

Department Head
Professor Douglas Hamilton

Associate Department Head for Undergraduate Education
Professor Barrett Wells

Associate Department Head for Graduate Education and Research
Professor Gerald V. Dunne

Associate Department Head for Administration
Professor George N. Gibson

Professors
Alpay, Boggs, Birge, Budnick, Cormier, Cote, Dobyrynin, Dunne, Dutta, Edson, Eyler, Fernando, Gai, Gibson, Gould, Hamilton, Hines, Islam, Javanainen, Joo, Kappers, Kharchekno, Kovner, Mallett, Mannheim, Michels, Montgomery, O'Donnell, Papdimitrakopoulos, Peterson, Rawitscher, Roychoudhury, J. Schweitzer, Smith, Stwalley, Swanson and Wells

Associate Professors
Blum, Brooks, Gordina, Jones, Liu, Sinkovic, Teplyaev, Wolgemuth, and Yelin

Assistant Professor
Bezrukov, Gao, Hancock, Huber, Jain, P. Schweitzer, Till

The Master of Science and Doctor of Philosophy degrees are offered.

Admission

For admission to either the M.S. or Ph.D. program, completion of a bachelor's degree normally is required. It is expected that the applicant will have majored in physics or in a related subject.

The Master of Science Degree

Each student in the master's program follows an individual plan of study arranged jointly by the student and an advisory committee, based on the student's career goals as well as prior preparation. Candidates for the Plan B Master's degree are required to complete 24 credits of courses. Under Plan A, a thesis is required, as well as completion of 9 credits of Thesis Research courses as stipulated in the Standards and Degree Requirements section of this catalog.

The Ph.D. Degree

Each doctoral student's course of study is supervised by an advisory committee, headed by the student's major advisor. The committee and the student jointly plan a curriculum that is designed to provide the general knowledge of physics appropriate for the Ph.D. and also the specialized expertise necessary to conduct dissertation research. This research is conducted under the supervision of the major advisor and culminates in an original scientific contribution.

There are numerous research projects in the Department of Physics which provide graduate students with opportunities for conducting the scientific investigations necessary for the Ph.D. degree. These include atomic, molecular and optical physics (experimental and theoretical), condensed matter physics (experimental and theoretical), nuclear physics (experimental and theoretical), particle and field theory (including relativity and cosmology) and quantum optics (experimental and theoretical). Active research groups are engaged in each of these areas. Their work is described on-line at <www.phys.uconn.edu>. A brochure that describes the department's graduate program also is available on-line.

Special Requirements for the Ph.D.

The requirements for the Ph.D. include all the general requirements listed in the Standards and Degree Requirements section of this catalog. In addition, satisfactory completion of Physics 5302 (Electrodynamics II) and Physics 5403 (Quantum Mechanics III) is required for the Ph.D. degree.

The General Examination in physics consists of written and oral sections. A set of written examinations must be completed satisfactorily to qualify for admission to the oral part of the General Examination.

Courses

PHYS 5010 - Independent Study
A special reading course for graduate students. This course may be taken, with change of topic, up to three times for a maximum of nine total credits. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatistactory.)

PHYS 5020 - Research in Physics
Experimental and theoretical research in selected topics in physics. This course may be taken up to three times for a maximum of nine credits.

PHYS 5050 - Modern Physics for Teachers
New teaching materials and techniques as developed by the Physical Science Study Committee for secondary school teachers of physics.
Prerequisite: PHYS 317, which must be taken concurrently (RG483).

PHYS 5094 - Physics Seminar
The treatment of special topics, primarily by individual readings and reports.

PHYS 5101 - Methods of Theoretical Physics I
Vector and tensor analysis, curvilinear coordinates, linear algebra, functions of complex variables, differential equations, special functions, elements of Green's functions.

PHYS 5102 - Methods of Theoretical Physics II
Abstract vector spaces, Hilbert space, group theory. Fourier series and integral representations, Theory of Green's functions and integral equations. Complex function theory.
Prerequisite: PHYS 5311 (RG 482).

PHYS 5105 - Methods of Experimental Physics
Experimental methods used in modern research are applied to experiments from various fields of physics, including: low temperature conductivity of metals, x-ray diffraction, acoustic attenuation, optical constants of metals, color centers in alkali halides, nuclear beta decay, Zeeman effects and others.

PHYS 5201 - Theoretical Mechanics I
Classical mechanics: Lagrange equations, central force motion, rigid body motions, small oscillations, Hamilton equations, canonical transformation.

PHYS 5202 - Theoretical Mechanics II
Dynamics of continuous media, hydromechanics, elasticity, wave motion, wave interactions and scattering, non-linear processes.
Prerequisite: PHYS 5318 (RG481).

PHYS 5301 - Electrodynamics I
Differential formulations of electrostatics and magnetostatics, electromagnetic induction. Maxwell equations, electromagnetic waves, application to wave guides, cavities, and dispersive media. Foundations of special relativity.
Prerequisite: PHYS 5101 (311) (RG4040)

PHYS 5302 - Electrodynamics II
Maxwell's equations with time dependent sources; radiation from relativistic charged particles; dynamical laws for charged particles; diffraction of electromagnetic waves.
Prerequisite: PHYS 306 and PHYS 318 (RG485).

PHYS 5350 - Computerized Modeling in Science
Development and computer-assisted analysis of mathematical models in chemistry, physics, and engineering. Typical topics include chemical equilibrium, reaction rates, particle scattering, vibrating systems, least square analysis and quantum chemistry.

PHYS 5401 - Quantum Mechanics I
Mathematical formulation and interpretation of quantum mechanics. Illustrative examples. Hydrogen atom. Dirac ket and bra vectors, matrix methods. Scattering theory.
Prerequisite: PHYS 5101 (311) and PHYS 5201 (318) (RG 4041).

PHYS 5402 - Quantum Mechanics II
Symmetry and angular momentum. Approximation methods for stationary and time-dependent problems, with applications. Relativistic theory of the electron.
Prerequisite: PHYS 5401 (RG487).

PHYS 5403 - Quantum Mechanics III
Occupation number representation, electron gas, Hartree-Fock approximation, correlation energy, superconductivity, perturbation theory, Green's functions, Feynman diagrams.
Prerequisite: PHYS 5402 (RG490).

PHYS 5500 - Statistical Mechanics
Ensembles, distribution function, partition function. Bose-Einstein and Fermi-Dirac distributions, fluctuations, applications to the properties of solids and liquids and to the kinetic theory of gases.
Prerequisite: PHYS 5401 (RG488).

PHYS 5600 - Modern Physics
Experimental and theoretical milestones in the development of contemporary physics. Atomic, molecular, and optical physics including quantum optics; condensed matter physics; nuclear and particle physics; and cosmology and astrophysics.
Prerequisite: PHYS 5401 (RG487).

PHYS 5621 - Advanced Topics in Physics I
Selected topics in theoretical and experimental physics.

PHYS 5622 - Advanced Topics in Physics II
Selected topics in theoretical and experimental physics.
Prerequisite: PHYS 5621 (RG489)

PHYS 6110 - Atomic Physics
Coupling of angular momenta. Hartree-Fock theory of many electron atoms, fine structure and hyperfine structure. Introduction to group theory.
Prerequisite: PHYS 5402 (RG490).

PHYS 6120 - Molecular Physics
Heitler-London and molecular orbital theories for diatomic molecules, semi-empirical methods of poly-atomic molecules.
Prerequisite: PHYS 6110 (RG 495).

PHYS 6130 - Quantum Optics
Semiclassical theory of light-matter interactions. Quantum states of light. Generation, detection and interactions of nonclassical radiation.
Prerequisite: PHYS 5401 (RG487).

PHYS 6140 - Principles of Lasers
The physics of lasers, including optical pumping and stimulated emission, laser rate equations, optical resonators, non-linear optics, the Kerr effect and Faraday rotation. Applications to gas, crystal, glass, liquid, dye, semiconductor, chemical and ultraviolet lasers, Q-switching, mode-locking, and parametric devices.

PHYS 6150 - Semiconductor Optical Devices
Semiconductor based optical devices such as lasers, amplifiers, modulators, and photodetectors, and their application to optical fiber transmission systems.
Prerequisite: PHYS 6201 (RG1114).

PHYS 6201 - Fundamentals of Solid State Physics I
Crystal structure, phonons, electronic band structure, metals, insulators and semiconductors.

PHYS 6202 - Fundamentals of Solid State Physics II
Optical, magnetic and transport properties. Lattice defects. Non-crystalling solids.
Prerequisite: PHYS 6201 (RG506).

PHYS 6211 - Condensed Matter Physics I
Crystal structure; lattice vibrations; electronic band structure of solids; transport theory; basic properties of metals, semi-conductors and insulators; magnetism; super-conductivity.
Prerequisite: PHYS 5402 (RG490).

PHYS 6212 - Condensed Matter Physics II
Crystal structure; lattice vibrations; electronic band structure of solids; transport theory; basic properties of metals, semi-conductors and insulators; magnetism; super-conductivity.
Prerequisite: PHYS 6211 (RG491).

PHYS 6220 - Advanced Solid State Physics
The many-body problem in solid state physics. The electron gas, normal metals, electron-phonon interactions, superconductivity, ferro- and antiferro-magnetism and spin waves, polaron theory.
Prerequisite: PHYS 6212 or PHYS 6342 (RG496).

PHYS 6234 - Non-Equilibrium Properties of Solids
Electrical and thermal conduction, thermoelec-tricity. Electrons and phonons. Perturbation techniques to estimate interaction rates; electron-phonon, phonon-phonon and imperfection scattering processes. Ultrasonic generation and attenuation, spin-lattice interactions.
Prerequisite: PHYS 6211 (RG501).

PHYS 6236 - Microwave Physics I
The principles of microwave and radio frequency techniques applied to investigation of the properties of matter.
Prerequisite: PHYS 5301 (RG493).

PHYS 6244 - The Electrical Properties of Polymers
Experimental and theoretical aspects of electrical phenomena in polymers: DC and AC conductivity, dielectric constant, electrical breakdown, photoconductivity, etc. Extended and localized electron wavefunctions; band and hopping conduction.

PHYS 6246 - Nuclear Magnetic Resonance I
Basic theory and experimental methods of NMR with emphasis on resonance and relaxation in metals. Brief discussion of interpretation of NMR in non-metallic solids, liquids, and gases.
Prerequisite: PHYS 5401 (RG487).

PHYS 6247 - Nuclear Magnetic Resonance II
Basic theory and experimental methods of NMR with emphasis on resonance and relaxation in metals. Brief discussion of interpretation of NMR in non-metallic solids, liquids, and gases.
Prerequisite: PHYS 6246 (RG502).

PHYS 6254 - Low Temperature Physics I

Lectures and seminars on selected topics in low temperature physics; superfluidity and super-conductivity, solid state, nuclear alignment and polarization, transport properties in solids.

PHYS 6256 - X-Ray Physics I
Symmetry of crystals. Production and properties of x-rays. Application of x-rays in the study of crystalline and amporphous solids by diffraction and spectroscopic techniques, including synchrotron radiation for studying atomic and electronic structures in materials.

PHYS 6264 - Semiconductor Physics
Semiconductors and semiconductor devices. Band structure, phonon scattering, velocity-field relations, effects of doping and magnetic fields, optical and transport properties.
Prerequisite: PHYS 6201 and PHYS 5402, which may be taken concurrently (RG1115).

PHYS 6300 - Astrophysics and Modern Cosmology
Basic principles of contemporary astrophysics; applications to stars, galaxies, and modern cosmology.

PHYS 6310 - Relativity
Special relativity, tensor analysis, foundations of general relativity, Petrov classification of curved spacetimes, Schwarzchild and Kerr solutions, experimental tests and recent developments.

PHYS 6320 - Nuclei and Particles
Properties of nuclei and particles, conserved quantities, isospin, quark model, Fermi gas model, electroweak interaction, high energy scattering.

PHYS 6331 - Nuclear Physics I
A quantum mechanical treatment of nuclear forces and nuclear structure, including the shell and collective models, and of reaction and radiation phenomena. The second semester is reserved for a discussion of selected topics on an advanced level.
Prerequisite: PHYS 5402 (RG490).

PHYS 6332 - Nuclear Physics II
A quantum mechanical treatment of nuclear forces and nuclear structure, including the shell and collective models, and of reaction and radiation phenomena. The second semester is reserved for a discussion of selected topics on an advanced level.
Prerequisite: PHYS 6331 (RG497).

PHYS 6341 - Quantum Theory of Fields I
Local gauge invariance, Lagranian formulation, Noether currents, spontaneous breakdown of symmetry, Higgs mechanism and superconductivity, canonical quantization, Feynman diagrams, Green's functions.
Prerequisite: PHYS 5403 (RG498).

PHYS 6342 - Quantum Theory of Fields II
Topics chosen from the following: Path integral formalism, generating functionals, renormalization, abelian and non-abelian gauge theories (QED and QCD), electroweak theory, solitons, instantons.
Prerequisite: PHYS 6341 (RG499).

†GRAD 5930. Full-Time Directed Studies (Master's Level) (GRAD 397) 3 credits.

†GRAD 5950. Master's Thesis Research (GRAD 395) 1 - 9 credits.

†GRAD 5960. Full-Time Master's Research (GRAD 396) 3 credits.

GRAD 5998. Special Readings (Master's) (GRAD 398) Non-credit.

GRAD 5999. Thesis Preparation (GRAD 399) Non-credit.

†GRAD 6930. Full-Time Directed Studies (Doctoral Level) (GRAD 497) 3 credits.

†GRAD 6950. Doctoral Dissertation Research (GRAD 495) 1 - 9 credits.

†GRAD 6960. Full-Time Doctoral Research (GRAD 496) 3 credits.

GRAD 6998. Special Readings (Doctoral) (GRAD 498) Non-credit.

GRAD 6999. Dissertation Preparation (GRAD 499) Non-credit.

Physiology and Neurobiology

******

Department Head
Professor J. Larry Renfro

Professors
Armstrong, Chapple, Chen, Crivello, de Blas, Gallo, Kraemer, LoTurco, Maresh, Moiseff, Pescatello, and Zinn

Associate Professor
Cantino, Conover, Nishiyama, and Walikonis

Assistant Professors
Anastasios Tzingounis, Kanadia, Schwartz, Mulkey

Physiology and Neurobiology includes the following major areas of research:

(1) Neurobiology – cellular and comparative neurobiology with emphasis on neural integration of behavior patterns, synaptic transmission, developmental neurobiology, glial cell biology, regulation and biophysics of ion channels, neuronal mechanisms of calcium and pH regulation, molecular neurobiology and functional neuroanatomy;

(2) Physiology – evolution of physiological adaptations in higher organisms, comparative aspects of osmotic and ionic regulation in vertebrates, transepithelial ion and water transport, renal physiology, muscle physiology, cardiovascular and respiratory physiology.

INTERDISCIPLINARY STUDY

Neurosciences

This is an interdisciplinary area of concentration. Neuroscience is concerned with the structural and functional characteristics of the nervous system and its relation to the adaptive physiology and behavior of the organism. Students in this program may approach the full range of neuroscience studies through courses and research at the cellular, systemic, and organismic levels. A particular strength of the area is the analysis of behavior, its development, and its neurological bases. This area of concentration is offered in the fields of study of pharmaceutical science, physiology and neurobiology, and psychology. Application is made to the preferred field of study, but the applicant must be acceptable to the Neuroscience Committee.

Biomedical Engineering Program

The Department of Physiology and Neurobiology participates in a joint program

with the School of Engineering for graduate students interested in interdisciplinary work in which biological and engineering disciplines are interrelated. Applicants may have primary training in biology or physical sciences. For information with regard to the biological engineering program, students should write to Dr. William Chapple, Unit 3156, Storrs, Connecticut 06269-3156.

Courses

PNB5302(3 Credits) Fundamentals of Physiology Introduction to integrative biology. Associations of molecules, cells and tissues and their integrated functions across all organizational levels. Application of language and basic concepts of physiology to the development of problem-solving skills. Components:Lecture

PNB5314(2) The Physiology of Excitiable Cells

In depth study of the molecular structure, function and regulation of ion channels and the mechanisms that control membrane potential and cell excitability. Reading and discussion focus on primary literature. Components:Lecture

PNB5325(3 Credits) Biological Rhythms

Neuroendocrine and environmental factors in the control of biological rhythmicity, especially circadian and annual rhythms. Emphasis on animals. Components:Lecture

PNB5330(3 Credits) Hormones and Behavior

Hormones and regulation of behaviors, reproductive, parental, social and aggressive behaviors, as well as migration, hibernation, and learning and memory. Components:Lecture

PNB5347(1 - 3)Instructor Consent Required Electron Microscopy

Lectures and laboratory exercises on the principles and practice of biological electron microscopy. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatistactory.) Components:Lecture

PNB5351(1 - 3)Instructor Consent Required Projects in Electron Microscopy

Electron microscopy as a research method in biological sciences. Components:Independent Study

PNB5390(3 Credits) Membrane Transport

Fundamental mechanisms by which water and small molecules are transported across biological membranes. Biophysical and biochemical analysis of transport by diffusion, osmosis, channels, carriers and pumps. Physiological integration of different transport mechanisms. Components:Lecture

PNB5395(3 Credits) Independent Study

A reading course for those wishing to pursue special work in biology. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatistactory.) Components:Independent Study

PNB5396(1 - 3) Investigation of Special Topics

Advanced study in a field within Physiology and Neurobiology. Components:Independent Study

PNB5397(1 - 6) Research

Conferences and laboratory work covering selected fields of Physiology and Neurobiology. Components:Independent Study

PNB6400(3 Credits) Seminar in Neurobiology

An in-depth study of selected topics in the molecular, cellular, and central aspects of neurobiology.

Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatistactory.) Components:Seminar

PNB6402(3 Credits) Seminar in Comparative Physiology

Components:Seminar

PNB6403(3 Credits) Seminar in Endocrinology

Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatistactory.) Components:Seminar

PNB6404(3 Credits) Seminar in Biological Rhythms

Components:Seminar

PNB6405(3 Credits) Seminar in Research and Journal Presentations in Physiology and Neurobiology

Provides the opportunity for graduate students to present journal articles and their laboratory research in physiology and neurobiology to the department. Students enrolled in this course receive a grade of S (satisfactory) or U (unsatisfactory). Components:Seminar

PNB6417(3 Credits) Developmental Neurobiology

Molecular mechanisms of neurodevelopment. Neural induction, cell fate determination, neurogenesis, axon targeting, neuronal migration, synapse formation and activity-dependent synaptic remodeling. Components:Lecture Requirement Group:Prerequisite: PNB 5301 (RG178).

PNB6418(3 Credits) Integrative Neurobiology

Physiology of the central nervous system: information processing and central mechanisms in vertebrates and invertebrates; physiological aspects of behavior. Components:Lecture Requirement Group:Prerequisite: PNB 5301 (RG178).

PNB6423(3 Credits) Human Reproduction

The physiology of human reproduction. Components:Lecture

PNB6424(3 Credits) Reproductive Neuroendocrinology

Analysis of the functional interaction between the body’s two regulatory systems, the nervous and endocrine systems, with respect to the regulation of female reproduction. Components:Lecture

PNB6426(3 Credits) Molecular and Cellular Neurobiology

Molecular and cellular aspects of modern neurobiology including the analysis of neuronal proteins and their “post-translational modifications, the dynamics of cellular substructures, and various signaling mechanisms” in nerve cells including synaptic transmission. Molecular and cellular biology of selected neurological disorders. Components:Lecture Requirement Group:Prerequisites for undergraduates: Seniors only; PNB3251 and PNB 3275 and one of the following: MCB “2210, MCB 2000 or MCB 3010. Consent of instructor required for graduate students who are in” programs other than PNB.

†GRAD 5930. Full-Time Directed Studies (Master's Level) (GRAD 397) 3 credits.

†GRAD 5950. Master's Thesis Research (GRAD 395) 1 - 9 credits.

†GRAD 5960. Full-Time Master's Research (GRAD 396) 3 credits.

GRAD 5998. Special Readings (Master's) (GRAD 398) Non-credit.

GRAD 5999. Thesis Preparation (GRAD 399) Non-credit.

†GRAD 6930. Full-Time Directed Studies (Doctoral Level) (GRAD 497) 3 credits.

†GRAD 6950. Doctoral Dissertation Research (GRAD 495) 1 - 9 credits.

†GRAD 6960. Full-Time Doctoral Research (GRAD 496) 3 credits.

GRAD 6998. Special Readings (Doctoral) (GRAD 498) Non-credit.

GRAD 6999. Dissertation Preparation (GRAD 499) Non-credit.

Plant Science

*****

Department Head
Professor Richard McAvoy

Professors
Adams, Berkowitz, Brand, Guillard, Li, McAvoy, Singha,

Associate Professor
Alexopoulos, Auer, Elliott, Miniutti, Morris, Schulthess, Schwab, Westa

Assistant Professors
Henderson, Kuzkovkina-Eischen, and Legrand

The Department of Plant Science offers M.S. and Ph.D. degree programs. Research is conducted in the following major areas: Agronomy (including turf management); Horticulture (including plant biotechnology); Soil Science, and Landscape Architecture (M.S. only). Research areas are highly diverse and continuously developing. Prospective applicants should check the department website (www.canr.uconn.edu/plsci/) for current information on faculty research.

All applicants must provide results of the Graduate Record Examination general tests and three letters of recommendation with their application.

The M.S. program is available with either a thesis (Plan A) or non-thesis (Plan B) option, although most students are admitted under Plan A. Students with deficiencies in their undergraduate preparation may be expected to include preparatory coursework in their plan of study. All M.S. students must enroll in at least one semester of PLSC 5897, Graduate Seminar.

Applicants for the Ph.D. program should have adequate training and experience to enable them to perform independent research. Required coursework will depend on the nature of the research project and the student's background. A minimum of two years of full-time study beyond the master's degree (or equivalent) is expected. All Ph.D. students must enroll in at least two semesters of PLSC 5897, Graduate Seminar.

Special Facilities

The Department of Plant Science has research facilities in several buildings and field locations. Most laboratories are new or recently renovated and are well equipped. Several faculty laboratories are located in the college's Agricultural Biotechnology Laboratory. The Department also operates the University Plant Biotechnology Facility and the Soil Nutrient Analysis Laboratory that can be utilized for research purposes. The Plant Science Research Farm and Nursery is located within one mile of the main campus and contains 160 acres (65 hectares) and a small greenhouse range that are available for field research projects. The Floriculture greenhouse on the main campus provides about 15,000 square feet (1400 square meters) of growing area, and additional greenhouse space is associated with both the Agricultural Biotechnology Laboratory and the Plant Biotechnology Facility.

Courses

PLSC 5150 - Design and Analysis of Agricultural Experiments
The design and analysis of experiments commonly conducted in agricultural field, greenhouse, and laboratory research. Presentation of summarized data using computer generated graphics from printers, plotters, and film recorders will be covered. Emphasis is placed on use of computers (mainframe and personal) and appropriate computer programs (e.g., SAS, Sigma Plot).

PLSC 5240 - Plant Biotechnology
Principles of recombinant DNA and plant gene transfer technologies. Applications of plant biotechnology in agricuture, horticulture, forestry, human/animal health care, and the pharmaceutical industry. Social and environmental impacts of plant biotechnology.

PLSC 5250 - Plant Gene Transfer Techniques
Techniques of plant gene delivery and transgenic plant production. Verification and analysis of transgenic plants.

PLSC 5252 - Physiology and Ecology of Trees
Also offered as NRE 5252.

PLSC 5298 - Current Topics in Plant Biology
Informal discussions of current concepts, research and techniques in the areas of plant biotechnology, plant physiology and molecular biology.

PLSC 5410 - Soil Chemistry Components
Basic concepts of the physical chemistry of soil constituents. Topics include soil atmospheres, soil solutions, soil organic

matter, soil mineralogy, and surface characteristics and analysis. Term paper required. Not open to students that have passed PLSC 259C.

PLSC 5420 - Soil Chemistry Reactions and Equilibrium
Physical chemical characteristics of soil minerals and soil organic matter, and their reactivity with compounds present in the aqueous and vapor phase. Topics include: modern spectroscopic surface analyses, soil organic matter and its interactions with metals, redox reactions, solubility, derivation of ion-exchange equations, and kinetics of soil reactions. Term paper required. Also offered as ENVE 303.

PLSC 5620 - Soil Fertility
Factors governing nutrient uptake by plants, fate of nutrients applied to soils, priniples and practicies in the use of fertilizers and amendments for crop production, laboratory and field studies of social and plant response to applied nutrients.

PLSC 5897 - Seminar
Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatistactory.)

PLSC 5898 - Topics in Plant Science
Topics and credits to be published prior to the registration period preceding the semester offerings.

PLSC 5899 - Independent Study

†GRAD 5930. Full-Time Directed Studies (Master's Level) (GRAD 397) 3 credits.

†GRAD 5950. Master's Thesis Research (GRAD 395) 1 - 9 credits.

†GRAD 5960. Full-Time Master's Research (GRAD 396) 3 credits.

GRAD 5998. Special Readings (Master's) (GRAD 398) Non-credit.

GRAD 5999. Thesis Preparation (GRAD 399) Non-credit.

†GRAD 6930. Full-Time Directed Studies (Doctoral Level) (GRAD 497) 3 credits.

†GRAD 6950. Doctoral Dissertation Research (GRAD 495) 1 - 9 credits.

†GRAD 6960. Full-Time Doctoral Research (GRAD 496) 3 credits.

GRAD 6998. Special Readings (Doctoral) (GRAD 498) Non-credit.

GRAD 6999. Dissertation Preparation (GRAD 499) Non-credit.

Political Science

*****

Department Head
Professor Mark A. Boyer

Professors
Clifford, Hiskes, Lewis, and Zirakzadeh

Associate Professor
Best, Dudas, Hertel, Hettinger, Kelly, Ladewig, Kingstone, Lefebvre, Morrel, Pressman, Scruggs, Simien, Sterling-Folker, Waddell, and Yalof

Assistant Professors
Bayulgen, Cole, Dolgert, Dyson, Herrera, Kashwan Morrell, Moscardelli, Nunnally, Richards, Singer, Turcotte, Venator Santiago, and Zheng

The Department of Political Science offers study leading to the degrees of Master of Arts (M.A.) and Doctor of Philosophy (Ph.D.). Master's degree students usually take a less specialized program, including work in several areas of political science.

Admission to the Master of Arts Degree Program

All applicants are required to take the Graduate Record Examinations. Only those applicants showing high scholastic promise are admitted. Usually, an undergraduate major in political science (or an equivalent body of course work) is required for admission. However, exceptions are made for promising candidates who have majored in related subjects. Some undergraduate work in history, economics, and sociology also is desirable. Except where the M.A. degree clearly is intended to be a terminal degree, the admissions committee is reluctant to act favorably in the case of an applicant whose record shows no successful academic exposure to one or more foreign languages.

Requirements for the Master's Degree

After fulfilling the requirements for the master's degree, a final examination is administered. The final examination for the M.A. degree is both written and oral.

Admission to the Ph.D. Degree Program

Students pursuing the M.A. in Political Science who wish to continue for the Ph.D. degree are admitted to the doctoral program only upon recommendation of the committee administering the M.A. final examination. Those who have earned the M.A. degree elsewhere are admitted to pursue doctoral work here only with very convincing professional recommendations and demonstrated evidence of scholarly ability.

Such applicants also must submit the results of the Graduate Record Examinations.

Departmental Requirements for the Ph.D. Degree

The Ph.D. program involves two distinct stages. Doctoral students first prepare for a comprehensive written and oral general examination. After passing this examination, they devote themselves to research and the writing of a dissertation. All doctoral students must prepare in two of the following areas: international relations, comparative politics, American politics, political theory and public law.

All doctoral students are required to take, as early in their program as possible, Political Science 5600, Political Science 5605, and Political Science 5610.

Ph.D. students are required to have a competent reading knowledge of at least one foreign language appropriate to the general area of study or, upon recommendation of the advisory committee, at least six credits of advanced work in a related area or a supporting area such as statistics. However, an advisory committee may require additional advanced work in a related or supporting area, alone or in conjunction with a foreign language.

Special Facilities

Students interested in comparative politics will find the Center for Latin American and Caribbean Studies avaluable resource. A vast archive of survey data from polls taken both in the United States and abroad is housed at the Roper Center. Excellent computer facilities together with expert technical help from the Roper Center's staff provide ready access to these survey materials.

Courses

POLS 5000 - Independent Study in Political Science

POLS 5010 - Investigation of Special Topics in Political Science

POLS 5100 - Proseminar in Political Theory
Historical survey and analysis of fundamental concepts in political theory.

POLS 5105 - Political Theory
Historical and conceptual analysis of selected political ideas such as justice, liberty, rights, political obligation, or the state; including an examination of one or more major schools or bodies of political thought from ancient to contemporary times.

POLS 5110 - Seminar in American Thought and Ideology

POLS 5200 - Proseminar in Comparative Government
Political institutions and processes compared. Derivation of generalizations.

POLS 5205 - West European Politics
Contending approaches to the political systems of West European nations. Comparative analysis of industrialization, institutional structure, and political economy.

POLS 5210 - Seminar in Latin American Politics

POLS 5215 - Comparative Political Development
Development of political systems in relation to socio-economic level and other conditioning factors. Political stability and change.

POLS 5220 - Seminar in African Politics
Focus on the rise of nationalism in post-war Africa, the process of decolonization, and the problems of economic growth and national integration. Attention will also be given to the role of ideology as a determinant in the choice of development policies.

POLS 5225 - East European Politics
Comparative analysis of the political development, economic modernization, social stratification, and indigenous ideologies of post-Communist Eastern Europe.

POLS 5230 - Development Administration
Strategies of implementing development in Latin America, Asia, and Africa; social, political, and cultural obstacles to administrative reform in developing nations; problems of technical assistance in overseas administration; theories of development administration.

POLS 5235 - Comparative Democratization
Democratization and major approaches to regime change away from authoritarianism.

POLS 5240 - Research Seminars in Comparative Politics

POLS 5300 - Proseminar in International Relations
Current theories of and methodological approaches to international relations.

POLS 5305 - Foreign Policy Analysis
Analysis of foreign policy processes from a comparative, theoretical perspective.

POLS 5315 - International Security
Political and military issues as they intersect at the international level, such as war, terrorism, alliances, and intervention.

POLS 5320 - International Conflict and Cooperation
Examination of theories and methodologies relating to the study of international conflict and cooperation. Topics include deterrence, negotiation and bargaining, theories of conflict and war, and approaches to conflict resolution.

POLS 5325 - International Political Economy
Major problem areas in which politics, economics, and business intersect at the international level -- trade, foreign investment, and monetary relations. The politcs and mechanisms of U.S. foreign economic policy.

POLS 5330 - International Organization and Law
Internarional cooperation to resolve economic, social, and political transnational problems.

POLS 5335 - U.S. Foreign Policy in the Middle East
Examination of U.S. political, economic and strategic interests and aims in the Middle East.

POLS 5340 - Politics and Security in the Middle East
Examination of security issues in the Middle East and the responses of regional actors and external powers.

POLS 5345 - Foreign Policies of the Russian Federation and the Former USSR
Regional and global roles of the former USSR and postCommunist Russia.

POLS 5390 - Economic Rights
Economic Rights include the right to an adequate standard of living, the right to work, and the right to basic income guarantees for those unable to work. These rights are grounded in international law - particularly in the Universal Declaration of Human Rights and the International Covenant on Economic, Social, and Cultural Rights. This class will explore the conceptual bases, measurement, and policy applications of economic rights. Specific topics will include: child labor, the right to development, non-governmental initiatives, and the institutionalization of economic rights (e.g., constitutionalization versus statutory implementation versus discretionary policies).

POLS 5400 - Proseminar in American Politics
Theory and practice of American government and politics, with an emphasis on various theoretical and methodological perspectives.

POLS 5405 - National Decision-Making Process: Presidency and Congress
The interaction of the institutionalized Presidency and the Congress in the formulation and execution of public policy. Emphasis given to current issues and problems.

POLS 5406 - Seminar in the American Political System
Examination of empirical research in American politics, including institutions and processes.

POLS 5407 - Special Topics in American Political Institutions and Policy
The institutions and policy-making process of American government.

POLS 5408 - Special Topics in American Political Behavior
The political behavior of the American public, including public opinion, voting behavior, and other forms of participation.

POLS 5409 - Special Topics in American Race, Gender and Ethnic Politics
The politics of American race, gender and ethnicity, with a focus on disadvantaged groups and their influence on the political process.

POLS 5410 - Black Feminist Theory and Politics
Major debates at the core of black feminist theory, emphasizing the ways in which interlocking systems of oppression uphold and sustain each other in contemporary U.S. politics.

POLS 5415 - Administrative Ethics
Examination of models and standards of ethics in public administration, decision-making techniques and tools, and analyses of selected, contemporary dilemmas confronting public administration and public policy.

POLS 5420 - Public Opinion and American Democracy
Theories of democracy and what they imply about the public's capabilities and role; empirical research on the American public and public opinion in the context of democratic theory.

POLS 5425 - American Political Parties
The development, organization, and role of political parties in the United States, with implications for public policy.

POLS 5430 - Politics, Society, and Educational Policy
The analysis of the interactions among educational policy, politics and other social forces. In-sights and concerns from politics and other social sciences disciplines will be applied to different levels and types of schooling.

POLS 5435 - Proseminar in Public Policy
Major works in U.S. public policy, with comparative illustrations of general principles.

POLS 5440 - Proseminar in Public Administration
Theory and structure of administration and the public service.

POLS 5445 - Public Budgeting
An examination of the development and structure of the public financial sectors; the principles and roles of operating and capital budgets in public organizations; and introduction to the relationships between funding mechanisms and public policy.

POLS 5450 - Politics of Organization and Bureaucracy

POLS 5455 - Public Opinion and Public Policy
Theoretical and empirical study of public opinion and its role in policy formation.

POLS 5460 - Social Policy

POLS 5505 - Seminar in Public Law
Selected topics in public law, the administration of justice, and jurisprudence.

POLS 5510 - Judicial Decision-Making
The judicial decision-making process in terms of methods and models developed in the framework of the behavioral sciences.

POLS 5515 - Constitutional Interpretation
An exploration of the theories and process of constitutional interpretation in the United States, with an emphasis on the role the Supreme Court plays in defending and enforcing civil liberties.

POLS 5600 - Nature of Political Inquiry
The scope of political science, modes of inquiry, the role of concepts and theory. Graduate students are urged to take the course in their first semester.

POLS 5605 - Seminar in Quantitative Methods of Political Science
Introduction to the data analysis techniques most often used by political scientists. Requires no previous background in statistics.

POLS 5610 - Research Design in Political Science
Introduction to quantitative and non-quantitative empirical research design in political science.

POLS 5615 - Seminar in Qualitative Methods of Political Science
A survey of qualitative research methods. Training in use of case studies, comparative historical approach, interviewing and focus groups, ethnography and interpretive methods.
POLS 5600 5605, 5610

POLS 6100 - Research Seminar in Political Theory
Investigation of special topics in political theory, with emphasis on the preparation and completion of original research projects.

POLS 6400 - Research Seminars in American Politics

POLS 6500 - Research Seminar in Judicial Process

POLS 6610 - Research Seminar in Quantitative Methods
Research in quantitative applications to political data.
Prerequisite: POLS 5395 (RG509). to political data. Components:Seminar Requirement Group:Prerequisite: POLS 5395 (RG509).

†GRAD 5930. Full-Time Directed Studies (Master's Level) (GRAD 397) 3 credits.

†GRAD 5950. Master's Thesis Research (GRAD 395) 1 - 9 credits.

†GRAD 5960. Full-Time Master's Research (GRAD 396) 3 credits.

GRAD 5998. Special Readings (Master's) (GRAD 398) Non-credit.

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†GRAD 6930. Full-Time Directed Studies (Doctoral Level) (GRAD 497) 3 credits.

†GRAD 6950. Doctoral Dissertation Research (GRAD 495) 1 - 9 credits.

†GRAD 6960. Full-Time Doctoral Research (GRAD 496) 3 credits.

GRAD 6998. Special Readings (Doctoral) (GRAD 498) Non-credit.

GRAD 6999. Dissertation Preparation (GRAD 499) Non-credit.

Polymer Science

*****

Program Director
Professor Douglas H. Adamson

Professors
Papadimitrakopoulos, Dobrynin, Parnas, Sotzing

Research Professor
Scola

Associate Professors
Adamson, Asandei, Burkhard, Nieh, and Seery

Assistant Professors
Kasi, Lin, and Ma

Work leading to the degree of Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) is offered in the interdisciplinary field of polymer science in the Institute of Materials Science

(www.ims.uconn.edu/polymer).

Admission to Degree Programs

In addition to the basic admission requirements of the Graduate School, an applicant should submit Graduate Record Examinations (GRE) General Test scores at the time of application. A sound undergraduate major in science and/or engineering normally is required for entrance to the degree programs.

The M.S. Program

Other than the GRE General Test scores, there are no special requirements for admission to the master's program beyond those of the Graduate School. Selection of Plan A (thesis) or Plan B (non-thesis) is made after consultation with the advisory committee.

The Ph.D. Program

Admission to the doctoral program is based upon a careful assessment of the student's potential for creative research in polymer science. There are no special requirements for the doctoral program beyond those of the Graduate School, other than the GRE General Test scores.

Facilities

The Institute of Materials Science (IMS) has well-equipped, environmentally controlled research laboratories that are continually being upgraded. These include a clean room for surface and interface research, a monochromic source, variable angle ESCA, a relaxation spectrophotometer, and a tuneable UV/visible pulsed Nd:YAG laser. The IMS

Microscopy Laboratory has a new JEOL 6335F cold field emission gun SEM with an automated digital interface and a fully automated digital JEOL 2010 FasTEM.

The polymer processing area includes a Brabender Prep Center, a Brabender Plasti-Corder torque rheometer, twin screw extruder/mixer, pelletizer, and an injection molding machine. Among recently acquired instruments and facilities particularly relevant to polymer research are a Rheometrics ARES controlled strain rheometer, a PAAR Physica UDS-200 controlled stress rheometer and a Rheometric System IV, H/P 5890 and H/P 6890 Gas Chromatograph/Mass Spectrometers, and a Bruker GADDS wide-angle diffraction instrument, Bruker D5005 and D8 Advance power diffractometers, a Bruker Anton-Parr, a Renishaw Ramascope System, a Nicolet Magna 560 FT/IR, TA Instruments STA 600, T6A 500, and DSC 100. There are many other large and small instruments too numerous to list.

The Institute also operates a state-of-the-art materials simulation laboratory with a parallel cluster based on more than 24 PCs of the latest architecture. Students also have access to the main University computer system, as well as dozens of PCs, Macs, and Unix work stations.

Courses of Study

Course offerings are shown below. These are co-sponsored by departments in the sciences and engineering. Special Topics (Chemistry 5394) is offered each semester. The subject of these courses varies widely and depends on student and faculty interest and availability. In addition, the program sponsors weekly seminars of outstanding speakers representing various study areas in polymer science and engineering. Topics offered have included Liquid Crystals, Inorganic Polymers, Nanomaterials, Biopolymers, Polymers for Energy Storage and Generation, and Lifetime Prediction of Materials.Prediction of Materials.

Courses

Chemical Engineering
5351. Polymer Physics
5352. Polymer Properties
5355. Polymer Structure and Morphology
5356. Adhesion
5358. Composite Materials
5367. Polymer Rheology
5368. Polymer Rheology and Processing Laboratory

Chemistry
5380. Polymer Synthesis
5381. Polymer Physical Chemistry
5382. Polymer Characterization I
5384. Polymer Characterization II
5385. Reactions of Polymers
5394. Investigation of Special Topics
- Inorganic Polymers
- Polymer Biomaterials
- Polymer Photonics
- Polymer Spectroscopy - Conducting Polymers

Molecular and Cell Biology
5013. Structure and Function of Biological Macromolecules
5015. X-ray Structure Analysis
Physics
6244. The Electrical Properties of Polymers

Professional Studies

*****

Department Head
Dr. Susan W. Nesbitt

Program Head
Associate Professor Peter Diplock

Associate Professor
Sullivan

Assistant Professors
Allen

The Master of Professional Studies (M.P.S.) is a flexible, convenient on-line degree program. This unique graduate study opportunity is available to students from anywhere in the world and at a time that fits into each student's schedule. Working adults can complete all degree requirements within two years although the typical time to complete the program is three years.

The M.P.S. degree program is specifically designed for individuals and practitioners with established career paths who are interested in developing marketable skills to meet evolving workforce demands, in seeking professional development, and in expanded promotional opportunities.

The degree program provides skills and knowledge for immediate application in the following fields of study:

Human Resource Management (HRM)

The Human Resource Management field of study is designed for beginning and mid-career HR professionals or those interested in making a transition to the field. Graduates will be qualified to assume professional labor or management related HRM positions in both the private and public sector. This program has a residency requirement.

Courses

GPPS 5300 - Independent Study

Independent study in a topic related to the graduate program in Professional Studies as designated and approved by the instructor assigned to oversee and grade the project.

GPPS 5301 - Special Topics in Professional Studies

The instructor assigned will designate the special topic(s) related to the graduate program in Professional Studies and oversee and grade students' work in the course. With a change of content, this course may be taken for credit twice.

GPPS 5325 - Issues in Economic Development

This course concerns economic, social, and demographic change in those countries comprising the less wealthy regions of the South. It examines development from linear (neoclassical), structuralist (political economy), and other perspectives, and emphasizes relationships between "advanced" and "developing" countries within the context of the global economy. In addition to theoretical grounding, the course provides practice in preparing development profiles of individual countries.

GPPS 5347 - Program Evaluation

This course is intended to provide students with skills required to apply the methods of science to the assessment of social programs. Here a social program refers to organized, goal-directed activities designed to address a social problem. The goal of this course is to provide you, the student, with enough skill that you are able to design and implement evaluations of programs. The extent to which you are able to do this without assistance reflects largely your familiarity with scientific methods. Some of the more technical forms of impact studies may require additional study, or assistance from consultants.

GPPS 5352 - Systemic Analysis

Provides students with a foundational understanding of the complex and dynamic relations between issues and the systems that cause them. Systemic analysis trains students to understand in the operational dynamics of the social and structural dimensions of a society or group.

GPPS 5357 - Quantitative Analysis

This course is designed to help students develop skills necessary to understand and utilize research based on quantitative methods while building fundamental skills in quantitative analysis. The course will include basic univariate statistics, bivariate statistics and basic multivariate statistics including basic analysis of variance and basic multiple regression analysis. This course stresses the use of Microsoft Excel for performing statistical analysis.

GPPS 5361 - Strategic Staffing and Talent Management

This course presents the theoretical frameworks and practical tactics for the acquisition, deployment, and retention of the talent necessary to achieve the strategic and tactical objectives of the business. Topics will include strategic staffing, human resource planning, recruitment, assessment, selection decision-making strategies, succession planning and retention strategies. The importance of linking staffing and talent management to business strategies, objectives, and competitive challenges will be emphasized.

GPPS 5389 - MPS Internship

The internship will provide professional experience in the student's field of study in a private or public organization. Students will select the organization and specific internship position with the approval of the major advisor. Students will be expected to perform professional duties for a minimum of 160 hours during the semester. Prior to the beginning of the internship, student will develop a set of professional objectives for the internship experience. Students will maintain a log of experiences and activities during the internship. At the conclusion of the internship, students will write a paper evaluating the experience gained in light of the stated objectives.

Open to students enrolled in the Master of Professional Studies degree program (RG3471).

GPPS 5395 - MPS Residency Program

The Master of Professional Studies (MPS) program requires students to complete a professional residency. The residency is a milestone towards the completion of the MPS degree. Consistent with the criteria for the MPS Capstone Project, each residency will be subject to the approval of the student's advisory committee. Appropriate residencies are those designed to: (a) provide students with an opportunity to develop a sense of affiliation and identification with the program and the university; (b) provide students with an opportunity for scholarly dialogue related to their capstone project; or (c) provide students with an opportunity for professional socialization by developing relationships with peers, faculty, and practitioners in the field. Examples of appropriate residencies include but are not limited to sessions at the Storrs campus, attendance and participation in approved regional national or international professional conferences.

Prerequisite: Corequisite: GPPS 5397 (RG3472).

GPPS 5397 - MPS Capstone Project

Towards the end of the M.P.S. program, students will select, with faculty approval, a topic for a major project that demonstrates the student's ability to define, analyze, synthesize, evaluate, and recommend actions or solutions to deal with a major issue, problem, or opportunity within the field of study. Capstone Projects may include job-related field projects, integrative analyses of professional literature, and comprehensive project proposals for adoption by third parties. In all cases, the Capstone Project is intended to demonstrate an extensive understanding of the topic area selected, the ability to devleop and integrative and systemic analysis of a problem, and the ability to identify appropriate solutions and recommendations. A written report documenting all aspects of the project will be presented for faculty approval.

Open to students enrolled in the Master of Professional Studies degree program (RG3471).

HSL 5310 - Introduction to Homeland Security
Provides an understanding of the operational and organizational dynamics of terrorism. By the end of the course, students should be able to design effective measures for countering and responding to terrorism.

HSL 5311 - Terrorism, Asymmetrical Conflict and Homeland Security
This course will provide learners with an intellectual framework for engaging in ongoing self-directed learning within the Homeland Security domain. By the end of the course, students should be able to design effective measures for countering and responding to terrorism based on an understanding of the organizational dynamics of terrorism.

HSL 5312 - Intelligence for Homeland Security: Organizational and Policy Challenges
This course will examine contemporaneous issues facing the intelligence community and its role in homeland security. The emphasis will be on critical thinking of issues related to policy development, implementation, and intelligence support to senior decision makers in the homeland security community. By the end of this course, students will have had the opportunity to address policy, organizational and substantive issues pertaining to homeland security and intelligence; interact with each other, and author well researched papers.

HSL 5313 - Critical Infrastructure Protection in Homeland Security
This course develops a network theory of vulnerability analysis and risk assessment called “modelbased vulnerability analysis” that is used to extract the critical nodes from each sector, model the nodes’ vulnerabilities by representing them in the form of a fault-tree, and then applying fault and financial risk reduction techniques to derive the optimal strategy for protection of each sector. At the completion of this course, students will be able to apply the model-based vulnerability technique to any critical infrastructure within their multi jurisdictional region.

HSL 5315 - Contemporary Issues in Homeland Security Leadership
This course is designed to support the overarching goals of the Homeland Security Leadership program by providing an intellectual framework for engaging in ongoing self-directed learning within the Homeland Security domain; developing a cadre of leaders across the Homeland Security continuum who share substantive skills in analysis, interpretation, policy development, and administration of approved policy; and to complement other more operationally oriented training programs.

HRM 5300 - Independent Study
Independent study in a topic related to the Human Resources Management certificate program as designated and approved by the instructor assigned to oversee and grade the project.

HRM 5301 - Special Topics in Occupational Safety and Health
The instructor assigned will designate the special topic(s) related to the Human Resources Management certificate and oversee and grade the students’ work in the course.

HRM 5304 - Employment Law
This course addresses the applicable federal and state laws, the different forums (federal court, state courts, Equal Employment Opportunity Commission, and state Commissions on Human Rights and Opportunities), and prevention of claims through the diversity training, a system of reporting/handling disputes, and the proper employer response. This course will not address the NLRB, collective bargaining agreements, or union rights.

HRM 5340 - Negotiations and Administration
This course provides the student with the fundamental skills needed to partiicipate fully in any situation requiring bargaining skillls.

HRM 5341 - Labor Relations and the Law
This course will cover the basic legislation that impacts today’s workplace in the public as well as the private sector. Legislation that prevents and remedies employment discrimination will be included.

HRM 5342 - Introduction to Alternative Dispute Resolution’(Process
This course provides the student with the fundamental skills needed to understand and participate fully in alternative dispute resolution.

HRM 5351 - Human Resources and Public Policy
This course examines the government’s influence on the workplace and the impact of public policy on the human resource function within organizations. The course is geared towards developing a better understanding of public policy frameworks, processes, and analytical methods, and their impact on HR issues, problems, challenges, and the resulting actions required in the practice of Human Resources Management.

HRM 5300 - Independent Study
Independent study in a topic related to the Human Resources Management certificate program as designated and approved by the instructor assigned to oversee and grade the project.

HRM 5301 - Special Topics in Occupational Safety and Health
The instructor assigned will designate the special topic(s) related to the Human Resources Management certificate and oversee and grade the students’ work in the course.

HRM 5304 - Employment Law
This course addresses the applicable federal and state laws, the different forums (federal court, state courts, Equal Employment Opportunity Commission, and state Commissions on Human Rights and Opportunities), and prevention of claims through the diversity training, a system of reporting/handling disputes, and the proper employer response. This course will not address the NLRB, collective bargaining agreements, or union rights.

HRM 5340 - Negotiations and Administration
This course provides the student with the fundamental skills needed to partiicipate fully in any situation requiring bargaining skillls.

HRM 5341 - Labor Relations and the Law
This course will cover the basic legislation that impacts today’s workplace in the public as well as the private sector. Legislation that prevents and remedies employment discrimination will be included.

HRM 5342 - Introduction to Alternative Dispute Resolution’(Process
This course provides the student with the fundamental skills needed to understand and participate fully in alternative dispute resolution.

HRM 5351 - Human Resources and Public Policy

This course examines the government's influence on the workplace and the impact of public policy on the human resource function within organizations. The course is geared towards developing a better understanding of public policy frameworks, processes, and analytical methods, and their impact on HR issues, problems, challenges, and the resulting actions required in the practice of Human Resources Management.

OSH5300(1 - 3)Instructor Consent Required Independent Study

Independent study in a topic related to the Occupational Safety and Health Certificate program as designated and approved by the instructor assigned to oversee and grade the project. Components:Independent Study

OSH5301(1 - 3)Instructor Consent Required Special Topics in Occupational Safety and Health

The instructor assigned will designate the special topic(s) related to the Occupational Safety and Health Certificate program and oversee and grade students' work in the course. Components:Lecture

OSH5321(3 Credits) Seminar in Occupational Safety and Health Management

This course is an in-depth study of the impact of issues such as the changing demographics, and globalization of regulations, on promoting prevention of injuries and illness to workers, and protection of property and the environment in the workplace. This course is taught as a series of active seminars requiring students to research, write, and discuss papers. Components:Seminar

OSH5322(3 Credits) Industrial Pollution Management

This course provides students with management and applied techniques to prevent and control pollution from industrial activities. It includes legal aspects of pollution prevention and control, setting up pollution prevention programs, performing pollution prevention assessments, performing economic evaluations and management principles in controlling industrial pollution. Components:Lecture

OSH5325(3 Credits) Systems Safety Analysis

This course will acquaint students with empirical methods and techniques for proactively identifying, assessing, and eliminating or controlling safety-related hazards to acceptable levels. Components:Lecture

OSH5326(3 Credits) Managing Environmental Systems

This course will provide guidance and detailed information on developing environmental management systems with special reference to ISO 14001; measuring corporate needs, advantages and disadvantages; liability issues; and internal and external auditing. Components:Lecture

OSH5376(3 Credits) Occupational Safety and Health

This is a graduate course that provides the student with the rationale for providing an occupationally safe and healthy work environment for employees. These skills are needed to be able to work effectively in the area of human resources and employee development as well as industrial relations since workers have been provided by law with specific safety and health rights. Components:Lecture

OSH5378(3 Credits) Advanced Industrial Hygiene

This is a graduate-level course in the field of industrial hygiene. It is directed at protecting workers' health through the recognition, evaluation and control of hazards in the work environment. Components:Lecture

OSH5380(3 Credits) Loss Control Methods

This course offers a detailed study of loss control research methods and application techniques with emphasis on the control of hazards using safety engineering methods in a variety of industrial settings. Components:Lecture

University of Connecticut - College of Continuing Studies - Subject: Occupational Safety and Health

OSH5381(3 Credits) Advanced Loss Control and Management Theory

This course provides students with opportunities to apply management and loss control techniques to analyze and address occupational safety and health issues. Topics in this course include: epidemiology concepts in analyzing occupational safety and health injuries and illnesses; hazard analysis; prevention and control of hazards; tools of accident prevention; safety and health training; motivating safety and health; and communicating safety. Components:Lecture

Requirement Group:Prerequisite: OSH 5380 (RG3875)

OSH5382(3 Credits) Analysis of Occupational Safety and Health Law and Regulations

This course provides the substance for understanding the Occupational Safety and Health laws and regulations, the regulatory process; and the research data and analyses required to promulgate or revise a law or regulations. Components:Lecture

GRAD 5998. Special Readings (Master's) (GRAD 398) Non-credit.

GRAD 5999. Thesis Preparation (GRAD 399) Non-credit.

†GRAD 5930. Full-Time Directed Studies (Master's Level) (GRAD 397) 3 credits.

†GRAD 5950. Master's Thesis Research (GRAD 395) 1 - 9 credits.

†GRAD 5960. Full-Time Master's Research (GRAD 396) 3 credits.

Psychology

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Department Head
Professor James Greene

Associate Deptartment Head and Coordinator of Research and Resources
Professor Janet Barnes-Farrell

Associate Department Head and Coordinator of Undergraduate Studies
Professor David B. Miller

Coordinator of Graduate Studies
Etan Marcus

Distinguished Professors
Fein, Fisher, and Salamone

Professors
Barnes-Farrell, Blanton, Burton, Carello, Chaffin, Gibbons, Johnson, Kalichman, Leach, Lillo-Martin, Miller, Naigles, Park, Pratto, Pugh, and Swadlow

The Department of Psychology offers study leading to the degree of Doctor of Philosophy (Ph.D.) in the several areas described below. There is a pervading emphasis on the acquisition of a general background in research findings and theoretical interpretations. All students are expected to conduct independent research projects prior to their dissertation research. Opportunities are provided for pre-professional experience in undergraduate teaching, research on grant-supported projects, and research and applied opportunities with clinical agencies. The Departmental website is http://psychology.uconn.edu

Behavioral Neuroscience

This area of concentration offers study that focuses on the biological basis of behavior, through research participation, seminars, and formal course work. Research programs make use of a variety of approaches – of neurophysiology, neurochemistry, neuroanatomy, neuroendo-crinology, genetics, ethology, and behavioral analysis – to study problems in sensation, perception, emotion, motivation, learning, motor activity, aggression, sex differences, reproductive behavior, communication, brain lateralization, and the organization of sensory cortex.

Clinical Psychology

The clinical program is designed to produce psychologists able to work on a scientific and professional level, with special competence in research, diagnosis, and therapy. At least one year of internship at an approved facility is required. The program has APA accreditation. The program emphasizes both child/family and adult interventions and provides opportunity to pursue concentration in child psychology, health psychology, and neuropsychology.

Developmental Psychology

The program provides training in how experiential and maturational processes, broadly defined, continually influence each other to shape developmental trajectories and outcomes. Current faculty members are unified by a focus on the critical role that contexts play in the processes that govern the emergence and organization of behavior during development. Emphasis is on breadth of training in developmental content areas, including the development of auditory processing, the perceptual abilities of typically developing infants and consequences of deprivation, socioemotional development in the contexts of peer relationships and parent-child interaction, the acquisition and emergence of linguistic structure and meaning, and similarities and differences in the development of typical and atypical children.

Perception/Action/Cognition

Two areas of specialized study are offered: (1) the ecological approach to perception and action, and (2) language and cognition. Facilities exist for research and training on many topics, including: the perceptual control of action, coordinated movement, psycholinguistics, speech perception and production, neurobiological and psychophysical studies, and the philosophical and theoretical foundations of perception, action, and cognition. Emphasis in psycholinguistics is provided in cooperation with the Department of Linguistics.

Industrial/Organizational Psychology

This area of concentration is concerned with the application of psychological methods and principles to understanding human behavior in work settings. Students can choose to emphasize personnel psychology, organizational psychology, occupational health psychology, or human factors/ergonomics in their research and course work. All students take the same core courses in the first year of study, and all students are required to be actively engaged in research during their entire course of study. An approved one-year field research experience is required.

Neurosciences

This is an interdisciplinary area of concentration. Neuroscience is concerned with the structural and functional characteristics of the nervous system and its relation to the adaptive physiology and behavior of the organism. Students in this program may approach the full range of neuroscience studies through courses and research at the cellular, systemic, and organismic levels. A particular strength of the area is the analysis of behavior, its development, and its neurological bases. This area of concentration is offered in the fields of study of biobehavioral science, pharmaceutical science, physiology, and psychology. Application is made to the preferred field of study, but the applicant must be acceptable to the Neurosciences Committee.

Social Psychology

This division provides excellent training in both laboratory and field research methods and statistics and broad coverage of the major theoretical paradigms of social psychology. Curriculum requires exposure to three levels of analysis: the social person (including identity, social cognition, attitudes, emotions), the person and others (including groups, close relationships, and organizations), and the social context (including intergroup relations, gender, and health). Research areas include dyadic relations (e.g., close relationships, person perception, gender), social inequality (including stigma, stereotyping and discrimination, prejudice), and health psychology (including risk assessment, information, motivation skills, intervention research).

Admission Requirements

Well qualified candidates are encouraged to apply for the Ph.D. degree. Requirements for admission include basic courses in statistics, general psychology, and any of several sub-areas within psychology. Applicants must present scores on the three parts of the general Graduate Record Examination.

The online application for admission may be accessed through the Graduate School website at: http://grad.uconn.edu/prospective/online.html. There is not a separate application for Psychology; however, the Psychology Department requires application materials in addition to the materials required by the Graduate School. The Psychology Department admissions requirements and procedures may be found on the department website at: http://www.psychology.uconn.edu/academics/graduate/documents/UConn_Psych_Admission_Brochure.pdf .

The application deadline for Clinical Psychology is December 1. The application

deadline for Social Psychology and Industrial/Organizational Psychology is December 15. The deadline for all other Psychology graduate programs is January 1. For questions regarding graduate programs, please send an email to psychgrad@uconn.edu or call 860-486-2057 .

Facilities

Research facilities including multiple research laboratories for conducting research in the various sub-areas of psychology, five computer-based laboratories for data collection, and programming and on-line research capabilities, and several experimental rooms dedicated to empirical research data collection. In addition, research capabilities exist in multiple laboratories at affiliated research institutions such as Haskins Laboratories (New Haven), the Institute of Living (Hartford), and the University of Connecticut Health Center (Farmington).

Also a wide variety of approved locations are available for clerkship, practicum and intern training in clinical and industrial psychology, and for work experience for advanced students in other sub-disciplines. These resources include several national corporations, VA hospitals, community clinics, and trauma centers. Opportunities for work with developmentally disabled individuals living in the community also exist.

Courses

PSYC 5100 - History of Psychology
Intellectual antecedents to contemporary clinical, developmental, experimental, and social psychology.
Open to Psychology graduate students, others with permission (RG786).

PSYC 5101 - Motivation
Theories of motivation considered in relation to their supporting data. Also offered as COMM 340.

PSYC 5102 - Psychology of Women and Gender
A survey of research and theory on the interpretation of sex differences; gender, status, and power, and women's life span development.

PSYC 5120 - Health Psychology
Interaction of biological, psychological, and social factors in health. Topics include disease prevention and health promotion, psychosocial factors in treatment of illness, and stress and coping processes.

PSYC 5121 - Research Methods in Health Psychology
Research designs, methods, and data analysis strategies used in health promotion and disease prevention research (e.g., case control studies, randomized clinical trials).
Prerequisites: STAT 3115Q (242) and STAT 5105 (379) or equivalent statistics course (RG 3725)

PSYC 5122 - Clinical Health Psychology
Examines the interaction of biological, psychological, and social factors in health and the application of psychological interventions for physical illness, psychological problems secondary to physical illness, and health promotion.

PSYC 5123 - Occupational Health Psychology
Introduction to research in occupational health and the field of occupational health psychology in a proseminar format. Topics include work stress, worker participation in hazard management, epidemiology of occupational exposures, workplace incivility, and design of safe work environments.
Prerequisite: STAT 5105 or NURS 5020 or PUBH 5434 (RG3496).

PSYC 5130 - Causal Modeling in Psychology
The analysis of data to test causal theories, the use of factor analysis to test models of measurement, and the comparison of alternative models is discussed.
Prerequisite: STAT 5105 (RG516).

PSYC 5131 - Meta Analysis: Theory and Practice
Methods of research synthesis, including the literature review and the place of quantitative methods in drawing conclusions from existing empirical research. Introduces the statistical techniques of meta-analysis, which integrates the results of independent studies addressing the same hypothesis.
Prerequisite: STAT 5105 (379) (RG 3740)

PSYC 5140 - Foundations in Neuropsychology
An introduction to neuropsychology, including functional neuroanatomy, neurochemistry, neuropharmacology and cognitive/emotional function and dysfunction.

PSYC 5141 - Neuropsychological Assessment
An introduction to clinical neuropsychological assessment, including review of neuroanatomy and neuropsychological functions, common syndromes of neuropsychological dysfunction, specific tests to measure neuropsychological functions and professional issues for the neuropsychologist.
Prerequisite: PSYC 5140 (RG513).

PSYC 5170 - Current Topics in Psychology
Selected topics in psychology are studied with particular attention to recent developments in the field.

PSYC 5200 - Behavioral Neuroscience Research Seminar
Seminar on current research, with intra- and extra-mural colloquium speakers.

PSYC 5228 - Neuropsychopharmacology
This course will review the anatomy and physiology of the CNS and then discuss the effects of pharmacological agents on it. Topics include general anaesthetics, hypnotics and sedatives, anticonvulsants, alcohol, muscle relaxants, tranquilizers, hallucinogens, and narcotics. Student presentations will treat topics relating the CNS and behavioral pharmacology.

PSYC 5251 - Neural Foundations of Learning and Memory
Examination of the processes involved in habituation, conditioning, learning, and memory through a study of the neural elements and systems involved in their production and maintenance.

PSYC 5257 - Physiological Psychology Laboratory
Techniques used in the study of physiological psychology, including ablation, electrical and chemical stimulation, and electrophysiological recording of the nervous system.

PSYC 5261 - Animal Behavior
A survey of the scientific study of animal behavior, with an emphasis on evolutionary and developmental mechanisms underlying non-human behavior patterns.

PSYC 5270 - Current Topics in Behavioral Neuroscience
Special problems or areas of research are studied with particular attention to recent

developments in the field.

PSYC 5284 - Human Behavior Genetics
Concepts and methods in human behavioral genetic analyses with emphasis on normal variations, psychopathologies, and ethical issues.

PSYC 5285 - Neurobiology of Aging: Changes in Cognitive Processes
Neural basis of age-related changes in learning and memory. Both the normal aging process and age-related pathologies examined. Encompasses both animal models and human data.

PSYC 5300 - Research Seminar in Clinical Psychology
Advanced seminar presentations by faculty, graduate students, and visiting speakers on current theoretical developments and empirical research in clinical psychology.
Open to students in Clinical Psychology (RG2160).

PSYC 5301 - Practicum in Interviewing and Cognitive Assessment
An introduction to psychological assessment with supervised practice in administering and interpreting clinical interviews and psychological tests.
Open to students in Clinical Psychology (RG2160).

PSYC 5302 - Adult Psychopathology
Theoretical and descriptive overviews of mental disorder that afflict adults, emphasizing etiology, diagnosis, and conceptualization.
Open to students in Clinical Psychology (RG2160).

PSYC 5303 - Child Psychopathology
An examination of diagnosis, etiology, and prognosis in child psychopathology.
Open to students in Clinical Psychology (RG2160).

PSYC 5304 - Practicum in Personality Assessment
Supervised practice in administration and interpretation of clinical tests and case history material, report writing and discussion of implications of diagnostic data for therapeutic procedures.

PSYC 5305 - Psychodynamics
Criteria for the evaluation of personality theories. An analysis of the major methods of psychotherapy and of the personality theories on which they are based.
Open to students in Clinical Psychology (RG2160).

PSYC 5306 - Professional Issues in Clinical Psychology
An examination of the relations among the law, ethical issues, and professional practices of clinical psychologists and of other providers of mental health services.
Open to students in Clinical Psychology (RG2160).

PSYC 5307 - Empirically Validated Methods of Psychotherapy
Instruction and supervised practice of empirically validated, psychotherapeutic techniques and treatments.
Open to graduate students in Clinical Psychology and to others with permission (RG 3643)

PSYC 5311 - Group Psychotherapy
Theories and methods of group psychotherapy.

PSYC 5332 - Research Design and Test Construction
Theoretical issues and practical problems in developing valid measures of personality variables and in designing experimental and quasiexperimental research.
Open to students in Clinical Psychology (RG2160).

PSYC 5370 - Current Topics in Clinical Psychology

Open to students in Clinical Psychology (RG2160).

PSYC 5399 - Clinical Psychology Research Group.
Discussion of ongoing research of faculty and graduate students
Psyc 5399 Prerequisite

PSYC 5400 - Research Seminar in Developmental Psychology
Current research in developmental psychology, with intra- and extramural speakers and directed readings.
PSYC 5400 prerequisite

PSYC 5410 - Advanced Developmental Psychology
This course undertakes, at an advanced level, a developmental treatment of child behavior on the basis of experimental findings and psychological theory.

PSYC 5420 - Cognitive Development
Current theory and research on children's conceptual development.

PSYC 5430 - Developmental Ethology
Introduction to conceptual, theoretical, and empirical issues based upon an ethological and biopsychological approach to development across species. Topics include nature-nurture, behavioral embryology, early experience, continuity-discontinuity, and performationism versus epigenesis.

PSYC 5440 - Development of Language and Related Processes
Experimental and descriptive study of the child's language processes, with emphasis on acquisition, structure, meaning, thought, and the influence of verbal processes on nonverbal behavior.
Open to Psychology graduate students, others with permission (RG786).

PSYC 5450 - Infancy and the Effects of Early Experience
Data and theory concerning the effects of early experience in infancy on behavioral and physiological development. Cross-species comparisons are emphasized.

PSYC 5460 - Social and Personality Development
Fundamental research and theory on social behavior, social cognition, and interpersonal relations in the preschool period (2-6 years) and in middle childhood (6-12 years). Early childhood precursors and consequences in adolescence. Both normative and atypical development.

PSYC 5470 - Current Topics in Developmental Psychology
Selected topics in developmental psychology are studied with particular attention to current research and theoretical trends.

PSYC 5499 - Research Team in Develomental Psychology
Planning and execution of both individual and collaborative research projects in developmental psychology.
PSYC Grad progam only

PSYC 5500 - Research Seminar in Language and Cognition
Also offered as LING 305.

PSYC 5512 - Ecology of Language and Cognition
The scope and content of an ecological theory of language are outlined. Conventional theories of language, ecological theories of perceiving and acting and relevant portions of social psychological, anthropological, and linguistic theory are explored.

PSYC 5513 - Memory
Contrasts associationist, cognitive, connectionist, and cognitive neuroscience approaches to issues involving short-term memory, long-term memory, and the representation of knowledge.

PSYC 5514 - The Mental Lexicon
The role of the mental lexicon in the perception and production of words, including the representation and use of knowledge about phonology, morphology, orthography, and semantics.

PSYC 5515 - Connectionist Models
Connectionist models in psychology and computational neuroscience. Topics include learning, memory, and language processes in both intact and damaged networks.

PSYC 5541 - Reading Acquisition and Reading Disorders
Examination of theories and research: Aspects of literacy and stages of acquisition; cognitive prerequisites for reading and writing; individual differences in learning and the problem of dyslexia.

PSYC 5553 - Introduction to Nonlinear Dynamics
Basic concepts and methods of nonlinear dynamics systems theory applied to behavioral time-series data.

PSYC 5554 - Advanced Nonlinear Dynamics for the Behavioral Sciences
Advanced concepts and methods of nonlinear dynamics systems theory applied to behavioral time-series data.
Prerequisite: PSYC 5553 (RG2945).

PSYC 5564 - Dynamics of Language and Cognition
Application of dynamical systems theory to language modeling.

PSYC 5567 - Cognition
An introduction to theories of human cognition.

PSYC 5568 - Psychology of Language
Psychological aspects of linguistic structure, with particular attention to phonology.

PSYC 5569 - The Neuropsychology of Language
An examination of language and speech in relation to the biological systems that serve communicative processes in man.

PSYC 5570 - Current Topics in Cognitive Science
Special topics in cognitive systems theory are reviewed with particular emphasis on techniques for the intrinsic measurement of systems behavior including information processing capacities and goal achievements. Students are required to apply the techniques discussed to an ongoing research topic of their own choosing.

PSYC 5571 - Sensation and Perception I
Relations among physical, physiological, and psychological variables in selected sensory and perceptual processes. Attention is given to problems of measurement, empirical findings, and theoretical interpretations.

PSYC 5572 - Sensation and Perception II
A continuation of Psychology 369.
Prerequisite: PSYC 5571 (RG518).

PSYC 5574 - Control and Coordination of Action
Covers the ecological approach; movement as the product of a representational/computational system; intentionality; physical principles of self-organization and cooperativity; task dynamics. Problems in the physiology of activity, prosthetics and robotics are addressed.

PSYC 5575 - Introduction to Cognitive Systems
Survey of the fundamental concepts of machine theory, cybernetics, structural stability theory, and natural systems theory with respect to their role in modeling cognitive systems.

PSYC 5583 - Sentence and Discourse Processing
How psychological theories of perception and learning provide insight into language processing at the level of sentence structure and discourse structure.

PSYC 5600 - Research and Practice of Industrial/Organizational Psychology
Current research and practice in industrial/organizational psychology, with intra- and extramural speakers. This course may be repeated to a maximum of 12 credits.

PSYC 5601 - Proseminar in Industrial/Organizational Psychology I
Introduction to research and practice in the field of I/O psychology; personnel psychology, organizational psychology, human factors/ergonomics, and judgment and decision making.
Open to doctoral students in Industrial/Organizational psychology, others with permission (RG3497).

PSYC 5602 - Proseminar in Industrial/Organizational Psychology II
Introduction to research and practice in the field of I/O psychology; personnel psychology, organizational psychology, human factors/ergonomics, and judgment and decision making.
Open to doctoral students in Industrial/Organizational psychology, others with permission (RG3497).

PSYC 5611 - Work Motivation
Major theoretical approaches to work motivation, and their implications for the design of work settings and the treatment of workers.
Prerequisite: PSYC 5613 (RG519).

PSYC 5612 - Leadership in the Workplace
Theoretical and research issues associated with leadership in the workplace. Classical and current theories of leadership, research in leadership development, and evaluation of various leadership models.
Prerequisite: PSYC 5613 (RG519).

PSYC 5613 - Organizational Psychology
Major research lines in organizational behavior (work motivation, leadership, work attitudes, job design, turnover, absenteeism), with attention to emerging areas (e.g., women in management). Emphasis on research methods and analytic strategies.
Open to doctoral students in Industrial/Organizational Psychology, others with permission (RG797).

PSYC 5614 - Personnel Psychology

Techniques of personnel psychology: recruitment, selection, placement, evaluation, training, development, and related areas. Open to doctoral students in Industrial/ Organizational Psychology, others with permission (RG797).

PSYC 5615 - Human Factors
Theories of design and analysis of man-machine systems in an industrial/ organizational context. Special emphasis on the human as an information-processing sub-system operating with other people and machines in complex systems. Application of psychological principles to design of industrial workplaces, military systems, and consumer products; and to the design of simulation systems for training.
Open to doctoral students in Industrial/ Organizational Psychology, others with permission (RG797).

PSYC 5616 - Human Judgment and Decision Process
Examination of social judgment methodology, judgmental heuristics and biases, process tracing, bootstrapping, behavioral decision theory, and multi-attribute utility measurement.
Open to doctoral students in Industrial/ Organizational Psychology, others with permission (RG797).

PSYC 5617 - Occupational Health and Safety
Research methods, theories and findings related to the impact of work duties and environmental conditions on occupational safety and health.
Prerequisite: PSYC 5615 (RG521).

PSYC 5618 - Selection and Placement
Theory and research on employee selection and placement. Selection models, employee testing, statistical methods in selection and placement, equal opportunity and EEOC guidelines and related ethical issues.
Prerequisite: PSYC 5614 (RG522).

PSYC 5619 - Performance Appraisal
Methods and issues in performance rating in organizations. Classic studies and current models of performance evaluation are used to explore factors which enhance or hinder the accurate gathering, evaluation, and communication of employee performance information.
Prerequisite: PSYC 5614 (RG522).

PSYC 5620 - Design and Analysis of Human-Machine Systems
The basis, in theories of perception and learning, for design of complex human-machine systems.
Prerequisite: PSYC 5615 (RG521).

PSYC 5621 - Simulation and Training
The theoretical basis for techniques of effective training of human operators in complex human-machine systems.
Prerequisite: PSYC 5615 (RG521).

PSYC 5622 - Work Systems and Performance
Research methods, theories and findings related to the impact of work duties, schedules, psycho-social variables and circadian psychophysiology on human performance.
Prerequisite: PSYC 5615 (RG521).

PSYC 5670 - Current Topics in Industrial/ Organizational Psychology
Selected topics in industrial/organizational psychology are studied with particular attention to current research and theoretical trends. Topics vary by semester.

PSYC 5699 - Research Team in Industrial/ Organizational Psychology
Planning and execution of both individual and collaborative research projects in industrial/organizational psychology. This course may be repeated to a maximum of 12 credits.
PSYC 5699 Prerequisite

PSYC 5700 - Proseminar in social psychology
Presentations on current research in all areas of social psychology.
Open to Social Psychology graduate students, others with permission (RG787).

PSYC 5701 - Experimental Social Psychology
A critical overview of the various laboratory methods and techniques in social psychology.

PSYC 5702 - Field Research Methods
An examination of various methods of field research, focusing on design, analysis, theory, and practical issues.
Prerequisite: PSYC 5701 (RG515).

PSYC 5703 - Advanced Social Psychology
An overview of the field of social psychology organized around the major underlying theoretical orientations. Several positions are critically examined along with representative empirical work.
Open to Social Psychology graduate students, others with permission (RG787).

PSYC 5770 - Current Topics in Social Psychology
Topics vary by semester. Recent topics have included Social Cognition, Small Groups, Health Psychology, Emotion, Problems in Personality, and Ecological Social Psychology.

PSYC 5799 - Research Team in Social Psychology
Planning and execution of both individual and collaborative research projects in social psychology.

PSYC 5800 - Research in Psychology

PSYC 5801 - Independent Study in Psychology

PSYC 6130 - Measurement and Scaling
History and theories of psychological measurement and scaling. Application of unidimensional scaling models (e.g., Thurstone, Guttman, and Likert scaling, hierarchical cluster analysis, multidimensional scaling, and factor analysis) to psychological research problems.
Prerequisite: STAT 5105 (RG516).

PSYC 6136 - Seminar in Quantitative Research Methods
Quantitative research culminating in a research methods paper. Intended as the capstone course for the Quantitative Research Methods graduate certificate following completion of other courses in the certificate program.

PSYC 6141 - Practicum in Neuropsychological Assessment
Field placements in clinical neuropsychology. Students will be placed in area hospitals, rehabilitation centers, or on campus, where they will perform neuropsychological evaluations under supervision and attend clinical rounds and team meetings.
Prerequisites: PSYC 5301, PSYC 5140, and PSYC 5141 (RG514).

PSYC 6300 - Clerkship in Clinical Methodology
Supervised clinical training in a community facility.

PSYC 6301 - Practicum in Adult Psychotherapy
Supervised psychotherapy training with adults including diagnostic procedures.
Open to students in Clinical Psychology (RG2160).

PSYC 6302 - Practicum in Child

Psychotherapy
Supervised psychotherapy training with children and parents including diagnostic procedures.
Open to students in Clinical Psychology (RG2160).

PSYC 6303 - Didactics of Supervision and Consultation
Exposure to theories, models, and empirical data pertinent to providing quality supervision of the psychodiagnostic and psychotherapeutic activities of mental health professionals.
Open to students in Clinical Psychology.
Prerequisites: PSYC 5301, PSYC 5304, PSYC 6301, and PSYC 6302 (RG2159)

PSYC 6304 - Practicum in Clinical Supervision
Supervised training in supervising psycho-diagnostic and psychotherapeutic activities of less advanced clinical psychology students.
Open to students in Clinical Psychology.
Prerequisites: PSYC 5301, PSYC 5304, PSYC 6301, and PSYC 6302 (RG2159)

PSYC 6310 - Internship in Clinical Psychology
Students assume professional psychological assessment, psychotherapeutic, and consultation responsibilities under the direct supervision of licensed clinical psychologists.

PSYC 6505 - Teaching Experimental Psychology
The lecture method applied to teaching undergraduate courses in experimental psychology (introductory, congition, learning and memory, sensation and perception) and giving conference presentations. Attention is given to presentation style and content.

PSYC 6730 - The Self in Social Psychology
Social psychological perspectives on the self. Early psychological/sociological views on the structure of the self, symbolic interactionism, self-concept and self-esteem, social comparisons, self-discrepancies, self-regulation and automaticity, and the self within the culture are some of the topics discussed.

PSYC 6731 - Person Perception
An examination of the social psychological literature dealing with person perception and cognition, organized around the historical development and current status of attribution theory and research.

PSYC 6732 - Attitude Organization and Change
An overview of the field of attitude theory and research focusing on problems of attitude formation, attitude organization, and attitude change.
Open to Psychology graduate students, others with permission (RG786).

PSYC 6733 - Social Cognition
Study of causal attribution, stereotyping, evaluating, judgement and decision-making, persuasion, expectancies, memory, attention as they pertain to social life.

PSYC 6750 - The Social Psychology of Stigma
Classic and current theories and research on stigma are covered. General stigma processes as well as group-specific (e.g., race, gender, mental illness) issues will be discussed.

PSYC 6752 - Interpersonal Relations
The study of affect, cognition, and behavior in two-person relationships.
Prerequisite: PSYC 5701 (RG515).

PSYC 6771 - Intergroup Relations
Marxism, social identity theory, realistic group conflict theory, elite theory, equity theory, relative deprivation, authoritarian personality, social dominance theory and evolutionary theory as it pertains to intergroup and gender relations.

†GRAD 6930. Full-Time Directed Studies (Doctoral Level) (GRAD 497) 3 credits.

†GRAD 6950. Doctoral Dissertation Research (GRAD 495) 1 - 9 credits.

†GRAD 6960. Full-Time Doctoral Research (GRAD 496) 3 credits.

GRAD 6998. Special Readings (Doctoral) (GRAD 498) Non-credit.

GRAD 6999. Dissertation Preparation (GRAD 499) Non-credit.

†GRAD 5930. Full-Time Directed Studies (Master's Level) (GRAD 397) 3 credits.

†GRAD 5950. Master's Thesis Research (GRAD 395) 1 - 9 credits.

†GRAD 5960. Full-Time Master's Research (GRAD 396) 3 credits.

GRAD 5998. Special Readings (Master's) (GRAD 398) Non-credit.

GRAD 5999. Thesis Preparation (GRAD 399) Non-credit.

Public Health

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M.P.H. Program Director
Associate Professor David Gregorio

MPH Program Coordinator
Assistant Professor Joan Segal

Interdisciplinary MPH Coordinator
Assistant Professor Jane Ungemack

Ph.D Coordinators
Professor Tom Babor (Social & Behavorial Health Sciences)

Professors Lawrence Silbart
Nicholas Warren (Occupational & Environmental Health Sciences)

Professors
Ascencio, Aseltine, Babor, Beazoglou, Chapman, Cherniak, Duffy, Erickson, Faghri, Ferris, Fifield, Fortinsky, Grady, Gregorio, Harkness, Hesselbrock, Morse, Pescatello, Petry, Pfeiffer, Rajan, Reisine, Rodriguez, Rosenberg, Santeere, Schensul, Schmeiser, Silbart, Singer, Snyder, Stevens and Tennen

Associate Professor
Anderson, Aneskevich, Bahr, Britner, Burleson, Covault, Ford, Grant, Henning, Kurz, Lazzarini, Manautou, Pendrys, Robison, Shelton, Warren, Wetstone and Wright

Assistant Professors
Brown, Coperhaver, Kang, Leger, Peterson, Salazar, Segal, Smith, Swede, Thibodeau, Tikoo, Ungemack, Wolfe and Wu

The Master of Public Health (M.P.H.) is a professional degree program, accredited by the national Council on Education for Public Health, for individuals seeking training and experience in applied public health practice. The program faculty represents the population-based health sciences. Students must earn a total of 48 credits distributed among core, elective, and capstone activities. The core curriculum (24 credits) consists of the basic public health disciplines: social and behavioral sciences, epidemiology, biostatistics, health administration and environmental health, along with courses on public health law, research methods and the Practicum, a service learning activity. Elective course offerings (15-21 credits) emphasizing applied public health practice provide students with the understanding, knowledge, experience, skills and values necessary to function successfully as a public health practitioner. Within this overall framework, students are able to select from course content reflecting faculty interest in

health systems administration, law and policy, epidemiology, occupational/environmental health, and applied practice methods. The capstone requirement may be met through a research thesis (9 credits) or an applied practice project or essay (3 credits).

The program is tailored to the needs of working professionals who wish to pursue part-time evening study. It also offers the opportunity to complete degree requirements simultaneously within the Schools of Medicine, Dental Medicine, Law, Social Work and Nursing.

For admission, applicants must demonstrate a strong academic record, background and/or experience relevant to public health, well-articulated career goals relevant to public health, and a commitment to the health of the community. A complete application includes official transcripts, a personal letter of application, and three letters of recommendation (preferably at least one academic letter). Submission of GRE (or MCAT, LSAT, DMAT, or GMAT) scores is highly encouraged. Information is available from: MPH Program Director, University of Connecticut Health Center, Farmington, CT 06030-6325, email: mph@nso.uchc.edu, Web address: <http://publichealth.uconn.edu/acprgms_mph_overview.php>

The Doctor of Philosophy (Ph.D.) degree program in Public Health is a full-time, interdisciplinary degree program. This cross-campus doctoral program prepares future public health leaders with the skills needed to enhance health in human populations. The Social and Behavioral Health Sciences concentration offers students specialized instruction in the theory and methods that emphasize the social, psychological and behavioral influences on health, illness, and injury. The concentration in Occupational and Environmental Health Sciences focuses on exposures to physical and chemical agents, biological exposures, ergonomic impacts, accident/safety risks and psychosocial factors.

For admission to the doctoral program in public health, students must demonstrate a commitment to public health, and have successfully completed courses in at least three of the five core competencies in public health (Biostatistics, Epidemiology, Occupational/Environmental Health, Behavioral Sciences, and Health Services Administration) before matriculating in the program. Students are required to complete a minimum of 45 credits, including a required seminar series (4 credits). There is a core program in discipline-specific theory, advanced research methods, and additional elective courses to complete the plan of study. After completion of course work, students take a general examination, prepare and defend a dissertation proposal, then write and defend a doctoral dissertation, which fulfills 15 credits. For more information please visit http://www.publichealth.uconn.edu.

Courses

PUBH 5400 - Introduction to Public Health

Provides an introduction to the discipline, its scientific foundations, and its relationship to other fields including clinical medicine. The basic concepts and skills necessary for a practitioner of public health are explained. Students gain a better appreciation of epidemiology to guide public health interventions and the development of public health policy.

PUBH 5401 - Principles of Epidemiology

Introduction to epidemiological concepts and methods as applied to public health research, community diagnosis, prevention, health planning and evaluation studies. Intensive use of exercises in descriptive and analytic epidemiology based on current investigations.

PUBH 5402 - Introduction to Biostatistics

An introductory presentation of the fundamentals of biostatistical theory and application, aimed at developing competence in the use of statistics, probability distributions, hypothesis testing, inference and estimation as applied to the most commonly used techniques in parametric and nonparametric statistical methods. Critical appraisal of research reported in journal articles serves as an application of learned techniques.

PUBH 5403 - Health Administration

Examination of past, present, and proposed approaches to the organization and management of health care services. Emphasis is on the role and functioning of the manager and the evolution of health care policy and trends as they affect managerial roles.

PUBH 5404 - Environmental Health

Explores the policy, political and public health implications of such issues as air pollution, drinking water, exposure to hazardous chemicals, indoor air pollution, food protection, lead poisoning, housing, international issues, etc. Provides the student with some basic technical information and familiarity with terms for a better understanding of policy and political decisions and health effects of environmental exposures.

PUBH 5405 - Social and Behavioral Foundations of Public Health

An introductory survey emphasizing basic social science concepts in the analysis of public health including orientations toward health, disease and health care, the origins and distribution of health care resources, and the role of social movements and research in improving public health.

PUBH 5406 - Law and Public Health

An introduction to the American legal system as it relates to health care and public health. Sessions present important applications of law to health including the powers of state governments, public health at the federal level, hospital, physician and HMO liability, emergency care and medical research, mental health law, reproductive health and the right to privacy, the right to refuse treatment and end of life issues, privacy and confidentiality in health care, infectious disease law and disability discrimination, and public health policy and advocacy.

PUBH 5407 - Practicum in Public Health

Under faculty guidance, students undertake an organized set of activities that responds to an identified need of a public health agency or health-related organization. The activities may involve the policy development, planning, implementation, administration or evaluation of public health services, or a combination of such activities. Students should be appropriately advanced before initiating the practicum.

PUBH 5408 - Introduction to Epidemiology & Biostatistics I

This is the first of a two-course sequence introducing students to concepts and methods of epidemiology, biostatistics and public health research. Topics include nature of variability, common probability distributions, causal reasoning, control of bias and confounding, descriptive and analytic design of observational and experimental studies, principles of disease screening and clinical efficacy.

Open to students admitted to MPH program, others with consent of instructor (RG 3213).

PUBH 5409 - Introduction to Epidemiology & Biostataistics II

This continuation of a two-course sequence on basic epidemiology, biostatistics and public health research addresses hypothesis generation, data collection methods, point and confidence interval estimation, inference testing, correlation/regression analysis, multivariable interaction, effect modification, power and meta-analysis. Evaluation of study designs, research methods and statistical procedures in clinical and public health literature will be stressed.

Open to students admitted to MPH program, others with consent of instructor. Completion of PUBH 408 required (RG 3214).

PUBH 5410 - Fundamentals of Strategic Planning

Fundamentals of strategic planning for public and non-profit organizations emphasizing the development of mission and vision statements, stakeholder analysis, scanning of internal and external environments; formulation and implementation of goals and objectives, definition of strategic issues,program planning, and evaluation. Introduction to related concepts in long range planning and group decision making. A group strategic planning project caps the course.

PUBH 5412 - Health Regulation

Focus is on the relationship between law and health care. Regulation of practice, practitioners and facilities. Legal aspects of alternative delivery systems including managed care. Legal and ethical dimensions of the health care provider-client relationship also are addressed.

PUBH 5414 - Health Economics

An introduction to economic theory and various applications of economics in the analysis of the U.S. health care system.

PUBH 5416 - Principles of Quality Improvement

Quality improvement (QI) is the art and science of improving quality of care by continuously making small improvements in key steps or processes. Because systems of care are inherently complex, people need tools and methods to recognize and prioritize what changes are necessary and to know how to implement and evaluate such changes. Several basic principles or concepts underlie QI efforts, such as variation, leadership, systems thinking, and the psychology of motivation. This course will describe critical principles and concepts important to QI and will illustrate their practical application to health care settings.

PUBH 5419 - Public Health Agencies

Takes organization and management theory into practice. The focus is on governmental and non-profit agency management and administration. Emphasis is on developing and defending budgets, personnel management, working within the political context, with the community and with multiple agencies.

PUBH 5430 - Public Health Informatics

An overview of the basic information skills required to clarify a health-related information need and identify and use appropriate information resources to select materials that answer that need. The course will include discussions of health-related networks and information resources, demonstrations of their appropriate use, class exercises and a semester project. Enrollment limited to 12.

PUBH 5431 - Public Health Research Methods

Introduction to conceptualization, methods, and analysis in public health research including: formulation of research questions and hypotheses, development of research and analytic models, use of qualitative (interviewing and observation) and quantitative (seconday and survey data) data collection methods, and qualitative and quantitative data analysis leading to the formulation of research projects.

PUBH 5432 - SAS Programming and Data Management

Focuses on SAS programming to introduce the most commonly used features of the language, including data definition, modification and organization; data manipulation and selection; data display and basic data analysis using descriptive statistics. Students also learn to create datasets using data entry or importing from other programs.

PUBH 5433 - Health Program Evaluation

Methods of evaluating the implementation and impact of health programs. Topics include: specification of program objectives and components, experimental and quasi-experimental evaluation designs, collection and analysis of program data, and the dissemination and application of evaluation results.

PUBH 5434 - Topics in Intermediate Biostatistics

An introduction to the interplay of experimental design and data analysis. Begins with a review of statistical estimation and testing. Topics include analysis of variance, linear regression, and power analysis. Applications are emphasized through the demonstration and use of statistical software.

PUBH 5435 - Statistical Methods in Epidemiology

An introduction to the statistical methods most commonly used in analyzing data from epidemiological studies. The course begins with a review of basic epidemiology and statistics. Subsequently, the focus is on contingency table methods and logistic regression with emphasis on dose-response relationships, interaction and confounding. Computer software for data analysis is demonstrated.

PUBH 5436 - Intermediate Epidemiology

This course will go into depth on some of the major design and implementation issues in epidemiology and biomedical research. By the conclusion of the course, the student should have a better appreciation of the importance and complexities of epidemiological investigation.

PUBH 5437 - Epidemiological Research Appraisal

A research seminar on uses, strengths and limitations of epidemiological methodology. Major studies in infectious disease, chronic disease and health care epidemiology are critically analyzed. The goal is to promote sound judgment of the scientific validity of epidemiological evidence.

PUBH 5438 - Investigation of Disease Outbreaks

Provides students with the basic skills and perspectives necessary to investigate acute disease outbreaks. The emphasis is on the use of epidemiology to investigate outbreaks of infectious diseases, guide public health interventions, and develop public health policy. Students will participate in an outbreak investigation conducted by the state health department.

PUBH 5439 - Epidemiology of Cancer

An introductory survey of how basic and epidemiological research inform cancer control and prevention. It is geared towards, but not limited to, matriculated MPH students, public health professionals, health care providers, and epidemiologists. No prior knowledge of cancer pathology is required.

PUBH 5440 - Public Health Issues in Genetics

The Human Genome Project and other research initiatives are providing us with new opportunities to screen, diagnose and provide novel interventions for a range of genetically determined diseases. The goal of this course is to provide sufficient understanding of inheritance patterns and genetics technology to appreciate the associated public health issues.

PUBH 5450 - Public Health Practice

Discussion of initiatives to define the practice of public health, including the Institute of Medicine (IOM) Report on the Future of Public Health and the Public Health Service's "essential functions" of public health. Includes review of expenditures studies and estimates of actual public health infrastructure resource needs, as well as discussion of appropriate future roles for public health.

PUBH 5451 - Maternal and Child Health Policy and Programs

This introductory course will examine maternal and child health (MCH) programs and policy from the past to the present. Children's rights, advocacy and MCH history will be discussed to provide a foundation to understanding the philosophy and importance of MCH. The health and development of children will be addressed starting with families and working through each of the developmental cycles: maternal and infant health, preschool, school age, and adolescent health. Topics that are cross- cutting across the MCH spectrum such as health disparities, women's health and international health will also be discussed.

PUBH 5452 - Injury and Violence Prevention

Injury and violence are major preventable public health problems with predictable patterns. The purpose of this course is to familiarize the student with the epidemiological literature of intentional and unintentional injuries. The course is designed to focus on the knowledge and skills required to design, implement, and evaluate scientifically sound community injury prevention and control programs.

PUBH 5453 - Chronic Disease Control

Chronic diseases are examined from clinical, epidemiological and program planning perspectives. Diseases examined include: selected neoplastic diseases, cardiovascular diseases, chronic obstructive pulmonary diseases, cerebrovascular disease and diabetes. The role of public health agencies, for profit and non-profit entities in research, education, and risk reduction activities also are covered.

PUBH 5454 - Infectious Disease Control

Overview of microbiology. Agent-host environment relationship in causation and control of infectious diseases. Epidemiological patterns of major infectious diseases, with emphasis on sexually transmitted diseases, respiratory conditions and nonsocomial infections.

PUBH 5455 - Health Education

Methods for planning, presenting, and evaluating health education programs in communities, schools and worksites. Includes use of the Precede Model, setting of goals and objectives, behavior modification theory, group processes, teaching techniques and activities for developing and presenting workshops or courses.

PUBH 5460 - Health and Human Rights

Explores the many ways in which human health and well-being are related to human rights. Human rights are a field of international law which includes major treaties, treaty bodies, and adjudicatory mechanisms. This course will review the ways in which human rights instruments and jurisprudence have addressed health and issues related to health. Students will also study a wide range of substantive public health issues that have a human rights dimension, and consider the ways that human rights are used as advocacy tools to improve the structural environment that shapes the public¿s health.

PUBH 5461 - Healthcare Law and Ethics

An analysis and evaluation of the legal rights of patients and providers in the health care process. Specific topics may include: nature of rights, consent to treatment, contraception, abortion, sterilization, involuntary commitment, and allocation of limited medical resources.

PUBH 5462 - International Health

Examines primary health care as a model suited to the health needs of developing nations. Provides a broader understanding of the genesis of illness in developing countries and analyzes the kind of care required to have an impact on these illnesses.

PUBH 5463 - Comparative Health Systems

An analysis of national health systems in relation to their socio-economic, political, cultural, and epidemiologic contexts. The examination of alternative approaches to organizing scarce health care resources serves as an integrating theme.

PUBH 5465 - Occupational Health

Recognition and prevention of occupational disease and injuries, including social and political aspects and policy issues such as OSHA and Workers' Compensation laws. Overview of some of the major occupational disease issues. Approaches of industrial hygiene, ergonomics, and occupational epidemiology to understanding and preventing occupational health hazards.

PUBH 5466 - Industrial Hygiene

The skills required to recognize, evaluate and control occupational hazards. Review of hazards associated with a variety of work processes and jobs. Students learn how to take an occupational history, to research the hazards associated with an industry, and to conduct a plant walk-through. Control methods, such as ventilation and personal protective equipment, are evaluated.

PUBH 5467 - Occupational and Environmental Disease

Clinical introduction to occupational disease, including diagnostic strategies and patient management techniques. Review of the diseases of primary target organs, including the range of syndromes from that organ, appropriate diagnostic techniques, and treatment options.

PUBH 5468 - Occupational and Environmental Epidemiology

Topics include the history of occupational epidemiology, causal models, occupational exposure classification systems, environmental epidemiology, cohort mortality studies, cross-sectional surveys, case-control studies, ecologic studies, and statistical and methodological issues in research design and their solutions.

PUBH 5472 - Disability and Public Health

Examines both developmental and acquired disabilities from a public health perspective. Public health issues of cognitive and physical disability, including: prevention, diagnostic and definitional considerations, epidemiological and statistical controversies, legal and ethical aspects, treatment considerations and research concerns.

PUBH 5473 - Women, Public Health and Reproduction

The history of reproduction and public health issues in the U.S.; underlying ethical issues in modern reproductive health care and key components of opposing views; major financial, social and emotional considerations in policy making and the increasing role that reproductive health plays in public health as a whole.

PUBH 5474 - Urban Health

Comprehensive overview of historical forces and social factors related to the health status of African-Americans, Hispanics, and other minority groups in American society. Although much of the course content examines current minority health issues, the use of theory and research to identify underlying causes and to suggest practical strategies/interventions for addressing these problems is a major focus.

PUBH 5475 - Public Health and Policy in an Aging Society

This course examines the demographics of aging; organization, financing and delivery of health services for older adults; formal and informal caregiving; retirement and housing policy; and end of life care. Policy and ethical aspects of these topics will be explored. The course will be research-oriented, integrating empirical evidence to illustrate central concepts. Familiarity with basic principles of research design, including ability to critically read and synthesize scientific literature, is important.

PUBH 5476 - Community Mental Health

Overview of mental illness, substance abuse and related conditions, including epidemiological patterns and interventions. Chronic mental patients, the homeless mentally ill and other special groups. The community mental health movement and role of government. Regulations and mental health law.

PUBH 5477 - Food, Health and Politics

This course will provide a comprehensive overview of the factors that influence how our food is grown; what foods are available, affordable, and advertised; and the ensuing public health implications. We will examine the history of food production in America, the development of public and private food assistance programs, the fast food movement, and food marketing. Students will explore the political, social, economic and enviromental factors that impact food availability and consumption, and discuss the implications of these factors on health outcomes, such as obesity, hunger, chronic diseases, and health disparities.

PUBH 5495 - Independent Study in Public Health

An individual course for those wishing to pursue special topics in the public health sciences under faculty supervision.

PUBH 5497 - Graduate Seminar in Public Health

PUBH 5498 - Field Experience in Public Health Systems

Under direction by field preceptors, students will participate in an intensive service-learning experience wherein they

will examine a timely public health issue from the perspective of health indicators/ disease surveillance; policy development; planning, implementation, or evaluation of public health services; essential public health functions; and operational issues of a large complex public health agency/organization.

PUBH 5499 - Capstone Project in Public Health

PUBH 6490 - Public Health Seminar

This student-centered seminar series will meet weekly in both the Fall and Spring semesters of the student's first 2 years and will introduce the students to a broad range of faculty and outside speakers in public health. The seminar will follow a cycle where students read and discuss papers for an upcoming presenter, the next week the speaker will present and participate in discussion and questions and answers, and the following week there will be a student presentation. During their fourth semester, students will present an overview of the literature supporting their proposed research project. This seminar is common to all students in the doctoral program in public health.

PUBH 6491 - Advanced Topics in Social and Behavioral Foundations of Public Health

This seminar course will be given in parallel with the MPH survey course, Social and Behavioral Foundations of Public Health (PUBH 405) with the goal of more in-depth exploration of the topics presented in the survey course. The objective is to gain a more advanced understanding of the concepts and theories in the social and behavioral sciences and their ability to explain patterns of health, illness and health care utilization, practices and policies. In conjunction with the survey course, the biopsychosocial paradigm of health and illness will provide the conceptual framework for integrating the societal, interpersonal, and intrapersonal factors that influence the public's health.

Prerequisite: Co-requisite: PUBH 5405 (RG 003988).

PUBH 6492 - Advanced Topics in Health Promotion, Disease and Disability Prevention

An in-depth examination of health promotion and disease and disability prevention policies, programs and strategies. This course will involve continued examination of important national and international issues in health promotion and disease and disability prevention that compliment those raised in GPAH 324. Students will critically analyze the health promotion and disease and disability prevention scientific literature relating to a critical issue of their choice. The format for this critique will be a seminar presentation and a written scientific synthesis.

Prerequisite: Co-requisite: GPAH 6324 (RG 3987).

PUBH 6493 - Occupational and Environmental Health: Exposures, Risk and Prevention

Exposure pathways, risk analysis techniques and prevention strategies relevant to both occupational and environmental settings. Lectures reinforced by discussion of case studies presented by students.

PUBH 6495 - Independent Study of Special Topics in Advanced Public Health Sciences

A doctoral-level independent study course for Ph.D. students who wish to pursue special topics in advanced public health sciences under faculty supervision.

†GRAD 6930. Full-Time Directed Studies (Doctoral Level) (GRAD 497) 3 credits.

†GRAD 6950. Doctoral Dissertation Research (GRAD 495) 1 - 9 credits.

†GRAD 6960. Full-Time Doctoral Research (GRAD 496) 3 credits.

GRAD 6998. Special Readings (Doctoral) (GRAD 498) Non-credit.

GRAD 6999. Dissertation Preparation (GRAD 499) Non-credit.

†GRAD 5930. Full-Time Directed Studies (Master's Level) (GRAD 397) 3 credits.

†GRAD 5950. Master's Thesis Research (GRAD 395) 1 - 9 credits.

†GRAD 5960. Full-Time Master's Research (GRAD 396) 3 credits.

GRAD 5998. Special Readings (Master's) (GRAD 398) Non-credit.

GRAD 5999. Thesis Preparation (GRAD 399) Non-credit.

Public Policy

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Department Head
Professor Mark Robbins

Program Directors
Instructor Jennifer Dineen (GPSR) and Professor Bill Simonsen (MPA)

Professors
Edith Barrett, Amy Donahue, and Barry Feldman

Associate Professor
Thomas Craemer and Ken Dautrich

Assistant Professor
Deneen Hatmaker, Beth Neary, and Erin Melton

The Department of Public Policy offers two master's degree programs: Master of Public Administration and Master of Arts in the field of Survey Research. Also offered are the following Graduate Certificates in: Public Financial management; Public and Nonprofit Management; and Survey Research.

MASTER OF PUBLIC ADMINISTRATION

The Master of Public Administration (M.P.A.) program provides students with a dynamic and integrated approach to the study of public policy and management. The M.P.A. program is committed to preparing students for leadership positions in public policy and management through a personalized education that is both theoretically rich and skills-based. The M.P.A. program is accredited by the National Association of Schools of Public Administration and Public Affairs (NASPAA). The M.P.A. website can be accessed at this address: http://www.dpp.uconn.edu/academics/mpa/index.html

Admission

Admission to the M.P.A. program is selective. Considerations for admission include a bachelor's degree from an accredited college or university; a strong academic record; a personal goal statement; your current resume; and three letters of recommendations. The verbal, quantitative, and analytical scores from the Graduate Record Examinations (GRE) are also required. Acceptable TOEFL exam scores for international students are required.

The Admissions Committee begins the review of applications on February 15th for Fall admission and on November 15th for Spring admission.

Admissions materials can be found at this website: http://www.dpp.uconn.edu

Plan of Study

A focused approach is the program's framework for teaching public management, analytical techniques, and public policy. The curriculum is organized into a set of core courses, a field internship, and area of specialization, and a capstone project.

Problem-oriented courses prepare students for decision-making in public management. The program develops the skills managers need to diagnose problems, collect and analyze information, plan, choose among policy alternatives, communicate findings, implement programs, and manage change.

MASTER OF ARTS IN SURVEY RESEARCH

The Master of Survey Research (M.S.R.) Program at the University of Connecticut offers the Master of Arts (M.A.) degree in the field of study of Survey Research. The program provides students with a dynamic and integrated approach to the field of survey methodology. The quality of our academic program is the product of an outstanding faculty and the resources of a research university. The use of practical experiences as a learning tool, combined with theory, analysis, and case studies in the classroom, make our program job-relevant and intellectually challenging.

The program is designed to serve students with a diverse range of backgrounds that places them in a wide variety of occupations. Our program views survey research as a tool that can be utilized in multiple fields.

Admission

Admission to the M.A. program in Survey Research is selective. Considerations for admission include a bachelor's degree from an accredited college or university; a strong academic record; and verbal, quantitative, and analytical scores from the Graduate Record Examinations (GRE). Acceptable TOEFL exam scores for international students are required. A personal letter, current resume, and three letters of recommendations are also required.

Interested applicants should contact the director at 860-570-9223 or jennifer.dineen@uconn.edu

Admissions materials can be found at this website: http://www.dpp.uconn.edu/academics/gpsr/index.html

Courses

PP 5300 - Independent Study

PP 5301 - Special Readings in Public Policy

PP 5315 - Capstone in Public Administration I
Development of project management skills and the research question, bibliography, and methodology for the capstone project. Open only to students in the Master of Public Administration Program.
PP 5370 and PP 5340 MPA only

PP 5316 - Capstone in Public Administration II
Research and writing of the capstone project.
PP 5316 Prerequisite

PP 5317 - Capital Financing and Budgeting
Examination of the municipal bond market, capital budgeting techniques, and related public policy issues.

PP 5318 - Financial Management for Public and Nonprofit Organizations
Management of financial resources in public service organizations. Topics include variance analysis, public sector and nonprofit accounting, financial statement analysis, and forecasting.

PP 5319 - Program Developmemt and Evaluation
Techniques for evaluating and improving organizational performance and the ability to deal with the challenges posed by changing environments. Topics include strategic planning, program development, program implementation, evaluating effectiveness, and performance measurement and improvement.

PP 5320 - Ethics in Policy and Management
Ethics in public policy and management, including contemporary ethical dilemmas and decision-making tools and techniques.

PP 5321 - State and Local Fiscal Problems
Analytical tools and concepts to evaluate policies related to government revenues, the delivery of public services, and intergovernmental relations.

PP 5322 - Evaluating Public Programs
The tools and concepts important to evaluation research.
PP 5376

PP 5323 - Leadership and Management of Nonprofit Organizations
The theory and practice of effective leadership and management of nonprofit organizations.

PP 5324 - Resource Development for Nonprofit Organizations
Important concepts in the fundraising process unique to local, national and international nonprofit organizations.

PP 5325 - Labor Relations and Public Financial Management
Overview of the interrelation of two key fields of public administration: finance and labor relations.

PP 5326 - Public Investment Management
Key dimensions of investment decision making in government, including portfolio analysis and understanding of appropriate investment instruments

PP 5327 - Analysis for Management Decision Making
Analytic approaches to decision making in a public management environment.

PP 5330 - The Practice of Survey Research
The practice and use of survey research in the United States and throughout the world. The structure, culture and professional norms of the survey community. The role of public opinion polling in government and public policy-making.

PP 5332 - Advanced Quantitative Methods
Advanced statistics for survey research analysis.

PP 5333 - Principles and Methods of Survey Research II
Advanced theory and statistics for survey research.

PP 5334 - Focus Groups
Introduction to focus group research.

PP 5340 - Introduction to Public Policy
Introduction to the fundamentals of public policy making in the United States with a focus on developing the communication skills required in a professional workplace.
PP 5340 Prerequisite

PP 5341 - Public Opinion and Democratic Processes
American public opinion in the context of democratic theory.

PP 5342 - Policy Analysis
Approaches and techniques used to evaluate public programs and public policy.

PP 5344 - Social Policy
Examination of the concepts and principles of public policy analysis, with applications to important social issues.

PP 5358 - Administrative Law
The basis legal framework of administrative organization and the rules governing administrative powers and their exercise; also the legal procedures for the enforcement of bureaucratic responsibility in the democratic state.

PP 5360 - Information Technology Management for Public Policy
Overview of practices and issues in managing the use of information technology in public service organizations.

PP 5361 - Theory of Public Organization
An examination of organization theory and research findings; their relation to public organizations.

PP 5362 - Organizations & Management
The application of organization theory and research findings; their relation to public organizations.

PP 5363 - Administrative Functions of Local Government
An examination of the characteristic managerial problems of the several functions of local government such as police, fire, traffic, public works, parks, health, recreation. The course is designed for individuals planning to work with citizen agencies, in agencies for governmental management, or in journalism.

PP 5364 - Public Finance and Budgeting
Techniques, practice, and organization of financial functions in governmental organizations, including revenue analysis, budgeting skills, and financial statement analysis.

PP 5365 - Human Resource Management
The structures, processes, and principles of human resource management and labor-management relations in the public service, and examination of contemporary human resource policies and challenges.

PP 5367 - Problems in Intergovernmental Administration
Examination of intergovernmental relations as an administrative system, with emphasis on current problems.

PP 5370 - Applied Research Design
Research design for organizational management and policy analysis and evaluation. How to communicate, execute and evaluate research. Skills in selecting appropriate analytic procedures and properly interpreting and reporting results.

PP 5372 - Introduction to Public Administration Skills
Provides basic skills and competencies important to completing the MPA program and for future professionals in the public service.

PP 5373 - Budgeting in Public Service Organizations
Processes and techniques of public budgeting; the principles and roles of budgets in public service organizations; analytic tools, concepts, and principles of budget analysis and decision making.

PP 5375 - Analytic Tools for Public Problems
The analytic tools necessary to evaluate the activities of government.

PP 5376 - Applied Quantitative Methods
Statistical reasoning, tools, and techniques for effective public management.
Prerequisite: Open only to students in the Master of Public Administration or the M.A. in Survey Research programs (RG508).

PP 5377 - Qualitative Methods in Public

Policy
Development and design of qualitative research.

PP 5379 - Principles and Methods of Survey Research
Exploration of the theory and practice of survey research, including sampling, questionnaire design, analysis and reporting results.

PP 5385 - Attitude Formation
Theories of attitude formation and attitude change

PP 5390 - Supervised Internship
Experience in a public organization under competent supervision.
Prerequisite: Open only to students in the Master of Public Administration or the M.A. in Survey Research programs (RG508).

PP 5397 - Special Topics in Public Policy Organization

An examination of organization theory and research findings; their relation to public organizations. Components:Seminar

PP5362(3 Credits) Organizations & Management

The application of organization theory and research findings; their relation to public organizations. Components:Seminar

PP5363(3 Credits) Administrative Functions of Local Government

An examination of the characteristic managerial problems of the several functions of local government such as police, fire, traffic, public works, parks, health, recreation. The course is designed for individuals planning to work with citizen agencies, in agencies for governmental management, or in journalism. Components:Seminar

PP5364(3 Credits) Public Finance and Budgeting

Techniques, practice, and organization of financial functions in governmental organizations, including revenue analysis, budgeting skills, and financial statement analysis. Components:Seminar

PP5365(3 Credits) Human Resource Management

†GRAD 5930. Full-Time Directed Studies (Master's Level) (GRAD 397) 3 credits.

†GRAD 5950. Master's Thesis Research (GRAD 395) 1 - 9 credits.

†GRAD 5960. Full-Time Master's Research (GRAD 396) 3 credits.

GRAD 5998. Special Readings (Master's) (GRAD 398) Non-credit.

GRAD 5999. Thesis Preparation (GRAD 399) Non-credit.

†GRAD 6930. Full-Time Directed Studies (Doctoral Level) (GRAD 497) 3 credits.

†GRAD 6950. Doctoral Dissertation Research (GRAD 495) 1 - 9 credits.

†GRAD 6960. Full-Time Doctoral Research (GRAD 496) 3 credits.

GRAD 6998. Special Readings (Doctoral) (GRAD 498) Non-credit.

GRAD 6999. Dissertation Preparation (GRAD 499) Non-credit.

Social Work

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Dean
Professor Salome Raheim

Associate Dean for Academic Affairs
Assistant Professsor Catherine M. Havens

Professor
Fisher, Gitterman, Healy, Humphreys, Johnson, and Klein

Research Professors
Frisman

Associate Professors
Bullock, Comer, Cordero, Dicks, Drachman, Heller, Kurz, Lyon, Malcolm, Negroni, Parks, Simmons, and Wayne

Assistant Professors
Harding, Havens, Letendre, Libal, Medina, Papallo, Smith, Spath, Thomas, and Werkmeister-Rozas

The University of Connecticut School of Social Work promotes social and economic justice by providing high quality graduate education in social work. The School shares with other units of the University the pursuit of excellence in teaching, research and scholarship, the vision of an expanded international role, and a commitment to public service that bring the knowledge of the University to the people of the State. The School of Social Work offers courses of study leading to the degrees of Master of Social Work and Doctor of Philosophy.

The Ph.D. Program

The goal of the doctoral program in Social Work is to equip future social work leaders with the expert scholarly and research skills needed to provide intellectual leadership and direction to the profession. The program provides a rigorous curriculum designed to prepare social workers for careers as faculty in colleges and universities and as researchers. The curriculum reflects the particular attention given to the unique role of theory and research in the traditions of professional social work in relation to applied practice and to knowledge building.

The course of study consists of 54 graduate credits. Ten core courses (30 credits) provide the students with competency in advanced research methods and statistics, social science theories and practice theories, while the balance consists of two elective courses (6 credits) in related disciplines, dissertation preparation seminar (3 credits) and dissertation research (15 credits). It is expected that program completion will require three to five years for full-time students.

The Ph.D. Admission Procedure

Applicants to the Ph.D. program in Social Work must have an M.S.W. degree and a minimum of two years post - M.S.W. experience in social work.

In addition to the admission standards of the Graduate School, all applicants are required to submit scores from the General Test of the Graduate Record Examinations, three letters of professional reference, a personal statement, curriculum vitae, and a writing sample. All items should be sent in one packet directly to the Graduate Admissions Office, University of Connecticut, 438 Whitney Road Extension, Unit 1006, Storrs, CT 06269-1006. All applicants are advised to visit the UConn School of Social Work website <http://www.ssw.uconn.edu> for more detailed information about the Ph.D. Program and application materials.

The M.S.W. Program

The primary goal of the M.S.W. program is to prepare competent professional practitioners to help people to enrich their lives, improve their communities, and contribute to social justice. To prepare MSW graduates for advanced practice in a variety of settings, the curriculum emphasizes knowledge and method skills for social work in micro-level practice (i.e. helping individuals, families, and groups to mobilize their personal and environmental resources to reach their goals) and macro-level practice (i.e. administration, policy formulations, organizational and environmental changes through group and community advocacy and social actions).

The course of study requires that each student earn 18 of the program's 60 credits in field education through supervised placements in agencies where they learn to integrate theory and practice. All students are required to complete courses in Human Oppression (BASC 5300), Research I (BASC 5330), Research Methods in Social Work Practice (RSCH 5332), Analysis of Social Welfare Policy (BASC 5350), Human Behavior in the Social Environment: Macro Theories (BASC 5360), Human Behavior in the Social Environment: Micro Theories (BASC 5361), Macro Foundation Practice (BASC 5390) and Micro Foundation Practice (BASC 5391) . In addition to the required foundation courses and advanced research course, students specialize in one of the following advanced major concentrations: casework, group work community organization, administration or policy practice. Electives and independent study enable students to meet their interests in focused areas of the profession. B.S.W.s from a social work program accredited by the Council on Social Work Education may be eligible for course exemptions or for the Advanced Standing Option. The School does not grant social work course credit for life experience or previous work experience. The M.S.W. Program at the School of Social Work is accredited by the Council on Social Work Education.

The M.S.W. Admission Procedure

Applications for admission to the M.S.W. program should be sent directly to the School of Social Work. A more detailed description of the M.S.W. program, admission procedures, and financial aid information are available at the School of Social Work website <http://www.ssw.uconn.edu> and in the current view book of the School of Social Work which can be obtained from the Admissions Office, University of Connecticut School of Social Work, 1798 Asylum Avenue, West Hartford, Connecticut 06117. Phone: (860) 570-9118.

Dual Degree Programs

Reflecting the School's commitment to interdisciplinary teaching and practice, dual degree programs are offered with the University of Connecticut Schools of Law (J.D.), Business (M.B.A.) and Medicine (M.P.H.). A joint degree program is also offered with the Yale Divinity School. There are separate admission applications for these programs.

The STEP Program

The School of Social Work also has a non-degree program, STEP (Staff Training and Education for the Profession), that is available to students who hold a bachelor's degree. Students are encouraged to test their interest in the social work degree by taking courses in STEP. Students who then matriculate may be able to apply up to 14 credits earned through STEP toward the M.S.W. degree. Non-credit courses also are held on a variety of specialized social work topics.

Courses

BASC 5300 - Human Oppression: The African-American and Puerto Rican Perspective
Examines economic, political, social and cultural forces operating at global, national and local levels, which generate and maintain oppression based on race and ethnicity in the United States. The course will focus on the oppression of the Black and Latino populations in the United States, highlighting the African-American and Puerto Rican experiences and perspectives. It will provide a framework for analyzing and understanding oppression. A historical perspective will be utilized to explore past and current oppression related to race and color, culture and ethnicity, social class, gender, sexual/emotional orientation and religion. Intercultural, intracultural, psychosocial, social and political responses to oppression will be addressed throughout the course.
Open to students in both the MSW program and the STEP program (RG 844)

BASC 5301 - Special Populations
The goal of the course is to provide an opportunity for students to understand and to critically analyze human oppression and issues that are relevant to social work practice methods. The course will examine demographic, economic, political, social and cultural forces operating at national and local levels highlighting the African-American and Puerto Rican experiences and perspectives. The focus of the class is the application of the knowledge of special populations to the social work practice methods. The course will combine lectures by the instructor and invited speakers, and class discussions. At times, small groups will be used to encourage students to examine their personal and professional interactions with oppression, and to discuss their implications for social work practice.
Open to students in the MSW Advanced Standing Option. Corequisite: CSWK 5340 or GRWK 5340 or POPR 5340 and CSWK 5301 or GRWK 5301 or POPR 5310 (RG3467)

BASC 5330 - Research I: Principles and Methods of Social Work Research
Prepares M.S.W. students to understand research methodology including basic statistics and computer application; critically review research studies; learn how to utilize research to solve social problems and enhance social work practice, and to understand the role of the practitioner/researcher in social work. Must be taken prior to or concurrent with first year of field education. Meets one of the prerequisites for RSCH 332.
Open to students in both the MSW program and the STEP program (RG843).

BASC 5333 - Research Methods for Social Work Practice
Provides an understanding of the basic foundation of social work research. Students will learn to: 1) develop critical thinking and knowledge of the principles and methods of research as tools for evaluating their practice; 2) become acquainted with the process and function of research in the advancement of social work theory, knowledge, and practice; 3) value ethical practices in conducting research with diverse individuals and vulnerable populations; 4) judge the adequacy and value of research findings in social work by the use of generally accepted criteria; 5) incorporate computer-based technology in accessing information; and 6) understand the researcher/evaluator role in social work practice.

BASC 5350 - Analysis of Social Welfare Policy and Social Service Delivery Systems
This course will provide a critical analysis of the historical roots of American social welfare policy, the formulation of policy, and the economic and political determinants of contemporary policy development. Examination and analysis of the inter-relationship between social welfare policy, the service delivery systems, and practice implications for private and public agencies and programs. The course also includes the examination of international issues in social welfare policy and social service delivery. Students will analyze and apply the results of policy research relevant to social service delivery; understand and demonstrate policy practice skills in regard to economic, political and organizational systems; use them to influence, formulate, and advocate for policy consistent with social work values, and identify financial, organizational, administrative, and planning processes required to deliver social services.
Open to students in both the MSW program and the STEP program (RG846).

BASC 5360 - Human Behavior in the Social Environment: Macro Theories
The required courses in human behavior in the social environment emphasize social work's "person-and-environment" frame of reference. Although the focus of analysis differs, this course emphasizes the social and physical environment. Major themes stressed throughout the course include theories and research about the interdependence of persons and their environments (physical and social), political, economic, and cultural contexts, including values and ethical issues, in which our social welfare institutions function. Cultural and ethnic diversity, institutional prejudice, especially racism and sexism, issues of social, economic, and political justice and the process of social change will be stressed. Values and ethical issues relevant to macro social work will also be considered.
Open to students in both the MSW program and the STEP program (RG848).

BASC 5361 - Human Behavior in the Social Environment: Micro Theories
Focuses on the individual and the family in transaction with social, economic, political, and cultural contexts and forces. Content areas emphasize current theories, empirical evidence to support these theories, ethical implications, and critical analysis. The course is organized around a systems perspective through a biopsychosocial lens. Variations arising from culture, ethnicity, social class, gender, sexual orientation are considered in this course.
Open to students in both the MSW program and the STEP program (RG848).

BASC 5390 - Macro Foundation Practice
The focus of this course is on macro practice foundation knowledge and skills associated with generalist practice in administration, community organizing and policy practice. It explores the history and place of macro methods in the evolution of the social work profession. Students are introduced to the unique language and perspective of macro practice as a capacity building and strength based intervention. The course includes definitions of and ways to analyze communities, organizations and policies. Emphasis is given to strategies and tactics for achieving change in communities, organizations and policies, to improving services for populations at risk, and promoting diversity and distributive justice, including an international context. Particular ethical and value mandates and dilemmas associated with macro practice are identified throughout the course.
Open to students in the MSW program. Prerequisites: BASC 5360 and BASC 5361or must be taken concurrently with this course. Corequisites: BASC 5391, FED 5351and FED 5301 (RG3164).

BASC 5391 - Micro Foundation Practice
This course is designed to provide a history of and a foundation for micro social work theory and practice emphasizing ecological, strengths and capacity building perspectives. It provides knowledge, values and skills associated with generalist practice with individuals, families and groups within the

context of organizations and communities. The course examines the mission of the social work profession and its value and ethical base, including its commitment to diversity, populations-at-risk and social and economic justice. Strategies for helping client-systems will include: preparing for practice; developing mutual working agreements; engaging, assessing and formulating goals; implementing interventions; monitoring and evaluating progress; and terminating services. The course emphasizes integration of course content with field experience. This course is one of the two foundation practice courses taken with the first semester of the first year of field placement.
Open to students in the MSW program. Prerequisites: BASC 5360 and BASC 5361or must be taken concurrently with this course. Corequisites: BASC 5390, FED 5351 and FED 5301 (RG3165).

FED5301(0) Field Education Seminar I FED 5301 - Field Education Seminar I
This seminar helps students prepare for and make optimum use of their field education experience. Topics include the roles and responsibilities of the student within the agency setting, exploration and development of learning contracts, and the educational assessment of self as a learner in the profession. The seminar is used to identify issues that arise in the field and ways to deal with them.
Open to students in the MSW program. Corequisite: FED 5351 (RG 3170).

FED 5302 - Field Seminar II
This seminar helps students prepare for and make optimum use of their field education experience. Areas of seminar content include such topics as the roles and responsibilities of the student within the agency setting, exploration and development of learning contracts, and the educational assessment of self as a learner in the profession. The seminar identifies issues that arise in the field and ways to deal with them.
Open to students in the MSW program. Prerequisite: FED 5351 and FED 5301. Corequisites: FED 5352 and ADMN 5301 or CSWK 5301 or GRWK 5301 or CORG 5301 or POPR 5301 (RG 3227).

FED 5310 - Field Education Seminar III
This seminar helps students prepare for and make optimum use of their field education experience. Topics include the roles and responsibilities of the student within the agency setting, exploration and development of learning contracts, and the educational assessment of self as a learner in the profession. The seminar is used to identify issues that arise in the field and ways to deal with them.
Open to students in the MSW program. Prerequisite: FED 5352 and FED 5302. Co-requisite: CSWK 5353 or GRWK 5353 or ADMN 5353 or CORG 5353 or POPR 5353 (RG3426).

FED 5311 - Field Education Seminar IV
This seminar helps students prepare for and make optimum use of their field education experience. Areas of seminar content include such topics as the roles and responsibilities of the student, field instructor and faculty advisor, exploration and development of the learning contract, and the educational assessment of self as a learner in the profession.
Open to students in the MSW program. Prerequisites: CSWK 5353 or GRWK 5353 or ADMN 5353 or CORG 5353 or POPR 5353 and FED 5310. Corequisites: CSWK 5354 or GRWK 5354 or CORG 5354 or ADMN 5354 or POPR 5354 (RG3427)

FED 5340 - Field Practicum Extention
Field Practicum Extension of hours

FED 5350 - Field Education Seminar V
This seminar helps students prepare for and make optimum use of their field education experience. Topics include the roles and responsibilities of the student within the agency setting, exploration and development of learning contracts, and the educational assessment of self as a learner in the profession.
Open only to students in the MSW Program. Corequisites: CSWK 5355 or GRWK 5355 or ADMN 5355 or CORG 5355 or POPR 5355. Prerequisites: FED 5352 and FED 5302 (RG3705)

FED 5351 - Field Education Foundation I.
Teaches students basic skills in social work practice with systems of all sizes including individuals, groups, organizations, and communities. This field experience course provides the foundation for the development of advanced skills in specific social work methods in advanced field experiences.
Open to students in the MSW program. Co-requisites: BASC 5390, BASC 5391 and FED 5301 (RG52).

FED 5352 - Field Education Foundation II.
Continues to develop basic skills in social work practice with systems of all sizes, while adding increased emphasis on the students' development of skills in the students' major method.
Open to students in the MSW program. Prerequisites: FED 5351 and FED 5301. Co-requisites: ADMN 5301 or CSWK 5301 or GRWK 5301 or CORG 5301 or POPR 5301 and FED 5302. (RG55).

RSCH 5326 - Special Topics in Research
Introduces new and innovative material on a variety of special topics in research. These topics will rotate content to include survey methods, ethnography, single system design or focus on a specific problem or population.
Open to students in the M.S.W. Program. Prerequisite: BASC 5332 (RG3710)

RSCH 5332 - Research Methods in Social Work Practice
This course builds on students' prior research knowledge acquired through undergraduate training, previous elective graduate coursework or self study. This course will provide students with: 1) an understanding of various "families" of research methods to equip them to evaluate social work practice with systems of all sizes and to be able to understand and interpret basic published social work research; 2) the knowledge to identify data collection methods that are appropriate to the research design being employed; and 3) an understanding of true experimental designs as a means for addressing strong causal inference with oppressed groups.
Open to students in both the MSW program and STEP program. Prerequisite: BASC 5330 / RSCH 5330 (RG 3163).

RSCH 5340 - Social Work Research Evaluation With Macro and Micro Systems
This course focuses on the development of knowledge, attitudes and skills appropriate to the ongoing critical evaluation of social work practice with small and large systems from diverse populations. This course will prepare students to integrate evaluation methods into assessment, planning, intervention and evaluation of their professional social work practice. This course provides students with the knowledge to develop skills for evaluating practice through the use of evaluation designs appropriate for use in micro and macro level practice.
Open to students in both the MSW program

and STEP program. Prerequisite: BASC 5330 / RSCH 5330 (RG 3163).

ADMN 5301 - Managing People: Communication Skills in Supervision, Personnel Management and Leadership
This course covers leadership theory and analysis, supervision, personnel/human resource management, with emphasis on interactional skills. The course prepares students to function effectively in supervisory and administrative roles and to use themselves in creative professional ways in exercising leadership in human service settings.
Open to MSW students in the Administration concentration. Prerequisites: BASC 5390, BASC 5391, FED 5351and FED 5301. Corequiisites: FED 5352 and FED 5302 (RG3228).

ADMN 5302 - Managing Money: Financial Management Strategies & Fiscal Responsibilities for Social Administrators
This course instructs on the fundamental principles and processes in financial management processes, budgeting systems, preparation and execution of budgets, basics of accounting, use of computer spread sheets, managerial accounting, financial statements, cost analysis, inventory and fixed asset accounting, funding sources, financial performance measures, internal control and external audits, fiduciary relationships and responsibilities, liabilities in 501(c) 3, ethics in finance, collaborating and leveraging of resources.
Open to MSW students in the Administration concentration. Prerequisites: ADMN 5301, FED 5352 and FED 5302. Corequisites: ADMN 5353 and FED 5310 (RG3425).

ADMN 5303 - Creating and Managing Opportunities in the Organization's Internal and External Environment
The course focuses on selected internal and external challenges and opportunities for the social work administrator. These include staff relations and organizational climate, the use and organization of the organization's physical environment, the voluntary board, public relations, and strategic alliances. The course gives students opportunities to develop a range of knowledge and skills in work with staff, volunteers, the media, and partners in the community to maximize opportunities to enhance the organization and its services to clients and the community.
Open to MSW students in the Administration concentration. Prerequisites: ADMN 5302, ADMN 5353 and FED 5310. Corequisites: ADMN 5354 and FED 5311 (RG3433)

ADMN 5316 - Women in Social Welfare Administration
Emphasizes issues for women in social welfare administration. Covers barriers faced by women in seeking administrative positions and promotions; advancement opportunities for women; research findings on gender and management; career planning; and development of practice strategies for solving administrative dilemmas. Addresses concerns of special groups of women, including issues of race, age, and sexual orientation.
Open to students in both the MSW program and the STEP program

ADMN 5319 - Computer Applications in Human Service Agencies.
Emphasizes concepts and techniques of computer use, application areas of the electronic technologies for the full range of social work agency needs, principles of computer system design and development, and in particular, methods of managing the computer process. All students enrolling in this course are expected to have basic computing skills such as operating a computer and word processing. For those who do not have these requisite skills, help is available at the UConn Hartford Campus Computer Center.
Open to students in both the MSW program and the STEP program

ADMN 5327 - Current Topics in Administrative Skills.
Intensive skill-oriented workshop on various topics in administration. Varied topics each semester include budgeting, marketing, staff development, conflict management, working with boards, and grant writing.
Open to students in both the MSW program and the STEP program

ADMN 5335 - Staff Development and Training.
Offered in a workshop format, focuses on skill building in planning, developing, and implementing training in human service organizations. In addition, examines selected organizational and management issues related to staff development. Facilitates learning through discussion, small group exercise, and a training project to be carried out in the student's agency (either field placement or place of employment).
Open to students in both the MSW program and the STEP program

ADMN 5353 - Field Education in Administration III.
Focuses primarily on the student's major method, emphasizing preparation for competent, advanced specialized practice.
Open to MSW students in the Administration concentration. Prerequisites: FED 5352 and FED 5302. Corequisites: ADMN 5302 or POPR 5310 and FED 5310 (RG568).

ADMN 5354 - Field Education in Administration IV.
Focuses primarily on the student's major method, emphasizing preparation for competent, advanced specialized practice.
Open to MSW students in the Administration concentration. Prerequisites: ADMN 5353 and FED 5310. Corequisites: ADMN 5303 and FED 5311 (RG569)

ADMN 5355 - Block Placement in Administration.
Field Education in Administration for well-prepared students who have completed all course requirements except the second year of field education and the appropriate method course. Required course for students in the M.S.W. program completing a Block Field Placement.
Open to MSW students in the Administration concentration. Prerequisites: FED 5352 and FED 5302. Co-requisites: POPR 5310 and FED 5350 (RG804).

CSWK 5301 - Casework Helping Process: The Work and Ending Phases
Builds upon foundation theory of ecological strengths and capacity building perspectives and the method base of social work practice. Course content focuses on the interventive facet and transactional nature of the casework process in helping people with a wide range of life transition stressors and environmental obstacles. Substantial attention is paid to working with people of special populations. Students focus upon the development of critical thinking and decision-making skills and the ability to be self-observant.
Open to MSW students in the Casework concentration. Prerequisites: BASC 5390, BASC 5391, FED 5351 and FED 5301. Corequisites: FED 5352 and FED 5302 (RG3229).

CSWK 5302 - Casework Practice Approaches: Differential Applications
This course builds upon knowledge, skills, and values developed previously and deepens the understanding of theoretical, method, and empirical bases of casework practice, while maintaining simultaneous concern for people and environments. The course examines the ways that assessment and interventive

strategies are informed by different theoretical orientations and research findings. Students continue to develop skills related to work with special populations and to develop professional self awareness.
Open to MSW students in the Casework concentration. Prerequisites: CSWK 5301, FED 5352 and FED 5302. Corequisites: CSWK 5353 and FED 5310 (RG3429)

CSWK 5303 - Casework with Vulnerable and Resilient Populations
This course consolidates casework theory and methods established in the prior casework courses. The unifying concept in this course is the application of differential casework interventions with vulnerable and resilient populations over the life course. The course will also focus on contemporary issues and ethical dilemmas affecting professional function, roles and identity. Students are challenged to locate and critically examine empirical and practice theory literature necessary for working with different populations.
Open to MSW students in the Casework concentration. Prerequisites: CSWK 5302, CSWK 5353 and FED 5310. Corequisites: CSWK 5354 and FED 5311 (RG3434)

CSWK 5340 - Skills Laboratory in Casework Practice
This course builds upon casework interviewing, assessment, and intervention skills developed in the student's BSW coursework and fieldwork. Students will have the opportunity to identify, practice, and critique a range of assessment, intervention skills. Students will use materials and cases from the concurrent CSWK 301 course to further develop their casework skills.
Open to students in the MSW Advanced Standing option in the Casework concentration. Co-requisites: CSWK 5301 and BASC 5301 (RG3470)

CSWK 5345 - Clinical Conditions with Children and Adolescents
Addresses values, knowledge, and skills required for social work practice with children and adolescents who experience varied biopsychosocial problems related to mental disorders, as well as practice with their families. It helps students to think about practice situations in a spirit of inquiry, maintaining awareness of the complexity of psychiatric conditions and the limitations of our knowledge about them. Students become familiar with current psychiatric classification systems and learn a range of assessment and intervention skills. Students demonstrate the ability to access the most recent empirical and practice knowledge, and to develop skills related to work in a variety of social work practice settings where mental challenges are encountered. Mental disorders are addressed in the context of larger biopsychosocial systems. Attention is paid to differences arising from such variables as age, gender, ethnicity, race, religion, sexual orientation, and physical ability.
Open to students in the MSW program. Prerequisites: BASC 5390, BASC 5391, FED 5351 and FED 5301 (RG3310)

CSWK 5346 - Clinical Conditions with Adults and Older Adults
This is a practice course which pays equal attention to the values, skills, and knowledge required for social work practice with adults and older adults who have a range of bio psychosocial problems related to mental disorders. Students will learn a range of assessment and intervention skills and become familiarized with current psychiatric classification systems. Students will demonstrate the ability to access the most recent empirical and practice knowledge and to develop skills related to work in a variety of mental health settings. Mental disorders will be learned within the context of the larger bio psychosocial system and attention is paid to differences based upon such variables as age, gender, ethnicity, religion, sexual orientation, and physical ability.
Open to students in the MSW program. Prerequisites: BASC 5390, BASC 5391, FED 5351 and FED 5301.

CSWK 5353 - Field Education in Social Casework III
Focuses primarily on the student's major method, emphasizing preparation for competent, advanced specialized practice.
Open to MSW students in the Casework concentration. Prerequisites: FED 5352 and FED 5302. Corequisites: CSWK 5302 and FED 5310 (RG542)

CSWK 5354 - Field Education in Social Casework IV.
Focuses primarily on the student's major method, emphasizing preparation for competent, advanced specialized practice.
Open to MSW students in the Casework concentration. Prerequisites: CSWK 5353 and FED 5310. Corerequisites: CSWK 5303 and FED 5311 (RG543).

CSWK 5355 - Block Placement in Casework.
Field Education in Casework for well-prepared students who have completed all course requirements except the second year of field education and the appropriate method/s course. Required course for students in the M.S.W. program completing a Block Field Placement.
Open to MSW students in the Casework concentration. Prerequsites: FED 5352 and FED 5302. Co-requisites: CSWK 5302, CSWK 5303 and FED 5350 (RG806).

CSWK 5365 - Family Therapy: Theory and Practice
Provides a knowledge of significant theories, theorists, practice skills and techniques for family therapy, as well as the growing professional self-awareness of the therapist. Provides: a) opportunities for study of the use of family therapy with particular problem situations; b) critical study of changes in current theories, emerging theories and integration of theories; c) analysis of research in family therapy; and, d) an ongoing seminar for discussion of cases.
Open to students in both the MSW program and the STEP program

CORG 5301 - Essential Theory & Intervention Practice in Community Organization
This course builds on content covered in micro and macro foundations of social work practice and reviews in greater depth community organization history, values and assumptions, Rothman models of organizing, roles of the community social worker, and strategies used by community organizers to bring about change. The course promotes in-depth understanding of the various types of communities and enhances skills for community analysis. Essential information for grassroots organizing and community and coalition building is covered. It incorporates content on providing community based services to oppressed population groups, including leadership development and advocacy. Furthermore, it highlights the importance of power theory and dynamics in selecting models and strategies for intervention. The importance of relationship building and attention to process tasks and goal achievement are covered.
Open to M.S.W. students in the Community Organization concentration. Prerequisites: BASC 390, BASC 391, FED 351 and FED 301. Corequisites: FED 352 and FED 302 (RG3231).

CORG 5302 - Theory and Practice of Social Movements For Community Organizers
This course will integrate Community Organization foundation and advanced method practice knowledge, values and skills. Students will be asked to select an agency-based Community Organization assignment that they have been working on during the academic year as the basis for a capstone assignment. An outline for this assignment will be distributed and discussed in class. Appropriate literature that will help students in conceptualizing and writing their capstone assignments will also be distributed and discussed. The course will concentrate on addressing social movement theory and implications for social change and community social work. A minimum of two social movements will be analyzed and one or more social movement related projects will be selected as an in-class project(s).
Open to MSW students in the Community Organization concentration. Prerequisites: CORG 5301. (RG3428)

CORG 5353 - Field Education in Community Organization III.
Focuses primarily on the student's major method, emphasizing preparation for competent, advanced specialized practice.
Open to MSW students in the Community Organization concentration. Prerequisites: FED 5352 and FED 5302. Corequisites: POPR 5310 and FED 5310 (RG561)

CORG 5354 - Field Education in Community Organization IV.
Focuses primarily on the student's major method, emphasizing preparation for competent, advanced specialized practice.
Open to MSW students in the Community Organization concentration. Prerequisites: CORG 5353 and FED 5310 . Corequisites: CORG 5302 and FED 5311 (RG562).

CORG 5355 - Block Placement in Community Organization.
Field Education in Community Organization for well-prepared students who have completed all course requirements except the second year of field education and the appropriate method course. . Required course for students in the M.S.W. program completing a Block Field Placement.
Open to MSW students in the Community Organization concentration. Prerequisites: FED 5352 and FED 5302. Co-requisites: POPR 5310 and FED 5350 (RG805).

CORG 5370 - Grassroots Neighborhood Organizing.
Provides intensive instruction for students who wish to become practitioners or trainers in grassroots neighborhood model of organizing. Examines Alinsky's model of organizing and the refinement of that model. Open to students in both the MSW program and the STEP program

GRWK5301(3 Credits) Essentials of Social Group Work Practice Provides knowledge, theories, and practice principles common to social group work. Focuses on knowledge and practice methods that are used to identify and understand procedures and processes essential to planning, developing and working with small groups in various agency-based settings, dealing with a range of issues and diverse peoples. Social and behavioral sciences and group work literature, empirical data and practice wisdom serve as the foundation for organizing course content and activities.

Required course for students in the Group Work concentration. Components:Lecture Requirement Group:Open to MSW students in the Group Work concentration. Prerequisites: BASC 5390, BASC 5391, FED 5351 and FED 5301. Corequisites: FED 5352 and FED 5302 (RG3230).

GRWK5302(3 Credits) Differential Group Work: Populations and Settings

Designed to increase the depth of understanding of the content of GRWK 301: Essentials of Social Group Work Practice. This course focuses on the application of group work processes, properties and group work skills to group work practice with groups that are established for different purposes and with populations that differ according to age, culture and need for group work services. This course will also examine the impact of different settings as the context for group work practice.

Required course for students in the Group Work concentration. Components:Lecture Requirement Group:Open to MSW students in the Group Work concentration. Prerequisites: GRWK 5301, FED 5352 and FED 5302. Corequisites: GRWK 5353 and FED 5310 (RG3430)

GRWK5303(3 Credits) Advanced Group Work Practice Methods and Techniques

The overall emphasis of this course will be on a critical analysis and sound examination of the social group work method B - its underlying theories, knowledge, research supported practices, ideological commitments, and basic tenets and principles. The primary focus is on the development of advanced practice methods and techniques.

Required course for students in the Group Work concentration. Components:Lecture Requirement Group:Open to MSW students in the Group Work concentration. Prerequisites: GRWK 5302, GRWK 5353 and FED 5310. Corequisites: GRWK 5354 and FED 5311 (RG3432)

GRWK5311(3 Credits) Group Processes

The purpose of this course is to help students develop a conceptual frame of reference for understanding small group processes. The focus of study is mainly on establishing a theoretical and conceptual appreciation of how small groups function. Students will develop an increasingly wide range of conceptual tools to identify and assess group processes. Students will gain a better understanding of small group interaction as it impacts individuals, interpersonal relationships and interactions with others beyond the group. Experiential as well as didactic study methods will be used.

Required course for students in the Group Work concentration. Components:Lecture Requirement Group:Open to students in both the MSW program and the STEP program

GRWK5340(3 Credits) Skills Laboratory in Social Group Work Practice

Primary focus is to offer students an opportunity to demonstrate how to apply (i.e., simulate practice experiences) some of the knowledge and theory presented in GRWK 301 - Essentials of Social Group Work Practice in practice situations. Students will participate in exercises and use procedures to enhance and assess current practice skill levels. Exercises and other instructional aids will center on particular elements pertinent to basic competencies in social group work practice including group formation, entering an established group, work within the group's process and achieving group goals. As well, attention is focused on group work within the context of the agency setting and its philosophical stance toward this method of practice.

Required course for students in the Advanced Standing Option in the Group Work Concentration and must be taken in the summer prior to the beginning of full time study for the M.S.W. degree. Components:Lecture Requirement

Group:Open to students in the MSW Advanced Standing Option in the Group Work concentration. Co-requisites: GRWK 5301 and BASC 5301 (RG3469)

GRWK5342(3 Credits) Group Work Practice in Therapeutic Settings.

Seminar on use of groups for therapeutic purposes in settings such as mental health clinics, residential treatment centers, counseling services, etc. Students share responsibility for the examination of material from their own clinical practice with groups. Components:Lecture Requirement Group:Open to students in the MSW program. Prerequisite: CSWK 5301 or GRWK 5301 (RG550).

GRWK5353(4) Field Education in Group Work III

Focuses primarily on the student's major method, emphasizing preparation for competent, advanced specialized practice.

Required course for students in the Group Work concentration. Components:Practicum Requirement Group:Open to MSW students in the Group Work concentration. Prerequisites: FED 5352 and FED 5302 . Corequisites: GRWK 5302 and FED 5310 (RG554).

GRWK5354(4) Field Education in Group Work IV

Focuses primarily on the student's major method, emphasizing preparation for competent, advanced specialized practice.

Required course for students in the Group Work concentration. Components:Practicum Requirement Group:Open to MSW students in the Group Work concentration. Prerequisites: GRWK 5353 and FED 5310. Corequisites: GRWK 5303 and FED 5311 (RG555).

GRWK5355(8)Instructor Consent Required Block Placement in Group Work.

Field Education in Group Work for well-prepared students who have completed all course requirements except the second year of field education and the appropriate method course. Required course for students in the M.S.W. program completing a Block Field Placement. Components:Practicum Requirement Group:Open to MSW students in the Group Work concentration. Prerequisites: FED 5352 and FED 5302. Co-requisites: GRWK 5302, GRWK 5303, and FED 5350. (RG807)

POPR5301(3 Credits) Policy Practice: Process and Finances Course content includes the definition of policy practice, the phases of policy practice and the skills needed for policy practice especially advanced analytical and interactional skills, including the conscious use of self in practice, as well as persistence, creativity, and pragmatism and taking appropriate risks in the pursuit of policy practice goals. Other content includes the use of large data sets, data management systems, quantitative analysis, qualitative methods, especially focus groups. Emphasis is given to the use of policy practice to achieve distributive justice and implement and evaluate effective social service policies for populations at risk. Ethical requirements and dilemmas in policy practice are integrated throughout the course.

Required course for students in the Policy Practice concentration. Components:Lecture Requirement Group:Open to MSW students in the Policy Practice concentration. Prerequisites: BASC 5390, BASC 5391, FED 5351 and FED 5301. BASC 5350 must be taken as a pre or co requisite. Corequisites: FED 5352 and FED 5302 (RG3309).

POPR 5301 - Policy Practice: Process and Finances
Course content includes the definition of policy practice, the phases of policy practice and the skills needed for policy practice especially advanced analytical and interactional skills, including the conscious use of self in practice, as well as persistence, creativity, and pragmatism and taking appropriate risks in the pursuit of policy practice goals. Other content includes the use of large data sets, data management systems, quantitative analysis, qualitative methods, especially focus groups. Emphasis is given to the use of policy practice to achieve distributive justice and implement and evaluate effective social service policies for populations at risk. Ethical requirements and dilemmas in policy practice are integrated throughout the course.
Open to MSW students in the Policy Practice concentration. Prerequisites: BASC 5390, BASC 5391, FED 5351 and FED 5301. BASC 5350 must be taken as a pre or co requisite. Corequisites: FED 5352 and FED 5302 (RG3309).

POPR 5302 - Policy Practice: Careers, Contexts, and Quantitative Analysis
The course will begin with content on career planning. Students will be helped to understand the complexity of social service funding, including the sources of funds and the mechanisms for transferring funds to social service programs, including federal and state tax policies and implication for social service programs. Critical current issues such as the growth of faith-based and profit-making social service strategies will be debated. Other topics will include the use of the media and public relations expertise, cutting edge social theories, micro and macro economic theories, and global economic policies and how they impact social service policies. Students will be expected to demonstrate an ability to integrate and critically evaluate their practice skills as they prepare to leave the program. Emphasis will be given to the use of policy practice intervention strategies to achieve distributive justice and effective service policies for populations at risk. Ethical requirements and dilemmas in policy practice will be integrated throughout the course.
Open to MSW students in the Policy Practice concentration. Prerequisites: POPR 5301, POPR 5353 and FED 5310. Corequisites: POPR 5354 and FED 5311(RG3431)

POPR 5310 - Program Planning, Development, and Evaluation
This course covers a broad range of knowledge and skills needed to develop sound program proposals and to plan, manage, and evaluate social programs. These include assessing social and community needs; setting goals within the context of strategic plans; writing measurable objectives; designing program implementation and evaluation strategies, developing a program budget, and identifying funding sources. The course will address value and ethical issues in program development, as well as constraints and opportunities that support or constrain program planning.
Required for students in the ADMN, CORG and POPR concentrations and must be taken concurrently with field placement. Pre- and co-requisites differ for each of these major concentrations. Refer to the Social Work Student Handbook for details.

POPR 5312 - Political Advocacy
This course builds on the concepts and interventions introduced in the Macro Foundation Practice course. The content covers political decision-making groups, including executive, legislative, judicial and private agency decision-making. The ways macro practitioners use power and political analysis is discussed. Emphasis is on the design, implemention and evaluation of a political advocacy strategy to improve the life situations of populations at risk,

such as lobbying, preparing and delivering testimony to a public policy making group and forming and maintaining coalitions. Ethical requirements and dilemmas in doing political advocacy are integrated throughout the course.

POPR 5340 - Program Planning, Development and Evaluation Skills Laboratory
Focuses on gaining knowledge and skills in the elements of program planning and proposal writing, and includes application of these through development of a program proposal for funding. The skills laboratory will provide an additional opportunity for students to apply knowledge and skills through a proposal review and evaluation exercise. The exercise will be conducted on the last day of the course after the students' final projects have been submitted. The instructor will choose one final project for the purposes of the review exercise with the student's name removed. (Note: more than one proposal can be selected offering an opportunity for ranking them in the exercise.) Open to students in the MSW Advanced Standing Option in the Administration, Community Organization and Policy Practice concentrations. Corequisites: POPR 5310 and BASC 5301 (RG3468)

POPR 5353 - Field Education in Policy Practice III
Focuses primarily on the student's major method, emphasizing preparation for competent, advanced specialized practice. Required course for MSW students in the Policy Practice concentration. Prerequisites: FED 5352 and FED 5302. Corequisites: POPR 5310 or CORG 5312 and FED 5310 (RG573).

POPR 5354 - Field Education in Policy Practice IV
Focuses primarily on the student's major method, emphasizing preparation for competent, advanced specialized practice. Required course for MSW students in the Policy Practice concentration. Prerequisites: POPR 5353 and FED 5310. Corequisites: POPR 5302 and FED 5311 (RG575).

POPR 5355 - Block Placement in Policy Practice
Field Education in Policy Practice for well-prepared students who have completed all course requirements except the second year of field education and the appropriate method course. Required course for students in the M.S.W. program completing a Block Field Placement. Open to MSW students in the Policy Practice concentration. Prerequisites: FED 5352 and FED 5302. Co-requisites: POPR 5310 and FED 5350 (RG809). Requirement Group:Open to MSW students in the Policy Practice concentration. Prerequisites: FED 5352 and FED 5302. Co-requisites: POPR 5310 and FED 5350 (RG809).

DSEL5310(3 Credits) Current Trends in Family Intervention: Evid-Based and Promising Practice Models of In-Home Treatment

This course exposes students to several nationally acclaimed Evidence-Based Practice (EBP) treatment programs for families that are widely practiced. Students are introduced to competencies associated with EBP and an overview of several empirically supported therapy programs that are designed to address psychiatric, behavioral and/or substance abuse concerns in children and adolescents including Multisystem Therapy (MST), Multidimensional Family Therapy (MDFT), Intensive Home Child and Adolescent Psychiatric Services (IICAPS), Functional Family Therapy (FFT)and Brief Strategic Family Therapy (BSFT). Case presentations from local providers of these models and testimonials from families. Components:Lecture Requirement Group:Open to M.S.W. and STEP students.

DSEL 5310 - Current Trends in Family Intervention: Evid-Based and Promising Practice Models of In-Home Treatment
This course exposes students to several nationally acclaimed Evidence-Based Practice (EBP) treatment programs for families that are widely practiced. Students are introduced to competencies associated with EBP and an overview of several empirically supported therapy programs that are designed to address psychiatric, behavioral and/or substance abuse concerns in children and adolescents including Multisystem Therapy (MST), Multidimensional Family Therapy (MDFT), Intensive Home Child and Adolescent Psychiatric Services (IICAPS), Functional Family Therapy (FFT)and Brief Strategic Family Therapy (BSFT). Case presentations from local providers of these models and testimonials from families.
Prerequisite: DSEL 5310 Prerequisite

DSEL 5320 - Direct Practice in School for Children with Educational Disabilities and Their Families.
Meets state requirements for school work certification, approved by the Bureau of Certification and Professional Development. The practice of social work in schools requires that the social worker possess knowledge and skills to provide social work services for students with educational impairments and their families. To provide such service, the social worker must be able to engage in effective partnerships with parents and other multi-disciplinary team members and possess a repertoire of interventions appropriate for this population. Presents and discusses controversies and issues relative to labeling and testing procedures, such as the impact of racial and ethnic differences. Covers six areas of impairment as designated by law (Emotionally Impaired, Mentally Impaired, Learning Disabled, Autistic Impaired, Physically and Otherwise Health Impaired, and Speech and Language Impaired). Stimulates further study in impairment areas and lays a basic knowledge and skill foundation of social work services appropriate for these populations. HBEL 348, Emotional and Behavioral Disorders of Childhood and Adolescence is strongly recommended as a foundation, or to be taken concurrently, with DSEL 320.
Open to students in the MSW program (RG599).

DSEL 5325 - Direct Practice in Health
Examines practice concepts and principles in working with patients, families, and patient and caretaker's groups, in a variety of health care settings: acute care, chronic care, inpatient and ambulatory care, nursing homes, hospice, and community-based services. Studies issues and trends in practice including prevention (AIDS as a prime example); team work and other forms of interdisciplinary collaboration; organizational innovation; new practice roles; new ethical and moral dilemmas in health care practice. Views content from an ecological perspective on practice.
Open to students in the MSW Program. Co- or Prerequisite: CSWK 5301 (RG3706)

DSEL 5327 - Autism Spectrum Disorders: Social Work Practice and Policy Issues
This course will explore and provide knowledge from a variety of experts about Autism Spectrum Disorders (ASD), evidence of their causes, and a range of treatment interventions. It will examine the practice and policy roles of social workers with persons with ASD and their families in a variety of settings such as schools, hospitals and clinics. The rapid increase in the diagnosis of ASD has given rise to a need to distinguish between facts and misinformation. Experts with current knowledge of the disorders, family members living with the challenges of ASD and professionals working with patients

and families will be participating as faculty.

DSEL 5328 - Social Work Practice with Children
This course is designed to help students develop knowledge and skills in preventive work as well as clinical work with children. It briefly examines major theoretical orientations and research findings in working with children. Aspects of ecological theory, psychosocial theory, cognitive-behavioral theory as well as theories of group development are presented. Key issues of child development are summarized. Major social work settings that provide services to school age children are described and their impact on services addressed. The major emphasis of this course is on: 1) students' understanding of the importance of program media either as tools or as an end in themselves (program media include, but are not limited to drawing, simple arts and crafts, cooking, drama, games, music, nature walks, puppet-shows, role plays, sand trays, doll houses, story-telling and writing, sports etc.); 2) students' development of skills in selecting these program media to achieve certain practice goals, and 3) students' development of ease and leadership skills in utilizing a variety of program media in working with children.
Open to students in both the MSW program and the STEP program

HBEL 5300 - Substance Abuse: I: Intro to Alcohol and Other Drugs
Examines the special issues and problems in dealing with alcohol and drug abuse. Focuses on: developing a conceptual framework of drug abuse and addiction; major classifications of drugs; examining high risk populations with an emphasis on their unique problems and needs; integrating knowledge with practice by giving careful consideration to treatment issues such as identification, assessment, referral, therapeutic strategies, treatment modalities and settings; providing information on the role of federal, state, and voluntary organizations which impact on prevention, education and treatment programs.
Open to students in both the MSW program and the STEP program

HBEL 5301 - Substance Abuse II: Prevention and Treatment of Alcohol and Other Drug Abuse.
Builds upon HBEL 372, an overview of the various classes of drugs and the acute and chronic effects of drugs on human behavior and the body. Focuses on traditional and new intervention techniques that could be applied to social work practice. Provides knowledge of clinical applications and the empirical validation of effectiveness of major intervention strategies used in treatment of addictions.
Open to students in both the MSW program and the STEP program. Prerequisite: HBEL 5300 (RG808).

HBEL 5325 - Social Work Perspectives on the Status of Women in Society.
Examines cultural assumptions about women; the theories which support these assumptions and the socializing agents that maintain them; new ways of thinking about woman's role, about alternative social arrangements, and about implications for social work intervention.
Open to students in both the MSW program and the STEP program

HBEL 5327 - Ethnic Minorities and the Social Work Profession: Black Experience.
Considers the Black Experience from historical, social, political, and economic perspectives. Addresses the evolution of male/female roles and relationships, the genesis of Black family patterns, and the consequences for social work practice. Examines the impact of poverty and discrimination in a context of international and national cultural factors.
Open to students in both the MSW program and the STEP program

HBEL 5328 - Ethnic Minorities and the Social Work Profession: The Puerto
Considers the Puerto Rican experience in the United States from the historical, social, political, economic, and cultural perspectives. Examines the impact of poverty, migration, and discrimination on individuals, families and communities.
Open to students in both the MSW program and the STEP program

HBEL 5344 - Aging and Mental Health.
Uses ecological theory as a framework for understanding the psychological processes of adaptation and the mental health needs of the elderly. Analyzes various service arrangements in terms of their usefulness in rehabilitation and prevention.
Open to students in both the MSW program and the STEP program

HBEL 5347 - Black Family Life.
Examines the Black family from an historical and current perspective, focusing on the individual and collective social, cultural, and psychological contents within which behavior is expressed and by which it is significantly influenced; the adaptive, resilient behavior utilized by Black family units for survival and success; the Black family as a varied and complex system interacting with other systems within the wider society; myths related to the behavior and functioning of Black families.
Open to students in both the MSW program and the STEP program

HBEL 5352 - Death and Dying.
Focuses on dying as experienced by persons of all ages (not only the elderly) and on its psychological concomitants, such as rage and grief, bereavement and mourning; suicide and suicide prevention; dying as a career with identifiable states, as well as the concept of death as a social phenomenon.
Open to students in both the MSW program and the STEP program

HBEL 5355 - Social Work Practice With Service Members, Veterans and Military Families
This course provides foundational content that prepares students for competent and ethical practice with active military and veterans, military families and communities. The course includes an overview of the military culture, the historical contributions of social work, the many roles of social workers and existing services for this population and how different policies and service systems impact the military community.
Prereq: Open to matriculated and Non Degree Students - Prerequisite: BASC 5360 and BASC 5361.

HBEL 5357 - Social Gerontology.
Considers the societal aspects of aging, including the social psychological concomitants of adjustments, changing roles, and systems of social relationships. Includes an overview of the economic aspects of aging and the service delivery system.
Open to students in both the MSW program and the STEP program

HBEL 5367 - Culture and Health/Mental Health Disparities: Micro and Macro Perspectives
This course will examine health/mental health disparities as it relates to contemporary micro and macro practice with diverse populations. The objective of the course is the examination and analysis of the inter-relations among differential diagnosis, culture, and varying treatment strategies. The content will cover important aspects of health such as factors influencing wellness and disease, contemporary socio-political factors, and agendas that shape how health care services are delivered and accessed. We will explore current domestic and international health epidemics, discuss their implications

for populations that are at risk, and the professional communities' responses to them. Prerequisite is FED 5301

HBEL 5370 - New Perspectives on Lesbians and Gay Men.
Examines the problems of America's homosexual minority. Presents homophobia (fear of homosexuals or homosexuality) as a prejudice held by all people, gay and straight, in a society which holds that heterosexuality is the "normal" and "acceptable" behavior and attitude. Intended to expand the students' awareness of how homophobic attitudes affect them and their relationships with other people in both professional and non-professional settings.
Open to students in both the MSW program and the STEP program

HBEL 5373 - Violence Against Women: A Cultural Heritage.
Examines the connections between violence against women and the power distributions within society. Special focus on sexual assault, battering, sexual harassment, prostitution and pornography. Analysis considers social, political, and economic dynamics that affect the individual. Discusses the connection between violence and other social problems: sexism, racism, and classism.
Open to students in both the MSW program and the STEP program

HBEL 5376 - Puerto Rican and Latina Women and Their Reality.
Emphasizes the double oppression that the Puerto Rican woman faces. Analyzes the double burden that she confronts when seeking to maintain her identity as a Puerto Rican and as a woman in a society which discriminates against both groups. Equal emphasis is placed on issues of racism, classism, and heterosexualism since these issues create an even stronger burden on Puerto Rican women. Special consideration is given to Puerto Rican cultural aspects of the socialization process of males and females with a focus on rigid adherence to sex roles (e.g., machismo - marianismo).
Open to students in both the MSW program and the STEP program

HBEL 5381 - Child Maltreatment: History, Theory, Prevention and Intervention.
Primarily for students with some practice experience in family and children's services, examines the phenomena of child abuse and neglect and societal and professional responses aimed at their prevention and treatment. As with other courses in the Substantive Area in Family and Children's Services, it is presented in the context of ecologically-oriented, family-centered child welfare policy and practice.
Open to students in both the MSW program and the STEP program

HBEL 5386 - Studies in the Holocaust: Implications for Social Work
Focuses on the Holocaust and its many implications for social work students. The course traces the rise of the Nazi totalitarian state resulting from defeat after World War I, the world wide depression of the 1930's and Hitler's targeting of Jews in Germany and eventually Europe-wide. The lessons for social workers will be drawn from these experiences. The integration of this material by students into other courses is encouraged.
Open to students in both the MSW program and the STEP program

HBEL 5391 - Parenting and Parent Education.
Explores the methods that parents use to impart cultural values, control behavior, and assure healthy development of children. Students review findings of basic research about parenting and participate in a parent education workshop.
Open to students in both the MSW program and the STEP program

HBEL 5393 - Emerging Issues in Mental Health and Substance Abuse
This course is designed to introduce students to current issues confronting providers of mental health and addiction services and consumers of these services as we enter the 21st Century. Philosophies about people with mental health, addiction and co-occurring disorders are changing in response to the developing knowledge base and the rise of consumer movements. Specific emphasis on the growing need for broad based multi cultural service systems for consumers will be fostered. Issues of poverty and the "severely and predominantly mentally ill" will be discussed.
Open to students in both the MSW program and the STEP program

HBEL 5395 - Scientific Foundations of Child/Adolescent Development, Mental Disorders, and Substance Abuse
This Web-based Human Behavior elective is an advanced 3-credit course on knowledge for practice in children's services, mental health (all ages), and addictions. It can be used to meet an elective requirement in some substantive areas, by permission of the area chair. No class attendance required, one optional session. Students become familiar with current and emerging knowledge in these areas. They become proficient at accessing cutting-edge practice-relevant information to address issues and challenges that arise day-to-day. Class members discuss issues and questions with each other and the instructor via the Worl-wide Web. Class members can collaborate with each other on assignments if they wish. An optional class session at the beginning of the semester is offered to help students become comfortable with Web technology, and to get to know each other and the instructor in person.
Open to students in both the MSW program and the STEP program. Prerequisite or Co-requisite: BASC 5361 (RG 3162). chair.
No class attendance required, one optional session. Students become familiar with current and emerging knowledge in these areas. They become proficient at accessing cutting-edge practice-relevant information to address issues and challenges that arise day-to-day. Class members discuss issues and questions with each other and the instructor via the Worl-wide Web. Class members can collaborate with each other on assignments if they wish. An optional class session at the beginning of the semester is offered to help students become comfortable with Web technology, and to get to know each other and the instructor in person. Components:Lecture Requirement Group:Open to students in both the MSW program and the STEP program. Prerequisite or Co-requisite: BASC 5361 (RG 3162).

SWEL 5310 - Services to Immigrants and Refugees and Cross-Culture Helping.
Examines and connects concepts from migration studies with social work practice knowledge. Highlights the influence of immigration policy and procedures on the lives of immigrants and on service delivery and social work practice. Examines the interrelationship between sending and receiving countries and examines the experiences of individuals in the home country with their experiences in the new country. Emphasizes cultural and cross-cultural issues in each of the migration stages. Highlights different cultural views on health, mental health, help-seeking behavior, family and child-rearing practices and gender role behavior.
Open to students in both the MSW program and the STEP program

SWEL 5317 - Women, Children, and Families: Social Policies and Programs
Focuses on the policies and programs that affect women and children, in particular income supports, maternal and child health, housing, domestic violence, foster care and adoption, and parenting and child

maltreatment. Special attention will be paid to the legal rights of women and children, especially those who are immigrants, have disabilities, or are members of minority groups.
Open to students in both the MSW program and the STEP program

SWEL 5321 - Social Work Perspectives on Adoption.
Focuses on new developments in adoption and the knowledge, values and skills needed by social workers to effectively plan and deliver adoption services to a diverse group of children and families.
Open to students in both the MSW program and the STEP program

SWEL 5325 - Service Mapping: Geographic Information Systems for Social Workers
Geographic Information Systems (GIS) are a system of computer hardware and software as well as data and personnel used for the purposes of analyzing, displaying and presenting information that is tied to a spatial location. These systems provide a new tool social workers can use for the purposes of service planning, development, implementation and analysis. For example, information about current and potential client populations can be tied to specific locations to display service needs or outcomes. This course is designed to introduce social work students to the basics of using a desktop GIS and map analysis concepts for social work researchers, administrators, educators and policy planners. Students will become familiar with the sources, contents and uses of some of the freely available data sources available in Connecticut and on the Internet.
Open to students in the MSW program and the STEP program (RG 4044)

SWEL 5333 - Travel Study for Social Work.
Combines academic study with travel to examine social work and social welfare in other systems. Addresses the impact of social, economic and political systems on social welfare and social work; a cross-national examination of the profession; and cross-cultural understanding.
Open to students in both the MSW program and the STEP program

SWEL 5345 - International Development: Theory and Practice
This course addresses international relief, reconstruction and development -- theories and practice strategies to attack poverty and improve human well-being. Among the topics covered will be: building local capacity, developing local partnerships, use of appropriate technology to create sustainability, multi-sectoral work, cultural relevance, ensuring gender sensitive programming, understanding and working with local and national structures, funding streams, and international partnerships.
Elective course for Substantive Area: Focused Area of Study on International Social Work.
Open to students in both the MSW program and the STEP program

SWEL 5348 - International Social Work Global Issues
Cross-national, comparative approach to selected topics in international social problems and social welfare. Consideration of the problem of developing nations and modernization and urbanization as worldwide processes; the role of international organizations; the role of social work in international issues; and the implications of cross-national study for practice.
Open to students in both the MSW program and the STEP program

SWEL 5350 - Comparative Social Welfare Policy between the U.S. and the 2nd World
This course will explore the evolution and current state of development of social welfare in the "Second World", a designation that applies to those countries that were part of the Soviet Union or Warsaw Pact. Course content will include a discussion of a framework for policy analysis and comparative international social welfare policy analysis using selected health, welfare and employment policies as illustrations of current social welfare policy in Armenia and other "Second World" countries. Course will be jointly taught by Dr. Nancy A. Humphreys and Dr. Ludmilla Haroutunian involving a group of UConn MSW students and Armenian graduate students using WebCT technology.
Open to students in both the MSW program and the STEP program

SWEL 5351 - Policy Issues in Aging.
History, development, and ramifications of social, economic and political policy issues relevant to the elderly; the elderly as voters and political actors. Major attention to framework for policy analysis.
Open to students in both the MSW program and the STEP program

SWEL 5359 - Seminar on Long-Term Care for the Elderly.
Examines nursing homes and other long-term care facilities. Explores services offered by these institutions and the role of social work. Special attention given to the politics and government regulations of long-term care.
Open to students in both the MSW program and the STEP program

SWEL 5360 - Economic Justice: Labor and Social Work
This course examines the relationship of social work and the labor movement with particular attention to the labor movement under new leadership and with new direction. The class is organized around four themes: 1) Common roots of labor and social work, 2) Social workers as union members, 3) Social workers as union organizers and 4) The labor movement as a social movement.
Open to students in both the MSW program and the STEP program

SWEL 5370 - Social Work in Health Care: Introduction to Knowledge, Policy and Practice.
Bio-psycho-social-cultural aspects of health, illness, and disability in the context of individual, family, and community life. Attention is given to health care systems, social work roles and tasks in health care, the impact of health policy, and the concerns of planning, administration, supervision, and consultation in health care and in social work services in health care.
Open to students in both the MSW program and the STEP program

SWEL 5371 - Permanent Families for Children.
Focuses on permanency planning as a framework for social work practice in child welfare. Examines the philosophy, theory, and methodology of permanency planning for children and youth placed, or at risk of placement, out of their homes. Emphasizes programs, skills, and strategies for preventing placement, reuniting placed children with their biological families, or developing other permanent families, particularly through adoption.
Open to students in both the MSW program and the STEP program

SWEL 5374 - Social Work and Children's Rights.
Reviews the historical development of the children's rights movement and its relationship to current services. Examines and evaluates legal decisions affecting due process, equal protection, right to permanency, etc. Also examines legal problems as they affect foster care, adoption, child custody, and child support.
Open to students in both the MSW program and the STEP program

SWEL 5375 - War, Militarism and Social Work

This course provides theoretical and empirical content on several linked global phenomenon -- imperialism, militarism, and war -- to understand their impact on U.S. and global society. The course will also analyze "globalization," its relationship to war and militarism, and why this process is relevant to social work practice. The course examines political forces in the United States that support and benefit from militarism to illustrate their effects on social policy and the social work profession. Arguments for and against a dominant and aggressive U.S. role in global affairs will be examined. The course will also illustrate the adverse impact upon the welfare state and oppressed populations.
Open to students in both the MSW program and the STEP program

SWEL 5377 - Urban Policy Issues.
Focuses on urban problems and policy issues as well as social work practice issues in urban settings. Connecticut cities are used to explore the effectiveness of current policies and consider the need for policy change. Current social and economic needs of urban populations and the political environment are also considered.
Open to students in both the MSW program and the STEP program

SWEL 5380 - Poltical Social Work
This course will offer students an opportunity to explore the world of elected politics as a legitimate field of social work practice. Social workers are currently playing many roles in this area including, serving as volunteer and paid staff in political campaigns at the local, state and federal level; as paid staff of elected politicians; in politically appointed positions; and as elected politicians. Course content will focus attention on practical realities of each of these positions. As part of this course, students will be required to attend the annual Campaign School sponsored by the Institute for the Advancement of Political Social Work Practice.
Open to students in both the MSW program and the STEP program

SWEL 5385 - Human Rights and Social Work
This course will provide the theoretical, conceptual, and practical foundation for social workers to engage in a human rights-based approach to social work. Students will gain an understanding of the international human rights system, social work¿s contribution to achieving human rights, and how international human rights principles can be applied to social work practice. We will use a number of cases from varied countries, including the United States, to examine how social workers can both advocate for and respect human rights in their work.
Open to students in the MSW program (RG599).

SWEL5385(3 Credits) Human Rights and Social Work

This course will provide the theoretical, conceptual, and practical foundation for social workers to engage in a human rights-based approach to social work. Students will gain an understanding of the international human rights system, social work¿s contribution to achieving human rights, and how international human rights principles can be applied to social work practice. We will use a number of cases from varied countries, including the United States, to examine how social workers can both advocate for and respect human rights in their work. Components:Lecture Requirement Group:Open to students in the MSW program (RG599).

SSW 6400 - Social Work Doctoral Program Independent Study
Special Social Work topics not included in the Social Work Doctoral Program curriculum may be the subject of an Independent Study. A proposal must be presented and approved by the Director.
Prerequisite: Open only to Social Work Doctoral Program students (RG 3743).

SSW 6410 - Research Design and Knowledge Generation
This course focuses on logic methods and methods of scientific inquiry in the social sciences. Students explore the logic of knowledge building with reference to rational, empirical and cultural processes. Rational processes examined include logic, model building, hypothesis testing, induction, and deduction, and appraisal of knowledge claims. Empirical processes examined include observation, symbolic representation of data, and data structures. Cultural processes examined include the effect of culture on conceptualization, priorities, ethical considerations and resource distribution. Students are expected to develop methodological rigor as well as critical assessment of contemporary research issues that affect social work practice.
Open to doctoral students in Social Work, others with permission (RG2696).

SSW 6411 - Research II: Survey Research Methods
The course builds upon the beginning research design course by looking at the ways that survey design and data collection support the development of quasi-experimental research designs. Based on social exchange theory, the course provides students with the skills required to conduct reliable and valid data through self administered surveys with high response rates. Such data may be used to assess social needs, monitor program activities, measure outcomes or assess attitudes.
Open to doctoral students in Social Work, others with permission (RG2696).

SSW 6412 - Research III: Multivariate Statistics I
This course builds on an introductory level of statistical knowledge and assumes that students have completed an introductory statistics course, including experiences with data analyses that involve computer-based interactions (SPSS, SAS, etc.). This course develops an understanding of the general linear model (GLM). Once students gain a solid understanding of GLM, they can extend their knowledge to a variety of more complex statistical tests.The course focuses on the selection and application of appropriate statistical procedures to answer research questions or test hypotheses in social work research and involves the extensive use of available statistical packages. While the course emphasizes understanding of statistical testing, interpretation, and written presentation of statistical results, knowledge of the mathematical formulae and assumptions underlying each statistical procedure will be required and discussed.
Open to doctoral students in Social Work, others with permission (RG2696).

SSW 6413 - Research IV: Multivariate Statistics II
This course builds upon SSW 412 and also focuses on the selection and application of appropriate statistical procedures to answer research questions or test hypotheses in social work research. It focuses on data reduction methods and analyses of discrete or categorical data and makes extensive use of commercial statistical packages. While the course emphasizes understanding of statistical testing, interpretation, and written presentation of statistical results, knowledge of the mathematical formulae and assumptions underlying each statistical procedure is required and discussed.
Open to doctoral students in Social Work, others with permission (RG2696).

SSW 6414 - Research V: Qualitative Research Methods
This course explores the philosophical underpinnings, history, techniques and relevance to social work research of qualitative inquiry traditions such as

biography, phenomenology, grounded theory, ethnography and case study methods. This course will emphasize techniques, standards of quality, verification, and other indicators of rigor as well as value on ethical issues. After completing this course students will be able to describe various approaches, set up research protocols, describe data analysis and quality control techniques and specify standards for report writing.
Open to doctoral students in Social Work, others with permission (RG2696).

SSW 6420 - Critical Analysis of Historical and Philosophical Themes of the Profession
This course helps students to develop critical and historical understanding of social work knowledge, values and interventions. It reviews the social, economic, political and intellectual forces that influence the development of social welfare and professional social work. It examines the role that conflicting ideologies and commitments play in alleviating stress and suffering. The course focuses on knowledge of the development and history of social work in the context of changing social, economic, political and intellectual environments.
Open to doctoral students in Social Work, others with permission (RG2696).

SSW 6435 - Social and Behavioral Science: Smaller Target Systems
This course helps students to understand the theoretical and empirical frameworks on which contemporary best practices are built. The theories and frameworks examined include cognitive, behavioral/social learning, psychodynamic, family systems, and other related concepts. Other theories may be added that have been demonstrated to be valid underpinnings of effective or promising social work practice.
Open to doctoral students in Social Work, others with permission (RG2696).

SSW 6436 - Comparative Social Work Practice Models (Micro Practice)
This course explores the major social casework and group practice models from historical, theoretical, and empirical perspectives. Current practice approaches and models from related fields empirically shown to be most effective or promising are examined. Selected social work models are examined within the social, political, and ideological contexts of their times, as well as with respect to their contributions to the profession's knowledge base. Each model's contribution to the knowledge base and to direct practice methods are investigated and related to the student's conceptual and practice experiences.
Open to doctoral students in Social Work, others with permission (RG2696).

SSW 6445 - Social and Behavioral Science: Knowledge Base for Practice with Large Target Systems
This course conveys substantive knowledge from social science disciplines that inform macro practice with large systems (community organization, administration, and policy practice). Relevant disciplines include economics, political science, sociology (including organizational theory), anthropology, and epidemiology. Students use fundamental knowledge in each of these social sciences to demonstrate competence in the application of major social science theoretical models relevant to macro practice and the empirical evidence that supports these theories. Connections between macro and micro practice (social work with small systems) is covered. Ethical implications of knowledge developed by disciplines with different value bases when applied to social work is also covered.
Open to doctoral students in Social Work, others with permission (RG2696).

SSW 6446 - Comparative Social Work Practice Models (Macro Practice)
This course explores the evolution and current development of macro practice methods, including community organization, administration, and policy practice in social work. After a brief review of the conceptual history of macro practice social work, the course examines the unique roles of macro practice methods in carrying out the mission of the profession. Value issues and ethical dilemmas associated with social advocacy and policy change are examined throughout.
Open to doctoral students in Social Work, others with permission (RG2696).

SSW 6451 - Dissertation Preparation Seminar
This course is designed to assist students in identifying suitable dissertation topics and developing appropriate methodological approaches. It provides opportunities to assist students in building a firm foundation, upon which to engage in independent research and scholarship and to advance existing knowledge. Students prepare papers related to their dissertation topics for presentation and discussion with the group and for external conferences, in the process strengthening their scientific communication skills.
Open to doctoral students in Social Work, others with permission (RG2696).

†GRAD 5930. Full-Time Directed Studies (Master's Level) (GRAD 397) 3 credits.

†GRAD 5950. Master's Thesis Research (GRAD 395) 1 - 9 credits.

†GRAD 5960. Full-Time Master's Research (GRAD 396) 3 credits.

GRAD 5998. Special Readings (Master's) (GRAD 398) Non-credit.

GRAD 5999. Thesis Preparation (GRAD 399) Non-credit.

†GRAD 6930. Full-Time Directed Studies (Doctoral Level) (GRAD 497) 3 credits.

†GRAD 6950. Doctoral Dissertation Research (GRAD 495) 1 - 9 credits.

†GRAD 6960. Full-Time Doctoral Research (GRAD 496) 3 credits.

GRAD 6998. Special Readings (Doctoral) (GRAD 498) Non-credit.

GRAD 6999. Dissertation Preparation (GRAD 499) Non-credit.

Sociology

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Dean
Professor Salome Raheim

Associate Dean for Academic Affairs
Assistant Professsor Catherine M. Havens

Professor
Fisher, Gitterman, Healy, Humphreys, Johnson, and Klein

Research Professors
Frisman

Associate Professors
Bullock, Comer, Cordero, Dicks, Drachman, Heller, Kurz, Lyon, Malcolm, Negroni, Parks, Simmons, and Wayne

Assistant Professors
Harding, Havens, Letendre, Libal, Medina, Papallo, Smith, Spath, Thomas, and Werkmeister-Rozas

The Department of Sociology offers study leading to the M.A. and Ph.D. degrees in Sociology. Available areas of study include political sociology and social movements, gender and sexualities, racism and ethnic group relations, stratification and inequality, deviance, social structure and personality, and theory. Members of the Department also are associated with Women's Studies, Judaic Studies, African Studies, African-American Studies, Asian American Studies, and Human Rights programs.

The Department regards a basic understanding of research methods and statistics to be an essential part of graduate training in sociology. Accordingly, students are required to pass a basic statistics course as a prerequisite to the quantitative methods course.

Requirements for the M.A.

The purpose of all courses, residence, exams, and dissertation requirements is training and education for scholarly work and research in either an academic or applied setting.

Students should complete the M.A. degree in two years or less. Students may (1) write a master's thesis (required for admission to the Ph.D. program) or (2) submit a portfolio of their scholarly work in four areas: social structure and personality, social theory, social organization, and methods (for a terminal M.A. degree). Portfolios may be submitted at any time.

The Master's degree in Sociology requires a minimum of 37 credits, including Sociology 5001 (Proseminar, 1 credit), Sociology 5251 (Core Theorists, 3 credits), Sociology 5201 (The Logic of Social Research, 3 credits), Sociology 5203 (Quantitative Research I, 3 credits), and Sociology 5231 (Qualitative Research I, 3 credits).

Students with master's degrees in fields other than Sociology. Students with master's degrees in fields other than sociology may be admitted into the regular Master's program even if their goal is the Ph.D. Applicants will remain in the Master's program until they have satisfied the equivalency requirements as determined by the advisory committee and the graduate admissions committee.

Requirements for the Ph.D.

The Ph.D. in Sociology requires a minimum 30 credits beyond the Master's degree, including Sociology 6251 (Contemporary Social Theory, 3 credits), Sociology 6203 (Quantitative Research II, 3 credits), and Sociology 6231 (Qualitative Research II, 3 credits).

Candidates for the Ph.D. are required to have a master's degree in Sociology or its equivalent as determined by the admissions committee. Students who have been admitted to the Ph.D. Program by the departmental admissions committee are eligible to take the General Examination for the Ph.D. degree after fulfilling residence and course requirements, including the foreign language requirement (or six to nine credits in a related area).

The General Examination consists of one or more areas in Sociology (as defined by American Sociological Association sections), chosen by the student with the advice and consesnt of the advisory committee. The exam assesses substantive and theoretical knowledge of the area, critical thinking and assessment skills, an understanding of the implications of this knowledge for general sociology and the methodological skills appropriate to the area.

Courses

SOCI 5001 - Proseminar
Required of all M.A. candidates in the first year of study. Covers issues of successful graduate education and professionalization, including transitioning from the role of student to scholar; mentoring; networking; choosing thesis topics; presenting papers at conferences; getting papers published; getting grants; and developing vitae.

SOCI 5003 - Teaching Sociology
A survey and discussion of the content, viewpoints and methods that can be employed in teaching sociology. Emphasis is on course preparation for new teachers .
Prerequisite: Open only to graduate students in Sociology (RG523).

SOCI 5201 - The Logic of Social Research
Required of all M.A. candidates in the first year of study. Covers the logic of how to frame and design social research. Topics include the link between theory and method, selection of a research topic, inductive versus deductive reasoning, causality (including research designs for identifying causal relations) and causal errors, conceptualization, operationalization, levels of analysis, measurement, reliability and validity, sampling, using mixed methods, research ethics, and the politics of social research.

SOCI 5203 - Quantitative Research I
Required of all M.A. candidates in the first year of study. Introduction to quantitative methods of social research. Topics include linear regression, including ANOVA and ANCOVA; hypothesis testing and model selection; regression diagnostics; non-linearity and functional form; path analysis; and factor analysis.
Prerequisites: SOCI 5201 (RG3498)

SOCI 5205 - Topics in Quantitative Methods
Special topics in quantitative methods in sociological research. Topics will vary by semester.

SOCI 5210 - Applied Survey Design and Analysis
The design, administration, and analysis of sample surveys.
Prerequisite: SOCI 322 (RG525).

SOCI 5231 - Qualitative Research I
Introduction to qualitative methods of social research. Topics include epistemologies of

qualitative methodologies; ethical issues in qualitative research; the Chicago School; symbolic interactionism and grounded theory; introduction to fieldwork; basic fieldwork techniques; interviewing; narrative analysis; textual analysis; data analysis; content analysis using computers; and writng anlyses of data.
Open to master's and doctoral students in Sociology, others with permission (RG841).

SOCI 5235 - Topics in Qualitative Methods
Special topics in qualitative methods in sociological research. Topics will vary by semester.

SOCI 5251 - Core Theorists
An examination of the original writings of the major figures in sociological theory: Durkheim, Marx, Weber, and Simmel. The course focuses upon the theories of these major figures, their relations with contemporaries, their interconnections, and their influence upon subsequent theory and theory groupings.

SOCI 5255 - Topics in Sociological Theory
Special topics in sociological theory. Topics will vary by semester.

SOCI 5275 - Topics in Culture
Special topics in sociological theory and research in culture. Topics will vary by semester.

SOCI 5301 - Seminar on Crime and Justice
Broad survey of topics and issues relating to crime and the criminal justice system in the United States. Emphasis on policy issues.

SOCI 5311 - Deviant Behavior
Review of theory and research, with emphasis on their implications for a general theory of deviant behavior.

SOCI 5315 - Topics in Deviance and Crime
Special topics in sociological theory and research in deviance and crime. Topics will vary by semester.

SOCI 5351 - Seminar on Society and the Individual
A comparative analysis of the major theoretical approaches to individual-society relations, with an emphasis upon interdisciplinary contributions and trends of development. Contemporary issues and the prospects for theoretical integration are examined in the perspective of the long-term development of the field.

SOCI 5355 - Topics in Individuals and Society
Special topics in sociological theory and research concerning the relationship between individuals and society. Topics will vary by semester.

SOCI 5401 - Analysis of Social Organization
An examination of patterns of social organization found in bureaucracies and voluntary associations.

SOCI 5406 - Health Organizations and Their Environments
An in-depth analysis of the interaction between organizations and their sociological environments. An emphasis is placed on health service organizational obstacles to health planning.

SOCI 5411 - Sociology of Work
Analysis of work behavior with particular attention to formal and informal organization of labor, white collar, executive and professional roles.

SOCI 5421 - Seminar in Social Stratification
Social class theories, and problems of distribution of power and privileges. Some attention will be given to a comparative analysis of class systems.

SOCI 5425 - Topics in Stratification and Inequality
Special topics in sociological theory and research in social stratification and inequality. Topics will vary by semester.

SOCI 5453 - Medical Sociology
An examination of the institutional pattern of health care, including the social aspects of health and sickness, types of practitioners, and the social organization of therapeutic settings.

SOCI 5461 - Social Gerontology
A basic consideration of the societal aspects of aging including the social psychological concomitants of adjustments, changing roles, and systems of social relationships.

SOCI 5471 - Energy, Environment, and Society
Sociological perspectives on energy production, distribution and consumption; environmental impacts and constraints; alternative energy and environment futures; and cross-national studies of policy formation and implementation.

SOCI 5501 - Racism
Variable topics in the study of racism, such as racism and U.S. social policy, white racism, and the social construction of whiteness. Topic may vary by semester.

SOCI 5505 - Topics in Racism and Ethnic Group Relations
Special topics in sociological analyses of racism and ethnic group relations. Topics will vary by semester.

SOCI 5511 - Seminar on American Jewry
Applications of sociological theory and methods to the analysis of American Jewry.

SOCI 5515 - Sociology of Immigration
Theoretical and empirical work on immigration and ethnicity including forms of assimilation, ethnicity and transnationalism; challenges and opportunities for incorporation, and struggles over political, social, economic human rights. The course focuses on the US with selected cases from Europe and Asia.

SOCI 5601 - Gender and Society
Critical appraisal of social scientific perspectives on women and men. Feminist theory and current social science research on gender. Emphasis on interdisciplinary approaches.

SOCI 5605 - Topics in Gender and Sexualities
Special topics in sociological theory and research in gender and sexualities. Topics will vary by semester.

SOCI 5612 - Feminist Theory and Social Science
Examines intellectual background and contemporary context for feminist theoretical debates in the social sciences. Explores these debates with reference to feminist

perspectives on political theory, science, economics, postmodernism, postcolonialism, globalization, socialization, and sexuality.

SOCI 5651 - Seminar in the Family
An analytical study of the family as a social group in terms of structure, member roles, and function with an examination of ethnic, religious, and class differences. The interrelationship between the family and its cultural context is analyzed with particular reference to the impact of modern culture.

SOCI 5701 - Urban Sociology
A survey of topics in urban sociology. Examines both classical and contemporary perspectives on the social organization of cities including urbanization, suburbanization, spatial characteristics of cities, residential segregation, immigration, poverty and wealth, and urban-based social problems.

SOCI 5703 - The Metropolitan Community
Topics in urban sociology.

SOCI 5705 - The Community
A critical analysis of current theories of the nature of the community, its types, functions, processes, agencies, and values. Emphasis is given to community surveys and community organization.

SOCI 5706 - Seminar in Comparative Urbanization
Urbanization as a factor in social and cultural change, particularly in developed areas: Asia, Africa and Latin America.

SOCI 5751 - Demography
Survey and analysis of theories and present problem areas in demography. This includes such topics as: population growth and distribution, population composition, mortality, fertility, migration, and population policy.

SOCI 5753 - Methods of Population Analysis
The sources and characteristics of demographic data and vital statistics and the methods and problems of population data analysis.

SOCI 5757 - Seminar in Human Fertility, Mortality, and Migration
A review and critique of the literature on fertility, mortality and migration, and the dynamic interaction of these variables in population change.

SOCI 5801 - Political Sociology
Sociological aspects of political institutions and behavior; social and economic bases of political power, ideology, and mobilization of support; community and national power systems, political parties, and elites.

SOCI 5805 - Topics in Political Sociology
Special topics in sociological theory and research in political sociology. Topics will vary by semester.

SOCI 5806 - Seminar in Theories of the State
A sociological examination of theoretical analysis of the role of the state in modern society, and the relationship between the state and the applications of these theories to empirical analyses of specific research questions.

SOCI 5809 - Inequality and the Welfare State
Analysis of the relationship between systems of racial, class, and gender inequality, and the formation and implementation of social policy by the contemporary U.S. welfare state.

SOCI 5821 - Social Movements
Analysis of the conditions and processes underlying movement formation and participation and influencing their careers and outcomes.

SOCI 5829 - Social Change
A study of the forces prompting and impeding societal change with particular attention to those operative in contemporary society. Major theories of social change are examined.

SOCI 5831 - Law and Society
An overview of theoretical perspectives in the sociology of law, with emphasis on classical social theory.

SOCI 5833 - Gender, Politics and the State
Explores gendered construction of state and politics with attention to changes over time, across cultures and political institutions. Examines key debates within feminist political and legal theories and third world feminist and post colonialsist theories of the state. Discusses links between local resistance, immigration, cultural citizenship, international politics, neoliberal discourse, and global economic restructuring.

SOCI 5895 - Investigation of Special Topics
A seminar course. Topics vary by semester.

SOCI 5899 - Independent Study for Graduate Students
Special topic readings or investigations.

SOCI 6005 - Advanced Topics in Sociology
Advanced topics in sociological analysis. Topics will vary by semester.

SOCI 6203 - Quantitative Research II
Advanced quantitative methods of social research. Topics include generalized linear models, including binary logit and probit, multinomial logit, ordered logit and probit, and count data; censoring, truncation, and sample selection; panel data; and correlated errors

SOCI 6205 - Advanced Topics in Quantitative Methods
Advanced topics in quantitative methods in sociological research. Topics will vary by semester.

SOCI 6231 - Qualitative Research II
Advanced topics in qualitative methods of social research. Topics include contemporary debates in qualitative methodology; critical perspectives on qualitative methodology; feminist research; institutional ethnography; the case method; extended case method; Third World and postcolonial approaches to social research; analyzing and reanalyzing field data; applied and evaluation research; participatory and activist research.

SOCI 6251 - Current Theory and Research
An examination of current theories. Topics include: consideration of their continuities with classical theories, conceptual and measurement problems in testing and constructing current theories, and the interplay between theory and research. Prerequisite: SOCI 5251 (RG524).

SOCI 6255 - Advanced Topics in Qualitative Methods
Advanced topics in qualitative methods in

sociological research. Topics will vary by semester.

SOCI 6265 - Advanced Topics in Sociological Theory
Advanced topics in sociological theory. Topics will vary by semester.

SOCI 6275 - Advanced Topics in Culture
Advanced topics in sociological theory and research in culture. Topics will vary by semester.

SOCI 6315 - Advanced Topics in Deviance and Crime
Advanced topics in sociological theory and research in deviance and crime. Topics will vary by semester.

SOCI 6355 - Advanced Topics in Individuals and Society
Advanced topics in sociological theory and research in the relationship between individuals and society. Topics will vary by semester.

SOCI 6425 - Advanced Topics in Stratification and Inequality
Advanced topics in sociological theory and research in social stratification and inequality. Topics will vary by semester.

SOCI 6505 - Advanced Topics in Racism and Ethnic Group Relations
Advanced topics in sociological theory and research in racism and ethnic group relations. Topics will vary by semester.

SOCI 6605 - Advanced Topics in Gender and Sexualities
Advanced topics in sociological theory and research in gender and sexualities. Topics will vary by semester.

SOCI 6805 - Advanced Topics in Political Sociology
Advanced topics in sociological theory and research in political sociology. Topics will vary by semester.

†GRAD 5930. Full-Time Directed Studies (Master's Level) (GRAD 397) 3 credits.

†GRAD 5950. Master's Thesis Research (GRAD 395) 1 - 9 credits.

†GRAD 5960. Full-Time Master's Research (GRAD 396) 3 credits.

GRAD 5998. Special Readings (Master's) (GRAD 398) Non-credit.

†GRAD 6930. Full-Time Directed Studies (Doctoral Level) (GRAD 497) 3 credits.

†GRAD 6950. Doctoral Dissertation Research (GRAD 495) 1 - 9 credits.

†GRAD 6960. Full-Time Doctoral Research (GRAD 496) 3 credits.

GRAD 6998. Special Readings (Doctoral) (GRAD 498) Non-credit.

GRAD 6999. Dissertation Preparation (GRAD 499) Non-credit.

Speech, Language, and Hearing Sciences

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The mission of this section is to develop a theoretical perspective on human communication disorders and their clinical management. Two distinct areas of study are offered in this section which lead to either professional or research degrees:

Audiology - The Doctor of Audiology (Au.D.) is a professional degree which prepares students for clinical certification in Audiology.

Speech-Language Pathology – The M.A. in Speech-Language Pathology, is a professional degree which also prepares students for clinical certification. Speech-language pathologists who work in the Connecticut public schools must have school certification. Through an arrangement with the School of Education, students enrolled in the M.A. progam in Speech, Language and Hearing can fulfill requirements leading to certification as an SLP for employment in Connecticut's public schools. requirements include course work in Special Education, Regular Education, Human Development or Psychology, Classroom Instruction and Management.

Both of these degree programs are accredited by the American Speech, Language, Hearing Association's (ASHA) Council on Academic Accreditation (CAA).

Five areas of emphasis are offered for the Ph.D. degree: (1) speech pathology, (2) language, (3) audiology, (4) speech science, and (5) hearing science. The curriculum involves broad-based coursework and independent experimental investigations followed by dissertation research.

Admission Requirements

Requirements for admission to the professional degree programs (Au.D., M.A.) include completion of pre-professional background coursework (approximately 25 credits) as well as basic courses in math/statistics, physics, and biology or a Bachelor's Degree in Communication Disorders. Requirements for admission to the Ph.D. programs require a B.A./B.S. in a related field of study. Applicants for all programs must also submit scores from the Graduate Record Examination. The application deadline for the professional degree programs is February 1. The application form and instructions for applying are available at: http://grad.uconn.edu . For questions regarding the Communication Disorders graduate programs please visit our website www.slhs.uconn.edu, call (860) 486-2628, or send an email to slhs@uconn.edu.

Courses

SLHS 5302 - Summer Clinical Practicum in Speech Disorders

Summer Clinical Practicum in Speech Disorders

SLHS 5320 - Directed Observation in Hearing

Directed observation of diagnostic and rehabilitative procedures in audiology for pediatric and adult populations. Effects of etiology considered. Credits and hours by arrangement. Lecture. May be repeated for credit.

SLHS 5321 - Otologic Basis of Hearing Loss

Basic and advanced principles of medical audiology including anatomy and physiology of the system, disorders of the auditory system, genetics, radiology, and functional brain imaging.

SLHS 5322 - Electrophysiology Techniques and Interpretation I

Review of clinical applications of otoacoustic emissions, auditory brainstem response, electrocochleography, and auditory steady state potentials with emphasis on diagnostic issues. Four credits, three class periods and one 1-hour laboratory period.

SLHS 5323 - Geriatric Audiology

The physical effects of aging on the auditory periphery and central nervous system, as well as the consequences of aging on diagnostic and rehabilitative services to older clients.

SLHS 5324 - Psychosocial Issues of Hearing Loss

Contemporary counseling issues related to working with individuals with hearing disorders. Emphasis on family systems and the impact of a hearing disorder.

SLHS 5325 - Adult Aural Rehabilitation

The provision of aural rehabilitation services to adults with hearing loss including auditory training, speechreading, auditory-visual integration, effective communication strategies, and Deaf culture.

Prerequisite: CDIS 5356 (RG3366)

SLHS 5326 - Professional Issues in Audiology

Issues related to ethics and practice in the field of audiology, multicultural sensitivity, legal rights and responsibilities.

SLHS 5335 - Fluency Disorders

Research data and theoretical models regarding the etiology and characteristics of fluency disorders (primarily stuttering) are integrated to form the foundation for clinical management. Treatment approaches for children and adults are presented.

SLHS 5336 - Clinical Practicum in Speech Disorders

SLHS 5337 - Clinical Practicum in Hearing

Discussion. May be repeated for credit. Formerly COMS 337.

SLHS 5342 - Aphasia

The differential diagnosis of acquired neurogenic communication disorders as well as research, theory, and efficacy of language interventions for aphasia in adults. Formerly COMS 342.

SLHS 5343 - Cognitive-Communicative Disorders

Cognitive-communicative disorders in adults secondary to right hemisphere damage, traumatic brain injury, and dementia. Emphasis on differential diagnosis and theories and research pertaining to clinical management including the efficacy of interventions. Formerly COMS 343.

SLHS 5344 - Pediatric Rehabilitative Audiology

Auditory-based components of managing hearing loss in children; the role of the family and cultural environment in service delivery. Formerly COMS 344.

SLHS 5345 - Motor Speech Disorders

The effects of acquired and developmental neuropathology on speech. Emphasis on differential diagnosis and clinical management. Formerly COMS 345.

SLHS 5346 - Dysphagia

Dysphagia secondary to neurologic impairments, cancer, and degenerative disease. Anatomy and physiology of normal and disordered swallowing, evaluation including instrumental assessment techniques, and multidisciplinary management. Formerly COMS 346.

SLHS 5348 - Language Disorders I: Birth to 5 Years

The nature, assessment, and intervention of delayed and disordered language in children birth to five years of age.

SLHS 5349 - Language Disorders II: School Age Population

The nature, assessment, and intervention of delayed and disordered language in school-age children.

SLHS 5351 - Amplification for Residual Hearing

Introduction to hearing aids and assessment of the personal amplification needs of hearing-impaired individuals. Formerly COMS 351.

SLHS 5353 - Articulation and Phonological Disorders

The nature, assessment, and intervention of anatomical, physiological, and language-based disorders affecting the production of speech.

SLHS 5354 - Physiological and Psychological Acoustics

Anatomy, physiology and psychoacoustics of the auditory system. Formerly COMS 354.

SLHS 5355 - Psychoacoustics

Basic principles of human perception of sound.

SLHS 5356 - Audiological Assessment

The development and administration of advanced pure-tone and auditory discrimination tests; the interpretation of audiometric findings for adults and children. Formerly COMS 356.

SLHS 5357 - Organic Disorders of Communication

Research and theory pertaining to speech and language disorders resulting from congenital structural anomalies. Fornerly COMS 357.

SLHS 5359 - Voice Disorders

Normal anatomy and physiology of voice production including the effects of: aging across the lifespan, gender, and multicultural issues. Voice disorders, diagnostic procedures and management techniques to remediate voice disorders will be discussed.

SLHS 5360 - Laboratory Instrumentation

Presentation of basic concepts necessary for the application of electronic instrumentation to the study of speech and hearing. Description, analysis, and application of electronic and electro-acoustical instrumentation employed in communication science research. Formerly COMS 359.

SLHS 5361 - Advanced Speech Science I

Generation, transmission, detection, and analysis of the speech signal. Special attention is given the myology of speech production and the physiological correlates of the acoustic output. Theoretical models of speech production are examined in light of recent empirical findings. Biomedical and other research techniques are employed in the laboratory setting to investigate the speech communication processes. Formerly COMS 361.

SLHS 5362 - Advanced Speech Science II

A continuation of CDIS361. Formerly COMS 362.

Prerequisite: CDIS 5361 (RG246).

SLHS 5372 - Central Auditory Disorders

Assessment of auditory processing in adults and children. Effects of processing problems on communication and a discussion of management techniques. Electrophysiological measurement techniques are stressed. Formerly COMS 372.

SLHS 5373 - Pediatric Audiology

Physiological and perceptual maturation of the auditory system from gestation through two years of age. Assessment of children's hearing, including difficult to test children, public school and neonatal screening. Formerly offered as COMS 373.

SLHS 5374 - Clinical Project in Speech-Language Pathology

Written report and oral presentation on a client's clinical intervention. The clinical project must be successfully completed to graduate with an M.A. in speech-language pathology via the non-thesis track.

SLHS 5375 - Auditory System: Anatomy and Physiology

Review of the structure and function of the human auditory system, with emphasis on the clinical/applied aspects of anatomy and physiology. Oriented towards relationships to various auditory disorders.

SLHS 5377 - Introduction to Research

Introduction to research, experimental design, and statistics. Includes ethics in research, publishing, grant writing, general research skills, and computerized statistics. Open to graduate students in Communication Disorders, others with permission.

SLHS 6300 - Independent Study in Communication Disorders

This course is an independent study course in which periodic conferences with the instructor are required. May be repeated for credit.

SLHS 6319 - Practicum in Research

Practicum. May be repeated for credit.

SLHS 6363 - Seminar in Speech Pathology

1-6 credits. Seminar. May be repeated for credit with a change in content. Formerly COMS 363.

SLHS 6364 - Seminar in Audiology

1-6 credits. Seminar. May be repeated for credit with a change in content. Formerly COMS 364.

SLHS 6365 - Seminar in Speech Science

1-6 credits. Seminar. May be repeated with a change in content. Formerly COMS 365.

SLHS 6366 - Seminar in Hearing Science

1-6 credits. Seminar. May be repeated for credit with a change in content. Formerly COMS 366.

SLHS 6367 - Topics in Hearing and Speech Science

1-3 credits. Lecture. May be repeated for credit with a change in content. Formerly COMS 367.

SLHS 6368 - Topics in Speech Pathology

1-3 credits. Lecture. May be repeated for credit with a change in content.

SLHS 6369 - Topics in Audiology

1-3 credits. Lecture. May be repeated for credit with a change in content. Formerly COMS 369.

SLHS 6370 - Seminar in Psycholinguistics

Reports and discussion of current research on a selected topic each semester. Maya be repeated for credit with a change in contenrt, Formerly COMS 370.

SLHS 6401 - Amplification of Residual Hearing II

Theoretical and clinical issues related to hearing aid candidacy and fitting with an emphasis on advanced signal processing strategies.

Prerequisite: CDIS 5351 (RG3367)

SLHS 6402 - Hearing Conservation / Industrial Audiology

Effects of noise on the structure and function of the auditory system. Elements of noise measurements, otoprotection, and key issues in establishment and maintenance of a hearing conservation program.

SLHS 6410 - Vestibular System: Clinical Aspects

Anatomy, physiology and functional assessment of the vestibular system including instrumentation, procedures, and interpretation of clinical tests. Hands-on laboratory exercises included.

Open to graduate students in Audiology; others with permission (RG 4102).

SLHS 6422 - Electrophysiologic Techniques and Interpretation II

Methods of acquiring, averaging and analyzing cortical evoked and event-related potentials following auditory input. Emphasis on utilization of multi-channel recording devices for research and clinical purposes. Four credits. Lecture. Three class periods and one 1-hour laboratory period.

Prerequisite: CDIS 5322 (RG3368)

Statistics

*****

Department Head
Professor Joseph Glaz

Distinguished Professor
Dipak Dey

Professors
Bass, Chen, Chi, Gine, Glaz, Holsinger, Kuo, Mukhopadhyay, Ravishanker, and Vitale

Associate Professor
Harel, Majumdar, Pozdnyakov, Yan

Assistant Professors
Kang, Schifano, and Wang

Adjunct Associate Professor
Cappelleri

The Department of Statistics offers work leading to the M.S. and Ph.D. degrees, as well as courses in applied statistics in support of graduate programs in other fields. The M.S. program combines training in both statistical application and theory. To broaden their view of the use of statistics, candidates for the master's degree are required to enroll in at least one course involving the application of statistics offered by any other department on campus except Computer Science and Mathematics. In addition, students are encouraged to become involved in the statistical consultation work done by members of the department.

The doctoral program also provides a balance between statistical methods and theory. It emphasizes the development of the ability to create new results in statistical methods, statistical theory, or probability. After completing the necessary course work and a sequence of comprehensive written and oral examinations, the Ph.D. student must write a dissertation representing an original contribution to the field of statistics or probability. It is possible for the dissertation to be predominantly a development of statistical methodology in new areas of application. Both the M.S. and Ph.D. programs allow students sufficient flexibility to pursue their interests and to provide the time to take courses offered by other departments.

There are no official course requirements for admission to graduate study in the department, but a degree of mathematical facility is necessary for acceptable progress through the program.

The Department of Statistics is housed in the College of Liberal Arts and Sciences Building. Extensive computational facilities are available through three operating systems: Linux, Unix, and PC-Based NT. The Homer Babbidge Library provides excellent coverage of current and past issues of statistics journals as well as books in this field. There is also a separate departmental library.

Courses

STAT 5005 - Introduction to Applied Statistics
One-, two- and k-sample problems, regression, elementary factorial and repeated measures designs, covariance. Use of computer packages, e.g., SAS and MINITAB.
Prerequisite: Not open to students who have passed STAT 201 or STAT 2215Q (RG613).

STAT 5015 - Distribution Theory for Statistics

Open to graduate students in Statistics, others with permission (RG814).

STAT 5099 - Investigation of Special Topics

STAT 5105 - Quantitative Methods in the Behavioral Sciences
A course designed to acquaint the student with the application of statistical methods in the behavioral sciences. Correlational methods include multiple regression and related multivariate techniques.

STAT 5192 - Supervised Research in Statistics

STAT 5315 - Analysis of Experiments
Straight-line regression, multiple regression, regression diagnostics, transformations, dummy variables, one-way and two-way analysis of variance, analysis of covariance, stepwise regression.
Prerequisite: STAT 5005. Not open to students who have passed STAT 242 or STAT 3115Q (RG614).

STAT 5361 - Statistical Computing
Use of computing for statistical problems; obtaining features of distributions, fitting models and implementing inference. Basic numerical methods, nonlinear statistical methods, numerical integration, modern simulation methods.
Open to graduate students in Statistics, others with permission (RG814).

STAT 5415 - Advanced Statistical Methods
Discrete and continuous random variables, exponential family, joint and conditional distributions, order statistics, statistical inference:

STAT 5505 - Applied Statistics I
Exploratory data analysis: stem-and leaf plots, Box-plots, symmetry plots, quantile plots, transformations, discrete and continuous distributions, goodness of fit tests, parametric and non-parametric inference for one sample and two sample problems, robust estimation, Monte Carlo inference, bootstrapping.
Open to graduate students in Statistics, others with permission (RG814).

STAT 5515 - Design of Experiments
One way analysis of variance, multiple comparison of means, randomized block designs, Latin and Graeco-Latin square designs, factorial designs, two-level factorial and fractional factorial designs, nested and hierarchical designs, split-plot designs.
Prerequisite: STAT 5005. Not open to students who have passed STAT 243 or STAT 3515Q (RG615).

STAT 5525 - Sampling Theory
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, inference in finite populations.
Open to graduate students in Statistics, others with permission (RG814).

STAT 5535 - Introduction to Operations Research

Open to graduate students in Statistics, others with permission (RG814).

STAT 5585 - Mathematical Statistics I
Introduction to probability theory, transformations and expectations, moment generating function, discrete and continuous distributions, joint and marginal distributions of random vectors, conditional distributions and independence, sums of random variables, order statistics, convergence of a sequence of random variables, the central limit theorem.

STAT 5605 - Applied Statistics II
Analysis of variance, regression and correlation, analysis of covariance, general liner models, robust regression procedures, and regression diagnostics.
Prerequisite: STAT 5505 (RG815).

STAT 5625 - Introduction to Biostatistics
Rates and proportions, sensitivity, specificity, two-way tables, odds ratios, relative risk, ordered and non-ordered classifications, rends, case-control studies, elements of regression including logistic and Poisson, additivity and interaction, combination of studies and meta-analysis.

STAT 5635 - Clinical Trials
Basic concepts of clinical trial analysis; controls, randomization, blinding, surrogate endpoints, sample size calculations, sequential monitoring, side-effect evaluation and intention-to-treat analyses. Also, experimental designs including dose response study, multicenter trials, clinical trials for drug development, stratification, and cross-over trials.

STAT 5645 - Concepts and Analysis of Survival Data
Survival models, censoring and truncation, nonparametric estimation of survival functions, comparison of treatment groups, mathematical and graphical methods for assessing goodness of fit, parametric and nonparametric regression models.

STAT 5665 - Applied Multivariate Analysis
Multivariate normal distributions, inference about a mean vector, comparison of several multivariate means, principal components, factor analysis, canonical correlation analysis, discrimination and classification, cluster analysis.
Open to graduate students in Statistics, others with permission (RG814).

STAT 5685 - Mathematical Statistics II
The sufficiency principle, the likelihood principle, the invariance principle, point estimation, methods of evaluating point estimators, hypotheses testing, methods of evaluating tests, interval estimation, methods of evaluating interval estimators.
Prerequisite: STAT 5585 (RG816).

STAT 5725 - Linear Statistical Models
Linear and matrix algebra concepts, generalized inverses of matrices, multivariate normal distribution, distributions of quadratic forms in normal random vectors, least squares estimation for full rank and less than full rank linear models, estimation under linear restrictions, testing linear hypotheses.
Open to graduate students in Statistics, others with permission (RG814).

STAT 5825 - Applied Time Series
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.
Open to graduate students in Statistics, others with permission (RG814).

STAT 6315 - Statistical Inference I
Exponential families, sufficient statistics, loss function, decision rules, convexity, prior information, unbiasedness, Bayesian analysis, minimaxity, admissibility, simultaneous and shrinkage estimation, invariance, equivariant estimation.
Open to graduate students in Statistics, others with permission (RG814).

STAT 6325 - Advanced Probability
Fundamentals of measure and integration theory: fields, o-fields, and measures; extension of measures; Lebesgue-Stieltjes measures and distribution functions; measurable functions and integration theorems; the Radon-Nikodym Theorem, product measures, and Fubini's Theorem. Introduction to measure-theoretic probability: probability spaces and random variables; expectation and moments; independence, conditioning, the Borel-Cantelli Lemmas, and other topics as time allows.
Open to graduate students in Statistics, others with permission (RG814).

STAT 6425 - Seminar in Applied Probability

Open to graduate students in Statistics, others with permission (RG814).

STAT 6494 - Seminar in Applied Statistics

Open to graduate students in Statistics, others with permission (RG814).

STAT 6515 - Statistical Inference II
Statistics and subfields, conditional expectations and probability distributions, uniformly most powerful tests, uniformly most powerful unbiased tests, confidence sets, conditional inference, robustness, change point problems, order restricted inference, asymptotics of likelihood ratio tests.
Open to graduate students in Statisitcs, others with permission. Prerequisite: STAT 6315 (RG527).

STAT 6594 - Seminar in Nonparametric Statistics

Open to graduate students in Statistics, others with permission (RG814).

STAT 6625 - Seminar in Biostatistics

Open to graduate students in Statistics, others with permission (RG814).

STAT 6694 - Seminar in Multivariate Statistics

Open to graduate students in Statistics, others with permission (RG814).

STAT 6794 - Seminar in the Theory of Statistical Inference

Open to graduate students in Statistics, others with permission (RG814).

STAT 6894 - Seminar in the Theory of Probability and Stochastic Processes

Open to graduate students in Statistics, others with permission (RG814).

†GRAD 5930. Full-Time Directed Studies (Master's Level) (GRAD 397) 3 credits.

†GRAD 5950. Master's Thesis Research (GRAD 395) 1 - 9 credits.

†GRAD 5960. Full-Time Master's Research (GRAD 396) 3 credits.

GRAD 5998. Special Readings (Master's) (GRAD 398) Non-credit.

GRAD 5999. Thesis Preparation (GRAD 399) Non-credit.

†GRAD 6930. Full-Time Directed Studies (Doctoral Level) (GRAD 497) 3 credits.

†GRAD 6950. Doctoral Dissertation Research (GRAD 495) 1 - 9 credits.

†GRAD 6960. Full-Time Doctoral Research (GRAD 496) 3 credits.

GRAD 6998. Special Readings (Doctoral) (GRAD 498) Non-credit.

GRAD 6999. Dissertation Preparation (GRAD 499) Non-credit.

Womens Gender & Sexuality Studies

*****

Department Head
Professor Nancy A. Naples

Core Faculty
Breen, Boylan, D'Alleva, Desai, Dussart, Gurr, Makowsky, Mauldin, McComiskey, Naples, Silvermint, Sylvester, and Turcotte

Core Affiliate Faculty
Dayton, Eby, and Long

In virtually every field of university study, scholarship on women, gender, abd sexuality has become increasingly influential because of its path-breaking theoretical perspectives and its empirical findings. The programs of virtually every professional association testify to the vitality and presence of feminist research.

The Women's Studies Graduate Certificate at the University of Connecticut can be earned by students enrolled in a graduate degree program, or as a stand-alone certificate for those who have completed their undergraduate degree.

Although feminist scholarship may be available in other disciplines, Women's Studies offers a concentrated perspective and in-depth analysis. The graduate certificate enables students to pursue interdisciplinary study in this flourishing field while enhancing their educational background by encouraging the integration of personal, academic and political experiences and ideals.

Because the program is interdisciplinary and students will approach the certificate from a range of home fields and with widely varying preparation, all certificate plans of study will be individualized. Each certificate candidate combines the study of Women's Studies theory and methodology, either through current study or prior preparation. The core faculty of the Women's Studies Program will act as advisors to certificate students; careful advising will ensure that each student's program has the appropriate interdisciplinary breadth and fits appropriately with his/her other course work and professional needs.

All Women's Studies certificate plans of study must include work in more than one department and must be approved by the Program Director or a designee, who will coordinate the certificate program.

The requirements for the Graduate Certificate in Women's Studies follow:

1. For students enrolled in existing graduate programs

Open to students enrolled in any UConn graduate program.

Requires 12 hours of course work, of which at least nine hours must be at

the 5000 level or above. Not more than one Women's Studies 5390 may be applied to the

certificate.

2. For non-degree students:

Open to students with a bachelor's degree upon approval of the Women's

Studies Graduate Study Committee

Requires 12 hours of course work, of which at least nine hours must be at the 300 level or above, including:

Philosophy 5352 – Feminist Theory

Women's Studies 5365 – Women's Studies Research Methodology

Not more than one Women's Studies 5390 may be applied to the certificate.

Application/forms for both options may be obtained from the Women's Studies Program office or on the Women's Studies website, www.womens.studies.uconn.edu.

Courses applicable to the Graduate Certificate in Women's Studies include many advanced 4000-level Women's Studies courses and the following graduate-level Women's Studies courses as well as a variety of courses in Anthropology, English, French, History, Human Development and Family Studies, Philosophy, Political Science, Psychology, and Sociology. Each semester the Women's Studies Program publishes a list of the applicable courses to be offered in the following semester.

Courses

WGSS 5315 - Gender and Culture
Anthropological perspectives on the analysis of gender with special focus on dynamics of gender, culture, and power.

WGSS 5333 - Topics in the History of American Women

WGSS 5341 - Analysis of Rituals
Examines various theoretical contributions to the anthropological study of ritual. Controversies and ambiguities surrounding the social and symbolic significance of the ritual act for both men's and women's experiences and participation are addressed. Prerequisite: Anthropology 5311 (RG170).

WGSS 5344 - Psychology of Women and Gender
A survey of research and theory on the interpretation of sex differences; gender, status, and power, and women's life span development.

WGSS 5365 - Women's Studies Research Methodology for Graduate Students
Discussion of feminist and gender-oriented research methods and their relation to traditional disciplines. Analysis of gender bias in research design and practice. Major independent research project required.

WGSS 5371 - Genders, Sexualities, and Theories
Genders and sexualities with special attention given to lesbian, gay, bisexual, and transgender issues.

WGSS 5390 - Independent Study for Graduate Students

WGSS 5395 - Special Topics Seminar in Women's Studies
Topics of current interest from a feminist perspective.

WGSS 5398 - Variable Topics in Women's Studies
With a change in topics, may be repeated for credit.

Graduate Faculty

The Graduate Faculty includes only those individuals appointed by the dean of the Graduate School by authorization of the President. Members of the University Faculties who hold the rank of assistant professor or above at the University of Connecticut may become members of the Graduate Faculty upon recommendation of the department head (or dean of a school or college which is not departmentalized) and approval by the dean of the Graduate School if the professor's department, alone or in conjunction with another department, offers a program leading to a degree awarded through The Graduate School. A professor whose department does not offer a graduate degree program may be appointed to the Graduate Faculty by the dean of the Graduate School on the recommendation of the head of a department, (or dean of a school or college which is not departmentalized) whose graduate degree program(s) the professor would serve.

The following list is current as of April 8, 2013.

Abboud, Nelly, Associate Professor of Civil and Environmental Engineering, Ph.D., University of Delaware

Abikoff, William, Professor of Mathematics, Ph.D., Polytechnic Institute of Brooklyn

Accorsi, Michael, Professor of Civil and Environmental Engineering, Ph.D., Northwestern University

Adams, Douglas, Assistant Professor of Orthopaedic Surgery, Ph.D., University of Iowa

Adams, Eldridge, Professor of Ecology and Evolutionary Biology, Ph.D., University of California, Berkeley

Adamson, Douglas, Associate Professor of Chemistry, Ph.D., University of Southern California

Adamsons, Kari, Assistant Professor of Human Development and Family Studies, Ph.D., University of North Carolina, Greensboro

Adler, Adam, Associate Professor of Medicine, Ph.D., Columbia University

Adler, Daniel, Associate Professor of Anthropology, Ph.D., Harvard University

Agar, John, Professor of Prosthodontics, D.D.S., Medical College of Virginia

Agocha, V. Bede, Assistant Professorin Residence of Psychology, Ph.D., University of Missouri

Agrios, Alexander, Assistant Professor of Civil and Environmental Engineering, Ph.D., Northwestern University

Aguila, Hector, Associate Professor of Immunology, Ph.D., Albert Einstein College of Medicine

Ahking, Francis, Associate Professor of Economics, Ph.D., Virginia Polytechnic Institute and State University

Aindow, Mark, Professor of Chemical and Biomolecular Engineering, Ph.D., University of Liverpool, England

Albert, Arlene, Professor of Molecular and Cell Biology, Ph.D., University of Virginia

Alder, Nathan, Assistant Professor of Molecular and Cell Biology, Ph.D., University of California, Davis

Alexandrescu, Andrei, Professor of Molecular and Cell Biology, Ph.D., University of Wisconsin

Allen, Rodney, Assistant Extension Professor of Allied Health Sciences, Ph.D., Southern Illinois University

Almas, Khalid, Professor of Periodontology, M.Sc., University of London

Alpay, Pamir, Professor of Chemical and Biomolecular Engineering, Ph.D., University of Maryland

Alpert, William, Associate Professor of Economics, Ph.D., Columbia University

Altobello, Marilyn, Associate Professor of Agricultural and Resource Economics, Ph.D., University of Massachusetts

Ammar, Reda, Professor of Computer Science and Engineering, Ph.D., University of Connecticut

An, Yonghong, Assistant Professor of Economics, Ph.D., Johns Hopkins University

Anagnostou, Emmanouil, Professor of Civil and Environmental Engineering, Ph.D., University of Iowa

Anania, Michael, Associate Professor in Residence of Dramatic Arts, B.F.A., Boston University

Anderson, Amy, Professor of Medicinal Chemistry, Ph.D., Harvard University

Anderson, Elizabeth, Associate Professor of Nursing, Ph.D., University of Rochester

Anderson, Shayne, Assistant Professor of Human Development and Family Studies, Ph.D., University of Georgia

Andrew, Sheila, Associate Professor of Animal Science, Ph.D., University of Maryland

Aneskievich, Brian, Associate Professor of Pharmacology, Ph.D., State University of New York, Stony Brook

Angeles-Boza, Alfredo, Assistant Professor of Chemistry, PhD., Texas A&M University

Antic, Srdjan, Associate Professor of Neuroscience, M.D., M.S., Belgrade University, Yugoslavia

Anwar, A. F. Mehdi, Professor of Electrical Engineering, Ph.D., Clarkson University

Anyah, Richard, Assistant Professor of Natural Resources and the Environment, Ph.D., North Carolina State University

Armstrong, Lawrence, Professor of Kinesiology, Ph.D., Ball State University

Arnold, Andrew, Professor of Medicine, M.D., Harvard University

Arteaga, Sarita, Associate Professor of Prosthodontics, D.M.D., University of Connecticut

Asandei, Alexandru, Associate Professor of Chemistry, Ph.D., Case Western Reserve University

Aschkenasy, Nehama, Professor in Residence of Literatures, Cultures, and Languages, Ph.D., New York University

Aseltine, Robert, Professor of Behavioral Sciences and Community Health, Ph.D., University of Michigan

Asencio, Marysol, Professor of Human Development and Family Studies, D.Ph., Columbia University

Astur, Robert, Associate Professor of Psychology, Ph.D., University of New Mexico

Atkin, David, Professor of Communication Sciences, Ph.D., Michigan State University

Atkinson-Palombo, Carol, Assistant Professor of Geography, Ph.D., Arizona State University

Auer, Carol, Associate Professor of Plant Science, Ph.D., University of Maryland

Ayers, John, Associate Professor of Electrical and Computer Engineering, Ph.D., Rensselaer Polytechnic Institute

Azimi, Fakhreddin, Professor of History, Ph.D., Oxford University, England

Ba, Sulin, Professor of Operations and Information Management, Ph.D., University of Texas

Babor, Thomas, Professor of Community Medicine and Health Care, Ph.D., University of Arizona

Bagtzoglou, Amvrossios, Professor of Civil and Environmental Engineering, Ph.D., University of California, Irvine

Bai, Xue, Associate Professor of Operations and Information Management, Ph.D., Carnegie Mellon University

Baker, Frank, Research Professor of Social Work, Ph.D., Northwestern University

Baker, Jr., William, Assistant Professor of Pharmacy Practice, Pharm.D., University of Connecticut

Baldwin, Peter, Associate Professor of History, Ph.D., Brown University

Balma, Philip, Assistant Professor of Literatures, Cultures, and Languages, Ph.D., Indiana University

Balunas, Marcy, Assistant Professor of Pharmaceutical Sciences, Ph.D., University of Illinois, Chicago

Bamis, Athanasios, Assistant Professor of Computer Science and Engineering, Ph.D., Yale University

Bansal, Rajeev, Professor of Electrical and Computer Engineering, Ph.D., Harvard University

Bansal, Rashmi, Professor of Neuroscience, Ph.D., Central Drug Research Institute (India)

Barbarese, Elisa, Professor of Neuroscience, Ph.D., McGill University, Canada

Barber, Thomas, Professor in Residence of Mechanical Engineering, Ph.D., New York University

Barker, Keith, Professor of Computer Science and Engineering, Ph.D., Sheffield University, England

Barnes-Farrell, Janet, Professor of Psychology, Ph.D., Pennsylvania State University

Barreca, Regina, Professor of English, Ph.D., City University of New York

Barry, Lisa, Assistant Professor of Public Health, Ph.D., Yale University

Bar-Shalom, Yaakov, Distinguished Professor of Electrical and Computer Engineering, Ph.D., Princeton University

Barton, Marianne, Associate Clinical Professor of Psychology, Ph.D., University of Connecticut

Bass, Jr., Richard, Professor of Music, Ph.D., University of Texas

Bass, Richard, Distinguished Professor of Mathematics, Ph.D., University of California, Berkeley

Basu, Ashis, Professor of Chemistry, Ph.D., Wayne State University

Batchvarov, Kroum, Assistant Professor of Anthropology, Ph.D., Texas A&M University

Bavier, Anne, Professor of Nursing, Ph.D., Duquesne University

Baxter, Donald, Professor of Philosophy, Ph.D., University of Pittsburgh

Bayarsaihan, Dashzeveg, Associate Professor of Biostructure and Function, Ph.D., Wesleyan University

Bayer, Arend, Assistant Professor of Mathematics, Ph.D., University of Bonn, Germany

Bazzi, Ali, Assistant Professor of Electrical and Computer Engineering, Ph.D., University of Illinois

Bayulgen, Oksan, Associate Professor of Political Science, Ph.D., University of Texas

Beall, J, Professor of Philosophy, Ph.D., University of Massachusetts

Beasley, Maya, Associate Professor of Sociology, Ph.D., Stanford University

Beck, Cheryl, Distinguished Professor of Nursing, D.N.Sc., Boston University

Bedore, Pamela, Assistant Professor of English, Ph.D., University of Rochester

Bell, Alexandra, Associate Professor of Educational Leadership, Ph.D., University of Connecticut

Bellini, Sandra, Associate Clinical Professor of Nursing, D.N.P., Case Western Reserve University

Bellizzi, Keith, Associate Professor of Human Development and Family Studies, Ph.D., University of Connecticut

Bellur-Thandaveshwar, Saraswathi, Assistant Professor of Communication, Ph.D., Pennsylvania State University

Ben-Ari, Iddo, Assistant Professor of Mathematics, Ph.D., Technion-Israel Institute of Technology

Benn, Peter, Professor of Pediatrics, Ph.D., University of Birmingham, England

Benson, David, Professor of Molecular and Cell Biology, Ph.D., Rutgers University

Benzecry, Claudio, Assistant Professor of Sociology, Ph.D., New York University

Bercaw-Edwards, Mary Katherine, Associate Professor of English in Residence, Ph.D., Northwestern University

Berentsen, William, Professor of Geography, Ph.D., Ohio State University

Berkowitz, Gerald, Professor of Plant Science, Ph.D., Brandeis University

Berning, Joshua, Assistant Professor of Agricultural and Resource Economics, Ph.D., Washington State University

Bernstein, Leslie, Professor of Neuroscience, Ph.D., University of Illinois

Bernstein, Mary, Professor of Sociology, Ph.D., New York University

Berthelot, Anne, Professor of Literatures, Cultures, and Languages, Doctorates Lettres, University of Paris-Sorbonne, France

Berthold, S. Megan, Assistant Professor of Social Work, Ph.D., University of California, Los Angeles

Best, Samuel, Associate Professor of Political Science, Ph.D., State University of New York, Stony Brook

Bezrukov, Fedor, Assistant Professor of Physics, Ph.D., Russian Academy of Sciences, Moscow

Bezsonova, Irina, Assistant Professor of Molecular, Microbial and Structural Biology, Ph.D., University of Toronto

Bhat, Anjana, Assistant Professor of Physical Therapy, Ph.D., University of Delaware

Bhattacharjee, Sudip, Associate Professor of Operations and Information Management, Ph.D., State University of New York, Buffalo

Bi, Jinbo, Associate Professor of Computer Science and Engineering, Ph.D., Rensselaer Polytechnic Institute

Bidra, Avinash, Assistant Professor of Prosthodontics, M.Dent.Sc., University of Connecticut

Bigazzi, Pierluigi, Professor of Pathology, M.D., University of Florence, Italy

Biggs, Frederick, Professor of English, Ph.D., Cornell University

Biggs, Stanley, Distinguished Professor of Accounting, Ph.D., University of Minnesota

Bird, Robert, Associate Professor of Marketing, J.D., Boston University

Birge, Robert, Professor of Chemistry, Ph.D., Wesleyan University

Blank, Thomas, Professor of Human Development and Family Studies, Ph.D., Columbia University

Blanton, Hart, Professor of Psychology, Ph.D., Princeton University

Blatt, Joel, Associate Professor of History, Ph.D., University of Rochester

Blinov, Mikhail, Assistant Professor of Cell Analysis and Modeling, Weizmann Institute of Science, Israel

Bloom, Lynn, Distinguished Professor of English, Ph.D., University of Michigan

Bloomfield, Paul, Associate Professor of Philosophy, Ph.D., Syracuse University

Blum, Thomas, Associate Professor of Physics, Ph.D., University of Arizona

Bobaljik, Jonathan, Professor of Linguistics, Ph.D., Massachusetts Institute of Technology

Bock, Monica, Associate Professor of Art, M.F.A., M.A., School of the Art Institute of Chicago

Boelsterli, Urs, Professor of Pharmaceutical Science, Ph.D., University of Zurich, Switzerland

Boggs, Steven, Research Professor of Materials Science, Ph.D., University of Toronto, Canada

Bogner, Robin, Associate Professor of Pharmaceutical Science, Ph.D., Rutgers University

Bohannon, Richard, Professor of Kinesiology, D.Ed., North Carolina State University

Bollas, Georgios, Assistant Professor of Chemical & Biomolecular Engineering, Ph.D., Aristotle University of Thessaloniki, Greece

Bolling, Bradley, Assistant Professor of Nutritional Sciences, Ph.D., University of Wisconsin-Madison

Bontly, Thomas, Associate Professor of Philosophy, Ph.D., University of Wisconsin

Borgida, Adam, Associate Professor of Clinical and Translational Research, M.D., University of Connecticut

Bortfeld, Heather, Associate Professor of Psychology, Ph.D., State University of New York, Stony Brook

Bosker, Thijs, Assistant Professor of Natural Resources, Ph.D., University of New Brunswick, Canada

Boskovic, Zeljko, Professor of Linguistics, Ph.D., University of Connecticut

Boster, James, Professor of Anthropology, Ph.D., University of California, Berkeley

Bouchard, Norma, Associate Professor of Literatures, Cultures, and Languages, Ph.D., Indiana University

Boyer, Mark, Professor of Political Science, Ph.D., University of Maryland

Boylan, Alexis, Assistant Professor of Art History, Ph.D., Rutgers University

Brammer, Anthony, Professor of Medicine, Ph.D., University of Exeter, England

Brand, Mark, Professor of Horticulture, Ph.D., Ohio State University

Bravo-Ureta, Boris, Professor of Agricultural and Resource Economics, Ph.D., University of Nebraska

Bray, Melissa, Professor of Educational Psychology, Ph.D., University of Connecticut

Breen, Margaret, Professor of English, Ph.D., Rutgers University

Brenick, Alaina, Assistant Professor of Human Development and Family Studies, Ph.D., University of Maryland

Brewer, Molly, Professor of Obstetrics and Gynecology, M.D., State University of New York, Upstate Medical Center

Bridgeman, James, Associate Professor in Residence of Mathematics, M.A., Yale University

Britner, Preston, Professor of Human Development and Family Studies, Ph.D., University of Virginia

Brocke, Stefan, Associate Professor of Immunology, M.D., Free University, Germany

Brody, Harold, Distinguished Professor of Materials Science and Engineering, Sc.D., Massachusetts Institute of Technology

Brown, Edna, Assistant Professor of Human Development and Family Studies, Ph.D., University of Michigan

Brown, Judith, Assistant Professor in Residence of Allied Health Sciences, Ph.D., University of Connecticut

Brown, Pamela, Associate Professor of English, Ph.D., Columbia University

Brown, Scott, Professor of Educational Psychology, Ph.D., Syracuse University

Brown, Stacey, Assistant Professor of Community Medicine and Health Care, Ph.D., Kent State University

Brückner, Christian, Professor of Chemistry, Ph.D., University of British Columbia, Canada

Bruder, Mary, Professor of Community Medicine and Health Care, Ph.D., University of Oregon

Bruening, Jennifer, Associate Professor Educational Leadership, Ph.D., Ohio State University

Bubela, Deborah, Assistant Clinical Professor of Physical Therapy, Ph.D., University of Connecticut

Buck, Ross, Professor of Communication, Ph.D., University of Pittsburgh

Buckley, Roger, Professor of History, Ph.D., McGill University, Canada

Bucklin, Ann, Professor of Marine Sciences, Ph.D., University of California, Berkeley

Burger, Susan, Associate Clinical Professor of Nursing, Ph.D., University of North Carolina

Burgess, Diane, Distinguished Professor of Pharmaceutics, Ph.D., University of London, England

Burke, Mary, Associate Professor of English, Queen's University, Ireland

Burkey, Daniel, Associate Professor in Residence of Chemical & Biomolecular Engineering, Ph.D., Massachusetts Institute of Technology

Burkhard, Peter, Associate Professor of Molecular and Cell Biology, Ph.D., University of Basel, Switzerland

Burleson, Joseph, Associate Professor of Community Medicine and Health Care, Ph.D., University of Texas

Burton, Laura, Associate Professor of Educational Leadership, Ph.D., University of Connecticut

Burton, Leslie, Professor of Psychology, Ph.D., University of Chicago

Bush, Andrew, Associate Professor of Ecology and Evolutionary Biology, Ph.D., Harvard University

Bushey, Joseph, Assistant Professor of Civil and Environmental Engineering, Ph.D., Carnegie-Mellon University

Bushmich, Sandra, Professor of Pathobiology, D.V.M., New York College of Veterinary Medicine

Byrne, Tim, Associate Professor of Marine Sciences, Ph.D., University of California, Santa Cruz

Bystrom, Kerry, Assistant Professor of English, Ph.D., Princeton University

Bzymek, Zbigniew, Associate Professor of Mechanical Engineering, Ph.D., Technical University of Warsaw, Poland

Caira, Janine, Distinguished Professor of Ecology and Evolutionary Biology, Ph.D., University of Nebraska

Calabrese, Andrea, Professor of Linguistics, Dottore in Lettere, University of Padova, Italy

Campbell, Ben, Assistant Professor of Agricultural and Resource Economics, Ph.D., Texas A&M University

Campbell, Scott, Associate Professor of English, Ph.D., Rutgers University

Campbell, Winston, Professor of Obstetrics

and Gynecology, M.D., University of Connecticut

Campellone, Kenneth, Assistant Professor of Molecular and Cell Biology, Ph.D., University of Massachusetts Medical School

Canedo, Eduardo, Assistant Professor of History, Ph.D., Columbia University

Caner, Daniel, Associate Professor of History and Classics, Ph.D., University of California, Berkeley

Cantino, Marie, Associate Professor of Physiology and Neurobiology, Ph.D., University of Washington

Cao, Chengyu, Assistant Professor of Mechanical Engineering, Ph.D., Massachusetts Institute of Technology

Cao, Qing, Assistant Professor of Management, Ph.D., University of Maryland

Cardetti, Fabiana, Associate Professor of Mathematics, Ph.D., Louisiana State University

Carello, Claudia, Professor of Psychology, Ph.D., University of Connecticut

Carillo, Ellen, Assistant Professor of English, Ph.D., University of Pittsburgh

Carlson, Morgan, Assistant Professor of Genetics and Developmental Biology, Ph.D., University of California, Berkeley and Sand Francisco

Carmichael, Gordon, Professor of Genetics and Developmental Biology, Ph.D., Harvard University

Caron, Joan, Assistant Professor of Cell Biology, Ph.D., University of Connecticut

Carrafiello, Vincent, Professor of Business Law, J.D., University of Connecticut

Carson, John, Professor of Molecular, Microbial, and Structural Biology, Ph.D., Massachusetts Institute of Technology

Carstensen, Fred, Professor of Economics, Ph.D., Yale University

Carter, C. Barry, Professor of Chemical and Biomolecular Engineering, Ph.D., Oxford University, England

Casa, Douglas, Professor of Kinesiology, Ph.D., University of Connecticut

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Zaghi, Arash Esmaili, Assistant Professor of Civil and Environmental Engineering, Ph.D., University of Nevada, Reno

Zecevic, Nada, Professor of Neuroscience, M.D., Ph.D., University of Belgrade, Yugoslavia

Zeff, Richard, Professor of Immunology, Ph.D., Rush University

Zhang, Bi, Professor of Mechanical Engineering, Ph.D., Tokyo Institute, Japan

Zhang, Chuanrong, Associate Professor of Geography, Ph.D., University of Wisconsin

Zhang, Peng, Assistant Professor of Electrical and Computer Engineering, Ph.D., Tsinghua University, China, Ph.D., University of British Columbia, Canada

Zhang, Ping, Associate Professor of Molecular and Cell Biology, Ph.D., Albert Einstein College of Medicine

Zhang, Zhongju, Professor of Operations and Information Management, Ph.D., University of Washington

Zhao, Jing, Assistant Professor of Chemistry, PhD., Northwestern University

Zhdanov, Dmitry, Assistant Professor of Operations and Information Management, Ph.D., University of Minnesota

Zheng, Yu, Assistant Professor of Political Science, Ph.D., University of California, San Diego

Zhong, Xiaobo, Associate Professor of Pharmaceutical Science, Ph.D., Wageningen University

Zhou, Shengli, Associate Professor of Electrical and Computer Engineering, Ph.D., University of Minnesota

Zhu, Qiang, Professor of Oral Health and Diagnostic Sciences, Ph.D., University of Connecticut

Zhu, Qing, Professor of Electrical and Computer Engineering, Ph.D., University of Pennsylvania

Zinn, Steven, Professor of Animal Science, Ph.D., Michigan State University

Zirakzadeh, Cyrus, Professor of Political Science, Ph.D., University of California, Berkeley

Zorlutuna, Pinar, Assistant Professor of Mechanical Engineering, PhD., Middle East Technical University

Zurolo, Mark, Associate Professor of Art, M.F.A., Yale University

Zweifach, Adam, Associate Professor of Molecular and Cell Biology, Ph.D., Yale University

Appendix

SCHOLARLY INTEGRITY IN GRADUATE EDUCATION AND RESEARCH

Scholarly activity at the graduate level takes many forms, including, but not limited to, classroom activity, laboratory or field experience, writing for publication, presentation, and forms of artistic expression. Integrity in all of these activities is of paramount importance, and the Graduate School of the University of Connecticut requires that the highest ethical standards in teaching, learning, research, and service be maintained.

Scholarly integrity encompasses "both research integrity and the ethical understanding and skill required of researchers/scholars in domestic, international, and multicultural contexts." It also addresses "ethical aspects of scholarship that influence the next generation of researchers as teachers, mentors, supervisors, and successful stewards of grant funds" (Council of Graduate Schools, Research and Scholarly Integrity in Graduate Education: A Comprehensive Approach, 2012).

The Graduate Faculty Council, in accordance with the provisions of its By-Laws, has adopted this policy concerning scholarly integrity in graduate education and research and has approved the procedures set forth herein for addressing alleged violations. The Dean of the Graduate School shall coordinate the reporting, investigation, and determination of alleged breaches of scholarly integrity by graduate students in accordance with this policy. (A graduate student is defined as any individual who holds admission to the Graduate School to pursue either a graduate certificate or graduate degree, as well as any other individual enrolled in a graduate-level course who is not strictly enrolled in an undergraduate degree or an undergraduate certificate program.)

Members of the Graduate Faculty have primary responsibility to foster an environment in which the highest ethical standards prevail. All members of the University community have a responsibility to uphold the highest standards of scholarship, which encompasses activities of teaching, research, and service, and to report any violation of academic integrity of which they have knowledge. Instructors have a responsibility to take reasonable steps to prevent scholarly misconduct in their courses and to inform students of course-specific requirements.

Note: Student misconduct other than scholarly misconduct, as defined herein, is governed by the University's Student Code, which is administered under the direction of the Office of the Provost. Enforcement of its provisions is the responsibility of the Director of Community Standards. At the Health Center, student misconduct other than scholarly misconduct is governed by the Rules of Conduct.

A. DEFINITIONS OF SCHOLARLY MISCONDUCT

Scholarly misconduct is broadly defined as a failure to uphold standards of scholarly integrity in teaching, learning, research, or service.

For the purpose of this Policy, scholarly misconduct shall be deemed to include, but not be limited to, the following types of misconduct. The list is not intended to be exhaustive, but does identify major categories of scholarly misconduct, and provides illustrations where appropriate.

Cheating involves dishonesty during a course, on an examination required for a particular degree, or at other times during graduate study, e.g., copying the work of another student.

Plagiarism involves using another person's language, thoughts, data, ideas, expressions, or other original material without acknowledging the source (adapted from Council of Writing Program Administrators, Defining and Avoiding Plagiarism: The WPA Statement on Best Practices, 2003).

Distorted reporting involves "any omission or misrepresentation of the information necessary and sufficient to evaluate the validity and significance of research, at the level appropriate to the context in which the research is communicated" (D. Fanelli, Nature 494:149; 2013).

Fabrication or Falsification of Grades involves any form of falsification of coursework or tampering with grades, e.g., a student making unauthorized changes to her/his own grades or an instructor consciously misreporting grades of students.

Misrepresentation involves taking an examination for another student, submitting work done by another individual as one's own, submitting the same work for evaluation in two or more courses without prior approval, unauthorized use of previously completed work or research for a thesis, dissertation, or publication, or making false, inaccurate, or misleading claims or statements when applying for admission to the Graduate School or in any scholarly or research activity, including publication.

Academic or Research Disruption involves unauthorized possession, use, or destruction of examinations, library materials, laboratory or research supplies or equipment, research data, notebooks, or computer files, or it might involve tampering with, sabotage of, or piracy of computer hardware, computer software, or network components.

Fabrication or Falsification in Research involves falsification of, tampering with, or fabricating results or data.

Research Violations include violation of protocols governing the use of human or animal subjects, breaches of confidentiality, obstruction of the research progress of another individual, or disregard for applicable University, local, State, or federal regulations.

Professional Misconduct involves violation of standards governing the professional conduct of students in particular fields (e.g., pharmacy, nursing, education, counseling, therapy).

Deliberate Obstruction involves hindering investigation of any alleged act of scholarly misconduct.

Aiding or Abetting involves actions that assist or encourage another individual to plan or commit any act of scholarly misconduct.

B. ADDRESSING ALLEGATIONS OF SCHOLARLY MISCONDUCT

Allegations of scholarly misconduct will be addressed in accordance with the procedures set forth below. If a graduate student accused of scholarly misconduct is part of a combined degree program, the appropriate Associate Dean of the Graduate School (whether for Storrs and the regional campuses or the Health Center) and the academic leader of the other degree program will determine whether the complaint will be addressed in accordance with these procedures or in accordance with those of the other degree program, using the procedures of the program to which the alleged misconduct is more germane.

1. Misconduct Allegedly Committed Within an Academic Course

When an instructor or relevant dean or department head believes that an act of scholarly misconduct within an academic course has occurred, the procedures set forth below shall be followed:

(a) The instructor, dean or department head who believes that scholarly misconduct has occurred within an academic course (the "Complainant") shall retain all evidence

of the alleged misconduct in its original form. Original papers or other materials need not be returned to the accused student. Copies of the accused student's work will be provided to him or her upon request. All instructors within the course shall be notified of the allegation and the proposed academic consequences before the student is notified of the alleged misconduct.

(b) Within thirty (30) business days of becoming aware of alleged misconduct the Complainant shall notify the accused student in writing of the allegation of misconduct and the sanctions to be imposed. The notice shall be sent by the Complainant to the accused student by e-mail, to the student's official University e-mail address, and by first class mail, postage prepaid, to the mailing address on file with the University. The notification shall advise the student that s/he has ten (10) business days from the date the notice is sent via e-mail to contact the Complainant to address the alleged misconduct and/or request a hearing and that if s/he fails to do so, the sanctions described in the notice shall be imposed. The Complainant shall maintain a copy of the written notification sent to the accused student.

(c) The accused student may request a hearing by filing a written request with the appropriate Associate Dean of the Graduate School (whether for Storrs and the regional campuses or the Health Center). The Associate Dean shall notify the Complainant of the receipt of accused student's request for a hearing within five (5) business days. The Complainant shall within five (5) business days forward to the Associate Dean copies of the written notification sent to the student, copies of the student's work, and information about other evidence supporting the allegation. The Associate Dean will arrange for a hearing to be conducted in accordance with Section C hereof.

(d) A student who has been notified that s/he has been accused of scholarly misconduct may not withdraw from the course in which the alleged misconduct has occurred without the approval of the Dean of the Graduate School. If a semester concludes before a scholarly misconduct matter is resolved, the student shall receive a temporary "I" (Incomplete) grade in the course until the instructor submits the appropriate grade.

2. Misconduct Allegedly Committed Outside of an Academic Course

A substantial portion of a graduate student's course of study takes place in contexts where they are not students within a course (e.g., serving as a teaching or research assistant, working as an intern, conducting thesis or dissertation research, taking a written or oral general exam). Allegations of scholarly misconduct committed outside of an academic course will be addressed according to the procedures described in this section with the following exceptions:

• Cases involving allegations of research misconduct by students enrolled at Storrs or regional campuses will be referred to the Vice President for Research for review under the Policy on Alleged Misconduct in Research. Cases involving allegations of research misconduct by students enrolled at the Health Center will be referred to the Research Integrity Officer for action under the Policy on Review of Alleged Misconduct of Research. In either case, if the allegation is found to have merit, the case will be referred to a Hearing Committee for additional action (section C).

• Cases involving alleged violation of standards governing the professional conduct of students in particular fields (e.g., pharmacy, nursing, education, counseling, therapy) may be subject to additional review by other entities inside or outside the University (e.g., professional organizations, Institutional Animal Care and Use Committee, Human Subjects Institutional Review Board).

When any person (the "Complainant") believes that an act of scholarly misconduct outside of an academic course has occurred, the procedures set forth below shall be followed:

(a) The Complainant shall retain the evidence of the alleged misconduct in its original form.

(b) Within thirty (30) business days of becoming aware of the alleged violation, the Complainant shall notify the appropriate Associate Dean of the Graduate School (whether for Storrs and the regional campuses or the Health Center) of the alleged misconduct, in writing. The notification shall fully describe the nature of the alleged misconduct and the circumstances involved and shall be accompanied by evidence supporting the allegation. The notification shall bear the signature of the Complainant, and shall be dated. The Complainant shall maintain a copy of the notification sent to the Associate Dean.

(c). The Associate Dean shall notify the accused student in writing of the allegation of misconduct within five (5) business days. The notice shall be sent by the Associate Dean to the student by e-mail, to the student's official University e-mail address, and by first class mail, postage prepaid, to the mailing address on file with the University. The notification sent by the Associate Dean shall advise the student that s/he has ten (10) business days from the date the notice is sent via e-mail to contact the Associate Dean to address the alleged misconduct. The Associate Dean shall maintain a copy of the notification sent to the accused student.

(d) The Associate Dean will review the evidence submitted with the notification and consider any additional information provided by the accused student. Within twenty (20) business days of receiving the notification from the Complainant, the Associate Dean will determine whether the case should be referred to a Hearing Committee (section C) or to a different office within the university.

C. HEARING ON ALLEGATION OF SCHOLARLY MISCONDUCT

Accusations of scholarly misconduct to be subjected to a hearing will be heard by a Hearing Committee. The hearing will be scheduled no longer than thirty (30) business days after the accused student is initially notified of advised of accusation of misconduct.

For good cause shown, the Associate Dean may reschedule the hearing at the request of either the Complainant or the accused student. If the accused student fails to appear at the hearing, the Hearing Committee will hear evidence from the Complainant and render its finding. If the Complainant fails to appear at the hearing, the complaint will be dismissed. A finding of responsibility for scholarly misconduct or a dismissal of the complaint that arises from a party's failure to appear at the hearing may be appealed in writing to the Dean of the Graduate School, but only on the grounds that extreme circumstances prevented the party's attendance at the hearing. Should the appeal be accepted, the Dean will determine a new period within which a hearing must be held, and no further extensions will be granted.

The Hearing Committee shall be composed of three (3) voting members (two members of the graduate faculty and one graduate student). The appropriate Associate Dean of the Graduate School (whether for Storrs and the regional campuses or the Health Center) shall select members of the Hearing Committee with advice from the Executive Committee of the Graduate Faculty Council. The Associate Dean shall conduct the hearing as a non-voting member. No member of the Hearing Committee may be a member of the program/department of either party to the hearing. Nor may any member of the Hearing Committee have personal/professional associations with the parties. The accused

student and the complainant(s) will be notified in writing of the composition of the Hearing Committee, and may object to the appointment of any committee member on the grounds that the member's participation would jeopardize his or her right to a fair hearing. The Associate Dean conducting the hearing will determine whether any objections have merit and will decide whether a panel member will be seated.

The hearing, although formal, is not a court proceeding. As such, the Hearing Committee will not be bound by the procedures and rules of evidence of a court of law. The Hearing Committee will determine whether the student is responsible for scholarly misconduct as identified within notification of alleged misconduct sent to the accused student and will determine the appropriate sanction(s) if the student is found responsible. The Hearing Committee's decision shall be made by majority vote. A finding of scholarly misconduct shall be based on clear and convincing evidence submitted at the hearing.

The hearing will occur in private, and it will be recorded. The Graduate School will maintain a copy of the recording. The student may invite one person to attend the hearing as a support person. The student may consult with the support person throughout the hearing, but the support person shall not be permitted to participate in the hearing.

Both the student and the Complainant may submit documentary evidence and invite witnesses to provide testimony. The student and the Complainant shall submit the names of witnesses whose testimony they intend to offer to the Associate Dean conducting the hearing at least five (5) business days in advance of the hearing. The Associate Dean shall provide a list of the witnesses to the Hearing Committee, the student, the Complainant, and all witnesses at least two (2) business days before the scheduled hearing date.

The Associate Dean will conduct the hearing in accordance with the following procedure:

1. The Associate Dean will identify the accused student, the Complainant, the witnesses, the support person accompanying the student, if any, and the members of the Hearing Committee;

2. The Associate Dean will state the allegations of misconduct, as set forth in the notification sent to the accused student;

3. The Complainant and the accused student will be offered the opportunity to make opening statements;

4. The Complainant may present evidence of the alleged misconduct, which may include written statements, personal testimony, oral testimony of witnesses, and physical exhibits;

5. The accused student may present evidence to support his/her position, which may include written statements, personal testimony of the accused student, oral testimony of witnesses, and physical exhibits;

6. The Committee will be offered the opportunity to question the accused student, the accused student's witnesses, the Complainant, and/or the Complainant's witnesses.

7. The Complainant will be offered the opportunity to present a summation; and

8. The accused student will be offered the opportunity to present a summation.

During the hearing the accused student:

1. May decline to make statements. The accused student's refusal to answer questions shall not be interpreted as evidence of guilt; and

2. May decline to appear at the hearing. The refusal of the accused student to appear at the hearing shall not be interpreted as evidence of guilt. The hearing panel will consider the evidence presented in the absence of the accused student.

At the conclusion of the hearing, the Hearing Committee shall deliberate and render a decision. The decision will be sent to the accused student, the Complainant, the Dean of the school or college in which the alleged misconduct occurred, and to the Dean of the Graduate School within ten (10) business days from the date of the hearing. The notice shall be sent to the student by e-mail, to the student's official University e-mail address, and by first class mail, postage prepaid, to the mailing address on file with the University.

The Hearing Committee's decision will specify clearly:

1. Whether the student has been found responsible for scholarly misconduct; and

2. If so, the sanctions to be imposed. The Hearing Committee will consider mitigating circumstances in determining the severity of the sanctions to be imposed.

If the Hearing Committee finds that the student is responsible for scholarly misconduct, the finding will stand and the recommended sanctions will be imposed unless the student files a written appeal with the Dean of the Graduate School within ten (10) business days of his or her receipt of the Hearing Committee's decision. An appeal is not a new hearing. It is a review of the record of the original hearing. In order to prepare an appeal, the accused student and his or her support person (with the written consent of the accused student), shall have the right to review the records of the hearing, including the audio recording.

An appeal may be sought on the following three grounds:

1. On a claim of error in the hearing procedure;

2. On a claim of new evidence or information material to the case that was not available at the time of the hearing.

3. On a claim of substantive error arising from misinterpretation of evidence presented at the hearing.

The Dean of the Graduate School shall have the authority to dismiss an appeal not sought on one or more of these three grounds.

If an appeal is upheld, the Dean of the Graduate School shall refer the matter back to the Hearing Committee with appropriate instructions.

The decision of the Dean of the Graduate School concerning an appeal shall be final.

A version of this policy was first approved and adopted by the Board of Trustees on November 10, 1998. This version was approved and adopted by the Board of Trustees on April 24, 2013.

GRADUATE SCHOOL COMPLAINT RESOLUTION PROCEDURE

The University of Connecticut (University) is a community of scholars committed to integrity, freedom of inquiry and intellectual pursuit, respect for individuals and the rights of others, and tolerance for both individual differences and differing points of view. Accordingly, a fundamental responsibility of the Graduate School is to foster durable, harmonious, and productive working relationships among graduate students, post-doctoral fellows, faculty members, staff, and administrators.

This document describes the procedure by which graduate students and postdoctoral fellows can seek resolution of complaints resulting from their interactions with faculty, administrators, academic programs or departments, or other graduate students or post-doctoral fellows. Consistent with the University's Non-Retaliation Policy (http://policy.uconn.edu/?p=415), retaliation against any person who makes or participates in the investigation of a complaint under this policy is strictly forbidden.

Note: These procedures do not apply to matters addressed by other existing University policies or procedures including, but not limited to, allegations of scholarly misconduct, conduct proscribed by the Student Code, harassment, retaliation, and conflicts of interest. The Associate Dean of the Graduate School with jurisdiction (Storrs or Health Center) may at her/his sole discretion determine that a complaint falls under the jurisdiction of the Responsibilities of Student Life: The Student Code, the Policy on Scholarly Integrity in Graduate Education and Research, the Policy Statement on Harassment, the Policy on Conflict of Interest in Research, or any other existing University policy that provides for resolution of complaints. Should the Associate Dean determine that the complaint should be addressed through other procedures, she/he will notify the parties involved and refer the complaint to the appropriate University officials. The University of Connecticut Health Center (Health Center) has a separate Office of Postdoctoral Affairs with jurisdiction over any complaints raised by postdoctoral fellows at the Health Center.

A. Categories of complaints to which this procedure applies

Complaints to which this procedure applies include, but are not limited to, the following:

Unfair application of policies includes differential application of policies or regulations within a particular degree program or department that is not commensurate with individual differences in skills, contributions, or performance.

A hostile environment involves personal conflict or behavior within a laboratory, degree program, or department that has the effect of interfering with a person's performance. Note: a hostile environment claim may be referred to another office for resolution if it arises because a person is a member of a protected class under the University's Policy Statement on Harassment.

Unfair decisions relate to differential work assignments, allocation of research resources, allocation of financial support, or allocation of authorship that are not commensurate with individual differences in skills, contributions, or performance.

Interference or intimidation includes actions or behavior that limit, impede, or delay a person's completion of a task or degrade her/his performance in any aspect of her/his scholarly work.

B. Filing a complaint

A graduate student or post-doctoral scholar may file a complaint with the Graduate School when she/he believes that actions or behaviors governed by this procedure have occurred and when attempts to resolve her/his complaint either through direct communication with the individual(s) involved or through applicable procedures in the graduate program, department, school, or college have failed. To be addressed under this procedure, a complaint with the Graduate School must be filed in writing and must include:

1. A detailed description of the action(s) or behavior(s)governed by this procedure giving rise to the complaint, including documentary evidence (e.g., correspondence, notes, descriptions of interactions, dates of occurrence) supporting the allegation;

2. A description of action(s) already attempted to resolve the complaint (e.g., correspondence with the person(s) against whom the complaint is lodged; records of meetings with graduate program directors, department heads, or deans); and

3. The name (s) and signature(s) of the individual(s) lodging the complaint (Complainant).

Complaints may not be filed anonymously under this procedure. Anonymous complaints may be filed through the University of Connecticut's Workplace Alter Program (https://www.compliance-helpline.com/uconncares.jsp), but the Graduate School may or may not become involved in the resolution of anonymous complaints. If the Graduate School does become involved, it may be unable to resolve the complaint unless the Complainant discloses her/his identity.

C. Addressing the complaint

Within ten (10) working days of receiving a complaint, the Associate Dean of the Graduate School with jurisdiction (Storrs or Health Center) will, in her/his sole discretion, decide whether to convene a Hearing Committee. This decision will include a review of the complaint and the written evidence provided with the complaint. The Associate Dean will consider information provided by the Complainant describing prior attempts to resolve the complaint and may at her/his sole discretion choose to validate that information through communications with other parties to the complaint. The Associate Dean will ordinarily decline to convene a Hearing Committee unless there is evidence that prior attempts at a resolution have failed. In rare cases, the actions or behaviors alleged in the complaint may be sufficiently extreme that it would be unreasonable to expect the complainant to attempt a prior resolution.

If the Associate Dean decides not to convene a Hearing Committee, she/he will notify the Complainant by e-mail to the Complainant's official University e-mail address and by first class mail, postage prepaid, to the mailing address on file with the University. This decision cannot be appealed, but the Complainant will be encouraged to seek a resolution through direct communication with the person(s) against whom the complaint is directed and/or through procedures available through the relevant graduate program, department, school, or college, as applicable. If these attempts at a resolution fail, the Complainant may file a new complaint no sooner than thirty (30) business days after the notice declining to convene a Hearing Committee was sent.

If the Associate Dean decides to convene a Hearing Committee, she/he will notify both the Complainant and the Respondent(s) (person(s) against whom the complaint is lodged) by e-mail to the official University e-mail addresses and by first class mail, postage prepaid, to the mailing addresses on file with the University.

D. Hearing the complaint

If the Associate Dean decides to convene a Hearing Committee, the hearing will be scheduled no longer than thirty (30) business days after the Associate Dean notifies the parties of the decision to convene a hearing.

For good cause shown, the Associate Dean may reschedule the hearing at the request of either the Complainant or the Respondent. If the Respondent fail(s) to appear at the hearing, the Hearing Committee will hear evidence from the Complainant and render its finding. If the Complainant fails to appear at the hearing, the complaint will be dismissed. A finding issued by the Hearing Committee that arises from a party's failure to appear may be appealed in writing to the Dean of the Graduate School, but only on the grounds that extreme circumstances prevented the party's attendance at the hearing. Should the appeal be accepted, the Dean will determine a new period within which a hearing must be held, and no further extensions will be granted.

The Hearing Committee shall be composed of three voting members (two members of the Graduate Faculty and one non-faculty person – a graduate student when the Complainant is a graduate student or a post-doctoral fellow when the Complainant is a post-doctoral fellow). The Associate Dean of the Graduate School will select the members of the Hearing Committee with advice from the Executive Committee of the Graduate Faculty Council. No person who served as a mediator during prior attempts to resolve the complaint shall serve as a member of the Hearing Committee, nor may any member of the Hearing Committee have a direct involvement in the matter giving rise to the complaint. The Associate Dean of the Graduate School (Storrs or Health Center) shall conduct the hearing as a non-voting member. No member of the Hearing Committee may be a member of the program/department of either party to the hearing. Nor may any member of the Hearing Committee have personal/professional associations with any of the parties. The Complainant and the Respondent will be notified in writing of the composition of the Hearing Committee and may object to the appointment of any voting member on the grounds that the member's participation would jeopardize her/his right to a fair hearing. The Associate Dean presiding over the hearing will determine whether to seat or exclude any member of the Hearing Committee whose participation is challenged.

The hearing, although formal, is not a court proceeding. As such, the Hearing Committee will not be bound by the procedures and rules of evidence of a court of law. The Hearing Committee will determine whether the complaint has merit and will determine the appropriate remedy if the complaint is found to have merit. The Hearing Committee's decision shall be made by majority vote. A finding that the complaint is justified shall be based on clear and convincing evidence submitted at the hearing.

The hearing will occur in private, and it will be recorded. The Graduate School will maintain a copy of the recording. The Complainant may invite one person to attend the hearing as a support person. The Complainant may consult with the support person throughout the hearing, but the support person shall not be permitted to participate in the hearing.

Both the Complainant and the Respondent may submit documentary evidence and invite witnesses to provide testimony. Both parties shall submit the names of witnesses whose testimony they intend to offer to the Associate Dean conducting the hearing within five (5) business days in advance of the hearing. The Associate Dean shall provide the list of the witnesses to the Hearing Committee, the Complainant, the Respondent, and all witnesses at least two (2) business days before the scheduled hearing date.

The Associate Dean will conduct the hearing in accordance with the following procedure:

1. The Associate Dean will identify the Complainant, the Respondent, the witnesses, the support person accompanying the Complainant, if any, and the members of the Hearing Committee;

2. The Associate Dean will state the grounds for the complaint, as set forth in the original complaint filed with the Graduate School;

3. The Complainant and the Respondent will be offered the opportunity to make opening statements;

4. The Complainant may present evidence of the action(s) or behavior(s) leading to the complaint, which may include written statements, personal testimony, oral testimony of witnesses, and physical exhibits;

5. The Respondent may present evidence to support her/his defense against the complaint, which may include written statements, personal testimony, oral testimony of witnesses, and physical exhibits;

6. The Hearing Committee will be offered the opportunity to question the Complainant, the Complainant's witnesses, the Respondent, and/or the Respondent's witnesses.

7. The Complainant will be offered the opportunity to present a summation; and

8. The Respondent will be offered the opportunity to present a summation.

During the hearing either party:

1. May decline to make statements. A refusal to answer questions shall not be interpreted unfavorably with respect to that party's position; and

2. May decline to appear at the hearing. The refusal of the Respondent shall not be interpreted as evidence that the complaint is valid. The hearing panel will consider the evidence presented in the absence of the Respondent. The refusal of the Complainant to appear at the hearing will result in dismissal of the complaint.

At the conclusion of the hearing, the Hearing Committee shall deliberate and render a decision. The decision will be sent to the Complainant, the Respondent, the Dean of the home school or college of the person(s) against whom the complaint was lodged, and to the Dean of the Graduate School within ten (10) business days from the date of the hearing. The notice shall be sent to the Complainant and to the Respondent by e-mail, to the corresponding official University e-mail addresses, and by first class mail, postage prepaid, to the mailing addresses on file with the University.

The Hearing Committee's decision will specify clearly whether the complaint has been found to have merit. If the complaint is found to have merit, the Dean of the Graduate School will consult with appropriate University officials to implement an appropriate remedy.

E. Appeals

The Complainant may file an appeal of the Hearing Committee's decision with the Dean of the Graduate School. The appeal must be received within ten (10) business days of her/his receipt of the Hearing Committee's decision. An appeal is not a new hearing. It is a review of the record of the original hearing. In order to prepare an appeal, the Complainant and her/his support person shall have the right to review the records of the hearing, including the audio recording.

An appeal may be sought on any of the following three grounds:

1. On a claim of error in the hearing procedure;

2. On a claim of new evidence or information material to the case that was not available at the time of the hearing.

3. On a claim of substantive error arising from misinterpretation of evidence presented at the hearing.

The Dean of the Graduate School shall have the authority to dismiss an appeal not sought on one or more of these three grounds.

If an appeal is upheld, the Dean of the Graduate School shall refer the matter back to the Hearing Committee with appropriate instructions.

The decision of the Dean of the Graduate School concerning an appeal shall be final.

Adopted by the Graduate Faculty Council, 17 October 2007

Modified 23 May 2008

Modified 27 March 2013

REQUEST FOR LEAVE OF ABSENCE FROM GRADUATE STUDIES

Definition of a graduate student:
A graduate student is defined as any individual who holds admission to the Graduate School to pursue either a graduate certificate or graduate degree, as well as any other individual enrolled in a graduate-level course who is not strictly enrolled in an undergraduate degree or an undergraduate certificate program.

Under compelling personal or medical reasons, a graduate student may request a leave of absence from his or her graduate program for a period of up to 12 months (one calendar year). The request for a leave of absence must be made in writing using the Request for Leave of Absence from Graduate Studies Form. The completed application form must bear the signatures of the student, the student's Major Advisor, and the Department or Program Head. The completed application form is to be submitted to the Graduate School for review and approval at least 30 days before the leave of absence is to commence, or the earliest date possible in extenuating circumstances.

Information provided in the application for a personal leave of absence must address the specific reason(s) prompting the request. Examples could include, but are not limited to, (a) family leave and (b) financial hardship. Applications for a medical leave of absence require documentation from an appropriate health care provider, which must be submitted along with the form titled Request for Leave of Absence from Graduate Studies. In certain cases, the Dean of the Graduate School may request that a student provide documentation from an appropriate health care provider which certifies that the student has medical clearance to resume study at the conclusion of an approved leave of absence. In addition, consultation with university offices may be appropriate. For example, consultation related to assessment of the safety of the student's work environment may be requested by contacting the Division of Environmental Health and Safety (www.ehs.uconn.edu) and accommodations and services for students with disabilities may be discussed with the Center for Students with Disabilities (http://www.csd.uconn.edu/).

When the student is on an approved leave of absence for the full duration of a Fall or Spring semester, he or she is not required to register for any credit or non-credit course. Requests submitted during an academic session will be reviewed on a case basis to determine the most appropriate mechanism for recording the period of leave (e.g., requests made prior to the open enrollment closing date) may be dated to cover the entire semester). An approved leave of absence indicates that the student status will be recorded as "inactive" for the duration of the requested period of leave, and as such, the student will not have access to university services as a graduate student. In addition, the terminal date (the date determined by the Graduate School by which it is expected that all degree requirements will be completed) of any student granted a leave of absence will be extended by a period of time equivalent to the duration of the approved leave of absence. Thus, the period of the approved leave of absence will not be considered when calculating the time the student has spent working toward the completion of the degree. In contrast, a student who chooses to maintain continuous registration will maintain active status, which means the student will continue to pay associated fees, have access to university services as a graduate student, and the terminal date for degree requirements is not extended. Thus, the decision to choose a leave of absence versus continuous registration to maintain active status must be weighed accordingly.

International students are strongly encouraged to thoroughly evaluate the implications of each decision on their student status. International students must obtain authorization from an international advisor at Immigration Services before any course is dropped. Failure to do so will be considered a status violation and it will result in termination of the student's SEVIS record. It is strongly recommended that the student hold an advisory meeting with an international advisor if s/he is considering request for a leave of absence.

The leave of absence can be extended up to a maximum of one additional 12-month period. The request must be re-submitted using the previously described procedures, and ultimately approved by the Graduate School. An extended leave of absence cannot exceed two full calendar years (24 months) in duration. In such cases in which a student needs leave for more than a total of two calendar years, the student must reapply for admission to the Graduate School with no assurance of acceptance.

Approval of a leave of absence does not assure or guarantee that a graduate program, an academic department, the Graduate School, or the University would be in a position to provide financial support or a graduate assistantship to any graduate student upon their return to studies following an approved leave of absence. Students returning to studies after a leave of absence must work with appropriate faculty advisors and program personnel to resume their degree programs.

Reinstatement from an approved leave of absence will occur at the beginning of the appropriate academic term. To request reinstatement from an approved leave of absence, the student should complete the form titled Request for Reinstatement from Leave of Absence from Graduate Studies, and submit it to the Graduate School.

The University of Connecticut does not tolerate discrimination prohibited by federal and state law, including but not limited to sex discrimination, pregnancy-related discrimination, and disability discrimination. To ensure compliance with federal and state laws, including Title IX and the Americans with Disabilities Act (ADA), the University has designated a Title IX Coordinator and ADA Coordinator, who is charged with monitoring compliance with Title IX and the ADA and ensuring that reports of sex and disability discrimination are investigated and addressed by the University. For more information regarding the University's non-discrimination, anti-harassment, and non-retaliation policies, please visit the Office of Diversity's website: www.ode.uconn.edu or call (860) 486-2943.