

## Academic Programs

Central Connecticut State University offers graduate degree programs in approximately 40 fields of study, with many of the degrees offering specializations that provide additional focuses.

**The Master of Arts (M.A.)** degree signifies completion of at least 30 credits of advanced study, including research and a capstone experience, which includes a thesis, special project, and/or comprehensive examination. Students in an M.A. program seek to expand their knowledge of particular subjects and may specialize in one aspect of those subjects relevant to their career goals. Students also choose an M.A. degree program when planning to continue their studies at the doctoral level.

**The Master of Science (M.S.)** degree is primarily a professional degree. Some M.S. programs are designed for certified teachers and some are designed for students in other professions. Degree programs include at least 30 credits of coursework and capstone experiences in the form of theses, special projects, and/or comprehensive examinations.

**The Master of Arts in Teaching (MAT)** is designed to provide an accelerated route for both a master's degree and certification to teach in shortage areas of mathematics, sciences, English, Spanish, and technology and engineering classrooms. It offers high quality, full-time, degree-bearing teacher preparation to students who have completed content area coursework required for certification and have demonstrated their command of the content area.

**The Sixth-Year Certificate (SYC)** provides graduate study beyond the master's degree for teachers and other educators. Presently offered in the fields of educational leadership, mathematics education leadership, and reading and language arts, the Sixth-Year Certificate signifies completion of a program of study designed to prepare the recipient for a high level of professional practice and responsibility in public education. (Pending approval from the Connecticut Department of Higher Education is the Sixth-Year Certificate Program in Mathematics Education Leadership.)

**The Ed.D. program in Educational Leadership**, CCSU's first doctoral program, serves educational leaders in Connecticut through an innovative program of study integrating coursework and field studies grounded in authentic inquiry. Faculty and doctoral candidates work together to improve educational opportunities for the children and young people of Connecticut. Students accepted to the Ed.D. program proceed as a cohort through three years of intensive summer work to complete their core courses and seminar work. Students also complete a specialization and a dissertation. Students complete a minimum of 63 credits.

**Graduate post-baccalaureate** programs are available for initial teacher certification in elementary, secondary, TESOL, and pre-kindergarten through grade 12 fields, such as art, music, physical, special and technology and engineering education. In addition, coursework taken within related degree programs (M.S. and 6th year) may lead to certification as school counselor, reading and language arts consultant, and intermediate administrator/supervisor. The office of the dean, School of Education and Professional Studies, provides up-to-date information concerning certification programs and state requirements for certification.

There are also **Official Certificate Programs (OCP)** in Cell and Molecular Biology, Construction Management, Data Mining, Environmental Health & Safety, Global Leadership and Literacy, Lean Manufacturing & Six Sigma, Pre-Health, Public Relations/Promotions, and Supply Chain & Logistics, and TESOL. Advanced OCP (master's degrees are required) are also available in Professional Counseling, Reading & Language Arts, and the Superintendent of Schools. Also available are post-master's planned programs of study for school personnel and students interested in other areas and disciplines.

To learn more about the Cooperative Education Program, see the page [linked here](#).



## Academic Schools

### School of Arts and Sciences

The School of Arts and Sciences offers a wide range of liberal arts programs at the bachelor's and master's level, as well as certificate programs. Subject-matter majors for students in teacher education programs are provided by the academic departments within the school. Faculty in Arts and Sciences also have the primary responsibility for the University's honors program, for providing developmental course work in basic skills and for the University's general education program.

Faculty in Arts and Sciences are involved in research and other scholarly activities both on campus and in the community and state. Students have the opportunity to work with faculty in their research and to collaborate on projects relevant to their study. Certain programs require supervised clinical practice or field study experiences.

### School of Business

The School of Business prepares undergraduates for entry-level positions in business organizations through programs in accounting, international business, finance, management, management information systems, and marketing.

Presently, the School does not offer any graduate programs.

### School of Education and Professional Studies

Founded as the New Britain Normal School in 1849, Central Connecticut State University has a rich history and a longstanding tradition of excellence in the preparation of teachers. In the 21st century, CCSU's School of Education and Professional Studies continues this tradition through its commitment to preparing leaders for service in our communities and, thus, offers not only teacher education programs of excellence, but also equally strong professional programs for educators and human service professionals in a broad range of fields. Graduate programs include a doctoral program in educational leadership (Ed.D.) and accredited master's degree programs. Also offered are 6th-year certificate programs and several non-degree programs for the professional development of counselors, teachers, and administrators, e.g., Intermediate Administrator (092), Superintendent (093), Reading & Language Arts Certification, and Reading & Language Arts Consultant.

Undergraduate programs in the School of Education and Professional Studies include Nursing, Physical Education and Human Performance, Social Work, and Teacher Education. All undergraduate programs lead to a bachelor of science degree and are accredited by their respective professional organizations.

### School of Engineering and Technology

Central Connecticut State University is unique in that it has the only School of Engineering and Technology within the Connecticut public university system. The School of Engineering and Technology offers programs in technology and engineering education, industrial technology, engineering, engineering technology, biochemistry, and biomolecular sciences, in addition to graduate programs in engineering technology, technology management, biomolecular sciences, construction management, and technology and engineering education.

Designated as a Center of Excellence by the State of Connecticut, the School provides state-of-the-art equipment and facilities, with an emphasis on computer-integrated design and manufacturing. The Institute for Technology and Business Development, supported in part by the business community, facilitates outreach and research.



## The George R. Muirhead Center for International Education

Established by the Board of Governors for Higher Education in 1987 as a statewide Center for Excellence in International Education, the George R. Muirhead Center for International Education (CIE) is the cornerstone of the University's commitment to international education. The Center contributes to the University's mission by developing and supporting internationally focused programs, both academic and extracurricular. It provides a forum for students, faculty, staff, and alumni to pursue common interests through on-campus international activities, as well as programs of study around the globe. Working in collaboration with the University's academic departments and programs, the Center also promotes curricular integration of international education and the preparation of globally competent students.

Through its network of more than 20 university partnerships around the world, the Center makes [overseas study options](#) available to both graduate and undergraduate students. In any given year, the CIE offers a variety of CCSU-sponsored programs in Europe, the Caribbean, Africa, the Middle East, and Latin America to nearly 500 students. CCSU students are strongly encouraged to pursue overseas study as part of their academic programs, either via long-term study at our partner universities, or through short-term study in faculty-led courses abroad. By living and learning in another culture, CCSU students prepare for an increasingly integrated and interdependent world.

The Center also welcomes, advises, and supports a growing number of [international students](#) each semester, including the students who come to CCSU from around the world to engage in [intensive English language instruction](#). Through programming that brings students of many different heritages together, the Center fosters a spirit of cross-cultural understanding and provides opportunities for students to respect the customs and values of others, learning more about themselves in the process.

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For more information about the programs and resources provided by the Center for International Education:

[Study Abroad Programs](#)

[Intensive English Language Program](#)

[Information for International Students](#)

## Study Abroad Programs

Students of Central Connecticut State University have the opportunity to enhance their education and improve their career options by studying abroad! The University offers a choice of CCSU-sponsored international programs: short-term *Courses Abroad* and semester- or year-long study at one of Central's *Partner Universities* overseas.

Short-term programs, which are led by University professors, offer students a variety of credit-bearing courses in many locations around the world. These *Courses Abroad* are offered three times a year, during winter session, spring break, and summer session. Detailed information, including registration deadlines, program dates, cost, and sponsoring major departments, is available at the beginning of each academic year on the CIE website: <http://www.ccsu.edu/cie>.

Students may also elect to study abroad for a semester or a year at one of *CCSU's Partner Universities* located in Brazil, Chile, China, France, Germany, Hungary, Italy, Japan, Korea, Northern Cyprus, Poland, Spain, Sweden, and the United Kingdom. In general, students participating in one of these exchange programs pay tuition and fees to CCSU. Although variations in payment procedures do occur depending on the partner university, CCSU scholarships and financial aid apply to all Exchange programs, and applications are due April 1. Courses earned at a partner university transfer as residency credits, and apply toward Central's graduation requirements.

To plan either type of study abroad program, contact the International Education Coordinator in the Center for International Education (CIE), Barnard Hall, Room 123, or call 860-832-2040. Specific program information for all international programs and dates of regularly scheduled information sessions can be found on the CIE website at: <http://www.ccsu.edu/cie>.

## Intensive English Language Program

The Intensive English Language Program (IELP) offers full-time and part-time English language and American culture instruction to international students and faculty, foreign professionals, and members of the Connecticut community.

The IELP is dedicated to ensuring that students have a positive experience. Drawing from a strong curriculum and professionally degreed faculty, each session's courses are tailored to meet the needs of the students enrolled at that time. Classes are small, so teachers get to know and offer support and encouragement to each student individually. Activities arranged by the IELP offer students the opportunity to meet and interact with American students and local culture.

Living in another country is an exciting adventure and a challenge. The members of the IELP understand this and are here to help in every way possible. The IELP and the George R. Muirhead Center for International Education staff are always available to answer questions about visas, adjusting to American culture, academic planning, and other issues.

For more information, please contact the IELP in Barnard Hall, Room 124, at 860-832-3376 or [IELP@ccsu.edu](mailto:IELP@ccsu.edu).

## **International Student Admissions**

For information regarding admission for international students to the School of Graduate Studies, please click [here](#).



## Cooperative Education Program

Cooperative Education is a program offered through the Center for Advising & Career Exploration (CACE), located in Willard Hall. This program integrates classroom study with career-related work experiences. Co-op work experiences are paid, full-time, six-month positions related to academic and career interests. Co-op is an optional and, in most cases, non-credit program.

CCSU's program combines five months of on-campus study with six months of paid Co-op employment. Thus, students apply textbook learning to on-the-job training. The money earned often helps students finance their University educations.

Co-op students are assigned to an Advising and Career Exploration Specialist who guides their career development and develops appropriate Co-op placements. In the Career Development Seminar students receive instruction in skills that make the difference in today's job market: résumé writing, interviewing techniques, career planning, and job-seeking strategies.

Through participation in the Co-op program, students can graduate with up to two years of career-related work experience and, possibly, with a job offer. A sizeable number of Central Connecticut State University's Co-op students are offered permanent positions with their Co-op employers upon graduation. Nationwide, graduates of Co-op programs are hired at higher salaries and promoted faster than other employees. For students unsure of a career, Co-op is a no-risk way to test job options. For those set in their goals, Co-op provides a direct route from campus to career.

### How Co-op Works

- Co-op work blocks run from January through June (Group A) and from July to December (Group B).
- Students may participate in one, two, three, or four Co-op work blocks.
- Students must enroll in a Co-op Career Development Seminar during the semester prior to the first work experience.

### Enrolling in the Co-op Program

Once enrolled at Central Connecticut State University, the first step in becoming a Co-op student is to visit the Center for Advising & Career Exploration website at [www.ccsu.edu/cace](http://www.ccsu.edu/cace). Students should call 860-832-1615 to meet with a Specialist to formally enroll in the program. This gives students an opportunity to ask questions. Students should plan to enroll in the program at least one semester prior to the first planned work block. Group A students must apply no later than the third week of the fall semester; Group B students must apply no later than the third week of the spring semester. Applying a semester in advance of the work block ensures: 1) a place in the program; 2) sufficient time for the CACE staff to develop appropriate Co-op positions; and 3) sufficient time for students to complete the Career Development Seminar prior to their work experiences.

### The Career Development Seminar

The Career Development Seminar is designed to teach students life-long career skills. They learn to write a résumé, interview effectively, make career decisions, explore occupations and discover where the jobs are in their fields. This one-credit course is taught by the CACE staff.

### Cost and Eligibility

The Co-op program is available to all full- and part-time students in good academic standing. Participating students are required to pay a \$200 administrative fee each semester they are working in the field as a Co-op student.



## Accounting

### **AC 521      Accounting and Performance Measurement for Lean Enterprises      3**

Prereq.: Admission to the M.S. program in Technology Management. Performance metrics and financial reporting supporting continuous improvement and a lean culture, including value stream performance measurement and costing, features and characteristics costing, and target costing. Linked with AC 421. No credit given to students with credit for AC 421. Spring.

## Actuarial Science

Note: Additional work will be required for graduate credit in 400-level courses.

- ACTL 480 Topics in Actuarial Science 1 TO 3**  
 Prereq.: Permission of instructor. Topics chosen from theory of interest, risk theory, demography, and graduation. Irregular.
- ACTL 481 Review -SOA/CAS Course I 3**  
 Review and extension of the principles of calculus and probability as related to the material on the SOA/CAS Course 1 exam. Spring.
- ACTL 482 Review -SOA/CAS Course II 3**  
 Prereq.: ACTL 335 and permission of instructor. Review and extension of the principles of theory of interest, economics, and finance as related to the material on the SOA/CAS Course 2 exam. Spring.
- ACTL 564 Mathematics of Financial Derivatives 3**  
 Prereq.: Admission to the M.A. in mathematics with specialization in actuarial science or permission of the instructor. Study of mathematical models used to value financial derivatives. Includes both discrete time models such as binomial trees and simulation as well as continuous time models based upon Brownian motion and Ito's lemma. Fall.
- ACTL 565 Graduate Actuarial Models I 4**  
 Prereq.: Admission to M.A. program in Mathematics with specialization in Actuarial Science. Models the valuation of life contingent payments. Specific topics include survival models and life tables and their use in the calculation of net premiums and reserves. Multiple life and multiple decrement models are introduced. This is a link course with ACTL 465. Not open to students who have passed ACTL 465. Fall.
- ACTL 566 Graduate Actuarial Models II 4**  
 Prereq.: Admission to M.A. program in Mathematics with specialization in Actuarial Science. Frequency and severity models, compound distribution models, stochastic process and ruin models. This is a link course with ACTL 466. Not open to students who have passed ACTL 466. Spring.
- ACTL 580 Advanced Topics in Actuarial Science 3**  
 Prereq.: Permission of instructor. Seminar in risk theory, basic actuarial principles, actuarial models, actuarial modeling, or other advanced topic. May be repeated under different topics for a maximum of 6 credits. Irregular.

## Anthropology

Note: Additional work will be required for graduate credit in 400-level courses.

### **ANTH 401 City Life & Culture 3**

Exploration of the historical and contemporary development of urban spaces in the United States and Hartford area. Development of diverse cultural identities through neighborhood, social and, religious institutions will be examined. Spring. (O)

### **ANTH 416 Archaeology of Africa 3**

Prereq.: ANTH 150 or permission of instructor. Examines pre-historic and historic period of Africa via archaeological, documentary, and oral historical data. Spring. (O)

### **ANTH 418 New England Prehistory 3**

Prereq.: ANTH 140 or 150 or permission of instructor. An examination of the prehistoric people of New England through analysis of fragmentary remains of their villages, burial grounds, and trash deposits. Focus will be on sites excavated by the Anthropology Department at Central Connecticut State University. Spring. (E)

### **ANTH 420 African Diaspora Archaeology 3**

Prereq.: ANTH 150 or permission of instructor. Examination of early African diaspora life via analysis of archaeological remains. Consideration of issues such as diversity of populations, health and diet, and labor conditions. Spring.

### **ANTH 424 Peoples and Cultures of Africa 3**

Samples the diversity of African peoples, their cultures and related social relations. Primary focus on colonial and contemporary life, African liberation movements, and the influence of global political economy on life in modern Africa. Fall. (E) []

### **ANTH 425 Human Ecology 3**

Prereq.: 100-level anthropology course or permission of instructor. Explores the relationship between humans and their environments. How humans have changed the face of the earth and to what extent different environments have influenced human biological and cultural evolution. Cross listed with AFAM 425. No credit given to students with credit for AFAM 425 or ANTH 325. Fall. (O)

### **ANTH 426 People and Cultures of Eastern Europe 3**

A survey of culture in the nations of Eastern Europe concentrating on their contemporary aspects. Spring. (E) []

### **ANTH 428 Cultures of Latin America 3**

Prereq.: ANTH 140 or ANTH 170 or SOC 110. Introduction to modern and pre-Colombian societies in Latin America. Objectives include tracing the historical roots of social and economic relations in Latin America today, and the diverse responses Latin Americans have made and are making to rapid social change. Cross listed with LAS 428. No credit given to students with credit for LAS 428. Fall. []

### **ANTH 429 Global India 3**

Examination of Indian society and culture considering India's relationship with other world areas. Topics include colonialism, postcolonialism, globalization. Separate requirements for graduate and undergraduate students. Spring (O). []

### **ANTH 450 Archaeological Field School 3 TO 6**

Provides instruction in survey techniques, mapping, scientific excavation, photographic and laboratory skills and analysis. Field schools are operated in both historical and prehistorical archaeology. Enrollment is limited. Send letter of application to department. May be repeated. Summer.

### **ANTH 451 Field School in Cultural Anthropology 3 TO 6**

Prereq.: Permission of instructor. Development of qualitative research skills central to cultural anthropology through language study, home stays, seminars, speakers, and excursions. Normally involves travel outside the United States. Irregular.

### **ANTH 475 Topics in Anthropology 3**

Examination of selected topics in Anthropology. May be repeated under different topics up to 6 credits. Irregular.



## Art

Note: Additional work will be required for graduate credit in 400-level courses.

- ART 420 Issues in Contemporary American Art 3**  
Prereq.: ART 110 or 112 or 113. American art post-World War II to the present with emphasis on topics such as post modernism, public sculpture, feminist art, multiculturalism and contemporary art criticism. Includes visits to Hartford and New York galleries. (O)
- ART 424 Illustration III 3**  
Prereq.: ART 099 and ART 324. A successful portfolio review (ART 099) is required before enrollment. Topics in the development of individual media techniques.
- ART 430 Color Drawing 3**  
Prereq.: ART 230 or 252 or 431. A successful portfolio review is required before enrollment. Advanced course in drawing using a painterly approach. Strengthening of individual direction through an exploration of space, composition, color, and surface in a variety of color drawing mediums. Fall.
- ART 432 Life Drawing II 3**  
Prereq.: ART 099 and ART 332 or permission of instructor. A successful portfolio review (ART 099) is required before enrollment. Continuation of ART 332. Open to majors only.
- ART 435 Advanced Drawing 3**  
Prereq.: Permission of instructor. A successful portfolio review (ART 099) is required before enrollment. Emphasis on development of expressive use of line and value. Various materials used including ink, pencil, conte crayon, chalk, wire, charcoal, and others.
- ART 441 Intaglio II 3**  
Prereq.: ART 099 and ART 341, graduate standing or permission of instructor. A successful portfolio review (ART 099) is required before enrollment. Continuation of Intaglio I. Spring.
- ART 443 Silkscreen II 3**  
Prereq.: ART 099 and ART 343, graduate standing or permission of instructor. A successful portfolio review (ART 099) is required before enrollment. Continuation of Silkscreen I. Fall.
- ART 450 Advanced Watercolor Painting and Related Media 3**  
Prereq.: ART 099 and ART 250 or permission of instructor. A successful portfolio review (ART 099) is required before enrollment. This course will explore the various watercolor processes and the effects unique to each, i.e., tempera, aquarelle, water acrylics, and colored inks. Historical and contemporary examples of watercolor techniques will be discussed.
- ART 460 Ceramics III 3**  
Prereq.: ART 360. A successful portfolio review is required before enrollment. Advanced clay and glaze techniques.
- ART 464 Design-Handcraft Materials and Techniques II 3**  
Prereq.: ART 264 or 435. A successful portfolio review is required before enrollment. Continuation and extension of ART 264. Varied handcrafts, materials, and processes are explored as modes of artistic expression.
- ART 465 Studio Topics 1 TO 3**  
Prereq.: ART 099 and others to be stipulated at time of course offering. A successful portfolio review (ART 099) is required before enrollment. Selected topics in studio art, announced each semester. Students may not take this course for credit under the same topic more than once.
- ART 466 Jewelry Design 3**  
Prereq.: ART 099 and ART 120 or 366 or 435. A successful portfolio review (ART 099) is required before enrollment. Course exploring possibilities of materials and equipment in jewelry and metal work, with emphasis on design.
- ART 468 Ceramics IV 3**  
Prereq.: ART 099 and ART 460. A successful portfolio review (ART 099) is required before enrollment. Thesis-clay and glaze design used to express a statement in form.
- ART 490 Curatorship 3**  
Theory and practice in collection management, gallery and museum programming, and exhibition design. On demand.
- ART 494 Location Studies - Art 3 OR 6**  
Direct contact with cultural resources internationally. Consideration of principles common to all arts and those unique to art and architecture. Field trips to exhibits, private collections, artist's ateliers, operas, and museums. Preparatory reading, discussion, critical analysis and

concluding projects. Summer. [ ]

**ART 498 Independent Study**

**1 TO 3**

Prereq.: Formal application to Art Department chair following procedure approved by the Art Department faculty. Individually planned program of independent study in Art or Art Education for students who wish to pursue specialized areas not covered in regular course offerings or go beyond that provided for in the program. Must be requested three weeks before new semester. May be repeated up to a maximum of 6 credits.

**ART 500 Problems in Art Education**

**3**

Prereq.: 9 credits of approved graduate study or approval of advisor. Required of all Art and cross-certification graduate students. Designed to orient students to current issues surrounding the field of art education. The role of art teacher will be studied from the standpoint of professional growth, art organizations, administrative structures of schools and professional ethics. Spring.

**ART 509 Advanced Studies in Art History**

**3**

Prereq.: Permission of department chair. Selected topics in the history of art announced each semester. Students may not take ART 509 for credit under the same topic more than once. No credit given to students who have taken a previous course on the same topic. NOTE: This is a link course, on demand, with ART 408, 411 412, 414, or 420. On demand.

**ART 549 Advanced Painting I**

**3**

Prereq.: Permission of department chair. Exploration of varied qualities of painting media, historical and contemporary techniques and styles.

**ART 550 Advanced Painting II**

**3**

Prereq.: Permission of instructor or chair, or admission to M.S. in Art Education. For the advanced student who wishes to concentrate more deeply in one or two of the media or technique areas with the intention of developing personal expression.

**ART 551 Advanced Painting III**

**3**

Prereq.: ART 550. Continuation of ART 550.

**ART 559 Advanced Ceramics I**

**3**

Prereq.: Permission of department chair. Emphasis on skills in wheel use, glazing and firing techniques.

**ART 560 Advanced Ceramics II**

**3**

Prereq.: Permission of instructor or chair or admission to M.S. in Art Education. Various types of firings. Advanced techniques leading to professional studio potter.

**ART 561 Advanced Ceramics III**

**3**

Prereq.: ART 560. Using self-designed clay and glaze to make a mini solo exhibition.

**ART 565 Advanced Studies in Art:**

**3**

Prereq.: Permission of department chair. Selected topics in studio art and/or art education announced each semester. Maximum credits in one studio area and/or art education is 12. Students may not take ART 565 for credit under the same art education topic more than once. On demand.

**ART 570 Advanced Sculpture I**

**3**

Prereq.: Permission of instructor or chair or admission to M.S. in Art Education. Students pursue directed assignments in several sculptural areas. Past and present styles discussed. Studio and seminar.

**ART 571 Advanced Sculpture II**

**3**

Prereq.: ART 570 or equivalent. In-depth exploration of one or possibly two sculptural processes to be announced. Irregular.

**ART 572 Advanced Sculpture III**

**3**

Prereq.: ART 571. Continuation of ART 571.

**ART 576 Independent Study in Art and/or Art Education**

**1 TO 6**

Prereq.: Department chair's approval, and a minimum of 6 credits in the area selected for independent study. Maximum credits in any one studio area or in art education research is 12. Maximum credits permitted during one semester is 6. Course is only for advanced graduate students who have shown evidence of ability to complete satisfactorily graduate work in art or art education. The student does independent studio or research work of advanced nature and works with an assigned advisor for criticism.

**ART 597 Exhibition Research (Plan C)**

**3**

Prereq.: 21 credits of approved graduate study or recommendation of student's graduate advisor, and a 3.00 overall GPA. Student is expected to carry on research related to exhibition topic. Credit will be granted when the student's art exhibition is accepted by the exhibition committee.

**ART 598 Research in Art Education**

**3**

Prereq.: 9 credits of approved graduate study or recommendation of student's advisor. Designed to familiarize student with techniques and resources associated with research in the field of specialization. Opportunity for practical application will be provided. Fall.

**ART 599 Thesis (Plan A)**

**3**

Prereq.: 21 credits of approved graduate study or recommendation of student's graduate advisor, and a 3.00 overall GPA. Preparation of the thesis under the supervision of the thesis advisor. Plans A, C, D, and E require completion of 18 credits for programs with 30-35 credits, or 24



credits for programs with greater than 35 credits, and a 3.00 overall GPA.

## Biology

**Note: Additional work will be required for graduate credit in 400-level courses.**

- BIO 401 Human Nutrition and Metabolism 3**  
Prereq.: BIO 200 and BIO 290, or permission of department chair. Biochemical and physiological processes that affect the nourishment of humans, including new borns and the aging. Interactions among nutrients, the environment and the body resulting in perturbations affecting human health are considered. Three hours of lecture per week. Spring.
- BIO 402 Evolutionary & Ecological Genetics 3**  
Prereq.: BIO 200 and 290 or permission of instructor. Study of the genetic diversity of species and populations, and the processes that affect their evolution, including natural selection, gene flow, and mutation. Review of basic genetics from General Biology. Applications of genetics to modern problems in ecology and conservation. Spring. [Note: BIO 402 was added on 10.18.11 after its omission was discovered.]
- BIO 405 Ecology 4**  
Prereq.: BIO 200 and BIO 290 and CHEM 163 and CHEM 164 or CHEM 122 or permission of department chair. Distribution and abundance of different types of organisms and the physical, chemical, and biological features and interactions that determine survival, growth, and reproduction in changing environments. Ecological theory and quantitative analyses included in lecture and laboratory. Three hours of lecture and one three-hour laboratory per week. Fall.
- BIO 410 Ecological Physiology 4**  
Prereq.: BIO 200 and BIO 290 and CHEM 163 and CHEM 164 or CHEM 122 or permission of department chair. An examination of the physiological interactions between organisms and their associated ecosystems. Equivalent of three hours of lecture and three hours of laboratory per week. Summer.
- BIO 412 Human Physiology 3**  
Prereq.: BIO 122; or BMS 201; or BIO/BMS 318 or 319; or permission of department chair. Study of the human body and its reactions to internal and external environmental changes. Physiology of the musculoskeletal, nervous, circulatory, respiratory, excretory and endocrine systems is considered. Integrative mechanisms of the system are emphasized. Three hours of lecture per week. Cross listed as BMS 412. Fall.
- BIO 413 Human Physiology Laboratory 1**  
Prereq. or coreq.: BIO 412 or BMS 412 (either may be taken concurrently). Laboratory course to accompany BIO 412. One three-hour laboratory per week. Cross listed as BMS 413. Fall.
- BIO 416 Immunology 3**  
Prereq.: Any 300-level (or higher) course in Biology or Biomolecular Science or permission of chair. Cells and organs of the immune system, immunoglobulin structure and genes, antigen-antibody interactions, major histocompatibility genes and molecules. complement, humoral and cell-mediated immunities, hypersensitivities, immunodeficiencies, transplants, and autoimmunity. Three hours of lecture per week. Spring.
- BIO 421 Marine Invertebrate Biology 4**  
Prereq.: BIO 200 and 290, or permission of the department chair. Evolutionary relationships and morphological, physiological, developmental, and ecological variation within and among taxonomic groups of marine invertebrates. Equivalent of three hours of lecture and one, three-hour laboratory per week. Irregular.
- BIO 425 Aquatic Plant Biology 4**  
Prereq.: BIO 200 and BIO 290, or permission of department chair. Ecology and classification of microalgae, macroalgae and vascular plants from marine, estuarine, and freshwater environments. Laboratories and field trips include collection and identification of plants from Connecticut aquatic habitats. Three hours of lecture and one three-hour laboratory per week. Some Saturday field trips required. Fall. (E)
- BIO 434 Ecology of Inland Waters 4**  
Prereq.: BIO 200 and BIO 290, and CHEM 163 and CHEM 164 or CHEM 122 or permission of department chair. A comparison of lotic and lentic freshwater environments, with emphasis on physical and chemical parameters influencing the distribution of aquatic organisms, nutrient cycling, and factors affecting aquatic productivity. Three hours of lecture and one three-hour laboratory per week. Some Saturday field trips required. Fall. (O)
- BIO 436 Environmental Resources and Management 3**  
Prereq.: BIO 200 and BIO 290, and CHEM 163 and CHEM 164 or CHEM 122 or permission of department chair. Analysis of the interactions of human population-resource depletion-pollution at local to global scales from an environmental management/protection perspective. Emphasis upon better understanding the impacts of over-population and methods for control, significance and loss of biodiversity, aquatic pollution, and global climate change. Three hours of lecture per week. Spring. (E)
- BIO 438 Aquatic Pollution 4**

Prereq.: BIO 200 and BIO 290, and CHEM 163 and CHEM 164 or CHEM 122 or permission of department chair. Study of the various types of aquatic pollutants, their sources and control/treatment, and the effects of water pollution upon aquatic ecosystems, as well as Federal and State water pollution regulatory programs. Laboratory will include field collection of water samples and measurement of indicators of water quality. Three hours of lecture and one three-hour laboratory per week. Some Saturday field trips required. Spring. (O)

**BIO 440 Evolution 3**

Prereq.: BIO 200 and BIO 290, or permission of department chair. Mechanisms of inter-generational change including mutation selection, and drift; sexual selection; speciation; and extinction. Three hours of lecture per week. Fall. (O)

**BIO 444 Plant Taxonomy 3**

Prereq.: BIO 200 and BIO 290, or permission of department chair. Scientific approach to identification and classification of locally occurring plants using taxonomic keys. Includes ferns, fern allies, conifers and flowering plants, with emphasis on the latter. Field walks and plant collections required. Two hours of lecture and one three-hour laboratory per week. Fall.

**BIO 449 Plant Physiology 3**

Prereq.: BIO 200 and BIO 290, or BMS 201 or permission of department chair. Basic principles of plant function. Emphasis on the soil-plant-air continuum, phloem transport, photosynthesis and mechanisms of plant responses to the environment. Three hours of lecture per week. Spring.

**BIO 450 Investigations in Plant Physiology 1**

Prereq.: BIO 449 (may be taken concurrently) or permission of instructor. Investigative laboratory in plant physiology. Topics include water potential, transpiration, mineral nutrition, phloem transport, photosynthetic and respiratory gas exchange, photosynthetic electron transfer, plant movements, and plant hormones. One three-hour lab per week. Spring.

**BIO 480 Animal Behavior 3**

Prereq.: BIO 200 and BIO 290, or permission of department chair. Adaptive function, evolutionary history, development and physiological control of animal behavior. Three hours of lecture per week. Fall. (E)

**BIO 488 Animal Behavior Laboratory 2**

Prereq.: BIO 200 and BIO 290 or permission of department chair. Laboratory and field exercises designed to test hypotheses about the development, adaptive function, evolution, and physiological control of behavior of vertebrates and invertebrates. Includes an extensive observation-based behavioral catalog for a species of the student's choosing. Three hours of laboratory and one hour of lecture per week. Fall. (E)

**BIO 500 Seminar in Biology 1 TO 2**

Prereq.: Admission to the graduate school or permission of department chair. Study of contemporary topics in biology through individual readings, discussions and presentations. Irregular.

**BIO 508 Coastal Ecology 3**

Prereq.: Admission to the graduate school or permission of the department chair. Introduction to northeastern coastal ecology. Emphasis will be upon intertidal and shallow estuarine systems with a comparative ecosystems perspective. Three hours of lecture. Spring. (O)

**BIO 509 Coastal Ecology Laboratory 1**

Prereq.: BIO 508, may be taken concurrently, or permission of department chair. Laboratory to accompany BIO 508. One three-hour laboratory per week. Some Saturday field trips required. Spring. (O)

**BIO 515 Foundations of Ecology 3**

Prereq.: Admission to graduate school or permission of department chair. Introduction to the ecological primary literature through review of classic theoretical papers and manipulative experimental tests. This will include mathematical approaches, models, experimental design, and field experimental methodology regarding questions in population biology, community ecology and ecosystems ecology. Three hours of lecture. Spring. (E)

**BIO 517 Human Anatomy, Physiology, and Pathophysiology 6**

Prereq.: CHEM 311 or 550, or permission of department chair. For students in the Biological Sciences: Anesthesia (M.S.) and Biological Sciences: Health Sciences Specialization (M.S.) programs. Functional anatomy, physiology and pathophysiology of man. Review of cell physiology is followed by in-depth study analysis of muscular, circulatory, nervous, respiratory, excretory and endocrine systems with special applications to the health sciences. Summer.

**BIO 518 Pathophysiology and Applied Physiology 3**

Prereq.: BIO 412 or BMS 412 or BIO 517 or permission of department chair. For students in anesthesia and health sciences; others require permission of anesthesia program coordinator. Continuation of BIO 517, with emphasis on organ system physiology and pathophysiology. Cardiac, renal, and respiratory systems will be stressed. Three hours of lecture per week. Spring.

**BIO 520 Plant Ecology 3**

Prereq.: Admission to graduate school or permission of department chair. Interactions between plants and their living and non-living surroundings. Reproductive ecology, species interactions including competition, community structure, succession, phytogeography with emphasis on the tropics, and the biodiversity crisis. One Saturday field trip required. Three hours of lecture per week. Spring. (O)

**BIO 528 Pharmacology 4**

Prereq.: BIO 412 or BIO 517 or BMS 412, and CHEM 550 or permission of department chair. For students in anesthesia and health sciences; others require permission of anesthesia program coordinator. A comprehensive investigation into the pharmacological agents and their utilization with relevance to the health sciences. Special consideration given to pharmacodynamics. Fall.

**BIO 540 Topics in Advanced Biology****3 TO 4**

Prereq.: Permission of department chair. Selected topics in the biological sciences. Lectures, seminars, discussions, independent readings, reports, and laboratory work as appropriate for the topic will be utilized. Four credit hour offerings will include one three-hour laboratory per week. May be repeated with different topics. Irregular.

**BIO 571 Advanced Field Studies in Biology****1 TO 4**

Prereq.: Admission to graduate program or permission of depart chair. Interview with instructor required for courses outside the U.S. Travel-based field study experience. Advanced students will develop their abilities to identify biological questions, design and conduct observations and/or experiments that address those questions, and analyze their data and reach valid conclusions. May be repeated at different field sites. Irregular.

**BIO 590 Focused Study in Advanced Biology****1 TO 4**

Prereq.: Written permission of instructor(s) and department chair. Advanced project in biology under the supervision of one or more department members selected by the student and the graduate advisor. Written and oral research report required. May be repeated under a different topic no more than three times, for a maximum of 8 credits. On demand.

**BIO 591 Independent Research Project in Advanced Biology****1 TO 4**

Prereq.: Written permission of instructor and department chair. Individual student research in biology. Laboratory and/or field study under the supervision of faculty chosen consultation with the graduate advisor. Written research report required. May be repeated for a maximum of six credits. On demand.

**BIO 598 Research in Biology****3**

Prereq.: Admission to the graduate school or permission of department chair. Designed to familiarize student with techniques and resources associated with research in the specialization. Opportunity for practical application will be provided. Three hours of lecture per week. Fall.

**BIO 599 Thesis****3 OR 6**

Prereq.: BIO 598, permission of thesis advisor, and a 3.00 overall GPA. Preparation of the thesis under the supervision of the thesis advisor. On demand.

## Biomolecular Sciences

Note: Additional work will be required for graduate credit in 400-level courses.

### **BMS 412 Human Physiology 3**

Prereq.: BIO 122, or BMS 201, or BIO/BMS 318 or 319; or permission of department chair. Study of human body and its reactions to internal and external environmental changes. Physiology of the musculoskeletal, nervous, circulatory, respiratory, excretory and endocrine systems is considered. Integrative mechanisms of the system are emphasized. Cross listed as BIO 412. Fall. [c]

### **BMS 413 Human Physiology Laboratory 1**

Prereq.: BMS 412 or BIO 412 (either may be taken concurrently). Laboratory course to accompany BMS 412. One three-hour laboratory per week. Cross listed as BIO 413. Fall. [c]

### **BMS 415 Advanced Exploration in Cell, Molecular, and Physiological Biology 3**

Prereq.: BMS 306 or BMS 307 or BMS 311 or BMS 316 or permission of department chair. The focus will be on understanding a modern biological issue at the level of molecular, cellular, and physiological inquiry. The treatment of the topic will be at an advanced level, reflective of current research in the field. May be repeated under a different topic for a maximum of 6 credits. Irregular. [c]

### **BMS 497 Biosynthesis, Bioenergetics and Metabolic Regulation Laboratory 1**

Prereq. or coreq.: BMS 496 or BMS 506. Laboratory to accompany BMS 496 or 506. One three-hour laboratory per week. Irregular. [c]

### **BMS 500 Seminar in Biomolecular Science 1**

Prereq.: Permission of department chair. Study of contemporary topics in biomolecular sciences through individual readings, discussions and presentations. Fall. [c]

### **BMS 505 Molecular Biology 4**

Prereq.: BMS 306 or BMS 307 or permission of the department chair. For entering graduate students. Introduction to the structure and function of DNA. Emphasis on approaches currently being used to analyze the expression of genes. Examination of regulated gene expression and its relationship to cellular growth and differentiation. Three hours of lecture and one three-hour laboratory per week. This is a bridge course with BMS 495. No credit given to students with previous credit for BMS 495. Irregular. [c]

### **BMS 506 Biosynthesis, Bioenergetics, and Metabolic Regulation 3**

Prereq.: BMS 306, BMS 307, BMS 311, or BMS 316 and CHEM 212 and 213. For entering graduate students. Study of the molecular reactions that sustain life in connection to their role in biological systems. Structure and function of biomolecules. Integration and regulation of metabolic pathways will be discussed. This is a bridge course with BMS 496. No credit given to students with previous credit for BMS 496. Irregular. [c]

### **BMS 516 Medical Microbiology 3**

Prereq.: Admission to a BMS program, or permission of the department chair. Course will focus on interactions between humans and microorganisms that lead to health and disease. Topics will include microbial pathogenesis and human defenses. Irregular. [c]

### **BMS 519 Physiology of Human Aging 3**

Prereq.: BMS 412, or BIO 412 or BIO 517, or permission of department chair. Course will use a systems approach to compare the physiology of young adults and aged adults. Dysregulation of normal physiology and effects on organ systems will be related at the cellular and molecular levels. Irregular. [c]

### **BMS 540 Advanced Topics in Biomolecular Science 3 OR 4**

Prereq.: Permission of department chair. Selected topics in the biomolecular sciences. Lectures, seminars, discussions, independent readings, reports, and laboratory work as appropriate for the topic will be utilized. Four credit hour offerings will include one, three-hour laboratory per week. May be repeated with different topics. This is a link course with BMS 490. Irregular. [c]

### **BMS 562 Developmental Biology 3**

Prereq.: BMS 306 or BMS 307 or permission of department chair. Structural and functional aspects of development of organisms are studied. Emphasis on cellular differentiation and primary morphogenesis. Irregular. [c]

### **BMS 570 Advanced Genetics 3**

Prereq.: BMS 306 or BMS 307 or permission of department chair. Study of contemporary genetic research. Readings will be assigned from various texts and journals. Irregular. [c]

### **BMS 572 Laboratory Rotation in Cell and Molecular Biology 1**

Prereq.: Permission of department chair. Supervised research in three different cell and molecular biology laboratories as an introduction to modern research methods. One hour of seminar and three hours of research per week. On demand. [c]

### **BMS 590 Focused Study in Advanced Biomolecular Sciences 1 TO 4**

Prereq.: Written permission of instructor(s) and department chair. Advanced project in biomolecular sciences under the supervision of one or more department members selected by the student and the graduate advisor. Written and oral research report required. May be repeated under

a different topic no more than three times, for a maximum of 8 credits. On demand. [c]

**BMS 591 Independent Research Project in Biomolecular Sciences 1 TO 4**

Prereq.: Written permission of instructor and department chair. Individual student research. Laboratory study under the supervision of faculty chosen in consultation with faculty advisor. Written research report required. May be repeated for a maximum of 6 credits. On demand. [c]

**BMS 592 Advanced Mentorship in Biomolecular Science 1**

Prereq.: BMS 591, and written permission of instructor and department chair. Faculty-supervised mentorship by a graduate student of one or two high-school interns on a research project in biomolecular science. Student meets for 1 hour weekly with faculty advisor, for planning and evaluation, and works with intern(s) for 3 hours per week during a regular semester (40 hours research mentoring expected). Poster presentation (with interns), written report, and portfolio review required. May be repeated for a maximum of two credits. On demand.

**BMS 599 Thesis 3**

Prereq.: Permission of thesis advisor; approval of thesis plan by departmental thesis committee; 3.00 overall GPA. Preparation of the thesis under the supervision of the thesis advisor. On demand.

## Chemistry

**Note: Additional work will be required for graduate credit in 400-level courses.**

- CHEM 402 Instrumental Methods in Analytical Chemistry 4**  
Prereq.: CHEM 301 and CHEM 322 or CHEM 320; or admission to graduate studies. Theoretical and practical aspects of the most important instrumental techniques used in chemical analysis, including potentiometry, coulometry, voltammetry, UV/Visible absorption spectrophotometry, fluorescence spectrophotometry, atomic spectrometry, gas chromatography, and high-performance liquid chromatography. Three hours of lecture and one four-hour laboratory per week. Spring. (E)
- CHEM 406 Environmental Chemistry 3**  
Prereq.: CHEM 301 and CHEM 210 and 211. Nature and properties of pollutants, their interaction with each other and the environment, preventative and remedial methods of control. Laboratory concerned with sampling and analysis of pollutants. Two hours of lecture and one two-hour laboratory period per week. Spring. (O)
- CHEM 432 Chemistry Seminar 2**  
Prereq.: CHEM 321 or 322. Students will prepare presentations on topics of current interest in various fields of chemistry and may be required to attend seminars by faculty or outside speakers. Introduction to the use of the library, literature, and searching procedures in chemical research. One conference per week. Spring.
- CHEM 456 Toxicology 3**  
Prereq.: CHEM 212. Classes of toxic chemicals, their biotransformation and mechanisms of toxicity in humans. Includes natural and man-made chemicals, methods of risk assessment, environmental, and occupational regulatory standards. Spring.
- CHEM 458 Advanced Biochemistry 3**  
Prereq.: CHEM 354 or BMS 496. Advanced consideration of biochemistry topics including biophysical concepts in the action of proteins and nucleic acids; enzyme catalysis and regulation, and cell-cell communication. Current experimental methodologies will be emphasized. Spring.
- CHEM 459 Bioinorganic Chemistry 3**  
Prereq.: CHEM 354. Principles of inorganic chemistry as applied to biology. Focuses on correlation of function, structure and reactivity of metals in biological systems. Three hours of lecture per week. Spring. (O)
- CHEM 460 Inorganic Symmetry & Spectroscopy 3**  
Prereq.: CHEM 322. Electronic structure and theories of bonding as they relate to the molecular structures, properties, and spectroscopy of inorganic compounds. Primary focus will be on the compounds of the d-block elements. Three hours of lecture per week. Spring. (E)
- CHEM 461 Descriptive Inorganic Chemistry 3**  
Prereq.: CHEM 321. A systematic study of main-group elements and the multitude of compounds they form. Acid-base, substitution, and oxidation-reduction reactions along with structural descriptions will be emphasized. Three hours of lecture per week. Spring. (O)
- CHEM 462 Inorganic Chemistry Laboratory 1**  
Prereq.: CHEM 460 or 461 (may be taken concurrently). Laboratory course concerned with the synthesis and characterization of inorganic compounds. Topics include air-sensitive manipulation, coordination chemistry and chemistry of materials. One three-hour laboratory periods per week. Spring. (O)
- CHEM 485 Topics in Chemistry 3**  
Prereq.: CHEM 320 or CHEM 321 or CHEM 322. Advanced treatment of chemistry topics in analytical chemistry, inorganic chemistry, organic chemistry and physical chemistry. Three lectures or two lectures and one two-hour laboratory period per week depending on topic. May be repeated with different topics for a maximum of 9 credits. Irregular.
- CHEM 550 Basic Organic and Biological Chemistry 3**  
Fundamentals of organic and biological chemistry in relation to human health including chemical and physical properties of organic molecules occurring in living systems. Topics include structure-function and acid-base concepts, overview of cellular metabolism, and enzyme kinetics. For nurse anesthesia and health science specialization students only. Summer.
- CHEM 590 Topics in Advanced Chemistry 3**  
Selected topics in analytical, biochemistry, inorganic, organic, and physical chemistry. May be taken once in each field of chemistry. Irregular.





**Chinese**

Note: Additional work will be required for graduate credit in 400-level courses.

**CHIN 475 Studies in Classical Chinese****3**

Prereq.: CHIN 304 or 315, or permission of instructor. Introduction to classical Chinese, including etymology, semantics, grammar and literature. Taught in Chinese. May be repeated for up to 6 credits with different topics. Irregular. [I]

## Communication

Note: Additional work will be required for graduate credit in 400-level courses.

### **COMM 450 Communication Skills for Training and Development**

3

Prereq.: Junior standing or above. For graduate students, COMM 500 (may be taken concurrently). Application of communication strategies for training and development in public and private corporate and institutional settings. Additional written work will be required for graduate students. Irregular.

### **COMM 451 Environmental Communication**

3

Prereq.: Junior standing or above. Knowledge, attitude, and behavior-change strategies related to environmental and natural resource conservation issues. Coercive, incentive based, and communication-based change strategies will be contrasted. Additional written work will be required for graduate students. On demand.

### **COMM 454 Communication and Social Change**

3

Prereq.: Junior standing or above. For graduate students, COMM 500 (may be taken concurrently). Study of the relationship between communication and social change and the impact of socio-political and communication strategies on the achievement of effective community development and social change objectives. Additional written work will be required for graduate students. Fall.

### **COMM 500 Introduction to Graduate Studies in Communication**

3

Introduction to the theoretical, mythological, and philosophical perspectives that constitute the study of organizational communication and public relations. Fall.

### **COMM 501 Theories of Human Communication within an Organizational Context**

3

Prereq.: COMM 500. Critical review of theoretical traditions in communication and information sciences with emphasis on major causal, systems, and rules approaches to the study of organizational and managerial communication. An examination of human communication from the perspective of the social and behavioral sciences, the natural sciences, and the humanistic traditions. Spring.

### **COMM 503 Research Methods in Communication**

3

Prereq.: Completion of 18 credits in COMM graduate courses. Quantitative and qualitative methodologies including survey, experimental, focus group, ethnographic, and contents analysis. Students develop a research proposal including a literature review and research questions/hypotheses. Spring.

### **COMM 504 Organizational Communication Audits**

3

Prereq.: COMM 500 or permission of instructor. Study of information/communication flow and patterns, and formal/informal networks. Case studies of relational, environmental, and structural communication problems form a basis for discussion. Fall. (E)

### **COMM 505 Persuasive Communication**

3

Prereq.: COMM 500 (may be taken concurrently) or permission of department chair. Theories and empirical research related to the influence of audiences external to an organization. Fall.

### **COMM 506 Case Studies in Public Relations**

3

Prereq.: COMM 500 or permission of instructor. Case studies of public relations/promotions principles and processes in variety of internal and external, public and private, for-profit and non-profit contexts. This is a link course with COMM 406. No credit given to students with credit for COMM 406. Spring. (E)

### **COMM 507 Campaign Planning and Evaluation**

3

Prereq.: COMM 500 or permission of instructor. Methods and procedures used to plan, monitor, and evaluate communication campaigns. Both quantitative and qualitative methodologies are explored. Fall. (E)

### **COMM 508 Public Relations Writing Strategies**

3

Prereq.: COMM 500 or permission of department chair. Critically examines most common writing tools and formats used in the professional practice of Public Relations. Techniques focus on developing press releases, feature stories, pitch letters, op-eds, and newsletters. Irregular.

### **COMM 512 Communication & Change**

3

Prereq.: COMM 500. Examination and critical analysis of existing theories and paradigms of communication and development (social change) and evaluation of current approaches and methods to the use of communication (Interpersonal, Folk/Traditional, Group and Mass Media) for development/social change objectives. Irregular.

### **COMM 522 Corporate Communication**

3

Prereq.: COMM 500. Communication of an organization with its investors, customers, and employees. Interpersonal communication, media campaigns, and training programs are among the strategies examined. Focus will be on the use of media in public relations and corporate advertising processes and related theoretic and empirical research. Spring. (E)

**COMM 543 Intercultural Communication****3**

Study and critical examination of theories regarding how communication in and between multinational organizations must be modified to cope with cross-cultural differences. Such cross-cultural differences as those involved in conflict resolution, motivation, and managerial styles and their communication implications may be considered. Fall. (O)

**COMM 544 Strategies in Negotiation and Conflict Resolution****3**

Prereq.: COMM 500. Study of the theories and empirical research regarding negotiation and conflict resolution strategies and appropriate communication patterns unique to each approach and their impact on an organization's effectiveness. Fall. (O)

**COMM 551 Policy Issues in Organizational Communication****3**

Prereq.: COMM 500. Examines communication's impact on decision-making, planning, organizational policy, and ethics. Spring. (E)

**COMM 562 Communication and High-Speed Management****3**

Prereq.: COMM 500. Study of theory and empirical research which delineates the communication patterns necessary for the effective use of new high-speed management tools. Complex coordination patterns peculiar to processes of communication among managers and employees resulting from the application of these tools will be examined. Fall. (O)

**COMM 585 Special Topics****3**

Prereq.: COMM 500. Study of selected topics in organizational and managerial communication. May be repeated once with different topic. Irregular.

**COMM 590 Independent Study****1 TO 3**

Prereq.: Completion of Communication Core or permission of instructor. Reading and research in an approved topic under the guidance of a faculty member in the Communication department. May be repeated with different topics for a maximum of six credits. On demand.

**COMM 597 Special Project****3**

Prereq.: COMM 500 and a 3.00 overall GPA. Preparation of a special project under the supervision of an advisor. Students must have 24 credits completed or in progress in the M.S. Communication program. On demand.

**COMM 599 Thesis****3**

Prereq.: COMM 500 and a 3.00 overall GPA. Preparation of the thesis under the supervision of the thesis advisor. Students must have 24 credits completed or in progress in the M.S. Communication program. On demand.

## Computer Electronics Technology

Note: Additional work will be required for graduate credit in 400-level courses.

### **CET 402 Topics in Computer Electronics Technology 1 TO 3**

Prereq.: Permission of department chair. An individualized inquiry of comprehensive study into a selected technical area. The students may elect to examine processes, products or developmental aspects of networking, telecommunications or electronics. May be used as an elective on a graduate student's planned program advisor. Course may be repeated for a maximum of 6 credits for different topics. On demand.

### **CET 405 Applied Topics in Computer Electronics Technology 3**

Prereq.: Permission of department chair. A laboratory oriented course providing comprehensive study of a selected technological topic. May be used as an elective on a graduate student's planned program of study with the permission of the program advisor. Course may be repeated for a maximum of 6 credits for different topics. On demand.

### **CET 443 Electronic Communication 3**

Prereq.: CET 233 or CET 236; for graduate students, admission to the School of Graduate Studies. RF transmitting and receiving circuits, amplitude and frequency modulation and detection, phase modulation, antennas, RF transmission lines, and data transmissions. Focus on units of measurement. Laboratory experiments cover resonance, modulation, demodulation, and transmission channels. Lecture/lab meets 5 hours per week. On demand.

### **CET 449 Advanced Networking 3**

Prereq.: CET 349; for graduate students, permission of chair. Major emphasis on switching and STP, VLANs and InterVLAN routing. Basic Wireless concepts and configuration. In-depth focus on WAN technology, theory and design, including serial communication, HDLC, PPP, Frame Relay. Secure router management and ACL creation. Lab includes hands-on switching and routing configuration and troubleshooting Layer 2 and Layer 3 networking equipment and software. Lecture/lab meets 5 hours per week.

### **CET 453 Microcomputers 3**

Prereq.: CS 213 or CS 151, and CET 363; for graduate students, permission of department chair. Microcontroller architecture including basic memory design, address decoding and internal register structure, and assembly language programming including addressing modes and instruction set. Laboratory work consists of programming and interfacing experiments. Lecture/lab meets 5 hours per week. Spring.

### **CET 479 Internet Technologies 3**

Prereq.: CET 349. Laboratory-based course emphasizing concepts, tools, applications, and development of internet-related technologies. Includes the planning, design, building, and management of an HTTP server. Can count as elective in CIT Technology Specialization. Lecture/lab meets 4 hours per week.

### **CET 501 Applied Networking Technology 3**

Prereq.: Admission to the School of Graduate Studies. Functions and capacities of LAN/WAN networks, including design concepts of HTTP servers. Credit not given to students who have completed CET 249 as an undergraduate student. Fall.

### **CET 502 Applied Networking Technology II 3**

Prereq.: CET 501 or permission of department chair. Covers router configurations, router protocols, switching and hub terminology. Implementation of router startup commands, manipulation of router configuration files, IP and data link addressing. Interconnect routers, hubs and switches. On demand.

### **CET 513 Computer Applications for the Professional 3**

Prereq.: Admission to the School of Graduate Studies. Designed for business professionals who need to expand their knowledge of application software. Includes the in-depth application and interrelationship of state-of-the-art managerial software packages. On demand.

### **CET 533 Digital Telecommunications 3**

Prereq.: Admission to graduate studies. Digital communication techniques including coding, decoding, multiplexing, synchronous and asynchronous communication. Digital transmission for computer networks and modems. Covers digital radio principles and fiber optic applications. On demand.

### **CET 543 Telecommunications Systems 3**

Prereq.: CET 533 or permission of department chair. Radio and optical transmission systems, electromagnetic waves propagation, reflection, refraction and diffraction. Covers satellite communication related to broadcasting, telephony and data transmission. Introduction to characteristics and applications of antennas, cellular phones, fiber optics cables. On demand.

### **CET 559 Applied Network Security 3**

Prereq.: CET 501. Practical techniques of network security. Current applied research project presentation is expected. Topics include general security concepts, communication security, infrastructure security, cryptography basics, and operational security. This is a link course with CET 459. On demand.

**CET 596 Technological Problems and Issues**

**1 TO 3**

Prereq.: Admission to graduate program. Extensive study of selected technological issues and problems. Course may be repeated with different topics for a maximum of 6 credits. On demand.

## Computer Information Technology

### CIT 595 Capstone in Computer Information Technology 3

Prereq.: Permission of advisor, CIT director, dean of the School of Graduate Studies, and a 3.00 overall GPA. Capstone integrative experience requiring analysis, design and implementation of an advanced team project of significant size and scope in an information technology-related topic. Deliverables include a research paper, oral presentation, and completed applied project. Students must have completed the CIT core and 3 specialization courses.

## Computer Science

Note: Additional work will be required for graduate credit in 400-level courses.

- CS 407      Advanced Topics in Computer Science      1 TO 3**  
 Prereq.: CS 152 and 254 and permission of instructor. This course provides an opportunity to introduce into the curriculum topics of interest and new courses on an experimental basis. May be repeated with different topics for up to 6 credits.
- CS 410      Introduction to Software Engineering      3**  
 Prereq.: CS 253. An examination of the software development process from the initial requirement analysis to the operation and maintenance of the final system. The scope of the course includes the organization of software development projects, the verification and validation of systems, the problems of security and privacy, and the legal aspects of software development, including software protection and software liability. Irregular.
- CS 423      Computer Graphics      3**  
 Prereq.: CS 253 or (for graduates) CS 501. Wire frame and solid graphics in two and three dimensions, data structure for computer graphics, geometrical transformations in computer graphics, raster, and vector display device technologies. Fall.
- CS 460      Database Concepts      3**  
 Prereq.: CS 253 or (for graduates) CS 501. Database systems are considered from both the designer's and user's point of view. Physical implementation and data access techniques are studied. Irregular.
- CS 462      Artificial Intelligence      3**  
 Prereq.: CS 253 or (for graduates) CS 501. Presentation of artificial intelligence as a coherent body of ideas and methods to acquaint the student with the classic programs in the field and their underlying theory. Students will explore this through problem-solving paradigms, logic and theorem proving, language and image understanding, search and control methods, and learning. Spring.
- CS 463      Algorithms      3**  
 Prereq.: CS 253 or (for graduates) CS 501. Topics include algorithms in combinatorics, integer and real arithmetic, pattern matching, list processing, and artificial intelligence. Algorithmic analysis and domain-independent techniques are also considered. Irregular.
- CS 464      Programming Languages      3**  
 Prereq.: CS 253 or (for graduates) CS 501. Emphasis on programming languages as one of many tools in the software development effort. Comparison of different language usages of data types, information hiding, control structures, block structure, sub-programs, re-entrance, and recursion. Irregular.
- CS 465      Compiler Design      3**  
 Prereq.: CS 355. Current techniques of compiler writing. Introduction to formal grammar and parsing techniques is given. Problems of semantic phase are discussed and some solutions are given. Optimization techniques are discussed. Fall.
- CS 473      Simulation Techniques      3**  
 Prereq.: CS 152 or 213, and STAT 315. Basic principles of simulation methods using digital computers. Topics covered include random number generators, stochastic variate generators, computer models, and simulation languages. Irregular.
- CS 481      Operating Systems Design      3**  
 Prereq.: CS 253 or CS 501. Theory and design of computer operating systems. Topics include machine and interrupt structure, memory, processor, device, and information management. Spring.
- CS 483      Theory of Computation      3**  
 Prereq.: MATH 218 and CS 463. The concept of algorithm, correctness and efficiency of algorithm, decidable vs. undecidable problems, recursion, halting problem, formal languages, context free and context-sensitive grammars, and introduction to automata and parallel algorithms. Irregular.
- CS 490      Computer Communications Networks & Distributed Processing      3**  
 Prereq.: CS 253 and 254. Study of networks of interacting computers. The problems, rationale, and possible solution for both distributed processing and distributed data bases will be examined. Irregular.
- CS 495      Legal, Social, Ethical, and Economic Issues in Computing      3**  
 Prereq.: Permission of instructor. Topics include privacy, security, law of torts in computing, and legal protection of software. Spring.
- CS 498      Senior Project      1 TO 3**  
 Prereq.: Senior standing, 21 credits toward major including one advanced course. Opportunity for student to participate in design and implementation of large problem with small group of people. Problem will be chosen in consultation with instructor.

**CS 499 Seminar in Computer Science****3**

Opportunity for student to explore topics of current interest not covered in normal curriculum. Majors only. Irregular.

**CS 500 Computer Science for Computer Information Technology****3**

Prereq.: Permission of department chair or C.I.T. program coordinator. Concepts of computer science, including software analysis and design, inheritance, polymorphism, recursion, elementary sorting, and programming using arrays, sequential files, and linked lists.

**CS 501 Foundations of Computer Science****3**

Prereq.: CS 500 or CS 153 or permission of instructor. Software design for structuring and manipulating data. Topics include stacks, queues, hash tables, trees, graphs, advanced sorting, and analysis of algorithms.

**CS 502 Computing and Communications Technology****3**

Prereq.: Admission to the CIT program or permission of the program director. Comprehensive coverage of the concepts of computer networking, and computer architecture and organization required to enable students to understand and efficiently utilize computing and communication resources. Development of distributed computer applications. Spring.

**CS 530 Advanced Software Engineering****3**

Prereq.: CS 501, 502. Study of the software lifecycle including requirements analysis, specification, design, coding, testing, and maintenance. Includes proofs of correctness and techniques of formal specification. Spring. (O)

**CS 550 Topics in Human-Computer Interaction****3**

Prereq.: CS 501, 502. Study of the design, evaluation and implementation of interactive computing systems for the joint performances of tasks by humans and machines, algorithms and programming of the interface, and engineering concerns and design tradeoffs. Topics include computer-supported cooperative work, modeling intelligence, multimedia systems, and user interface design. Irregular.

**CS 570 Topics in Artificial Intelligence****3**

Prereq.: CS 501, 502. Topics include advanced techniques for symbolic processing, knowledge engineering, and building problem solvers. Irregular.

**CS 580 Topics in Database Systems and Applications****3**

Prereq.: CS 501, 502. Database technology needed to develop and manage sophisticated database systems. Topics include design of database management systems, advanced database applications, hypermedia, and object-oriented database management systems. Irregular.

**CS 590 Topics in High Performance Computing and Communications****3**

Prereq.: CS 481, 501, 502. Design, implementation, and evaluation of high performance computing and communications technologies for the development of distributed multimedia systems. Topics include distributed systems, parallel computing, modern operating systems, and network administration. Irregular.



## Construction Management

Note: Additional work will be required for graduate credit in 400-level courses.

- CM 435 Construction Superintendency 3**  
Prereq.: Senior standing. Examination of the role of the construction supervisor. Emphasis on personnel scheduling, time keeping, trade unions, superintendents, and the duties of the project manager.
- CM 455 Construction Project Management 3**  
Prereq.: CM 255 and CM 355, or admission to M.S. in Construction Management or Technology Management, or permission of department chair. Emphasis on administrative procedures, quality control, time and cost control, resource management, field office practices, construction processing, job site meetings, and correspondence. Lecture/lab meets four hours per week. Spring.
- CM 500 Fundamentals of Construction Management 3**  
Prereq.: Permission of the department chair. Introduces fundamental aspects of construction management to students without formal construction management backgrounds. Emphasis on creating familiarity with all aspects of construction projects. Topics covered include planning, scheduling, estimating, organizational forms, contracts and risk management.
- CM 505 Construction Project Delivery Systems 3**  
Explanation of various project delivery systems. Emphasis on design-bid-build, design-build, program management and construction management practices. Additional topics include ethics, professionalism, public responsibility, TQM and partnering. Spring. (O)
- CM 515 Construction Law 3**  
Principles of the legal doctrines relating to owners, design professionals and contractors. Emphasis on the legal issues surrounding the formation and interpretation of contracts, contract clauses, and legal remedies available to all parties. This is a linked course with CM 415. Spring. (O)
- CM 525 Construction Equipment Operation & Management 3**  
Selection and management of construction equipment for efficient and effective construction operations. Focus on equipment fundamentals and integration of equipment into the construction process. Economic considerations associated with equipment acquisition, ownership and replacement also covered. Fall. (O)
- CM 545 Construction Risk Management 3**  
A study of procedures that may be used to identify and solve problems arising during the construction process. Field problems requiring systematic problem solving, decision matrices and other risk assessment and mitigation tools will be addressed. Fall. (E)
- CM 565 Construction Labor Relations 3**  
Focus on collective representation, including the historical development of collective bargaining and employment laws. Emphasizes the unique aspects of the construction industry and addresses practical approaches to construction labor issues. Spring. (E)
- CM 575 Construction Financial Management 3**  
A study of various techniques used in the construction industry to improve company performance in financial areas. Topics include preparing and using financial statements, calculating revenue, cost and profit and allocating costs to contracts. Fall. (O)
- CM 596 Topics in Construction Management 3**  
Topics of interest in the construction management field not currently covered by the construction management curricula. Students may take this course under different topics for a maximum of 6 credits. On demand.



## Counseling

### **CNSL 500 The Dynamics of Group Behavior**

3

Prereq.: Admission to the graduate program and/or permission of department chair. Experiential approach to more effective interpersonal communication. Opportunity is offered for personal growth in awareness and understanding both of self and others, and in the communication of that self-awareness and understanding. The orientation of this course is educational. Students enrolled in this course may be observed by students in CNSL 507. Fall, Spring, Summer.

### **CNSL 501 Theories and Techniques in Counseling**

6

Prereq.: Admission to M.S. in Counselor Education or Marriage and Family Therapy. Investigation of theories and techniques in counseling, including research findings and skill development. Fall, Spring, Summer.

### **CNSL 503 Supervised Counseling Practicum**

3

Prereq.: Written permission from advisor. A minimum of 100 hours of supervised clinical experience in field setting. Includes direct service with clients, including experience in individual counseling and group work. Also includes on-campus group seminars. Fall, Spring, Summer.

### **CNSL 504 Professional Studies in Counseling**

3

Prereq.: Matriculation into the graduate program. Areas of study include: professional socialization and the role of the professional organizations, licensure or certification legislation, legal responsibilities and liabilities, ethics and family law, confidentiality, independent practice and inter-professional cooperation.

### **CNSL 506 Counseling Children & Adolescents**

3

Prereq.: CNSL 501 or permission of chair. An examination of counseling theories and strategies for working with children and adolescents. Spring, Summer.

### **CNSL 507 Methods in Group Facilitation**

3

Prereq.: CNSL 500 and 503. The impact of the facilitator's behavior on a group. Students will experience leading a group and observe different leadership styles as well as didactic presentations on group theory and leader interventions. Students will co-facilitate a group in the community. Recommended to be taken with either practicum or internship. Fall.

### **CNSL 509 Independent Study in Counseling**

1 TO 3

Prereq.: Permission of department chair. Systematic study of problems of special interest in counseling. Students are guided in selection of topics for study. Can be taken more than once for a maximum of 6 credits.

### **CNSL 520 Guidance Principles, Organization and Administration**

3

Prereq.: Admission into department. Introduction to principles of guidance in modern school and study of guidance services, practices, and basic concepts relating to organization and operation of guidance programs. Fall.

### **CNSL 521 Career Counseling and Development**

3

Prereq.: CNSL 501. Approaches to career counseling and development as it relates to agency and school settings. Includes relevant career theories, a survey of instruments utilized in assessing interests, values and career decision-making abilities, and relevant occupational information. Fall, Summer.

### **CNSL 522 Appraisal Procedures in Counseling**

3

Prereq.: CNSL 501. Survey of standardized appraisal instruments utilized in assessing factors, such as aptitude, intelligence, achievement, and interest as it relates to human service agencies and school counseling. Spring, Summer.

### **CNSL 524 Consulting in the Schools**

3

Prereq.: CNSL 520, or permission of department chair. Emphasis on the learning and practice of specific skills essential to consulting in the schools. The dynamics of child-parent relationships and their impact on consulting with parents will be included. Fall.

### **CNSL 525 Multicultural Counseling**

3

Prereq.: CNSL 501. Study of the effects of culture on world view and various approaches to counseling. Emphasis placed on the development of culturally appropriate skills for use with diverse populations.

### **CNSL 526 Principles of Comprehensive School Counseling**

3

Prereq.: Admission to the graduate program and/or permission of department chair. Overview of developmental guidance and counseling, and the role and function of the school counselor on the elementary, middle/JHS, and secondary levels. Includes the history, philosophy, trends, purposes, objectives, and roles within the schools at each of the three levels. Spring.

### **CNSL 530 Student Development in Higher Education**

3

Prereq.: Admission to the graduate program and/or permission of department chair. Overview of college student development, including characteristics of contemporary students. Fall.

### **CNSL 531 Student Services in Higher Education**

3

Prereq.: Admission to M.S. in Counselor Education or Marriage and Family Therapy. Overview of student services in higher education including characteristics of special student populations. Spring.

**CNSL 532 Program Design in Student Services 3**

Prereq.: CNSL 530. Design of experiential education for adults in higher education, including needs assessment, creation of developmental programs and learning communities, and program implementation and evaluation. Spring.

**CNSL 533 Legal, Financial, and Policy Issues in Student Affairs 3**

Prereq.: Admission to the Program in Student Development in Higher Education (Counseling). Examination of policy formation, law, and financial issues as they pertain to student affairs administration in higher education. Fall.

**CNSL 560 Introduction to Rehabilitation Counseling 3**

Prereq.: Admission to department. Overview of the philosophy and practice of rehabilitation counseling. Emphasis on the rehabilitation client, types of disabilities, and the life adjustment that disability entails. Fall.

**CNSL 561 Advanced Rehabilitation Counseling 3**

Prereq.: CNSL 560 or permission of the department chair. Case management and service coordination services including independent living services, job development, and placement of individuals with disabilities. Spring.

**CNSL 563 Medical Aspects of Rehabilitation Counseling 3**

Prereq.: Admission to the graduate program or permission of the department chair; CNSL 500 (may be taken concurrently). The rehabilitation counselor's role as a member of the health care team will be studied. General characteristics of various disability groups and identification of the medical specialists who serve these groups will be presented. Spring.

**CNSL 564 Rehabilitation and Disability Case Management Practices 3**

Prereq.: CNSL 560. Rehabilitation and disability case management process and community resources used in working with individuals with various disabilities. Principles and practices of private sector rehabilitation with individuals experiencing occupational and non-occupational injury and disability. Spring.

**CNSL 568 Alcohol and Drug Counseling 3**

Prereq.: CNSL 501 or permission of department chairperson. Basic assessment, intervention, and treatment techniques in working with individuals and families affected by alcohol and other drug abuse. Spring.

**CNSL 571 Mental Health Counseling 3**

Prereq.: CNSL 501. Principles and practices for assessing, diagnosing, treating, and preventing mental and emotional disorders. Includes general principles for promoting optimal mental health and human development. Spring.

**CNSL 575 Co-Occurring Substance Abuse and Mental Health Counseling 3**

Prereq.: CNSL 568 and CNSL 571. Unique etiology, treatment, and recovery concerns of persons diagnosed with co-occurring substance abuse and mental health disorders. Forensic and legal issues working with persons mandated or coerced into treatment.

**CNSL 580 Topics in Counseling 1 TO 3**

Prereq.: Degree candidacy or permission of instructor. Topics will vary each time the course is offered. Combination of lecture, discussion, inquiry sessions, and student presentation. May be taken more than once for credit under different topics.

**CNSL 581 Orientation to Professional Counseling 1**

Prereq.: Admission to Official Certificate Program in Professional Counseling. Introduction to the practice of professional counseling. Review of licensure laws, ethical practices and professional associations. Students will enhance their understanding of the role and work of a professional counselor. Summer.

**CNSL 591 Supervised School Guidance Internship 3 TO 6**

Prereq.: CNSL 503 and permission of instructor. Series of supervised experiences in the public school setting is provided. Required for school counseling certification. Must be taken in Fall-Spring cycle. Plan B requires a 3.00 overall GPA; students may not apply to take the comprehensive examination until 75% of course work for the major has been completed.

**CNSL 592 Supervised Internship in Higher Education 3**

Prereq.: CNSL 532 or permission of instructor. Professional experience to prepare persons to enter the student development field in higher education. Emphasis on actual practical experience, student/faculty/administrative interaction, and the special concerns which affect the conduct of student development services. Taken two semesters for a maximum of 6 credits. Plan B requires a 3.00 GPA; students may not apply to take the comprehensive examination until 75% of course work for the major has been completed.

**CNSL 594 Supervised Clinical Practice-Professional Counseling 3**

Prereq.: Permission of instructor. Supervised experience in community settings focusing on rehabilitation counseling, mental health counseling or substance abuse counseling. Must be taken in Fall-Spring cycle. Plan B requires a 3.00 overall GPA; students may not apply to take the comprehensive examination until 75% of course work for the major has been completed.

**CNSL 598 Research Methods in Counseling 3**

Admission to M.S. in Counseling Education or permission of department chair. Quantitative and qualitative research design, data analysis, and

interpretation for counseling and rehabilitation disciplines. Not open to students in specialization of School Counseling. Fall.

**CNSL 599 Thesis**

**3**

Prereq.: Permission of advisor; ED 598 or equivalent as accepted by advisor; completion of 24 credits; and a 3.00 overall GPA. Preparation of the thesis under the supervision of the thesis advisor.

## Criminal Justice

- CJ 501      Proseminar on the Nature of Crime      4**  
 Prereq.: Admission to the Criminal Justice Program or permission of department chair. Societal, legal, and cultural definitions of criminal behavior, theories of crime causation, and society's reaction to violation of law. Courses required as special condition for admission to the program must be completed or taken concurrently. Fall.
- CJ 510      Proseminar on Law and Social Control      3**  
 Prereq.: Admission to the Criminal Justice program or permission of department chair. Law as a means of social control, including history and philosophy of law, the interrelationship between law and other social institutions, such as the economy and the polity, and the effects of law and criminal justice policies on the preservation and promotion of inequalities based on social class, race, gender, and ethnic identity. Courses required as special condition for admission to the program must be completed or taken concurrently. Spring.
- CJ 520      Proseminar on the Administration of Justice      3**  
 Prereq.: Admission to the Criminal Justice program or permission of department chair. Critical analysis of the purpose and efficacy of those institutions which comprise the criminal justice system. Includes an exploration of discretion, ethics, and cultural diversity in criminal justice. Courses required as special condition for admission to the program must be completed or taken concurrently. Fall.
- CJ 525      Program Planning and Evaluation      3**  
 Prereq.: CJ 501 or 510 or 520; admission to the M.S. Criminal Justice Program and in good standing; or permission of the department chair. Planning and evaluating programs which encourage pro-social behavior of convicted offenders, with emphasis on programs in correctional institutions. Program areas include education, vocational training, substance abuse treatment, parenting, and anger management. Spring.
- CJ 530      Offender Profiles      3**  
 Prereq.: CJ 501 or 510 or 520 and admission to the M.S. Criminal Justice Program and in good standing; or permission of the department chair. Provides students with the background and practical knowledge to identify different types of mental illness and personality styles most often encountered among offenders, including sociopathy, poor impulse control, addictive personality, and poor management of anger and aggression. Fall.
- CJ 533      Research Methods in Criminal Justice      4**  
 Prereq.: Admission to the Criminal Justice program or permission of department chair. Examines methods of scientific inquiry as used in criminal justice. Topics include experimental and non-experimental design, survey research, evaluation research, scaling, sampling and coding. Courses required as special condition for admission to the program must be completed or taken concurrently. Spring.
- CJ 534      Quantitative Analysis in Criminal Justice Research      4**  
 Prereq.: CJ 533 and admission to the M.S. Criminal Justice Program and in good standing; or permission of the department chair. Analysis of quantitative criminal justice data using computer applications. Spring.
- CJ 535      Correctional Counseling      3**  
 Prereq.: CJ 501 or 510 or 520 and admission to the M.S. Criminal Justice Program and in good standing; or permission of the department chair. Overview of techniques of counseling as applied to the criminal/juvenile offender. Treatment issues focus on relapse prevention, group treatment, cognitive distortions, and negative imagery. Also included are typologies and evaluation of risk levels. Irregular.
- CJ 539      Delinquency and Control      3**  
 Prereq.: CJ 501 or 510 or 520 and admission to the M.S. Criminal Justice Program and in good standing; or permission of department chair. Study of juvenile delinquency from theoretical, conceptual, and legal perspectives. Attention given to nature and extent of delinquency and suspected causes of youthful misbehavior. Policy issues, control initiatives, and relevant research are critically analyzed. Irregular.
- CJ 560      Sexual Offending      3**  
 Prereq.: CJ 501 or CJ 510 or CJ 520 and admission to the Criminal Justice Graduate Program and in good standing or permission of department chair. Explores theories of sex offending, subtypes of sex offenders, assessment practices with sex offenders, models of sex offender treatment, and criminal justice strategies to reduce recidivism. Irregular.
- CJ 573      Managing Criminal Justice Employees      3**  
 Prereq.: CJ 501 or 510 or 520; admission to the Criminal Justice Program and in good standing; or permission of the department chair. Analysis of methods and strategies for managing human resources in criminal justice organizations. Topics include recruitment and selection, job analysis and classification, performance appraisal, training and development, employee unions, and workplace trends in criminal justice agencies. Irregular.
- CJ 575      Developing Criminal Justice Organizations      3**  
 Prereq.: CJ 501 or 510 or 520 and admission to the M.S. Criminal Justice Program and in good standing; or permission of department chair. Development, implementation and assessment of planned change in criminal justice organizations and system affiliates. Emphasis on the action

research model, including assessment of organizational needs, determination of goals; program design, implementation, and evaluation within the context of both paramilitary and non-paramilitary structures. Spring.

**CJ 577      Advanced Independent Reading and Research in Criminal Justice      1-3**

Prereq.: Admission to the M.S. Criminal Justice Program or permission of department chair. Individual program of reading and research conducted under the supervision of a faculty member. May be repeated with different topics for up to 6 credits. On demand.

**CJ 578      Special Topics in Criminal Justice      3**

Prereq.: Admission to the M.S. Criminal Justice Program or permission of department chair. Study of a specialized area of research or theory in criminal justice. May be repeated with different topics for up to 6 credits. Irregular.

**CJ 580      Public Policy in the Criminal Justice System      3**

Prereq.: CJ 501 or 510 or 520 and admission to the M.S. Criminal Justice Program and in good standing; or permission of department chair. Survey of the major theoretical and empirical studies of public policy as they relate to criminal justice agencies, including policy analysis models; typologies of policy outcomes; agenda setting; and policy formulation, implementation and impact. Irregular.

**CJ 597      Agency Collaborative Project      3**

Prereq.: CJ 533, completion of 21 credits of approved graduate study, admission to the M.S. Criminal Justice Program and in good standing. Preparation of a research project (Plan C) within a criminal justice agency under the supervision of an agency and faculty advisor. The research project may be initiated by the agency or the student, and may involve such activities as program development, program evaluation, and instrument validation. Major research paper required upon completion of the agency project.

**CJ 599      Thesis      3**

Prereq.: CJ 533, completion of 21 credits of approved graduate study (or permission of thesis advisor), and a 3.00 overall GPA. Preparation of the thesis under the supervision of a thesis advisor. On demand.

## Criminology

Note: Additional work will be required for graduate credit in 400-level courses.

### **CRM 450 Drugs and Society**

**3**

Prereq.: CRM 322 (with a grade of C-or higher). For graduate students, admission to the M.S. Criminal Justice Program and in good standing; or permission of the department chair. Selected social issues relating to illegal drug use, including international and national drug trafficking, money laundering, drug enforcement, drug-related crimes, prevention strategies, and legalization. Majors only. Irregular.

### **CRM 475 Controlling Anger and Aggression**

**3**

Prereq.: CRM 322 (with a grade of C-or higher). For graduate students admission to the M.S. Criminal Justice Program and in good standing; or permission of department chair. Multi-disciplinary overview of theory and research on anger and aggression. Topics include the emotion of anger, theories of aggression, and intervention strategies. Majors only. Irregular.



## Dance

Note: Additional work will be required for graduate credit in 400-level courses.

### **DAN 480 Project: Dance**

**1 TO 3**

Prereq.: Permission of instructor. Individual projects in choreography, research, or production under the guidance of dance/theatre staff.  
Irregular.

## Earth Sciences

Note: Additional work will be required for graduate credit in 400-level courses.

- ESCI 424 Geomorphology 4**  
 Prereq.: ESCI 121; for graduate students permission of department chair. Scientific study of landforms on the earth's surface. A systematic analysis of a wide variety of landforms, with an emphasis on the processes that form them. Tectonic and climate controls of geomorphic systems are considered as are the impacts of human activities. Three, one-hour lectures, and one three-hour laboratory per week. One or more one-day field trips. Fall. (O)
- ESCI 431 Introduction to Hydrogeology 4**  
 Prereq.: ESCI 121, MATH 152, CHEM 161 and 162; or permission of department chair. Overview of hydrologic and hydrological factors controlling the occurrences and dynamics of groundwater. Groundwater chemistry, quality, and contamination will also be covered. Three lectures and one three-hour laboratory per week. One or one-day field trips. Spring. (O)
- ESCI 442 Weather Analysis and Forecasting 4**  
 Prereq.: ESCI 462 and MATH 152 or permission of instructor. Basics of analysis and forecasting. National Weather Service (NWS) codes and interpretation, graphical analysis techniques, NWS facsimile products, applications of thickness and thermal wind equations, thermodynamic diagrams and their usefulness, cross-sectional analysis, tilt of pressure systems, quasi-geostrophic theory, performance characteristics of NWS prediction models. Three lecture hours and a three-hour laboratory per week. Fall. (O)
- ESCI 450 Environmental Geology 3**  
 Prereq.: ESCI 121 or permission of instructor. Geological factors that control or affect human habitat avoiding, or compensating for geological hazards. Applied geology from an environmental perspective that focuses on interactions between humans and Earth surface processes. Study of natural hazards such as river flooding, landslides and debris flows, earthquakes, volcanic eruptions, coastal hazards. Surface and groundwater use and pollution are also covered. Fall. (E)
- ESCI 452 Independent Study in Earth Science 1 TO 4**  
 Prereq.: Approved plan of study on arrangement with supervising instructor and approval of department chair. Special work in laboratory, theory, or research to meet individual requirements in areas not covered by regular curriculum. May be taken more than one semester up to 6 credits.
- ESCI 461 Physical Meteorology 3**  
 Prereq.: ESCI 129, PHYS 121 or 125 (may be taken concurrently), or permission of instructor. Examination of the physical basis of the earth's atmosphere. Structure, composition, gas laws, atmospheric thermodynamics and hydrostatics, atmospheric stability, solar radiation, and the energy budget of the earth. Three lecture hours per week. Fall. (E)
- ESCI 462 Dynamic Meteorology 3**  
 Prereq.: ESCI 461, MATH 126 or 221 (may be taken concurrently). Continuation of ESCI 461, with emphasis on dynamic processes of the earth's atmosphere. Equations of motion, geostrophic and gradient winds, thickness and thermal wind, circulation and vorticity, mechanism and influences of pressure changes. Three lecture hours per week. Spring. (O)
- ESCI 490 Topics in Earth Science 3-4**  
 Selected studies in earth science which are not offered presently in the curriculum of the department. Course may be repeated with different topics.
- ESCI 518 Topics in Astronomy 3**  
 Prereq.: Prior permission of instructor. Topics will vary each time course is offered. Combination of lecture, discussion, and student seminar presentations. May be taken more than once for credit under different topics.
- ESCI 519 Topics in Geology 3**  
 Prereq.: Prior permission of instructor. Topics will vary each time course is offered. Combination of lecture, discussion, and student seminar presentations. May be taken more than once for credit under different topics.
- ESCI 598 Research in Earth Science 3**  
 Prereq.: Admission to the M.S. program in Natural Sciences, and 15 credits in planned program of Earth Science, and permission of instructor. Course on theory and practice of conducting research in astronomy, geology, meteorology. Includes study of professional literature, evaluation of data-gathering techniques. Application of statistical methods to data; formation of multiple working hypotheses and verification of hypotheses. Classic problems in earth sciences are studied. On demand.
- ESCI 599 Thesis 3**  
 Prereq.: ESCI 598, permission of the thesis advisor and a 3.00 overall GPA. Preparation of the thesis under the supervision of the thesis



## Economics

Note: Additional work will be required for graduate credit in 400-level courses.

- ECON 420 Urban Economics 3**  
Prereq.: ECON 200, 201. Economic analysis of metropolitan and regional entities with special focus on land use, location decision-making, the provision and role of public services, transportation, public finance, human resources, and social welfare.
- ECON 430 International Economics 3**  
Prereq.: ECON 200, 201. Principles of international trade and finance and application to modern world, theory of comparative advantage, exchange rates, monetary standards, international financial institutions, tariffs, commercial policy, and aid to underdeveloped countries. [I]
- ECON 435 Economic Development 3**  
Prereq.: ECON 200. Problems of accelerating development in developing countries and maintaining development in prosperous countries. From view points of theory, history, and policy, this course attempts to explain forces that lead to economic development. [I]
- ECON 445 Labor Economics 3**  
Prereq.: ECON 200, 201. Economic analysis of human resources as a factor of production. Special attention is devoted to demographics, labor market structures, wage determination, career decision-making, training, and the roles of employee organizations.
- ECON 450 Money, Credit, and Banking 3**  
Prereq.: ECON 200. Money and its functions, including structure of the American banking system, with emphasis on monetary theory and policy.
- ECON 455 Public Finance 3**  
Prereq.: ECON 200, 201. Analysis of federal revenues and expenditures, including an examination of federal budget concepts, fiscal policy, cost-effectiveness analysis, tax efficiency and equity, and debt management problems.
- ECON 460 Economic Forecasting 3**  
Prereq.: ECON 200, 201 and STAT 104 or equivalent. The theory and use of such forecasting techniques as simple and multiple regression, seasonal adjustment, economic indicators, input-output and macroeconomic models. Emphasis will be given to economic applications and the use of the computer.
- ECON 462 Industrial Organization 3**  
Prereq.: ECON 201. Study of the structure, conduct, and performance of selected U.S. industries. The effects of concentration on prices, outputs, profits, and technological change will be analyzed.
- ECON 465 Government and Business 3**  
Prereq.: ECON 201. Role of government in the mixed economy, with special emphasis on antitrust laws, regulation and deregulation, social legislation, and public enterprise.
- ECON 470 Managerial Economics 3**  
Prereq.: ECON 201. Application of economic theory and quantitative methods to managerial decision-making problems. Topics include decision analysis, forecasting, demand analysis, production and cost analysis, linear programming, break-even analysis, and capital theory and budgeting.
- ECON 475 History of Economic Thought 3**  
Prereq.: ECON 200, 201. Evolution of economic thought from Ancient Greece to current doctrines.
- ECON 485 Econometrics 3**  
Prereq.: ECON 200, 201 and STAT 104 or equivalent. Application of statistical methods to economics. Emphasis is placed on statistical inference, regression analysis, and real-world applications using the computer. Spring. (O)
- ECON 498 Advanced Topics in Economics 3**  
Prereq.: ECON 200 and 201, or permission of instructor. Examination of advanced topics in economics which are not otherwise offered as part of the department's regular courses. Course may be repeated under different topics for up to 6 credits.
- ECON 499 Independent Study in Economics 3 OR 6**  
Prereq.: Permission of instructor. Students may specialize in projects of an advanced nature not covered by regular course offerings. Supervision is given through periodic conferences with each student and through several group meetings to discuss findings and common problems.



## Education

See also Education-Early Childhood, Education-Elementary, education-Secondary, Education-Teacher Education, Educational Foundations, Educational Leadership, Educational Technology, Reading, Special Education, Technology Education, and Vocational-Technical Education.

### **ED 501 Probe in Education**

**1 TO 3**

Prereq.: Permission of faculty advisor. In-service experience designed to meet the specific needs of school personnel.

### **ED 511 Principles of Curriculum Development**

**3**

Examination of selected programs including stated objectives, organizational patterns, curriculum materials, and instructional strategies. This examination will utilize various models of decision making.

### **ED 515 School Law**

**3**

Teachers study legal bases of chosen profession and develop more adequate understanding of federal, state, and local laws applicable to teachers and pupils of public school. Primary emphasis is placed on Connecticut statutes and judicial interpretations.

### **ED 517 Evaluation**

**3**

Introduction to the fundamental principles of measurement and evaluation. Emphasis will be placed on the construction of classroom achievement tests, analyzing test results, and on interpreting standardized test scores.

### **ED 540 Educational Motivation and the Learning Process**

**3**

Multidisciplinary approach to understanding of underachievement and resistance to learning. Emphasis on innovative ways of effecting learning by means of sociological, psychological, and educational advances in practice and theory.

### **ED 545 Integration of Methods of Research and Assessment**

**6**

Prereq.: Admission to the full-year post-baccalaureate certification program and a 3.00 overall GPA. Examination of traditional and alternative assessment strategies to promote learning. Techniques for analyzing and evaluating qualitative and quantitative research studies and developing skills to design, implement and assess action research projects specific to the internship and school site.

### **ED 595 Individual Study Project**

**1 TO 3**

Prereq.: Permission of department chair. Individual or small group directed study of a specific topic under the direction of a faculty member. May be repeated with different topics for a total of 6 credits. On demand.

### **ED 598 Research in Education**

**3**

Students will construct hypotheses in education, design a pilot study, and/or evaluate completed studies. Additional objectives may be presented by the instructor of the course.

### **ED 599 Thesis**

**3**

Prereq.: PSY 512 (or equivalent) or permission of instructor; completion of 18-24 credits; and a 3.00 overall GPA. Preparation of the thesis under the supervision of the thesis advisor.

## Education—Early Childhood

### **EDEC 551 Programs and Curricula in Early Childhood Education 3**

Prereq.: Matriculation in the M.S. program. Analysis of contemporary early childhood program models and practices including their historical and philosophical foundations. Includes an examination of criteria for establishing and evaluating contemporary early childhood programs. On-site observations and interaction with young children required. Fall. (O)

### **EDEC 552 Programs and Curricula in Early Childhood Education II 3**

Prereq.: EDEC 551 and matriculation in the M.S. program. Study of the implementation of developmentally appropriate curricula for children, ages three to eight. Emphasis on integrated curricula, learning centers, effective management, and active parent involvement. On-site observations and interaction with young children required. Spring. (O)

### **EDEC 553 Family, School and Community Partnerships in Early Childhood Education 3**

Prereq.: Matriculation in the M.S. program. In-depth exploration of impact of family and community on the education of young children. Study of school-child-family relationships which foster healthy development. Examination of comprehensive community and governmental support systems for children and families. Fall. (E)

### **EDEC 554 Observation and Assessment in Early Childhood Education 3**

Prereq.: EDEC 552 and matriculation in M.S. program. Study of appropriate assessment of young children's development and progress and their relationship to child-centered curricula and home-school communication. Strategies for assessing children's cognitive/language, social/emotional, and psycho-motor development. Play assessment and student portfolios are also included. Spring. (E)

### **EDEC 561 Administration in Early Childhood Education 3**

Prereq.: EDEC 552. Policies, procedures, and leadership responsibilities for the management of early childhood education programs. Topics include implementation of goals, budgeting and financial management, and meeting standards for a State of CT Child Day Care license. Summer.

## Education—Elementary

Note: Additional work will be required for graduate credit in 400-level courses.

### **EDEL 485 Creating Classroom Community (K-8)**

3

Examination of the purposes, processes, and strategies of varied approaches to building community in elementary education and kindergarten through grade eight classrooms. Irregular.

### **EDEL 508 Current Trends in Elementary Education**

3

Prereq.: Matriculation into M.S. program in Elementary Education. Current trends in Elementary School Curriculum, with emphasis on issues, models, and processes. Local and state projects will be examined. Not applicable to provisional, Intermediate Administrator/Supervisor certification. Fall.

### **EDEL 509 Education and the Development of Cultural Understanding**

3

Prereq.: Matriculation into M.S. program in Education. Study of attitudes, values, and expectations of educators as related to cultural diversity. Strategies presented to develop respect of students for cultural pluralism. Research related to the reduction of racial, ethnic, and sex stereotyping and biases is surveyed. Spring.

### **EDEL 512 Assessment of Learning**

3

Prereq.: EDEL 508. Study of current assessment theory and practices, with emphasis on designing data-driven classroom instruction based on a variety of formal and informal assessments. Spring.

### **EDEL 529 Analysis of Teaching**

3

Prereq.: Acceptance to Elementary Education M.S. program and successful completion of 18 credits in planned program. Analysis of instructional practices and their effects on learners. Diverse perspectives are analyzed, including selected conceptual frameworks, effective teaching, literature, research, and wisdom of practice. Spring.

### **EDEL 537 Social Studies Methods (1-6)**

3

Prereq.: Teacher certification or permission of instructor. Examines social studies as taught in elementary classrooms, considering both content and process. Approaching material from multiple perspectives, students will design developmentally-appropriate instruction. Fall.

### **EDEL 591 Designing Action Research in Elementary and Early Childhood Education**

3

Prereq.: Matriculation in either Elementary or Early Childhood, M.S., completion of 21 credits in planned program including ED 598, Plan C designation, and a 3.00 GPA. Students design action research projects having implications for the education of young learners in their own professional settings. Course outcomes include individual proposals specifying problem statement, theoretical framework, resource review, local context description, strategy, and evaluation design. Fall.

### **EDEL 592 Implementing and Documenting Action Research in Elementary and Early Childhood Education**

3

Prereq.: EDEL 591, and a 3.00 GPA. Students implement strategies proposed in EDEL 591. The final report documents findings and conclusions drawn from collected data and personal insights into their intervention. Presentation supplements the written report. Spring.



**Education—Secondary****EDSC 505 Innovations in Secondary Education****3**

Examination of current areas of research in secondary education, including restructuring of high schools, alternatives to tracking, innovations in various subject areas and interdisciplinary studies, team teaching, and grouping practices. Fall. (E)

**EDSC 556 Instructional Theory and Practice****3**

Prereq.: Admission to an M.S. program. Advanced study of the theoretical bases of instruction, focusing on the analysis of instructional models and their use in the secondary school classroom. Spring. (O)

**EDSC 582 Supervision of Secondary School Teaching****3**

Prereq.: Permission of content area department chair and assistant dean of Education and Professional Studies. Supervised teaching experience for graduate students who possess a Durational Shortage Area Permit from the State of Connecticut, signed by the EPS assistant dean. Not to be credited towards master's degree. To meet teacher certification program requirements, student must enroll in two sequential semesters and earn at least a C in each semester.

**EDSC 586 Seminar in Secondary Education****3**

Examination of issues relevant to the teacher in the middle or high school. Investigation of a specific curricular issue through qualitative methods of inquiry. Spring. (E)

## Education—Teacher Education

### **EDTE 502 Focus on Diversity in Education**

**3**

Prereq.: Admission to M.S. Program in Early Childhood Education, Elementary Education, or Educational Studies/Secondary - Strand 2 (Secondary Curriculum and Instructional Issues). Study of diversity in educational settings and practices, with emphasis on processes of inquiry, reflection, collaboration and critical analysis. This course is a prerequisite to all other courses in early childhood, elementary and secondary education. May be taken concurrently with other courses with permission of advisor. Fall, spring, summer.

### **EDTE 598 Introduction to Research in Education 3**

Prereq.: Admission to a masters program in education. Examination of basic concepts related to quantitative and qualitative research that helps educators develop knowledge and skills for interpreting and analyzing educational research.

## Educational Foundations

### **EDF 500 Contemporary Educational Issues 3**

Contemporary educational issues and the ways they are affected by social, political, and economic forces of society.

### **EDF 516 School and Society 3**

Prereq.: Matriculation into M.S. program. Presentation and analysis of factors, institutions, and events relating to school's role in society. Sociocultural analysis and interpretation of historic development, as well as contemporary influences affecting dynamic role of school in American life today. Fall, Spring, Summer.

### **EDF 524 Foundations of Contemporary Theories of Curriculum 3**

Study of the social, psychological, and philosophical influences that shape the curriculum and a range of curriculum positions in the United States and in other countries. Fall. (O)

### **EDF 525 History of American Education 3**

Prereq.: Admission to a Master's program. Study of the ideas, policies, practices, and social movements that have historically influenced and shaped the development of education in the United States. Fall.

### **EDF 526 Philosophy of Education 3**

Provides advanced-level students in education, and especially in the Educational Studies MS program, with an in-depth introduction to philosophy of education as an academic discipline. Focus both historical and contemporary. Irregular.

### **EDF 528 Comparative and International Education 3**

Prereq.: Admission to a Master's program. Study of education within international context, focusing on globalization, economic policy, and education in selected countries. Comparison with education in the U.S. will be made. Fall.

### **EDF 535 Special Topics in Educational Foundations 3**

Prereq.: Admission to Master's program. Inquiry into special topics in educational foundations. Examples include school violence, gender and education, multicultural education, national standards, and testing. Fall.

### **EDF 538 The Politics of Education 3**

Introduction to the politics of education and the making of educational policy within our society's political system. Topics include: school governance and the decision-making process, problems of policy-making in bureaucracy, intergovernmental rivalries of local, state, and Federal authority, legal and extra-legal influences, ideological conflict, and the struggle for change and reform in school institutions. Spring.

### **EDF 583 Sociological Foundations of Education 3**

Sociological principles and information applied to problems and situations in education. Emphasis on cultural forces that affect education, institutions, and agencies which relate to the public school and social structure of the school. Summer.

### **EDF 597 Supervised Readings in History and Philosophy of Education 1 TO 3**

Selected supervised readings in the history and philosophy of education by faculty in collaboration with a student's interests and professional needs. May be repeated for a maximum of three credits. On demand.

### **EDF 700 The Purposes of Education in America 3**

Prereq.: Admission to the Ed. D. program. A critical examination of the social, political, economic, and moral purposes of American education and their implications for goals, curriculum, teaching, evaluation, organization, administration, and financing of education. Summer.



## Educational Leadership

- EDL 513 Supervision 3**  
Prereq.: Admission to an M.S. program or permission of department chair. Study of major problems confronting supervisors in improving instruction: interpreting educational objectives to staff and public, coordinating education programs, teacher-supervisor relations, evaluating instruction, and supervision of student teachers. Summer.
- EDL 514 Administration 3**  
Prereq.: Admission to an M.S program or permission of department chair. Study of leader's roles in developing programs in education. Major areas include: obligation toward learners, staff, boards of education, and parents; administrative organization, curriculum development, and stimulating research.
- EDL 551 Curriculum Leadership 3**  
Prereq.: ED 511 and graduate matriculation. Study of curriculum leadership with special emphasis on curriculum processes, curriculum management, decision making, and current trends in the field. Fall, Summer.
- EDL 552 Topics in Educational Leadership 3**  
Prereq.: Permission of department chair. Comprehensive inquiry into a specific area of educational leadership. It may be repeated once with different content. Irregular.
- EDL 553 Internship in Student Development 1 TO 3**  
Prereq.: Permission of instructor. A supervised internship concerning leadership activities in institutions of higher education. Students initiate and complete an action plan and professional portfolio.
- EDL 555 Leadership for Culturally Diverse Schools 3**  
Prereq.: Admission to an M.S. program or permission of department chair. Study of leadership roles and strategies for developing a positive school climate for diverse cultural and racial groups in urban/suburban schools.
- EDL 590 Leaders as Learners: Educational Leadership and Self-Assessment 3**  
Prereq.: Master's degree, three years teaching experience, application to the Sixth Year Certificate program; or permission of department chair. Discussion of self-awareness as the cornerstone of effective leadership. Exploration of State and national standards, learning and leading styles, the impact of cultural and experiential background, and values and beliefs concerning educational leadership. Spring, Summer.
- EDL 605 Leadership in Teaching and Learning I 3**  
Prereq.: Admission to the Sixth-Year Certificate program. Study of leadership in the teaching and learning process. Focus on supervision of instruction, classroom assessment strategies, and working with diverse learners. Required 35-hour on-site field experience in an urban public school (Sixth-Year Certificate students) or research component. Fall.
- EDL 606 Leadership in Teaching and Learning II 3**  
Prereq.: EDL 605. Continuation of EDL 605. Includes a second 35-hour on-site field experience in an urban public school (Sixth-Year Certificate students) or research component. Spring.
- EDL 610 School Leadership I 3**  
Prereq.: Admission to the Sixth-Year Certificate program. Emphasis on enhancing students' repertoire of knowledge, skills and attitudes in identifying educational problems, and making informed decisions. Required 35-hour on-site field experience in a rural public school setting. Fall.
- EDL 611 School Leadership II 3**  
Prereq.: EDL 610. Continuation of EDL 610. Includes a second 35-hour on-site field experience in a rural public school setting. Spring.
- EDL 615 Understanding External Environments of School Leadership I 3**  
Prereq.: Admission to the Sixth-Year Certificate program. Knowledge and skills for political and community leadership, including policy development, resource allocation, ethical and legal obligations, risk management, and contract negotiation. Required 35-hour on-site field experience in a suburban public school setting. Fall.
- EDL 616 Understanding External Environments of School Leadership II 3**  
Prereq.: EDL 615. Continuation of EDL 615. Includes a second 35 hour on-site field experience in a suburban public school setting. Spring.
- EDL 618 Understanding the Political and Ethical Environment of Educational Leadership 3**  
Prereq.: Available to 6th year Educational Leadership students with permission of CCSU department chair or students admitted to Western Connecticut State University's Instructional Leadership doctoral program with permission of CCSU department chair. Knowledge and skills for political and ethical leadership, including ethical and legal decision making, policy development, fiscal management, and contract negotiations. Summer.

- EDL 634 Seminar in Curriculum Development 3**  
Study of curriculum design including the setting of objectives, selection of content material, instructional techniques, and program evaluation.
- EDL 652 Advanced Topics in Educational Leadership 1 TO 6**  
Prereq.: Admission to the Sixth-Year Certificate or Ed.D. program, and permission of instructor. Seminar addressing a specific topic in organizational leadership for educational settings. May be repeated for a total of 6 credits. Irregular.
- EDL 656 Leadership and Supervision in Teaching and Learning 3**  
Prereq.: Available to 6th year Educational Leadership students with permission of CCSU department chair or students admitted to Western Connecticut State University's Instructional Leadership doctoral program with permission of CCSU department chair. Focuses on strategic leadership skills of using instructional leadership, supervision, communication and technology to improve teaching and learning. Summer.
- EDL 681 The Superintendency I: Leading District Operations 3**  
Prereq.: Admission to Ed.D or Sixth-Year program; or chair's permission based on meeting requirements for Intermediate Administration Certification. The work of the superintendent from an internal perspective. Operational skills and understandings necessary to manage and coordinate the organizational structures and resources of the district to ensure learning for all students. Fall.
- EDL 682 The Superintendency II: Board & Public Relations 3**  
Prereq.: EDL 681 or permission of chair, based on meeting requirements for Intermediate Administration Certification. The work of the superintendent from an external perspective. Creating effective relationships with the board of education the public.
- EDL 690 Internship in Educational Leadership I 2**  
Prereq.: Admission to the Sixth-Year Certificate program, and completion of 18 credits in planned program or permission of instructor. Part one of a year-long supervised administrative internship (6 month in building leadership and 6 months in district leadership). Students initiate action plans, and begin professional portfolios to document strategic, instructional, organizational, and contextual leadership. Fall, Summer.
- EDL 691 Internship in Educational Leadership II 2**  
Prereq.: EDL 690. Part two of a year-long supervised administrative internship. Students continue work on actions plans in building and district settings, and add to their professional portfolios. Spring, Summer.
- EDL 692 Internship in Educational Leadership III 2**  
Prereq.: EDL 691. Part three of a year-long supervised administrative internship. Students complete actions plans, and submit building leadership and district leadership portfolios. Spring, Summer.
- EDL 695 Internship: The Superintendency I 3**  
Prereq.: Admission to Ed.D., or Sixth-Year Certificate program; 092 cert.; EDL 681/682 and/or permission of department chair. Part one of supervised administrative internship. Interns apply strategic, organizational, and contextual leadership skills. Students will conduct organizational assessments to design an action plan and initiate the development of a professional portfolio. Fall.
- EDL 696 Internship: The Superintendency II 3**  
Prereq.: EDL 695. Also based on meeting requirements for Intermediate Administration Certification. Part two of a supervised administrative internship in the superintendency. Students will complete their professional portfolio. Spring.
- EDL 697 Readings and Conference 1 TO 3**  
Prereq.: Admission to the Sixth-Year Certificate program and permission of Department Chair. Individual or small group directed study of a specific topic under the supervision of a faculty member. May be repeated with different topics for a total of 6 credits. Irregular.
- EDL 701 Leading Organizational Change I: Theory 3**  
Prereq.: Admission to the Ed.D. program. Theoretical foundations of change emphasizing organizational culture and development, chaos theory, models of systemic change and critical theory. Leaders develop capacity to critically assess their organizations for the purposes of guiding and sustaining meaningful change. Summer.
- EDL 702 Leading Organizational Change II: Program Development & Evaluation 3**  
Prereq.: EDL 701. Theoretical foundations and practical applications of strategies aimed at organizational development and ongoing systematic evaluation. Application of strategies of group learning and data-driven decision-making to the assessment of organizational outcomes. Summer.
- EDL 705 Leadership to Promote Effective Teaching & Learning 1 TO 4**  
Prereq.: Admission to Ed.D. program. Focus on new research on human learning and teaching. This course will explore the leadership implications of this research for the design and support of formal instructional environments aimed at helping all individuals achieve their full potential. Variable credit to a total of 6 credits applied to the doctoral program. Fall, spring, summer.
- EDL 710 Inquiry Seminar I: The Study of Human & Organizational Learning 2**  
Prereq.: Admission to the Ed.D. program. Educational research ethics and the relationship between research and the purposes of schooling. Students refine information-gathering skills and plan a field study to describe human and/or organizational learning (to be completed during the academic year). Summer.
- EDL 711 Inquiry Seminar II: Quantitative and Qualitative Research I 3**  
Prereq.: EDL 710. Quantitative and qualitative methods for educational research with emphasis on case studies, quasi-experimental design,

and instrumentation. Preparation of an integrative literature review and proposal for a field study about student or organizational learning. Fall.

**EDL 712 Inquiry Seminar III: Quantitative and Qualitative Research II 3**

Prereq.: EDL 711 Continuation of EDL 711, with emphasis on methods of analysis such as qualitative coding and applied statistics. Completion of a written report and formal presentation of the year-one field study. Spring.

**EDL 713 Inquiry Seminar IV: Study of Organizational Change 2**

Prereq.: EDL 712. Application of research methodologies to studies of the change process. Students develop a conceptual framework, an integrative review of the literature, and an inquiry plan for a study of organizational and cultural change. Summer.

**EDL 714 Inquiry Seminar V: Advanced Research Design 3**

Prereq.: EDL 713. Advanced topics in research study such as randomized field experiments, interrupted time series, and interaction analysis. Matching design and method to contexts, questions and researcher intentions are discussed. Students begin developing dissertation topics. Fall.

**EDL 715 Inquiry Seminar VI: The Dissertation Proposal 3**

Prereq.: EDL 714. Students complete the leadership portfolio requirement and prepare the dissertation proposal, including the literature review, methods, and instrumentation. Continued study of advanced research methods. Spring.

**EDL 716 Inquiry Seminar VII: Dissertation I 2**

Prereq.: EDL 715. Defense of the dissertation proposal. Students work through the summer with their dissertation advisor and committee members both individually and in small group tutorials. Summer.

**EDL 717 Inquiry Seminar VIII: Dissertation II 5**

Prereq.: EDL 716. Dissertation research and writing. Seminars provide intellectual and emotional support for problem-solving related to ethical, political and methodological dilemmas, conflicts of purpose, time management and stress. One-on-one and small group meetings with the dissertation advisor. Fall.

**EDL 718 Inquiry Seminar IX: Dissertation III 5**

Prereq.: EDL 717. Continuation of EDL 717. Seminars provide intellectual and emotional support. One-on-one and small group meetings with the dissertation advisor. Students complete the dissertation. Spring.

**EDL 719 Inquiry Seminar X: Dissertation IV 1**

Prereq.: EDL 718. Required continuation of EDL 718 for students who have not completed their dissertations or received approval to enroll in EDL 720. May be repeated for up to six credits over three calendar years.

**EDL 720 Inquiry Seminar XI: Disseminating Research Findings 2**

Prereq.: EDL 718 and permission of doctoral program coordinator. Students defend their completed dissertations and present their findings during professional development workshops for educational leaders. Preparation of conference proposals and articles for publication. Summer.

## Educational Technology

Note: Additional work will be required for graduate credit in 400-level courses.

- EDT 490 Instructional Computing 3**  
Examination and application of computers and other related technologies to various teaching situations with emphasis on developing skills in developing and evaluating instructional software programs.
- EDT 500 Instructional Design and Evaluation I 3**  
Prereq.: Permission of instructor. Application of instructional design principles that includes design of needs analysis, learner analysis, task analysis, goals and objectives, instructional and media strategies, and evaluation in solving instructional issues. Fall.
- EDT 501 Message Design and Production 3**  
Prereq.: Permission of instructor. Application of message design theories and principles involving perception, memory, attitude and persuasion. Course includes hands-on learning experience in the design and production of instructional materials. Fall.
- EDT 510 Design Tools 3**  
Prereq.: Admission to the EDT program or permission of instructor. Exploration of various software and hardware programs and how these multimedia tools can impact the design of instructional materials. Development of various audio and video compression skills. Summer.
- EDT 512 Computer-Based Instruction 3**  
Prereq.: EDT 500, 501 or permission of instructor. Application of computer-based strategies for instruction, including interactivity, adaptivity, feedback, branching, and evaluation, with emphasis on screen design, developing flow charts and storyboarding. Spring.
- EDT 514 Integrating Technology in the Classroom Curriculum 3**  
Prereq.: Admission to the EDT program or permission of instructor. Issues and strategies related to integrating technology in the curriculum. Instruction will be delivered both online (Blackboard Vista) and on campus. Theoretical basis and a practical skills orientation for leading technology integration effort. Summer, winter.
- EDT 521 Interactive Multimedia for Instruction I 3**  
Prereq.: EDT 512. Application of multimedia principles emphasizing screen design, branching, instructional, and media strategies, using flow charts, storyboards, and evaluation techniques. Spring.
- EDT 522 Instructional Design and Evaluation II 3**  
Prereq.: EDT 500. Examination and application of cognitive theories and new instructional design concepts, such as needs assessment and media strategies. Fall.
- EDT 531 Interactive Multimedia for Instruction II 3**  
Prereq.: EDT 521. Production of multimedia through hands-on experiences that include CD-ROM mastering, digital audio and video, animation, graphics, programming, and subsequent evaluation procedures for Educational Technology. Summer.
- EDT 532 Distance Learning and Networking I 3**  
Prereq.: Matriculation or permission of instructor. Analysis of distance learning and networking, including hands-on experiences to design, produce, evaluate, and manage students' own distance learning and networking programs. Spring.
- EDT 533 Distance Learning & Networking II 3**  
Prereq.: EDT 532. This course is the second in the distance education sequence and continues the work started in EDT 532. Attention will be paid to developing advanced distance learning solutions involving Internet, off-line materials and interactive instructional movies. Students will create distance education instruction for clients. Summer.
- EDT 597 Final Project 3**  
Prereq.: Permission of EDT advisor; completion of 24 credits in planned program; and an overall GPA of 3.00. Culminating experience. Students develop an instructional project that demonstrates acquired skills in design, production, and evaluation in Educational Technology. Summer.
- EDT 598 Inquiry in Educational Technology 3**  
Prereq.: Admission to the EDT program or permission of instructor. Graduate level research course with a focus on educational technology literature, providing familiarity with the process of reporting and evaluating research in the field. Research concepts and procedures will be stressed. Summer, winter.
- EDT 700 Topics in Leadership for Technology in Schools 1 TO 3**  
Prereq.: Admission to the Ed.D. program. Technology applications to enhance professional practice, increase organizational learning, and enhance productivity. Participants document their progress in meeting TSSA standards, and develop and carry out individualized learning plans. Variable credit to a total of 3 credits applied to the doctoral program. Summer.





## Electro-Mechanical Technology

Note: Additional work will be required for graduate credit in 400-level courses.

### **EMEC 463 Programmable Logic Controllers**

**3**

A study of programmable sequence controllers and programmable logic controllers for motion and process control. The use of ladder logic is included. Lecture/lab meets five hours per week. Spring.

## Engineering Technology

**ET 500      Topics in Engineering Technology****3**

Prereq.: Admission to the MSET graduate program or permission of instructor. Selected topics in engineering/technical applications. Opportunity to acquire knowledge of new and emerging technologies. Not for independent study. May be taken as a different topic more than once for credit. Link course with ET 495. No credit given to students with previous credit on the same topic for ET 495. Irregular.

**ET 501      Independent Study in Engineering Technology****3**

Prereq.: Permission of instructor. Studies of special areas in engineering technology providing for individual research and application. May be repeated with different topics for a maximum of 6 credits. On demand.

**ET 568      CAE Applied Finite Element Analysis****3**

Prereq.: ET 357 and 464, or permission of instructor. Application of the finite element method to structural problems. Spring.

**ET 592      Research and Development of Experiments****3**

Prereq.: Matriculation in MSET program and completion of 15 credits of approved graduate study. Concepts and procedures for obtaining, evaluating, and reporting existing and measured data. Fall.

**ET 598      Research in Engineering Technology****3**

Prereq.: ET 592, permission of project advisor, and a 3.00 overall GPA. Technical laboratory project conducted under the supervision of project advisor. Written and oral defense of project required. On demand.

**ET 599      Thesis****3**

Prereq.: ET 592, permission of thesis advisor, and a 3.00 overall GPA. Preparation of thesis under supervision of advisor. Written and oral defense of research required. On demand.

## Engineering Technology—Civil

Note: Additional work will be required for graduate credit in 400-level courses.

- ETC 405 Applied Structural Systems 3**  
Prereq.: ET 241 or ET 251, and CM 356; or permission of instructor. Introduction to strength of materials, structural analysis and the structural design process for the construction manager or architect. Includes review of current structural steel and reinforced concrete design specifications and building code requirements. Cannot be used for credit in ET programs. Spring.
- ETC 451 Soil Mechanics & Foundations 3**  
Prereq.: ET 357. Fundamentals of soil behavior and its use as a construction material. Principles of effective strength, permeability, shear strength, and consolidation. Application to construction problems in shallow and deep foundations, slope stability, retaining structures and excavation drainage. Lecture/lab required. Fall.
- ETC 454 Introduction to Transportation Engineering 3**  
Prereq.: ETC 353. Study of the planning, design, environmental concerns addressing, construction and maintenance of transportation projects using new and rehabilitated highway and bridge projects as focus points for lecture and laboratory work. Lecture/lab required. Fall.
- ETC 458 GPS Mapping for GIS 3**  
Prereq.: ETC 353 or GEOG 378 or permission of instructor. Use of the Global Positioning System (GPS) to collect information for use in a Geographic Information System (GIS). Includes integration of vector and raster data sets with GPS data. Hands-on use of equipment is emphasized.
- ETC 470 Structural Steel Design 3**  
Prereq.: ETC 356 and ET 397. An introduction to the analysis of steel structures using classical and computer methods. Application of design, fabrication, and construction in structural steel using standard specifications. Topics on beams, columns, trusses, and frames. Fall.
- ETC 471 Reinforced Concrete Structures 3**  
Prereq.: ET 357 and ETC 397. Applications of design and construction in reinforced concrete and timber structures. Topics on beams, columns, slabs, footings, retaining walls, formwork, and pre-stressed concrete fundamentals. Spring.
- ETC 472 Timber Structures 3**  
Prereq.: ETC 397. A study of the physical properties of wood used in structures and architecture. Influence on strength of moisture content, species, and preservation treatments are emphasized. Design and construction applications in bridges and buildings. Spring.
- ETC 475 Hydrology & Storm Drainage 3**  
Prereq.: ETC 122 and ET 252 and 354; or permission of instructor. Engineering topics pertaining to the hydrological cycle. Computational techniques and the use of application software for analysis of rainfall and runoff. Design skills for stormwater mitigation will be applied to course project. Lecture/lab required. Spring.
- ETC 476 Environmental Technology 3**  
Prereq.: CHEM 111 or CHEM 161 and 162 or CHEM 121 and MATH 115 or 119. Environmental effects on air, water, and land from construction activities. Case studies with discussion of corrective action. Fall.
- ETC 550 Global Positioning Systems Applications 3**  
Prereq.: ET 457. Global Positioning System (GPS) use for control surveying, GIS data acquisition and land surveying applications. Students will gather GPS field data and perform differential processing including static, kinematic, pseudo-kinematic, and real time GPS. Fall.
- ETC 556 Architectural and Civil Engineering Technology Computer Aided Design 3**  
Prereq.: Admission to MSET or MSTM, or permission of E.T. department chair. MicroStation CAD software in practical projects applications. Introduction to 3D design and solid modeling. Irregular.
- ETC 571 Design and Construction of Concrete Structures 3**  
Prereq.: Admission to the MSET program or permission of instructor. Design and construction aspects of concrete structures with reference to buildings and short-span bridges. Case studies construction failures. Computer methods of analysis and design. Fall. (O)
- ETC 573 Foundation Analysis and Design 3**  
Prereq.: Admission to the MSET program or permission of instructor. A study of the methods for subsoil investigations and in-situ testing to determine soil characteristics, analysis and design of shallow and deep foundations, and gravity and cantilever retaining walls. On demand.
- ETC 574 Ground Improvement Techniques 3**  
Prereq.: Admission to the MSET program or permission of instructor. Principles of mechanical and chemical soil stabilizations, surcharging, dewatering, and deep dynamic compaction. On demand.

**ETC 575 Earth and Earth Supported Structures****3**

Prereq.: Admission to the MSET program or permission of instructor. Principles and methods for design and construction of flexible retaining structures, braced excavations, slurry walls, cellular cofferdams, and earth slopes. On demand.

**ETC 577 Engineering Technology Project Administration****3**

Examination of principles and practices of project administration. Topics include planning, budgeting, permitting, programming, personnel, legal, public involvement, tort liability, emergency handling, and dealing with federal and state government requirements. Fall.

**ETC 578 Value Engineering for AEC****3**

Prereq.: ET 399 or permission of department chair. Applications of processes related to reducing costs; improving quality and service while increasing customer satisfaction. Concepts of value analysis, cost/benefit, cost modeling and life cycle costing in materials and systems engineering applications. On demand.

## Engineering Technology—Mechanical/Manufacturing

Note: Additional work will be required for graduate credit in 400-level courses.

- ETM 454 Applied Heat Transfer 3**  
 Prereq.: ET 354 and ETM 358 or permission of instructor. The principles of conduction, convection, and thermal radiation energy transfer. Conduction through walls, pipes. Forced and free convection, heat exchanges, thermal radiation of energy between surfaces, and the overall transfer of heat. Irregular.
- ETM 461 Composites and Plastics Manufacturing Processes 3**  
 Prereq.: ETM 256 or ETM 356, CHEM 111 or CHEM 161 and CHEM 162 or CHEM 121. Analytical study of thermoplastic, thermoset, and polymer matrix composite materials, and the manufacturing processes utilized in the plastics and composites molding and fabrication industry. Lecture/laboratory. Spring.
- ETM 462 Manufacturing Process Planning and Estimating 3**  
 Prereq.: MFG 121 and MFG 216 and ETM 340 or permission of instructor. Design and planning of production processes and operation sequence for discrete parts. Group Technology and Cellular Manufacturing. Tolerance analysis of parts and processes. Development of process plans, routings, operation sheets, and cost estimates for manufacturing operations.
- ETM 464 CAD Solid Modeling and Design 3**  
 Prereq.: ETM 260 and ETM 340; or permission of instructor. Computer-aided design and analysis of solid, surface, and sheet metal models emphasizing product design. Uses computer software for design, detailing, mass property analysis, dimensional standards, and family tables. Two hours of lecture and one two-hour laboratory per week. Spring.
- ETM 466 Design for Manufacture 3**  
 Prereq.: ETM 260 and ETM 340 or permission of instructor. Design principles and contemporary industrial practices for product realization. DFX and evaluation of designs. Integration of product functions with design and manufacturing process. Mistake proofing, design for manual, automated, and robotic assembly. Product liability issues.
- ETM 467 CAE Applied Finite Element Analysis 3**  
 Prereq.: ENGR 257 or ET 357 or permission of instructor. Application of the finite element method to structural engineering problems. Study of plane stress, plane strain, shell and continuum finite elements, mesh generation, proper element density and element interfacing, and composite modeling problems. Fall.
- ETM 510 Engineering Optimization 3**  
 Prereq.: Admission to MSET program or permission of instructor. Application of optimization techniques to engineering design or process problems. Principles of design/process variables, constraints, and objective functions. Techniques for solving constrained and unconstrained optimization problems, computer implementation of optimization schemes. Irregular.
- ETM 517 Automated Assembly and Manufacturing Cell Design 3**  
 Prereq.: Admission to MSET or MSTM, or permission of Engineering department chair. Manufacturing center level programming and programming execution of different automated work cells. CNC mill programming, inventory control and automated assembly at the center level. Design of several work cells to work concurrently on product manufacturing. Fall. (E)
- ETM 523 Contemporary Engineering Materials 3**  
 Prereq.: Admission to the MSET or MSTM, or permission of Engineering department chair. Analysis of contemporary materials for the applications, advantages or disadvantages, properties and specifications for product design and manufacturing techniques. Two lectures and one two-hour laboratory per week. Spring. (E)
- ETM 534 Concepts of Group Technology 3**  
 Prereq.: Permission of instructor. Principles and applications of group technology for the engineering and manufacturing environment. Analysis of part and coding system design for applications in CAD/CAM/CIM and process planning systems. Spring.
- ETM 540 Advanced Geometric Dimensioning & Tolerancing 3**  
 Prereq.: STAT 104, ET 340; department chair. Advanced concepts and applications of ANSI and ISO GD&T standards. Analysis and calculations of tolerance distribution, fits, part interchangeability, combined tolerances, gage tolerances, measurement uncertainty budget, geometrical deviations measurements, statistical tolerancing, and the six-sigma design concept. Irregular.
- ETM 542 Production Cost Estimates 3**  
 Prereq.: ET 360 and 497, or permission of instructor. Principles and methods for evaluating costs and times crucial to engineering designs, tooling and production, with application of these principles to case studies and basic engineering design problems. Spring.
- ETM 560 Computer Aided Manufacturing 3**



## English

Note: Additional work will be required for graduate credit in 400-level courses.

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|---|---|----------|
| <b>ENG 401</b>  | <b>Advanced Composition</b>               | <b>3</b> |
| Advanced course in expository writing designed for competent writers who wish to refine their skills. Emphasis on vividness, precision, and impact, with attention to audience and style. Not applicable to M.A. in English program.  |   |          |
| <b>ENG 403</b>  | <b>Technical Writing</b>                  | <b>3</b> |
| A course designed to assist students in planning, researching, structuring, writing, revising, and editing technical materials. Emphasis on various types of writing drawn from an industrial/professional context: reports, correspondence, directories, manuals, technical articles. Not applicable to M.A. in English program. |   |          |
| <b>ENG 445</b>  | <b>American Drama</b>                     | <b>3</b> |
| Development of American drama and its contribution to literature. Irregular.  |   |          |
| <b>ENG 448</b>  | <b>Studies in American Literature</b>     | <b>3</b> |
| Selected topics in American literature. Students may take this course under different topics for a maximum of 6 credits.  |   |          |
| <b>ENG 449</b>  | <b>Major American Authors</b>             | <b>3</b> |
| Intensive study of the writings, life, influence, and historical milieu of a major American author. Authors will vary each year. May be repeated under different author subjects for a maximum of 6 credits.  |   |          |
| <b>ENG 450</b>  | <b>Chaucer</b>                            | <b>3</b> |
| Readings in Chaucer, with special emphasis on The Canterbury Tales and Troilus and Criseyde. Irregular.   |   |          |
| <b>ENG 451</b>  | <b>Milton</b>                             | <b>3</b> |
| Readings in Milton's prose and poetry, with emphasis upon Paradise Lost and Samson Agonistes. Irregular.  |   |          |
| <b>ENG 458</b>  | <b>Studies in British Literature</b>      | <b>3</b> |
| Selected topics in British literature. Students may take this course under different topics for a maximum of 6 credits.   |   |          |
| <b>ENG 461</b>  | <b>Shakespeare: Major Comedies</b>        | <b>3</b> |
| Close analysis of major comedies and pertinent critical problems. Fall.   |   |          |
| <b>ENG 462</b>  | <b>Shakespeare: Major Tragedies</b>       | <b>3</b> |
| Close analysis of major tragedies and pertinent critical problems. Spring.  |   |          |
| <b>ENG 463</b>  | <b>Elizabethan &amp; Jacobean Drama</b>   | <b>3</b> |
| Major dramatists from Kyd to Ford, excluding Shakespeare. Irregular.  |   |          |
| <b>ENG 464</b>  | <b>Restoration and 18th-Century Drama</b> | <b>3</b> |
| English drama from 1660 to 1800, primarily comedy. Readings from the works of such dramatists as Wycherly, Etherege, Dryden, Congreve, Vanbrugh, Farquhar, Steele, Gay, Fielding, and Sheridan. Irregular.  |   |          |
| <b>ENG 470</b>  | <b>The Victorian Novel</b>                | <b>3</b> |
| Representative Victorian novelists with special emphasis on Trollope, Eliot, Dickens, Thackeray, and Hardy. Irregular.  |   |          |
| <b>ENG 474</b>  | <b>Contemporary American Novel</b>        | <b>3</b> |
| American novels which have come to prominence since World War II and the changing cultural environment which they reflect. Irregular.   |   |          |
| <b>ENG 475</b>  | <b>The British Novel to 1832</b>          | <b>3</b> |
| Form and content of the novel with readings selected from Behn, DeFoe, Richardson, Fielding, Sterne, Smollett, Johnson, Burney, Walpole, Austen, and Scott. Irregular.  |   |          |
| <b>ENG 476</b>  | <b>The Modern British Novel</b>           | <b>3</b> |
| Form and content of the novel with readings selected from Joyce, Woolf, Ford, Conrad, Lawrence, Huxley, Forster, Greene, Waugh, and others. Irregular.  |   |          |
| <b>ENG 477</b>  | <b>Modern British Poetry</b>              | <b>3</b> |
| Major works of Hardy, Hopkins, Yeats, D.H. Lawrence, Owen, Sassoon, Auden, Dylan Thomas, Larkin, Hughes, and others. Irregular.   |   |          |



- ENG 478 Modern American Poetry 3**  
The study of important American poets from Dickinson to the present. Irregular.
- ENG 480 Modern Irish Literature 3**  
Study of the major themes and traditions in Irish writers of the 20th century. Included will be works by Yeats, Joyce, Synge, O'Casey, O'Connor, and others. Irregular.
- ENG 486 World Literature and Film 3**  
Examines the historical, political, and aesthetic relationships of literature and film produced outside the U.S. and Great Britain. Discussion of texts will be frequently structured around arguments from cosmopolitan theory and film theory. This course is not applicable to the M.A. in English, but may count as an elective in other graduate programs. Spring.
- ENG 487 20th-Century British Drama 3**  
Study of major British playwrights of the twentieth century. Selections may be from the works of Shaw, Coward, Maugham, O'Casey, Eliot, Beckett, Osborne, Pinter, Shaffer, Ayckbourn, Churchill, Gray, Hare, Stoppard, and others. Irregular.
- ENG 488 Studies in World Literature 3**  
Selected topics in world literature. Students may take this course under different topics for a maximum of 6 credits. [I]
- ENG 491 Children's Literature 3**  
Balanced selection of the best literature available to children. Traditional forms of fables, legends, myths, epics, fairy tales, and folk tales of the world; examination of how these represent the universal needs and aspirations of all cultures. Major authors and illustrators included. Not applicable to B.A. or M.A. in English programs or English minors.
- ENG 492 Literature for Young Adults 3**  
Through extensive reading this course examines trends and issues, forms and content, and authors and topics of contemporary books read by and written expressly for adolescents. Recommended for secondary teachers and reading specialists. Not applicable to B.A. or M.A. in English programs or English minors.
- ENG 500 Seminar in American Literature 3**  
Prereq.: Admission or conditional admission to a degree program in English or permission of instructor. Designed to give student seminar experience in selected area of English studies. May be repeated with different topics for up to 6 credits. Fall.
- ENG 501 Seminar in British Literature 3**  
Prereq.: Admission or conditional admission to a degree program in English or permission of instructor. Designed to give student seminar experience in selected area of English studies. May be repeated with different topics for up to 6 credits. Spring.
- ENG 530 Topics in Literary Periods 3**  
Prereq.: Admission to degree program in English or permission of instructor. Detailed study of a period in English, American, or comparative literature (with comparison to include English and/or American). Topics may include: surveys of particular periods; focused examinations of forms, themes, problems, or other subjects associated with a given period. Attention paid to questions of periodization and its critical use. May be taken on different periods for up to 6 credits. Irregular.
- ENG 540 Topics in Literature and Theory 3**  
Prereq.: ENG 598 or permission of instructor. Detailed study of literature through the lens of a particular literary theory or critical method. Provides in-depth instruction on an important theory and its application. Topics will vary; may be taken on different theories for up to 6 credits. Spring.
- ENG 583 Teaching Writing across the Curriculum I 6**  
Prereq.: Acceptance to the Central Connecticut Writing Project (CCWP). Participants will explore research-based approaches to the teaching of writing; present successful teaching strategies in the area of writing across the curriculum, and write extensively in different genres. The emphasis is on personal and professional writing. Only 3 credits may be counted toward the Master's in English or Reading and Language Arts with the permission of the CCWP director and advisor. Cross listed as RDG 583. Summer.
- ENG 584 Teaching Writing across the Curriculum II 3**  
Prereq.: ENG 583. A continuation of ENG 583 which will also include the completion of a professional writing piece. Summer.
- ENG 590 Graduate Tutorial: Individual Guided Reading 3**  
Prereq.: Permission of department chair. A graduate tutorial set up as an independent study for students who wish to pursue intensive, guided research on a particular author or literary period. May be repeated with different topics for up to 6 credits.
- ENG 598 Research in English 3**  
Prereq.: Admission or conditional admission to a degree program in English or permission of instructor. Research skills in literature. Introduces the techniques and resources of literary research through an examination of the theory, history, and practice of literary criticism. Fall.
- ENG 599 Thesis 3**  
Prereq.: Admission to the M.A. program in English, a minimum of 18 credits and a 3.00 overall GPA in English and American Literature, and permission of the department chair. Preparation of the thesis under the supervision of the thesis advisor. On demand.



## Exercise Science

- EXS 410 Exercise Physiology 3**  
Formerly PE 410. Prereq: EXS 214 (formerly PE 214) with a grade of C- or higher and acceptance into the Professional Program or acceptance to M.S. Physical Education. Physiological factors which affect human performance in physical education and athletics. Acute and chronic effects of exercise on the respiratory, circulatory, and muscular systems. Required laboratory class taken in conjunction with lecture to give students the opportunity to gain knowledge of basic scientific and field tests in exercise physiology. Open to physical education majors only. Fall, spring, summer.
- EXS 415 Fitness Assessment and Exercise Prescription 3**  
Prereq.: EXS 307, 331, 408; admission to the Professional Program in either Athletic Training or Exercise Science, or to the M.S. in Physical Education. Use of laboratory and field tests for assessing physical fitness components, and of test results for developing individualized exercise prescriptions to improve cardiorespiratory fitness, muscular fitness, body composition, and flexibility.
- EXS 425 Implementation and Evaluation of Health Promotion Programs 3**  
Prereq.: EXS 307, 408; admission to the Professional Program in Exercise Science or to the M.S. in Physical Education. Comprehensive planning framework for health promotion programs in the U.S., which includes identifying health needs of the population, determining how to change health behaviors, marketing programs, and evaluating health benefits to the individual and organizations. Fall.
- EXS 450 Practicum in Exercise Science 3**  
Prereq.: EXS 415, 416; admission to the Professional Program in Exercise Science or to the M.S. in Physical Education. Provides an opportunity for students to gain 150 clock hours of field experience in an exercise setting, conducting prescribed exercise programs. Current CPR and first aid certification required. Fall, Spring, Summer.
- EXS 470 Internship in Exercise and Health Promotion 6**  
Prereq.: EXS 450; admission to the Professional Program in Exercise Science or to the M.S. in Physical Education. Off-campus practical experience. Includes wellness/health promotion, corporate fitness, YMCA, strength and conditioning, sports medicine, and cardiac rehabilitation. Offers opportunities to apply fundamental concepts. Current CPR and first aid certification required. Fall, Spring, Summer.
- EXS 507 Human Perspective in Sport 3**  
Prereq.: Admission to M.S. in Physical Education. Inquiry into the nature and expression of humans in sport. Topics include: The issues of competition and winning, amateurism vs. professionalism, values of sport, causes and results of spectator behaviors. Spring. (O)
- EXS 515 Sport, Physical Activity, and Exercise Psychology 3**  
Identifies principles and guidelines that professionals use to help adults and children participate in and benefit from sport and exercise activities. Spring. (E)
- EXS 519 Sport Biomechanics 3**  
Prereq.: EXS 216 or permission of instructor. Study of the mechanical analysis of sport skills, in order to improve teaching. The student is provided with a scientific basis for teaching correct form. Fall. (E)
- EXS 522 Physical Activity and Health 3**  
Prereq.: EXS 522 or permission of instructor. Study of the hypokinetic diseases of the human organism. Particular emphasis will be given to the beneficial effects of physical activity on the cardiovascular system, weight control, low back pain, longevity, and participation of women in sports. Spring. (O)
- EXS 523 Essentials of Sports Performance Training 3**  
Systematic approach to program design of sports performance program variables to help train athletes safely and effectively. Includes protocols for building stabilization, strength, power, speed, agility and quickness. Summer. (E)
- EXS 530 Nutrition for Health, Fitness, and Sport Performance 3**  
Prereq.: Permission of instructor. Provides knowledge base of the major nutrients relative to the role that nutrition, complemented by physical activity, may play in the enhancement of health and sport performance. Topics include weight management and eating disorders. Summer. (O)
- EXS 590 Independent Study / Topics in Exercise Science or Sports Medicine 3**  
Prereq.: Admission to the M.S. in Physical Education with approved planned program, or permission of instructor. Work in theory or research to meet individual requirements in areas not covered by the regular curriculum. Either PE 590 and/or EXS 590 may be taken for a maximum of 6 credits. Irregular.
- EXS 592 Advanced Physiology of Sport & Exercise 3**  
Prereq.: Permission of instructor. Using exercise physiology as a basis, examination of acute and chronic adaptations of the body to high physiological demands of physical activity and sport. Topics covered include the physiology of the skeletal, muscle, cardiorespiratory, endocrine and renal systems. Fall. (O)



## Finance

Note: Additional work will be required for graduate credit in 400-level courses.

### **FIN 400      Advanced Managerial Finance**

**3**

Prereq.: FIN 301, 310 and 320 (with grades of C- or higher). An advanced course in financial management of the business firm. Utilizes a case study approach to stress the application of financial management theories. Topics include asset management, investment decisions, and financial structure of the firm.

### **FIN 410      Securities Analysis**

**3**

Prereq.: FIN 301, 310 and 320 with grades of C- or higher. An advanced course in investments with emphasis on security analysis and portfolio management practices. Topics include financial statement analysis, use of derivatives, and special techniques employed in forecasting, timing, and the development of investment strategies.

### **FIN 425      Financial Derivatives**

**3**

Prereq.: FIN 301, 310 and 320 with grades of C- or higher; for graduate students, permission of department chair. Valuation of financial derivatives, including options and futures, applications to portfolio, and corporate risk management. Fall.

### **FIN 490      Independent Study in Finance**

**1 TO 3**

Prereq.: FIN 301, 310 and 320 with grades of C- or higher. Individualized readings and/or research by individual under the direction of a Finance faculty member. Topics will vary. May be repeated up to a total of 3 credits.

### **FIN 496      Practicum in Finance**

**1 TO 6**

Prereq.: Permission of instructor. Students work on a real world project under the direct supervision of a faculty advisor. Projects may be sponsored by a host organization. Student performance is monitored and evaluated in relation to conditions set forth in an approved Project Plan. May be repeated for a maximum of 6 credits.

### **FIN 498      Finance Seminar**

**3**

Prereq.: Permission of instructor. Course content varies.

### **FIN 499      CFA Seminar**

**3**

Prereq.: FIN 295, 310, 410 with grades of C- or higher; or permission of instructor; for graduate students, prerequisite of FIN 410 must have C or higher. Focuses on the advanced investment concepts which are the foundation of Chartered Financial Analyst (CFA) professional designation. Topics include ethical and professional standards, quantitative methods, global markets and instruments, analysis of stock and bond investments, and portfolio management. Spring.

## Fine Arts

Note: Additional work will be required for graduate credit in 400-level courses.

### **FA 490      Integrating the Fine Arts for the Young Learner      3**

Prereq.: Permission of department chair in Art, Music, or Theatre. Study of the aesthetic experience, its importance for children, and its interrelationship with empirical knowledge. Music, the visual arts, and movement will be investigated, with an emphasis on discovering resources and developing techniques for integrating each. Summer.

## French

Note: Additional work will be required for graduate credit in 400-level courses.

**FR 441      Advanced Oral Practice**

**3**

Prereq.: Permission of instructor. Open only to non-native speakers of French. Taught in French. Development of fluency in oral self-expression. Speech analysis to improve pronunciation and intonation. Irregular. (O) [I]

**FR 521      Medieval and Renaissance French Literature**

**3**

Prereq.: Admission to M.A. in Modern Language or permission of chair. Taught in French. Culture, language and literature from the 9th through the 16th centuries and their relation to contemporary society. Fall. (O)

**FR 553      19th-Century French Literature**

**3**

Prereq.: Admission to M.A. in Modern Languages. Taught in French. Major literary currents and works of the 19th century, with emphasis on the Romantic and Symbolist poetry, and the Realist and Naturalist novel. Fall. (E)

**FR 573      20th-Century French Literature**

**3**

Prereq.: Admission to M.A. in modern languages or permission of chair. Taught in French. Major works and movements of 20th-century literature from Surrealism to Post-Modernism.

## Geography

Note: Additional work will be required for graduate credit in 400-level courses.

- GEOG 433 Issues in Environmental Protection 3**  
Issues in the environmental protection planning process. Topics include air quality, noise, solid waste, hazardous materials, wilderness areas, endangered species, wetlands, and land use issues. A single field trip may be required.
- GEOG 434 Mexico, Central America, and the Caribbean 3**  
Study of our nearest neighbors south of the border, concentrating on people, the land on which they live, and related problems, primarily from a regional point of view. Cross listed with LAS 434. Fall. [I]
- GEOG 435 Japan and Korea 3**  
Study of the physical framework, resources, economic activities, and characteristic landscapes of Japan and Korea. Activities of the people of Japan and Korea in relation to their environment and resources, and the differing problems of development facing both nations. Fall. (O) [I]
- GEOG 436 South America 3**  
A survey of the countries of South America with emphasis on people, places, and problems. Cross listed with IS 436. Spring. [I]
- GEOG 437 China 3**  
Physical, economic, political, and historical geography of China. Special consideration of her population, resources, agricultural growth, and industrial expansion. Discussion of the geographic bases and the expansion of the Chinese State and the contemporary foundation of Chinese national power. Fall. (E) [I]
- GEOG 439 Urban Geography 3**  
Form, function, and evolution of urban settlements with reference to attributes of place. Emphasis is also placed on internal structure and regional relationships of cities. Provides a methodological basis for thought involving the planning process, including preservation planning and systems analysis. Personal on-site study of a current urban problem within the state is expected. Spring.
- GEOG 440 Rural Land Planning 3**  
Land use patterns and the planning process in agriculture, transportation, recreation, industry, population, and settlement in rural areas. Case studies and field work emphasizing the impact of urbanization on rural Connecticut. Fall. (O)
- GEOG 446 Sub-Saharan Africa 3**  
Relationships between physical environment and human development in Africa south of the Sahara. Spring. (E) [I]
- GEOG 448 Russia and Neighboring Regions 3**  
Environmental, cultural, and economic patterns that give character to the various regions of Russia and the N.I.S. Its contemporary political economy viewed in a spatial and historical context. Examination of Russia's relationship with Central Asia, East Asia, Eastern Europe and the EC. Fall. (E) [I]
- GEOG 451 Tourism Development in Southern New England 3**  
Prereq.: GEOG 290 or 291 or permission of instructor or department chair. Study of the tourism industry, including perspectives on supply, demand, and socio-economic impacts. Focus on issues, problems, and opportunities in tourism, including functions of state and regional tourism agencies in southern New England. Spring. (E)
- GEOG 452 European Union 3**  
Environmental, cultural, and economic patterns that give character to the different countries, regions, and cities of the European union. Analysis of spatial changes associated with European integration. Spring. [I]
- GEOG 453 Recreation and Resort Planning 3**  
Prereq.: GEOG 450 or permission of instructor or department chair. Study of the supply, location, distribution, use, planning, management, and impact of recreation facilities in both urban and rural situations. Spring.
- GEOG 454 Geography of Tourism Marketing 3**  
Prereq.: GEOG 290 and MKT 295 or permission of instructor. Examination of geographic elements and issues within the tourism industry, with a focus on how these may influence the spatial aspects of tourist behavior and industry development strategies. Fall.
- GEOG 455 New Directions in Tourism 3**  
Prereq.: GEOG 450 or permission of instructor or department chair. Study of contemporary forms of tourism including ecotourism, heritage tourism, and educational travel, which have their own impacts, management, and planning needs, and which differ notably from the traditions of mass tourism. Spring.
- GEOG 473 Geography of Natural Resources 3**  
Prereq.: GEOG 110 or permission of instructor. Examines the definition, location, and evaluation of management. Focus on management



strategies and cost benefit analyses of environmental degradation associated with resource use. Examples illustrated with GIS and remote sensing techniques. Spring. (O)

**GEOG 500 Graduate Studies in Geography 3**

Prereq.: Permission of advisor. History and philosophy of geographic thought with emphasis on current research trends in physical and human geography. Fall.

**GEOG 514 Studies in Systematic Geography 3**

Prereq.: Permission of advisor and instructor. Advanced study in one of systematic specialties of the department. May be repeated under different topics for a maximum of 9 credits. This is a link course with GEOG 450, GEOG 470, GEOG 471, GEOG 472, GEOG 475, and GEOG 483. On demand.

**GEOG 516 Studies in Regional Geography 3**

Prereq.: Permission of advisor and instructor. Advanced study in one of regional specialties of the department. May be taken more than once for credit. On demand.

**GEOG 518 Studies in Geographical Techniques 3**

Prereq.: Permission of advisor and instructor. Advanced study in one of the geographical techniques. May be repeated under different topics for a maximum of 9 credits. This is a link course with GEOG 441, GEOG 445, GEOG 466, GEOG 476, GEOG 478, and GEOG 479. On demand.

**GEOG 530 Graduate Internship in Geography 3**

Prereq.: Two graduate courses in geography and permission of advisor. Site-based internship. Work in an environment directly related to the planned program of study under the supervision of a geography faculty member. Written reports and plan of activity required. On demand.

**GEOG 542 Graduate Field Methods in Geography 3**

Prereq.: 3 credits of graduate study or permission of instructor. Advanced field research in physical and human geography. Team and individual research projects. This is a bridge course with GEOG 442. Fall. (O)

**GEOG 544 The Geography of World Economic Development 3**

Prereq.: GEOG 500 or IS 570 or permission of instructor. Spatial patterns of world economic development with consideration of contemporary changes in selected developing countries. Spring.

**GEOG 559 Advanced Field Studies in Regional Geography 3 OR 6**

Prereq.: Permission of graduate advisor. On-site group studies in regional geography. Normally involves travel outside the United States. Summer.

**GEOG 569 Graduate Readings in Geography 1 TO 3**

Prereq.: Permission of instructor. Directed graduate level independent studies in geography. May be taken more than once for a maximum of 6 credits. On demand.

**GEOG 578 Internet GIS and Mapping 3**

Prereq.: Planned program of study in M.S. Geography or permission of instructor. Principles and practices of interactive mapping and GIS data distribution across the World Wide Web. Fall. (O)

**GEOG 595 Special Project in Geography (Plan C) 3**

Prereq.: GEOG 598, permission of graduate advisor, and a 3.00 overall GPA. Completion of an advanced project in geography under the supervision of a faculty member. Requirements include preparation of a paper and an oral presentation on the project. On demand.

**GEOG 597 Geography Capstone Seminar (Plan B) 3**

Prereq.: GEOG 598, completion of 21 credits in the M.S. program in geography, and permission of graduate advisor. Directed readings seminar for Geography graduate students taking the comprehensive exam (Plan B). Comprehensive exam will be taken following completion of the course. Spring.

**GEOG 598 Research in Geography 3**

Prereq.: GEOG 500, and 15 additional graduate credits in geography. Designed to familiarize student with techniques and resources associated with research in field of geography. Practical application. Fall.

**GEOG 599 Thesis (Plan A) 3**

Prereq.: GEOG 598, permission of graduate advisor, and a 3.00 overall GPA. Preparation of the thesis under the supervision of the thesis advisor. Spring.



## Graphics Technology

Note: Additional work will be required for graduate credit in 400-level courses.

### **GRT 402 Topics in Graphics Technology**

**1 TO 3**

Prereq.: Permission of department chair. An individualized inquiry of comprehensive study into a selected technical area. The student may elect to examine processes, products or developmental aspects of graphics technology. May be used as an elective on a graduate student's planned program of study with the permission of the program advisor. Course may be repeated for a maximum of 6 credits for different topics. On demand.

### **GRT 405 Applied Topics in Graphics Technology**

**3**

Prereq.: Permission of department chair. A laboratory oriented course providing comprehensive study of a selected technological topic. May be used as an elective on a graduate student's planned program of study with the permission of the program advisor. Course may be repeated for a maximum of 6 credits for different topics. Lecture/lab meets 5 hours per week. On demand.

### **GRT 442 Print Production**

**3**

Prereq.: GRT 212. Applied study of pre-production, production, and post-production in the printing industry. Lecture/lab meets 5 hours per week.

### **GRT 462 Advanced Graphic Arts Techniques**

**3**

Prereq.: GRT 442. Integrated experience of advanced instruction in both flexo, offset and digital printing. Experiences will include advanced color work and direct to press operations. Cultural and historical aspects of graphic arts and industrial visitations. (Lab). Lecture/lab meets 5 hours per week.

### **GRT 472 Digital & Film Photography**

**3**

Principles of conventional and digital camera techniques. Includes camera handling, exposure, composition, developing, printing, and editing. Darkroom plans and equipment listings will be evaluated. Field trips to selected photography studios. Lecture/lab meets 5 hours per week. Open to all students. Fall.

## History

Note: Additional work will be required for graduate credit in 400-level courses.

- HIST 431 Ancient Northeast Africa 3**  
Prereq.: HIST 301 or permission of instructor. Aspects of the history and legacies of ancient northeast Africa with focus upon Nubia, Egypt, and Aksum. Irregular.
- HIST 433 History of Ancient Greece 3**  
Prereq.: HIST 301 or permission of instructor. Greek institutions from the Mycenaean period to the accession of Constantine. Fall.
- HIST 434 History of Ancient Rome 3**  
Prereq.: HIST 301 or permission of instructor. Roman institutions from the regal period to the reign of Constantine. Spring.
- HIST 435 History of Early Medieval Europe 3**  
Prereq.: HIST 301 or permission of instructor. The Late Roman empire to the 11th century. Spring. (E)
- HIST 441 Renaissance & Reformation 3**  
Prereq.: HIST 301 or permission of instructor. History of Europe during the Age of Transition and the Era of the Religious Wars, 1300-1648. Fall. (E)
- HIST 442 Absolutism and Enlightenment in Europe 3**  
Prereq.: HIST 301 or permission of instructor. Social, economic, political, and cultural forces of the period in relation to formation of modern society and government. Spring. (E)
- HIST 443 Revolution and Reformation in Europe 3**  
Prereq.: HIST 301 or permission of instructor. Political, economic, and social institutions in relation to rise of liberalism, nationalism, socialism, and imperialism. Fall.
- HIST 444 Mass Politics and Total War in Europe 3**  
Prereq.: HIST 301 or permission of instructor. National and international problems of European states. Spring.
- HIST 445 Ideas & Culture in Europe, 1750-1870 3**  
Prereq.: HIST 301 or permission of instructor. Main currents of European thought and culture from 1650 to 1850. Irregular.
- HIST 446 Ideas and Culture in Europe, 1870-Present 3**  
Prereq.: HIST 301 or permission of instructor. Main currents of European thought and culture from 1870 to the present. Irregular.
- HIST 447 History of the Soviet Union 3**  
Prereq.: HIST 301 or permission of instructor. Study of the rise and fall of Soviet Communism, 1917-1991. Irregular.
- HIST 448 Stalin and Stalinism 3**  
Prereq.: HIST 301 or permission of instructor. Historical study of Stalin and Stalinism stressing multidisciplinary perspectives, considered in the light of the collapse of the Soviet Union. Irregular.
- HIST 455 Historical Representation in Latin America 3**  
Prereq.: HIST 301 or permission of instructor. Throughout the twentieth century, intellectuals and artists have addressed historical and political issues in their work. This course studies that phenomena through historical documents, historical monographs, literary and artistic works using the methodology of the social history of ideas. Irregular.
- HIST 458 United States Sectionalism: The Clash of Cultures 3**  
Prereq.: HIST 301 or permission of instructor. Clash of Northern and Southern culture over the issues of slavery from 1787 to 1861. Emphasis on the attempt to quell sectional disputes through political compromise, the rise of abolitionism, and the creation of a Slave Power. Spring.
- HIST 460 African Enslavement in the Americas 3**  
Prereq.: HIST 301 or permission of instructor. Comparative history of slavery in Latin America, the Caribbean, and the United States from 1492-1888. Fall. (O)
- HIST 465 Economic History of the United States 3**  
Prereq.: HIST 301 or permission of instructor. American economy from its agricultural beginnings through stages of its commercial, industrial, and financial growth.
- HIST 469 African Americans in the 20th Century 3**  
Prereq.: HIST 301 or permission of instructor. Political, economic, social, and cultural developments in Black America since 1900. Cross listed

with AFAM 469. No credit given to students with credit for AFAM 469. Fall. (O)

- HIST 474 History of the Arab-Israeli Conflict 3**  
Prereq.: HIST 301 or permission of instructor. History of the Arab-Israeli conflict from the time of Israel's creation as a modern nation-state until the present. Spring.
- HIST 476 African History through Film 3**  
Prereq.: HIST 301 or permission of instructor. Africa's past and present are viewed through a series of movies and intensive scholarly discussion of selected topics and themes. Readings are derived from current scholarly research on the various issues discussed. Irregular.
- HIST 481 The Jews of Poland 3**  
Prereq.: HIST 301 or permission of instructor. Topics include immigration and settlement, community development and rights and privileges before 1795, modernization, nationalism, anti-Semitism, independence, Polish-Jewish relations during the holocaust, exodus and marginalization in communist Poland, and the new Polish Jews. Fall. (E)
- HIST 482 The Polish-American Immigrant and Ethnic Community 3**  
Prereq.: HIST 301 or permission of instructor. Topics include immigration and settlement in the United States, organizational infrastructure, heroes and myths, homeland politics and national consciousness, labor, class, ethnicity, cultural assimilation and political integration, and stereotypes and ethnic identity. Spring. (O)
- HIST 497 Topics in History 3**  
Prereq.: HIST 301 or permission of instructor. Historical focus on a facet of history in order to help clarify current domestic and/or world developments. May be repeated with different topics for up to 6 credits.
- HIST 501 The Professional Historian 3**  
Prereq.: Acceptance into the MA program in history or public history, or permission of department chair. Focus on major professional trends in history at both the academic and public history level, with a special focus on writing, research, and analysis of historical arguments and theories. Special conditions: This is a mandatory course for all MA history and MA in public history graduate students. It should be taken within the first year of acceptance to the MA history and MA in public history program. Spring.
- HIST 504 American Material Culture 3**  
Prereq.: Acceptance into MA program in history or public history, or permission of department chair. Studies material culture of artifacts, such as household utensils, furniture, buildings, and landscapes, throughout American history. This is a linked course with HIST 404. No credit given to students with previous credit for HIST 404. Fall.
- HIST 505 Local History and Community Development 3**  
Prereq.: Acceptance into MA program in history or public history, or permission of department chair. Research techniques and methodologies of local and community history. Explores the relationship between local and national developments. Students conduct research projects in New Britain and other area communities. This is a linked course with HIST 405. No credit given to students with previous credit for HIST 405. Irregular.
- HIST 510 Seminar in Public History 3**  
Exploration of development, methodologies, and employment opportunities of the field public history. Fall.
- HIST 511 Topics in Public History 3**  
Topical knowledge and hands-on experiences in the practice of public history in fields such as oral history, museums, archives, and historical editing. May be repeated with different topics for a total of 9 credits. Spring.
- HIST 512 Connecticut Encounters 3**  
Experience Connecticut's history through its buildings, landscapes, objects, and three-dimensional artifacts. Fieldwork and travel experience are an important part of the curriculum and narrative instruction will be carefully tied to site visits. May be repeated with different topics for a total of 6 credits. Summer.
- HIST 521 Public History Internship 3**  
Prereq.: Completion of at least 21 credits in the student's planned program of study or permission of instructor. Hands-on experience in the practice of Public History. Students will work for private and public agencies utilizing their skills acquired in coursework. On demand.
- HIST 540 Seminar in European History 3 OR 6**  
Selected problems in historical research. Irregular.
- HIST 545 History of South Africa since 1900 3**  
Focus on South Africa since 1900 with emphasis on the rise and fall of apartheid and multifaceted dimensions of the liberation struggle and the process of democratization. Irregular.
- HIST 560 Seminar in American History 3 OR 6**  
Selected problems in historical research. Irregular.
- HIST 563 The Age of Jackson 3**

Investigates the major events, figures, and political struggles of the Jacksonian Period. Irregular.

**HIST 565 Seminar in 17th- and 18th-Century America 3**

Topics in 17th- and 18th-century American history. Irregular.

**HIST 566 Civil War and Reconstruction in the United States 3**

Prereq.: Acceptance into the MA program in history or public history, or permission of department chair. Topics and themes of the Civil War and Reconstruction eras in the United States. Irregular.

**HIST 571 History of Sex, Gender, and Health in Modern United States 3**

Examines historical issues concerning the relationship among sex, gender, and modern medicine. Looks at sex as a subject of scientific study, and gender as an analytic category. Explores men's and women's interactions with the health sector, the social and gender construction of disease, and the politics of women's health. Irregular.

**HIST 580 Seminar in Non-Western History 3**

Selected problems in historical research specific to areas of the world other than the United States and Europe. May be repeated with different topics for a maximum of 6 credits. Irregular.

**HIST 583 Seminar in Latin American History 3**

Prereq.: Permission of instructor. Selected historical, political, social, cultural, or economic topics. Irregular.

**HIST 590 Teaching American History 3**

Prereq.: Acceptance into the History is Central Teaching American History grant project; permission of program director. Covers one of the major themes of the grant, either social movements, social change: the story of American freedom; technology and industry: changing economy; changing society, or American ideals in a changing nation. Students will explore the newest historiography on the theme and to discover new and effective methods to teach American history. Students will produce lesson plans and historiographic papers, participate in primary source research, and discuss a variety of readings. Summer.

**HIST 593 Directed Study in History 3**

Prereq.: Permission of graduate advisor and instructor. Selected readings and project appropriate to student's major field. Open only to students in M.S. program. Irregular.

**HIST 595 Public History Research Project (Plan C) 3**

Prereq.: Permission of instructor; completion of 18 credits; and a 3.00 overall GPA. Hands-on experience in the practice of public history. Students complete specialized projects based on client-oriented research and communicate their findings to non-academic audiences. Spring.

**HIST 596 Directed Advanced Readings in History 3**

Prereq.: Permission of department chair. Selected readings appropriate to student's program. May be repeated once. On demand.

**HIST 599 Thesis (Plan A) 6**

Prereq.: Permission of advisor and completion of 18 credits and a 3.00 overall GPA. Preparation of thesis under the supervision of the thesis advisor and second reader.



## International Studies

Note: Additional work will be required for graduate credit in 400-level courses.

- IS 450 Internship in International Studies 3**  
Students will work under faculty supervision in an international environment related to their academic track or planned program. Written reports are required. On demand.
- IS 501 Advanced Studies in International Studies 3**  
Linked course with Interdisciplinary Studies.
- IS 570 Modern World Issues 3**  
Examination of contemporary world problems such as population, underdevelopment, ecological degradation, war and diplomacy, and cultural extinction.
- IS 571 International Diversity and Integration 3**  
Study of the institutions and attitudes involved in international integration. Factors which influence this process such as ethnic and cultural diversity will be considered. Fall.
- IS 590 Graduate Field Study Abroad 3 OR 6**  
Course taught abroad. May be repeated for a maximum of 6 credits.
- IS 595 Special Project in International Studies 3**  
Prereq.: IS 598, permission of instructor, and a 3.00 overall GPA. Advanced project in international studies under the supervision of a faculty member. Requirements include preparation of a paper and an oral presentation on the project. On demand.
- IS 596 Independent Studies 3**  
Prereq.: Permission of advisor. Independent work in International Studies to meet individual interest in regions or topics not covered in the regular curriculum. Work will be under the supervision of an assigned faculty member. On demand.
- IS 597 Graduate Seminar in International Studies 3**  
Interdisciplinary seminar on one of the world's regions or countries. Aspects of its anthropology, economics, geography, history, government, politics, and sociology will be considered in a synthetic approach.
- IS 598 Research in International Studies 3**  
Prereq.: Permission of advisor. Designed to familiarize students with the techniques and resources associated with research in their specialization. Opportunity for practical applications will be provided. On demand.
- IS 599 Thesis in International Studies 3**  
Preparation of the thesis under supervision of the thesis advisor. Plans A, C, D, and E require completion of 18 credits for programs with 30-35 credits, or 24 credits for programs with greater than 35 credits, and a 3.00 overall GPA.







## Law

Note: Additional work will be required for graduate credit in 400-level courses.

### **LAW 400    Advanced Business Law**

**3**

Prereq.: LAW 250 (C- or higher). Advanced legal principles pertaining to commercial transactions and business organizations. Topics include contracts, sales, negotiable instruments, partnerships and corporations, accountant's legal liability, and bankruptcy.

## Linguistics

Note: Additional work will be required for graduate credit in 400-level courses.

- LING 400 Linguistic Analysis 3**  
Intensive analysis (syntactic, morphological, phonological) of selected data from English and other languages. Particular emphasis on developing analytical skills. Irregular.
- LING 430 Studies in Linguistics & the English Language 3**  
Selected topics in linguistics. Students may take this course under different topics for a maximum of 6 credits. Irregular.
- LING 431 The History of the English Language 3**  
History, growth, and structure of the English language. Spring.
- LING 496 TESOL Methods 3**  
Principles, methods, and materials for teaching English to non-English speaking students at all levels. Acquisition and practice of basic language teaching skills. Intercultural communication in the TESOL classroom.
- LING 497 Second Language Acquisition 3**  
Major theories of language acquisition and their potential application to language learning. The theoretical bases of second language instruction. Spring.
- LING 512 Modern Syntax 3**  
Concepts and formalisms in grammar. Problem solving in English syntax. Contemporary developments in syntactic theory. Spring.
- LING 513 Modern Phonology 3**  
Characteristics and organization of sound systems of languages. Special attention to the sound system of English and how it fits into universal patterns. Generative and post-generative phonologies. Spring.
- LING 515 An Introduction to Sociolinguistics 3**  
Examination of the interlocking nature of language and society, with particular emphasis on sociolinguistic theory and field work.
- LING 533 Second Language Composition 3**  
Psycholinguistics of writing in a second language. Principles, methods, and materials for teaching writing to students of English as a second or foreign language. The second language writing curriculum. Fall.
- LING 530 Topics in Theoretical and Applied Linguistics 3**  
Detailed study of a specific subfield in theoretical or applied linguistics. Students may take this course under different topics for a maximum of 6 credits. Irregular.
- LING 535 Second Language Testing 3**  
Linguistic and academic assessment of non-native speakers of English. Determination of language dominance and proficiency of bilinguals. Preparation of language tests. Fall.
- LING 596 TESOL Practicum 3**  
Prereq.: LING 496. Students will teach ESOL under supervision. Spring.
- LING 598 Research in TESOL & Applied Linguistics 3**  
Covers research topics and methods in TESOL and applied linguistics. Fall.
- LING 599 Thesis 3**  
Prereq.: Admission to the M.S. program in TESOL, a minimum of 15 credits of graduate coursework in TESOL and applied linguistics, permission of department chair, and a 3.00 overall GPA. Preparation of the thesis under supervision of the thesis advisor. On demand.



## Management

Note: Additional work will be required for graduate credit in 400-level courses.

### **MGT 403 Ethical and Social Issues for the Manager**

3

Prereq.: MGT 295 with a grade of C- or higher and junior standing or permission of the department chair. Defines contemporary ethical issues of managerial and corporate social responsibility and explores the impact of these issues on managerial decision-making behaviors. Emphasized issues that emerge in the internal as well as external environments of a business organization. Defines societal expectations of organizations regarding corporate social responsibility.

### **MGT 425 Labor/Management Relations**

3

Prereq.: The 8 pre-major courses with grades of C- or higher and MGT 295 with a grade of C- or higher and junior or senior standing. Study of issues related to labor-management relations. Topics include collective bargaining, labor-management contracts, contract negotiation and administration, grievance handling, employee discipline, and related topics. Methods for measuring staffing-related criteria are included. Spring.

### **MGT 431 Compensation and Benefits**

3

Prereq.: The 8 pre-major courses with grades of C- or higher; MGT 305 and STAT 201 with grades of C- or higher; and junior or senior standing. Study of compensation theory and practice. Topics include types of compensation and benefits, job analysis, job evaluation, pay structures, wage surveys, pay-for-performance, and methods for administering compensation and benefits. Fall.

### **MGT 460 Staffing**

3

Prereq.: The 8 pre-major courses with grades of C- or higher; MGT 305 with a grade of C- or higher; and junior or senior standing. Study of issues related to the staffing organizations. Topics include job analysis, human resource planning, recruitment, selection, equal employment opportunity, and related topics. Methods of measuring staffing-related criteria are included. Spring.

### **MGT 462 International Human Resource Management**

3

Prereq.: The 8 pre-major courses with grades of C- or higher; MGT 305 with a grade of C- or higher; and junior or senior standing. Study of human resource issues for multinational organizations. Topics include recruitment, selection, performance, training, career planning, compensation, labor relations, and related topics for expatriates and multicultural workforces. Fall. []

### **MGT 470 Organizing and Managing for Quality**

3

Prereq.: The 8 pre-major courses with grades of C- or higher; MGT 295 with a grade of C- or higher; and junior or senior standing. Examines leading organizational architecture that employs quality management in all activities of the enterprise. Explores how competitive strength is built by enabling the work force to innovate, so that products and service meet global customer standards. Irregular.

### **MGT 471 Managing Knowledge for Business Performance**

3

Prereq.: The 8 pre-major courses with grades of C- or higher; MGT 295 with grade of C- or higher; and junior or senior standing. For graduate students, permission of department chair (additional work required). Explores how people in organizations manage processes for creating, sharing, and evaluating knowledge used to improve and innovate business performance. Covers nature of knowledge, communities of practice, intellectual capital, knowledge life cycles, and executing knowledge projects. Irregular.

### **MGT 473 Organizing and Managing for Innovation**

3

Prereq.: The 8 pre-major courses with grades of C- or higher; and MGT 345 with a grade of C- or higher; and junior or senior standing; or permission of department chair. Explores contemporary approaches for releasing employee, supplier and customer creativity to constantly innovate what and how an organization produces its products and services. Irregular.



## Management Information Systems

### **MIS 501 Managing the IT Value Proposition**

**3**

Prereq.: Admission to MS-CIT or permission of department chair. Examines IT management from the practical, technical and theoretical aspects of information systems. Introduces information systems concepts and their implication for management of technology. Socio-technical and behavioral issues are examined.

### **MIS 502 Business Payoff of Information Technology & Systems**

**3**

Prereq.: Admission to MS-CIT or permission of department chair. Examines effective methods for competitive advantage through information systems and methods for sustainable payoff of IT. Impact of information technologies/systems on conducting business in a dynamic, global environment including sourcing options, virtual community and work patterns.

### **MIS 510 Managing Data Communications & Networking**

**3**

Prereq.: Admission to MS-CIT or permission of department chair. Provides technology overview of data networking and telecommunications in context of Information Systems management issues. Business cases stress strategies for successful design, implementation and maintenance of large-scale networked information systems, management of digital networks. On demand.

### **MIS 515 Data Management**

**3**

Prereq.: Admission to MS-CIT or permission of department chair. Concepts, principles, issues, and techniques for managing corporate data resources. Techniques for managing the design and development of large database systems. Data warehousing, data mining, and database administration will be emphasized. On demand.

### **MIS 550 Information Technology Policy and Strategy**

**3**

Prereq.: Admission to MS-CIT or permission of department chair. Strategic use of enterprise information systems and technology for the evolving and changing global marketplace. Development and implementation of policies and plans to achieve the alignment of information systems, technology and enterprise goals. On demand.

### **MIS 561 International Management Information Systems**

**3**

Prereq.: Admission to MS-CIT or permission of department chair. Examination of the role of information technology in today's business environment. Includes both theoretical perspectives as well as case studies custom-developed from international enterprises. Irregular.

### **MIS 565 Information Systems Analysis and Design**

**3**

Prereq.: Admission to MS-CIT or permission of department chair. Information systems development methods and analysis and design techniques with a focus on object-oriented analysis and design. Evaluation and selection of systems development, analysis and design methodologies including JAD, RAD, UML, and object-oriented approaches. On demand.

### **MIS 569 Current Topics in Management Information Systems**

**3**

Prereq.: Admission to MS-CIT program or permission of department chair. Management information systems and information technology issues. Topics vary to reflect conditions in the field. May be repeated with different topics for a maximum of six credits.





## Marketing

Note: Additional work will be required for graduate credit in 400-level courses.

### **MKT 470 Integrated Marketing Communication**

**3**

Prereq.: MKT 306 (C- or higher). Applications of marketing communication theory. Students learn how an organization integrates its promotion mix elements to present a unified message, and then create a strategic promotion plan for a real client. Fall.

## Marriage and Family Therapy

### **MFT 541 Introduction to Theories of Family Systems 3**

Prereq.: Admission to department. Historical and theoretical underpinnings of General Systems Theory as it applies to families and family therapy. Major models of family therapy will be presented to orient the student to an understanding of functional and dysfunctional processes in human interaction. This course lays the foundation for the subsequent assessment and treatment courses which focus specifically on the major schools of family therapy. Fall, spring, summer.

### **MFT 542 Professional, Ethical, and Legal Issues in Marriage and Family Therapy 3**

Prereq.: Admission to the MFT program. Professional, ethical, and legal issues in marriage and family therapy. Fall, Summer.

### **MFT 543 The Family Life Cycle 3**

Prereq.: MFT 541. Developmental aspects of the family system over time, delineating critical issues for individual and other subsystems at various stages and transition points of the family life cycle. This course covers divorce, remarriage, and blended families within the various stages a family may experience. Fall.

### **MFT 544 Families in Context: Gender and Cultural Dimensions 3**

Prereq.: MFT 541. Integral principles of human organization that influence family growth and development. Students gain an understanding of ethnicity and gender from a systemic framework. Fall.

### **MFT 551 Structural/Strategic & Behavioral Family Therapies 3**

Prereq.: MFT 541. Assessment and interventions from the structural, strategic, and Behavioral schools of family therapy are examined. Students learn about diagnosis and treatment of human dilemmas and symptomatology within a systemic context. Spring.

### **MFT 552 Experiential, Intergenerational and Psychodynamic Family Therapies 3**

Prereq.: MFT 551. Assessment and interventions from Experiential, Intergenerational, and Psychodynamic schools of family therapy are explored. Students learn diagnostics and treatment of human dilemmas and symptomatology from these schools of therapy. Fall.

### **MFT 554 Couples Therapy 3**

Prereq.: MFT 541. Assessment and treatment approaches to problematic dyadic relationships within a systemic framework are explored. Problems unique to couples are discussed, including sexual, communication, and role expectations. This course covers treatment of spousal violence, sexual dysfunctions, mate selection, types of marriages, communication problems, gender and power issues, and the developmental stages of marriage. Fall.

### **MFT 555 Dysfunctional Family Processes 3**

Prereq.: MFT 541. Examination of structures and processes of family dysfunction, including substance abuse, family violence, and sexual abuse. Assessment and intervention strategies from a systemic framework. Spring.

### **MFT 556 Systemic Perspectives on Mental Disorders 3**

Prereq.: MFT 541. Diagnostic classifications of mental, emotional, and behavioral disorders of individuals within a systemic framework. Students learn how to communicate within a medical model framework using systemic conceptualizations. Spring.

### **MFT 557 Action Methods in Marital and Family Therapy 3**

Prereq.: MFT 541 or permission of instructor. Introduces students to action methods involving physical movement and dramatic role-play in MFT. Uses hands on experience and theory to compare action-oriented and exclusively verbal methods regarding therapeutic effectiveness and skill level. Spring.

### **MFT 558 Internal Family Systems Therapy 3**

Prereq.: MFT 541 or permission of instructor. Basic theory, techniques, and clinical applications of the Internal Family Systems model of psychotherapy. This experiential course will emphasize exploration of the student's own internal family system through in-class exercises and course assignments. Summer.

### **MFT 583 Marriage and Family Therapy Practicum I 3**

Prereq.: MFT 551 and permission of MFT coordinator. Students participate in direct client contact, staff meetings, and supervision in a clinical setting. Fall.

### **MFT 584 Marriage and Family Therapy Practicum II 3**

Prereq.: MFT 583. Students participate in direct client contact, staff meetings, and supervision in a clinic setting. Spring.

### **MFT 585 Marriage and Family Therapy Internship (Plan E) 3 TO 9**

Prereq.: MFT 584 and permission of the MFT coordinator. Placement in a community agency providing marital and family therapy under supervision. May be repeated as needed to complete minimum requirement of 12 consecutive months (and 500 clinical contact hours/100 supervision hours). Plans A, C, D, and E require completion of 18 credits for programs with 30-35 credits, or 24 credits for programs with

greater than 35 credits, and a 3.00 overall GPA.

**MFT 598 Research Methods in Marriage and Family Therapy**

**3**

Prereq.: Admission to M.S. in MFT graduate program or permission of department chair. Quantitative and qualitative research design, data analysis, interpretation, and program evaluation methods related to marriage and family therapy. Spring.

## Master of Arts in Teaching

### **MAT 510 Research on Teaching Diverse Learners**

5

Prereq.: Admission to the M.A.T program. Research-based introduction to teaching, learning theory, classroom implications of developmental and diversity issues, and personal stance. Includes at least 15 hours of school day field experiences in assigned settings. Summer I.

### **MAT 511 Introduction to Special Education**

1

Prereq.: Admission to M.A.T. program. Introduction to basic concepts, legal issues, and terminology related to teaching special learners in the regular classroom. Satisfactory completion of exit examination is required to pass the course. Summer I.

### **MAT 520 Design and Delivery of Instruction**

4

Prereq.: Admission to the M.A.T. program, and MAT 510 (C or better). Coreq.: MAT 529. Cross disciplinary study of design and delivery of instruction. Includes at least 45 hours of field experience in an assigned public school classroom, delivering lessons and observation by university instructor. Students must pass the field component to pass the course. Summer II.

### **MAT 529 Content Pedagogy I in Certification Area: English, Mathematics, Science, Spanish, Special Education, Technology**

3

Prereq.: MAT 510 (C or better). Coreq.: MAT 520. Introduction to discipline-specific standards, pedagogy, and assessment strategies. Taught in certification area: English, mathematics, science, Spanish, special education or technology. Summer II.

### **MAT 530 Meeting the Needs of Special Learners in the Classroom**

3

Prereq.: Admission to the M.A.T. program, and MAT 511 (C or better) and MAT 520 (C or better). Coreq.: MAT 533. Study of strategies for meeting the needs of special learners in the regular classroom, emphasizing differentiation of instruction, assessment and management. Fall.

### **MAT 531 Literacy and Language Issues in the Classroom**

3

Prereq.: Admission to the M.A.T. program, and MAT 520 (C or better). Coreq.: MAT 533. Study of research, theory, and practice on developing literacy in content area classroom; differentiation to support struggling readers and writers; and strategies to support English language learners. Fall.

### **MAT 532 Research I: Reading and Designing Educational Research**

3

Prereq.: Admission to the M.A.T program. Coreq.: MAT 533. Develop ability to locate and critically read educational research; review literature; and design action research. This is the first half of the program capstone sequence (Plan E). Fall.

### **MAT 533 Field Experience in the Certification Area: English, Mathematics, Science, Spanish, Special Education, Technology**

3

Prereq.: Admission to the M.A.T program, MAT 520 and MAT 529, both with grades of C or higher. Coreq.: MAT 530, MAT 531, MAT 532, MAT 534, and MAT 539. Two days weekly supervised field experience in assigned public school classroom in certification area: English, mathematics, Science, Spanish, Special Education, or Technology. Focus on lesson planning, delivery, management and analysis of instruction. University supervisor observations and seminar. Fall.

### **MAT 534 Creating Productive Learning Environments**

3

Prereq.: Admission to the M.A.T. program, and MAT 520 with a grade of C or higher. Coreq.: MAT 533. Develop basic preventive management strategies, a repertoire of approaches to daily management of classroom behavior, skills in addressing chronic disciplinary problems, and a personal discipline plan congruent with school policies. Fall.

### **MAT 539 Content Pedagogy in the Certification Area II**

3

Prereq.: Admission to the M.A.T. program, and MAT 520 with a grade of C or higher. Coreq.: MAT 533. Continuation of study of discipline-specific standards, pedagogy and assessment strategies in the certification area: English, mathematics, science, Spanish, special education, or technology. Taught in the certification area. Fall.

### **MAT 540 Internship in the Certification Area: English, Mathematics, Science, Spanish, Special Education, or Technology**

6

Prereq.: Admission to the M.A.T. program and MAT 530, 531, 532, 533, 534, and 539 (all with grades of C or higher); a minimum GPA of 3.00; and permission of department chair. Coreq.: MAT 541 and MAT 542. Sixteen week, full-time internship in assigned public school classroom, supervised by certified teacher. Gradual assumption of full responsibility for classroom. Some certification areas must complete placements at two levels. Spring.

### **MAT 541 Internship Seminar**

1

Prereq.: Admission to the M.A.T. program. Coreq.: MAT 540. Cross disciplinary seminar focused on problem solving and reflection to improve student learning and support novice teachers. Attention to progress in action research. Spring.

### **MAT 542 Assessment of Student Learning**

3

Prereq.: Admission to the M.A.T. program. Coreq.: MAT 540. Design, implement, and analyze effective assessments of student learning, utilize state assessment data, make data-based decisions, and document impact on K-12 student learning. Spring.

**MAT 550 Research II: Conducting and Reporting Action Research 3**

Prereq.: Admission to the M.A.T. program; MAT 532, 540, 541, and 542 (all with grade of C or higher); and minimum GPA of 3.00 in MAT program. Complete the action research cycle by analyzing data and reporting research through paper and presentation. This is the second half of the program capstone (Plan E). Summer I.

**MAT 551 Perspectives on Educational Policy and Practice 3**

Prereq.: Admission to the M.A.T. program. Study of the contribution of philosophical, sociological and historical perspectives on American education today. Summer I.

## Mathematics

Note: Additional work will be required for graduate credit in 400-level courses.

### **MATH 421 History of Mathematics**

3

Prereq.: MATH 221 or for graduate students, admission to M.A., Mathematics or the M.S., Mathematics (for certified secondary teachers). Development of mathematics is traced from arithmetic of commerce, astronomy, geometry, and trigonometry in Babylonia, Egypt, Greece, and Rome to the later accomplishments in algebra, geometry, and calculus. Spring. (O)

### **MATH 440 Selected Topics in Mathematics**

1 TO 3

Prereq.: Permission of instructor. Selected topics in mathematics covering specialized areas not covered in regular offerings or that go beyond that provided for in the standard curriculum. May be repeated with different topics for a maximum of 6 credits. Irregular.

### **MATH 449 Mathematics Laboratory for Elementary School**

3

Prereq.: MATH 412, 414 or 327 or equivalent and student teaching. Provides teachers in elementary school with the opportunity to make mathematical materials useful in teaching elementary mathematics. Each participant constructs mathematical models and manipulatives appropriate to his/her teaching level and interest. Mathematical projects and educational implications are discussed. Can be used to meet the requirements for a major or minor in mathematics only for students seeking elementary, early childhood or middle level certification. Not recommended for use in meeting requirements for secondary school mathematics. Summer.

### **MATH 455 Introduction to Partial Differential Equations with Applications**

4

Prereq.: MATH 355 (C- or higher) or permission of department chair. Introduction to analytical, geometric, and numerical methods for solving partial differential equations. Basic models of physical systems using partial differential equations. Introduction to software used for solving partial differential equations. Fall. (O)

### **MATH 468 Symbolic Logic**

3

Prereq.: MATH 366 or equivalent. Introduction to truth, validity and argument. Methods of deduction, propositional functions and quantifiers, logic of relations, deductive systems, and propositional calculus. Spring. (E)

### **MATH 469 Number Theory**

3

Prereq.: MATH 366 or equivalent. Elementary theory of numbers. Divisibility, prime numbers, Fundamental Theorem of Arithmetic, congruences, Diophantine equations, quadratic residues and continued fractions are among topics considered. Fall. (O)

### **MATH 470 Mathematical Methods in Operations Research**

3

Prereq.: STAT 215 or 315, and MATH 110 or 228 or permission of instructor. Selected topics chosen from the areas of linear programming, decision analysis, and network analysis. Summer. (E)

### **MATH 477 Numerical Analysis**

3

Prereq.: MATH 221 and CS 151 or permission of instructor. Selected topics including difference operators, iterative methods of finding zeros of functions, interpolation and polynomial approximation, numerical integration and differentiation, matrices, and systems of linear equations. No credit given to students with credit for CS 254. Summer. (O)

### **MATH 491 Advanced Calculus**

3

Prereq.: MATH 222 or permission of instructor. Topics from continuity and differentiability of functions of several variables, exterior differential forms, multiple and iterated integration, line integrals, Gauss', Green's, and Stokes' theorems. Fall. (E)

### **MATH 500 Mathematics Practicum**

3

Prereq.: Admission to the M.A. program in mathematics and permission of the department. Supervised application of academic knowledge to an employment environment related to their field of study. On demand.

### **MATH 504 Topics in Mathematics**

1 TO 3

Prereq.: Permission of instructor. Topics in mathematics appropriate for in-service and pre-service graduate certification students who are not covered in regular course offerings. May be repeated under different topics for a maximum of 6 credits. Irregular.

### **MATH 506 Teaching Number Concepts in the Elementary Grades**

3

Prereq.: Admission to M.S. in mathematics for certified elementary teachers. NCTM Standards-based instructional practices that promote the development of number sense; operations with whole numbers, decimal numbers and common fractions; problem solving; and graphical representations in the elementary grades. Fall. (O)

### **MATH 507 Teaching Geometry & Measurement in the Elementary Grades**

3

Prereq.: Admission to M.S. in Mathematics for certified elementary teachers. NCTM Standards-based instructional practices that promote understanding of key concepts in geometry and measurement in the elementary grades. Fall. (E)

**MATH 508 Teaching Probability & Statistics in the Elementary Grades 3**

Prereq.: Admission to M.S. in Mathematics for certified elementary teachers. NCTM Standards-based instructional practices that promote understanding of key concepts in probability and statistics in the elementary grades. Spring. (O)

**MATH 509 Teaching Algebraic Thinking in the Elementary Grades 3**

Prereq.: Admission to M.S. in Mathematics for certified elementary teachers. NCTM Standards-based instructional practices that promote algebraic thinking in the elementary grades. Spring. (E)

**MATH 515 Abstract Algebra I 3**

Prereq.: MATH 366 or permission of instructor. Extension of basic group theory introduced in MATH 366, including normal subgroups, quotient groups, cyclic groups, permutation groups, classical isomorphism theorems, and Sylow theorems. Fall. (E)

**MATH 516 Abstract Algebra II 3**

Prereq.: MATH 515. Selected topics from advanced polynomial ring theory, Galois and extension field theory, homological algebra. Spring. (E)

**MATH 519 Principles of Real Analysis I 3**

Prereq.: MATH 377 or permission of instructor. Introduction to functions of a real variable and their properties. Rigorous study of the real number system, topological properties of real line, Cauchy sequences, limit and continuity properties of a real variable, metric spaces. Fall. (O)

**MATH 520 Principles of Real Analysis II 3**

Prereq.: MATH 519. Topics include Riemann-Stieltjes integrals, functions of bounded variation, sequences and series of real numbers, power series. Spring. (O)

**MATH 523 General Topology 3**

Prereq.: MATH 377 or permission of instructor. Rigorous study of point-set topology. Topics include set theory, definition and basic properties of topological spaces, continuous functions, and homeomorphisms. Spring. (O)

**MATH 525 Higher Geometry 3**

Prereq.: MATH 221 or permission of instructor. Topics from higher-dimensional geometry. Foundations of several geometries and relationship of Euclidean geometry to other geometries. Projective properties in a Euclidean (metric) setting. Selected topics from synthetic and analytic projective geometry. Fall.

**MATH 526 Complex Variables 3**

Prereq.: MATH 222 or permission of instructor. An introduction to the theory of functions of a complex variable. Topics include the field of complex numbers, complex analytic functions, elementary functions and their mapping properties, integration theory, and power series expansion of analytic functions. Spring. (E)

**MATH 531 Basic Concepts of Elementary School Mathematics 3**

Analysis of concepts underlying contemporary mathematics program in elementary school. Emphasis is placed on both structure of mathematical content and procedures used in developing pupil understanding of concepts and processes. Open only to post-baccalaureate certification students. Fall.

**MATH 534 Techniques in Diagnosis and Remediation for the Teaching of Mathematics - K-12 3**

Prereq.: Admission to M.S. in Mathematics for certified elementary or certified secondary teachers. This course will train early childhood, elementary, middle and secondary teachers in diagnosis and remediation. The course will use a clinical case study approach so that each student will get practical, as well as theoretical experience. Topics include identifying the factors related to learning difficulties in mathematics in the cognitive and affective domains, diagnostic tests, identification of the underachiever, and case studies. Spring.

**MATH 536 Teaching Number Concepts in the Middle Grades 3**

Prereq.: Admission to M.S. in Mathematics for Certified Elementary School Teachers. NCTM Standards-based instructional practices that promote the development of number sense; operations with whole numbers, rational numbers, integers; problem solving; and graphical representations in the middle grades. Fall. (O)

**MATH 537 Teaching Geometry & Measurement in the Middle Grades 3**

Prereq.: Admission to M.S. Mathematics for certified elementary teachers. NCTM Standards-based instructional practices that promote understanding of key concepts in geometry and measurement in the middle grades. Fall. (E)

**MATH 538 Teaching Probability & Statistics in the Middle Grades 3**

Prereq.: Admission to M.S. in mathematics for certified elementary teachers. NCTM Standards-based instructional practices that promote understanding of key concepts in probability and statistics in the middle grades. Spring. (O)

**MATH 539 Teaching Algebraic Thinking in the Middle Grades 3**

Prereq.: Admission to M.S. in mathematics for elementary teachers. NCTM Standards-based instructional practices that promote algebraic thinking in the middle grades. Spring. (E)

**MATH 540 Curriculum Problems in School Mathematics 3**

Prereq.: Admission to M.S. in Mathematics for certified elementary or certified secondary teachers. Current issues in mathematics education. Study of some current major curriculum projects. Content basic to these programs is studied with emphasis on mathematical structure.



Opportunity is provided for special investigation into topics of student's interest. Spring. (O)

**MATH 543 Secondary School Algebra with Technology from an Advanced Viewpoint 3**

Prereq.: Admission to graduate certification program in mathematics or M.S. in Mathematics for certified secondary teachers. Intended for in-service secondary school teachers and pre-service graduate certification students. Major objective is to broaden and deepen teacher's knowledge of the algebra topics encountered in secondary schools with particular emphasis on topics new to the curriculum and the uses of technology in teaching them. Opportunities will be provided to discuss the NCTM standards and their implications for teachers. Summer. (E)

**MATH 544 Secondary School Geometry with Technology from an Advanced Viewpoint 3**

Prereq.: Admission to graduate certification program in mathematics or M.S. in Mathematics for certified secondary teachers. For in-service mathematics teachers and graduate certification students in mathematics. Major objective is to expand teachers' knowledge of new topics and technology for teaching geometry. NCTM standards for geometry will be included. Summer. (O)

**MATH 547 Reflective Practice in Teaching Mathematics 3**

Designed to help in-service teachers develop as reflective practitioners through the use of lesson logs, narrative commentary, analysis of videotaped lessons, and examination of student work. Emphasis on relating instruction to the big ideas of mathematics, designing appropriate assessments, and determining meaningful feedback for students. Particularly helpful to beginning teachers who will be compiling their BEST portfolios. Open only to certified in-service teachers of mathematics, grades 7-12. Fall.

**MATH 580 Directed Study in Mathematics 1 TO 3**

Prereq.: Permission of the instructor. A study of selected topics in mathematics. The area of study will depend on the instructor and the interests and needs of the student(s). May be repeated with different topics to a maximum of 6 credits. Irregular.

**MATH 590 Special Project in Mathematics 3**

Prereq.: Completion of at least 21 credits in the student's planned program of graduate study and a 3.00 overall GPA. The study of an advanced topic in mathematics/mathematics education, approved by the student's graduate advisor and supervised by a faculty member. Requirements include preparation and oral presentation of a paper on the topic. Irregular.

**MATH 598 Research in Mathematics Education 3**

Prereq.: STAT 453 and permission of advisor. Course designed to familiarize graduate student with techniques and resources associated with research in mathematics and mathematics education. Opportunity for practical application will be provided. Fall.

**MATH 599 Thesis (Plan A) 3 OR 6**

Prereq.: Permission of the advisor, and a 3.00 overall GPA. Preparation of thesis under guidance of thesis advisor for students completing master's requirements under M.S. and M.A. Plan A.

## Mechanical Engineering

### **ME 458 Heating, Ventilating and Air Conditioning Systems Design**

**3**

Prereq.: ME 454 (may be taken concurrently); for graduate students, permission of instructor. Analysis and design of heating, ventilating, air conditioning and refrigerating systems (HVAC) for buildings and industrial applications, including equipment and component selection. Energy-efficient concepts and controls will be emphasized. Irregular.

### **ME 552 Mechanical Vibrations**

**3**

Prereq.: Permission of instructor. Modeling and analysis of vibrating systems, characteristics of single degree and multiple degrees of freedom systems. Modal analysis and synthesis, vibration control by isolation, absorption, or balancing. Applications of computer simulation and analysis techniques in vibrations. Vibration system modeling and analysis project required. No credit given to students with credit for ME 452. Link course with ME 452.

## Modern Languages

Note: Additional work will be required for graduate credit in 400-level courses.

### **ML 400 Topics in Advanced Modern Language Studies**

**3**

Prereq.: Permission of instructor. Literary and advanced language topics taught in the target language. May be repeated with different topics and in different languages. May be counted as an elective for a major or minor in a modern language. On demand.

### **ML 420 Internship in Foreign Languages**

**1 TO 3**

Prereq.: Appropriate 226 course or equivalent in target language. Practical field experience using the target language. One credit per eight-week unit. May be repeated to a total of 3 credits. On demand.

### **ML 428 Methods and Materials for Teaching World Languages at Elementary School Level**

**3**

Prereq.: ML 490 (may be taken concurrently) or LING 300 (may be taken concurrently) or permission of instructor, and admission to Professional Program or Accelerated Teacher Program in Spanish or admission to graduate program in modern language or permission of instructor for currently certified teachers. Participants will link the rationale, history, and theoretical foundations of elementary world language instruction to teaching and learning, and construct and adapt models for curriculum planning, program implementation articulation, and assessment. Participants will explore contemporary methodologies, lessons, activities resources, and address issues and concerns that apply to the elementary school level. NOTE: Instructors may not override professional program admission requirement. Fall. Summer.

### **ML 490 Teaching World Languages II: Acquisition in Young Children for Teachers of World Languages**

**3**

Prereq.: Admission to Professional Program or Accelerated Teacher Program in Spanish or admission to graduate program in modern language or permission of instructor for currently certified teachers. Participants will learn about research in the first and second language acquisition of world languages and discuss and apply implications of research findings (including brain research theory) for teaching and learning of world languages. Not open to TESOL students. NOTE: Instructor may not override professional program admission requirement. Summer.

### **ML 492 Topics in Language Teaching**

**1 TO 3**

Prereq.: ML 429. Special aspects of language teaching, such as creative uses of the language laboratory and other special aids, individualizing language instruction, teaching of literature and culture in the schools, will be emphasized. Topics may vary from section to section. Course may be repeated, with different topics, for up to 6 credits. Irregular.

### **ML 496 Independent Study in Modern Languages**

**3**

Prereq.: Permission of instructor. Independent work in language, culture, and literature, to meet individual interest in topics not covered in the regular curriculum. Work done under the supervision of a faculty member. On demand.

### **ML 500 Studies in Modern Languages**

**3**

Prereq.: Permission of instructor. Study of selected language, cultural and literary topics taught in the target language. May be repeated with different topics for up to 6 credits. On Demand.

### **ML 550 Intensive Studies in Modern Languages**

**3**

Prereq.: Admission to the Summer Institute of the target language. Intensive study of the language, culture, and society of specific areas where the target language is spoken. Designated for current teachers and other graduate students of the target language, it includes a technology component. May be repeated with different topics for up to 9 credits per graduate program. Summer.

### **ML 595 Special Project in Modern Languages**

**3**

Prereq.: Completion of 18 credits of approved graduate studies program, approval of advisor, and 3.00 overall GPA. Preparation of Special Project in Modern Languages under the supervision of a faculty member. On Demand.

### **ML 598 Research in Modern Languages**

**3**

Prereq.: Admission to the graduate program. Introduction to techniques and resources of literary research through examination of the theory, history, and practice of literary criticism. Course should be taken during first 15 credits of graduate study. Fall. (O)



## Music

Note: Additional work will be required for graduate credit in 400-level courses.

### **MUS 400 Project in Music**

**1 TO 4**

Prereq.: Permission of instructor. Individual study in an area of student's choice. May take the form of performance, composition, paper, or other area to be determined in consultation with a music department advisor.

### **MUS 401 Topics in Music**

**1 TO 3**

Prereq.: Permission of instructor. This course can be taken for the American Studies program. Selected topics in music to include specialized areas not covered in regular course offerings. May be repeated with different topics for up to 6 credits. Irregular.

### **MUS 404 Topics in Performance**

**1 TO 3**

Prereq.: Permission of instructor. Topics relevant to the performing musician including accompaniment, diction for singers, and performance practice. On demand.

### **MUS 405 Topics in Composers**

**3**

Prereq.: Permission of instructor. Historical and analytical study of selected composers and their works. On demand.

### **MUS 470 Musical Structure and Style**

**3**

Prereq.: Admission to the Master of Science (MS) in Music Education program, or four semesters of undergraduate music theory or demonstrated proficiency on the music theory entrance examination. Survey of the principles of music theory through analysis of representative forms from various style periods. Irregular.

### **MUS 501 Topics in Music**

**1 TO 3**

Selected topics in music covering specialized areas not covered in regular course offerings. Open only to students with an undergraduate degree in music or with special permission of the department chair. May be repeated with different topics up to 6 credits. Irregular.

### **MUS 502 Topics in Music Education**

**1 TO 3**

In-service experience designed to meet specific needs of public school music teachers. May be repeated with different topics for a maximum of 6 credits. Summer.

### **MUS 503 Topics in Instrumental Music Education**

**1 TO 3**

Study of specialized areas of instrumental music for the experienced music educator. May be repeated with different topics for a maximum of 6 credits. Summer.

### **MUS 504 Principles and Foundations of Music Education**

**3**

Prereq.: Admission to the Master of Science (MS) in Music Education degree program. The study of the school music program from a historical, philosophical, and psychological basis. Special emphasis on current research in pedagogy and trends in aesthetic education. Irregular.

### **MUS 505 Topics in Pedagogy and Curriculum**

**1 TO 3**

Exploration of specialized topics in music pedagogy and curriculum for the experienced music educator. May be repeated with different topics for a maximum of 6 credits. Summer.

### **MUS 506 Topics in Choral Music Education**

**2**

Specialized areas of choral music and the school choral music program for the experienced music educator. May be repeated with different topics for a maximum of 6 credits. Summer.

### **MUS 507 Topics in Conducting**

**1 TO 3**

Selected topics in band, choral, or orchestral conducting covering specialized areas for the experienced conductor. May be repeated with different topics for a maximum of 6 credits. Summer.

### **MUS 508 Topics in Choral Literature**

**2**

Selected choral literature and rehearsal techniques for specific choral ensembles, including elementary, middle, high school, and community choirs. May be repeated with different topics for a maximum of 6 credits. Summer.

### **MUS 509 Comparative Music Studies**

**3**

Prereq.: Admission to the graduate program in Music Education (M.S.) degree program. Study of the world of music from many perspectives including universal themes, organology, acoustics, iconography, notation, uses and function of music, and social identity. Irregular.

### **MUS 510 Current Issues in Music Education**

**3**

Prereq.: Admission to Master of Science (MS) in Music Education and MUS 504 or permission of graduate coordinator. Contemporary issues in music education and how these interface with educational reform. Topics and projects include curriculum (music and interdisciplinary), research, assessment, equity, and access. Irregular.

<b>MUS 512</b>	<b>Topics in String Pedagogy</b>	<b>2</b>
Intensive study of the elements of pedagogy, with emphasis on program development. May be repeated with different topics for a maximum of 6 credits. Summer.		
<b>MUS 515</b>	<b>Topics in Digital Synthesizer Techniques</b>	<b>2</b>
A study of selected aspects of digital synthesizer techniques and their application to the music classroom. May be repeated for a maximum of 6 credits with different content. Summer.		
<b>MUS 526</b>	<b>Developing Children's Choirs</b>	<b>2</b>
Study of organizational techniques, resource materials, and rehearsal techniques for developing children's choirs. Summer.		
<b>MUS 528</b>	<b>Topics in Computer Music Notation</b>	<b>2</b>
Specialized topics in computer music notation software and its application to the music classroom. May be repeated with different topics for a maximum of 6 credits.		
<b>MUS 529</b>	<b>Topics in Sequencing and Synthesis</b>	<b>2</b>
Specialized topics in MIDI sequencing and synthesis software tools and their application to the music classroom. May be repeated with different topics for a maximum of 6 credits.		
<b>MUS 536</b>	<b>Topics in Music Technology</b>	<b>1 TO 3</b>
Specialized topics in music technology including computer-assisted instruction, Internet and multi-media authoring, and music computerlabs. May be repeated with different topics for a maximum of 6 credits. Summer.		
<b>MUS 540</b>	<b>Chamber Ensemble</b>	<b>1</b>
Prereq.: Permission of instructor by audition. Study and performance of music for various chamber ensembles. Will be offered based on availability of faculty and student interest. May be repeated for a total of 3 credits toward the M.S. in Music Education degree. Irregular.		
<b>MUS 540E</b>	<b>Ensemble: Clarinet</b>	<b>1</b>
Prereq.: Permission of instructor by audition.		
<b>MUS 540F</b>	<b>Ensemble: Percussion</b>	<b>1</b>
Prereq.: Permission of instructor by audition.		
<b>MUS 547A</b>	<b>Ensemble - Traditional Jazz</b>	<b>1</b>
Prereq.: Permission of instructor through audition. Standard big band instrumentation repertoire that concentrates on ensemble playing while giving the more accomplished musicians improvisatory opportunities. May be repeated for up to 4 credits with different content.		
<b>MUS 547B</b>	<b>Ensemble - Improvisatory Jazz</b>	<b>1</b>
Prereq.: Permission of instructor through audition. Varied instrumentation. May be divided into several groups. Concentration on individual development of jazz improvisatory skills. May be repeated for up to 4 credits with different content.		
<b>MUS 548</b>	<b>Ensemble-University Singers</b>	<b>1</b>
Prereq.: Permission of instructor through audition. Select small vocal ensemble studies and performs primarily a capella repertoire including madrigals, motet, chamber music, vocal jazz and world music. The ensemble performs several times both on and off campus with occasional concert tours. May be repeated for up to 4 credits with different content.		
<b>MUS 549</b>	<b>University Chamber Players</b>	<b>1</b>
Prereq.: Permission of instructor through audition. Select ensemble of musicians exploring their passion for chamber music in all its settings. May be repeated up to 4 credits with different content.		
<b>MUS 551</b>	<b>Orff-Schulwerk Teacher Training Course Level I</b>	<b>3</b>
Foundations and principles of the Orff-Schulwerk process for teaching music to children; includes training in recorder pedagogy, ostination, bordun and canon. Summer.		
<b>MUS 552</b>	<b>Folk Dance and Movement Across the Curriculum</b>	<b>2</b>
Multicultural and interdisciplinary course based on traditional folk music and dances. Movement education will be explored. May be repeated with different topics for a maximum of 6 credits. Summer.		
<b>MUS 556</b>	<b>Orff-Schulwerk Teacher Training Course Level II</b>	<b>3</b>
Prereq.: MUS 551. A continuation of MUS 551; various accompaniment patterns, orchestrations, and modulation. Rhythmic training including irregular rhythms and meters; continuation of soprano recorder and introduction of alto recorder. Summer.		
<b>MUS 557</b>	<b>Topics in General Music Education</b>	<b>2</b>
Study of specialized areas of classroom music throughout the K-12 music program. May be repeated with different topics for a maximum of 6 credits. Summer.		
<b>MUS 559</b>	<b>Topics in High School Music Curriculum</b>	<b>2</b>
Study of selected non-performance curricula for the secondary music teacher. May be repeated with different topics for a maximum of 6 credits. Summer.		

- MUS 562 Topics in Instrument Repair 2**  
Repair and preventative maintenance of brass, woodwinds, and string instruments. May be repeated with different topics for a maximum of 6 credits. Summer.
- MUS 567 String Repair 2**  
Fundamentals of violin family repair through lecture, demonstration, and lab experience. Areas of emphasis include bridge and peg repair, seam and crack gluing, making and setting of sound posts, instrument cleaning, and bow rehairing. Summer.
- MUS 570 Topics in Vocal Techniques 2**  
Study of vocal techniques for selected age groups and/or levels of musical development. May be repeated for maximum of six credits with different content. Summer.
- MUS 572 Topics in Literature for Bands 2**  
Study of selected instrumental literature for specific instrumental ensembles, including elementary, middle, and high school bands, and wind and jazz ensembles. May be repeated with different topics for a maximum of 6 credits. Summer.
- MUS 574 Topics in Assessment and Evaluation 2**  
Study of various methods and evaluation as related to student, teacher, and program assessment. May be repeated with different topics for a maximum of 6 credits. Summer.
- MUS 575 Topics in Band 2**  
Study of selected aspects of the public school band program. May be repeated for a maximum of 6 credits with different content. Summer.
- MUS 578 Advanced Applied Music or Conducting 2**  
Prereq.: Admission to the Master of Science (MS) in Music Education degree program and approval for the Capstone Recital or Conducting Special Project. Individual instrumental or vocal instruction in performance or conducting. May be taken more than once for credit. Fee: \$400 (subject to change).
- MUS 579 Topics in Improvisation 2**  
Study of function and usage in specialized areas of improvisation. Development of basic skills in such realms as jazz, classical, and world music. May be repeated with different topics for a maximum of 6 credits. Summer.
- MUS 590 Sinfonietta 1**  
Prereq.: Permission of instructor. Standard symphonic literature will be rehearsed for concert performance. No more than a total of 4 credits from MUS 590, 591, and 592 may be taken for credit towards the M.S. in Music Education degree.
- MUS 591 Chorus 1**  
Prereq.: Permission of instructor. Representative chorus works from the great composers will be rehearsed and performed. No more than a total of 4 credits from MUS 590, 591, and 592 may be taken for credit towards the M.S. in Music Education degree.
- MUS 592A Wind Symphony 1**  
Various styles of band music and different compositions studied for performance each semester. No more than a total of 3 credits from MUS 590, 591, and 592A may be taken for credit towards the degree.
- MUS 597A Capstone Project in Music 3**  
Prereq.: Admission to the Master of Science (MS) in Music Education degree program at least 18 credits toward the planned program of study, a 3.00 cumulative grade point average and permission of the department's graduate committee. Individual study or research in an area of the student's choice with the consultation of the Capstone Project advisor; may include action research or composition. Summer.
- MUS 597B Performance or Conducting Recital 3**  
Prereq.: Admission to the Master of Science (MS) in Music Education degree program, approval of the audition committee, at least 18 credits toward the planned program of study and a 3.00 cumulative grade point average. The preparation and presentation of a performance or conducting recital under the guidance of the appropriate applied music instructor. Summer.
- MUS 598 Research in Music Education 3**  
Prereq.: Admission to MS in Music Education degree program and MUS 504 or permission of Graduate Music Coordinator. Study of research methods used in music education and the primary sources needed to conduct these types of research. Irregular.
- MUS 599 Thesis 3**  
Prereq.: Admission to the Master of Science (MS) in Music Education degree program; permission of the department's graduate committee; at least 18 credits toward the planned program of study; and a 3.00 cumulative grade point average. Preparation of the thesis under the supervision of the thesis advisor. Irregular.





## Nursing

Note: Additional work will be required for graduate credit in 400-level courses.

### **NRSE 498 Special Studies in Nursing**

**1 TO 3**

Prereq.: Permission of instructor. Individualized plan to aid the learner in attainment of professional goals. Plan may consist of directed study of reading, clinical experience, individual instruction, research, or other appropriate activities.

## Philosophy

Note: Additional work will be required for graduate credit in 400-level courses.

### **PHIL 440 Project in Practical Ethics**

**3**

Prereq.: PHIL 220, 346 and six credits from PHIL 144, 222, 240, 241, 242, 349, NRSE 246 341, 342. Research in practical ethics. May include a practicum designed by the student and approved by the instructor. On demand.

### **PHIL 492 Independent Study**

**1 TO 3**

Prereq.: Permission of instructor. Individual research in selected topics. Open to any student who wishes to pursue a topic of special interest for which the student is qualified. On demand.

## Physical Education

Note: Additional work will be required for graduate credit in 400-level courses.

- PE 405 Elementary Methods in Physical Education 3**  
 Coreq.: PE 406. Prereq.: PE 300 and admission to the Professional Program in teacher education. Application of the child-centered, problem-solving approach as a method to learning fundamental concepts of movement. Discussion, observation, and laboratory experience will provide theoretical background. 20 hours of field experience in an elementary physical education setting required.
- PE 416 Organization and Administration of Physical Education 3**  
 Formerly PE 402. Coreq: PE 417 (formerly PE 404). Prereq: PE 405 and admission to the Professional Program in teacher education. Administrative procedures involved in conducting physical education activities, arranging programs, providing facilities and handling staff-class details, finance, publicity, interscholastic, and intramural activities.
- PE 500 Improving Student Learning in Physical Education 3**  
 Prereq.: Permission of instructor. Components of the effective teaching of physical education are explored. Topics include teacher standards, student performance standards, instructional planning, assessment strategies, and reflective practice. Spring. (E)
- PE 505 Instructional Tools for Physical Education 3**  
 Prereq.: Admission to M.S. in Physical Education or permission of instructor. The student will use pedometers and heart rate monitors as instructional tools. The internet will be used for the planning and implementation of programs of instruction in physical education. Fall. (E)
- PE 510 Instructional Models for Physical Education 3**  
 Prereq.: Admission to M.S. in Physical Education or permission of instructor. Contemporary instructional models for physical education. Includes theory, planning, and implementation for cooperative learning, personalized systems of instruction, inquiry, and other effective models used in physical education. Fall. (O)
- PE 520 Current Issues in Physical Education 3**  
 Reviews current trends and issues involved in the teaching of Physical Education in American schools. Emphasis is upon a discussion of new and innovative administrative procedures, programs, trends, and problems. Spring. (O)
- PE 524 Sport, Physical Education, Athletics, and the Law 3**  
 The varied aspects and impact of law in professional sport, physical education, and athletics. Emphasis on negligence, product liability, and risk management. Fall. (E)
- PE 525 Concepts in Athletic Administration 3**  
 Prereq.: Admission to M.S. in Physical Education or permission of department chair. Focus on management application and control of interscholastic and intercollegiate athletics; specific reference to philosophical and sociological applications, institutional governance, ethical conduct and sportspersonship, legal issues, and evaluation systems. Fall. (O)
- PE 590 Independent Study/Topics in Physical Education 3**  
 Prereq.: Admission to the M.S. in Physical Education with approved planned program, or permission of instructor. Work in theory or research to meet individual requirements in areas not covered by the regular curriculum. Either PE 590 and/or EXS 590 may be taken for a maximum of 6 credits. Irregular.
- PE 597 Research in Physical Education and Exercise Science I 3**  
 Prereq.: Admission to M.S. in Physical Education or permission of department chair. Introduction to scientific process, focused on understanding research designs, interpreting research through writing and reviewing research. Overview of statistics presented. Students must take this course before successful completion of 12 credit hours of graduate coursework. Fall.
- PE 598 Research in Physical Education and Exercise Science II 3**  
 Prereq.: PE 597; admission to M.S. in Physical Education or permission of department chair. Scientific process of performing research, focused on concepts and procedures for designing, conducting, and analyzing research. Students must take this course before successful completion of 24 credit hours of graduate coursework. Spring.
- PE 599 Thesis 3**  
 Prereq.: 18 credits of approved graduate study including PE 597 and 598; minimum 3.00 overall GPA. Preparation of the thesis under the supervision of the thesis advisor.



## Physics

Note: Additional work will be required for graduate credit in 400-level courses.

- PHYS 425 Modern Physics 3**  
Prereq.: PHYS 305. Special theory of relativity; quantum aspects of matter and of electromagnetic radiation, Bohr model, nuclear structure, radioactivity. Irregular.
- PHYS 450 Advanced Laboratory 1**  
Prereq.: PHYS 331, 425. A study of the 400 kV Van de Graaf accelerator, particle detection electronics, and a study of induced nuclear reactions. One three-hour laboratory per week. Irregular.
- PHYS 452 Independent Study in Physics 1 TO 3**  
Prereq.: Approved plan of study by arrangement with supervising instructor and approval of department chair. Special work in laboratory or theory to meet individual requirements in areas not covered by regular curriculum. May be taken more than one semester up to a limit of 6 credits.
- PHYS 460 Seminar in Physics 1**  
Prereq.: Senior standing. Through individual readings, discussions, and presentations, students will study contemporary topics in various fields of physics. Capstone requirement for all physics majors in the B.A. and B.S. non-teaching programs. Hours by arrangement. Spring.
- PHYS 470 Quantum Mechanics 3**  
Prereq.: PHYS 425. Limits of classical physics, wave packets and uncertainty, Schrodinger wave equation, eigenfunctions and eigenvalues, one-dimensional potentials, wave mechanics, operator methods. Irregular.
- PHYS 471 Quantum Mechanics II 3**  
Prereq.: PHYS 470. Three-dimensional Schrodinger equation, angular momentum, radial equation, hydrogen atom, operator matrices and spin, addition of angular momentum, plus additional topics to be chosen by instructor. Irregular.
- PHYS 490 Topics in Physics 3**  
Selected studies in physics which are not offered presently in the curriculum of the department. Course may be repeated for different topics. No topic may be taken for credit more than once. Irregular.
- PHYS 505 Mathematical Physics 3**  
Prereq.: Undergraduate physics minor; MATH 222. Introduction to basic mathematical methods of theoretical physics, such as linear algebra (matrices), vector analysis, partial differential equations, orthogonal functions, and complex variables presented with physical illustrations. Irregular.
- PHYS 511 Classical Mechanics 3**  
Prereq.: PHYS 425 or permission of chair. Mechanics of continuous media, wave motion, special relativity, and introduction to Lagrange's and Hamilton's equations. Irregular.
- PHYS 519 Advanced Topics in Physics 3**  
Prereq.: Permission of instructor and student's advisor. Combination of lecture, discussion, and laboratory work. May be repeated more than once for credit under different topics. Irregular.
- PHYS 542 Advanced Electricity & Magnetism 3**  
Prereq.: PHYS 425 or permission of chair. Field theory of electromagnetism. Magnetic fields of currents, magnetic materials, electromagnetic induction of Maxwell's equations. Irregular.
- PHYS 598 Research in Physics 3**  
Prereq.: Admission to the MS program in natural sciences, and 15 credits in planned program of study, and permission of instructor. Student will conduct original research in physics including a literature review, project proposal, research presentation, and a report suitable for journal publication. On demand.
- PHYS 599 Thesis 3**  
Prereq.: PHYS 598, permission of the advisor, and a 3.00 overall GPA. Preparation of the thesis under the supervision of the thesis advisor. Plans A, C, D, and E require completion of 18 credits for programs with 30-35 credits, or 24 credits for programs with greater than 35 credits, and a 3.00 overall GPA. On demand.



## Political Science

Note: Additional work will be required for graduate credit in 400-level courses.

### PS 415 Government & Business in the Information Age 3

Prereq.: PS 104 or 110 or 315 or permission of department chair. Analysis of the evolution of the pattern of interaction between business and government in the American administrative and political process as we enter the information age, with attention to how we as members of society are affected by and may influence this process. Spring. (E)

### PS 420 Government and Politics of Latin America 3

Historical, social, economic, and ideological factors impacting contemporary government and politics in Latin America. Summer. [I]

### PS 421 Government and Politics of Africa 3

Historical, social, economic, and ideological factors impacting contemporary government and politics in Africa. Summer. [I]

### PS 425 Asian Politics 3

Prereq.: PS 104. Examination of the government and politics of East and South Asia with major focus on Japan, China, and India. Emphasis on historical and cultural forces shaping politics, Western impact on Asia, and cross-national comparisons. Spring. [I]

### PS 430 The American Presidency 3

Prereq.: PS 104 or 110 or permission of instructor. Office of President and place in the political system, colonial antecedents and modern counterparts. Emphasis on the presidency's functional and institutional development, contemporary role in politics and public policy, and interplay between man and office. Cross listed with AMS 430. No credit given to students with credit for AMS 430. Spring.

### PS 431 The Legislative Process 3

Prereq.: PS 104 or 110 or permission of instructor. Structure, behavior, and operation of U.S. Congress. Comparison with state legislatures. Interrelationships with executive and judicial branches. Problems of popular representation. Attention to the budgetary process, lobbying, and campaign financing. Spring. (O)

### PS 432 Urban Politics and Government 3

Prereq.: PS 104 or 110 or permission of instructor (non-Political Science introductory courses may be substituted with permission of instructor). Selected urban conditions and problems such as housing, racial relations, power structure, intergovernmental relations, partisan politics, group behavior, forms of government, politics of planning, regionalism, economic development, transportation, and communication. Field research projects. Fall. (O)

### PS 433 20th-Century Political Thought 3

Contemporary approaches to political theory, such as socialism, conservatism, liberalism, and group theory. Fall.

### PS 434 Government and Politics of the Middle East and North Africa 3

Historical background, contemporary setting, political processes, and major problems of some of the countries of Middle East and North Africa. Spring. [I]

### PS 435 Russian and Eastern Europe 3

Government and politics of Russia and of selected Eastern European countries such as Poland, Hungary, Ukraine, and Yugoslavia. Irregular. [I]

### PS 439 U.S. Middle East Policy 3

Examination of the evolution of United States foreign policy towards the Middle East since WWII. Emphasis placed on the sources, determinants, and goals of United States policy and the challenges facing the United States in the region. Irregular.

### PS 445 Public Policy Analysis and Evaluation 3

Prereq.: PS 260 or permission of department chair. An investigation in perspectives and methods of measuring public policies.

### PS 446 The Budgetary Process 3

Prereq.: PS 110 and 260. Examination and analysis of budgeting as an administrative and political process, with attention to techniques and reform efforts.

### PS 448 The Politics of Human Services 3

Study of the politics and administration of government programs that deal with human problems such as poverty, crime, health,

manpower development, and housing.

**PS 470 National Intern Experience 12**

Prereq.: Junior, senior, or graduate status; minimum 3.00 grade point average. For undergraduate students, special exception may be granted by the internship advisor in consultation with the department chair. Government or political intern experience in Washington, D.C., or other national settings, typically through a program such as the Washington Center. Cannot be used to satisfy the requirements for a political science major if the student has completed PS 480 or PS 482. No more than 6 credits of PS 470 may be applied toward a political science major. By application.

**PS 480 State Internship Experience 4**

Prereq.: Junior or senior status with a minimum 2.50 grade point average unless special exception is granted by the internship coordinator in consultation with the department chair. Also open to graduate students with a minimum 3.00 grade point average. Must be taken concurrently with PS 485. Students who apply and are admitted to this program are assigned to work in state and local government departments and agencies for a minimum of two days a week. Not open to students who have completed PS 482. Cannot be used to satisfy the requirements for a political science major if the student has completed PS 470. By application. Spring.

**PS 482 Intensive State Internship Experience 9**

Prereq.: Junior, senior, or graduate status; minimum 3.00 grade point average. For undergraduate students, special exception may be granted by the internship advisor in consultation with the department chair. Must be taken concurrently with PS 485. Students who apply and are admitted to this internship are assigned to work on a full-time basis, five days per week. Not open to students who have completed PS 480. Cannot be used to satisfy the requirements for a political science major if the student has completed PS 470. No more than 5 credits of PS 482 may be applied toward a political science major. By application. Spring.

**PS 485 State Internship Seminar 3**

Prereq.: Students must be enrolled in a department approved internship. Concurrent enrollment in either PS 480 or PS 482 is required. Structure, behavior, and operation of government institutions, agencies, and external organizations with an emphasis on applying theoretical knowledge to practical political experiences. Spring.

**PS 490 Directed Readings in Political Science 1 TO 6**

Prereq.: Permission of instructor. Individual programs of study for students with special abilities or interests in political science. May be repeated with different topics to a maximum of 6 credits. On demand.

**PS 491 Advanced Studies in Political Science 1 TO 6**

Intensive study of selected problems in political science. On demand.

**PS 501 Advanced Studies in International Law 3**

Prereq.: Graduate status. Origins, scope and limitations of public international law. Fundamental principles affecting laws among nations, and variables influencing state compliance. Discussion of contemporary issues, the role of international organizations, and the impact of the changing global power configuration on the international legal, political and economic environment. Fall.



## Psychology

Note: Additional work will be required for graduate credit in 400-level courses.

- PSY 410 Media Psychology 3**  
Prereq.: One psychology course and at least junior standing or graduate status; or permission of the instructor. Seminar examining the impact of electronic media on human behavior, feelings, thinking, and psychological development. Primary focus on the psychological impact of television and newer electronic media technologies (e.g., computers and the Internet). Summer.
- PSY 430 Psychology of Diversity 3**  
Prereq.: PSY 112 or permission of instructor. Open to students with junior or higher standing. Review of psychological research and theories pertaining to the study of diversity. Implications for clinical work and community education will be discussed.
- PSY 440 Motivation 3**  
Prereq.: Three courses in psychology. Physiological and psychological variables in selected motivational processes. Problems of measurement, empirical findings, and theoretical research. Readings in contemporary literature.
- PSY 444 Positive Psychology 3**  
Prereq.: PSY 112 and 3 additional credits in Psychology or permission of instructor. Scientific study of human strengths. Topics include optimism, creativity, well-being, and resilience. Spring.
- PSY 446 Introduction to Psychotherapy and the Psychology of Counseling 3**  
Prereq.: PSY 330 and 6 other credits in Psychology or permission of instructor or admission to M.A. Psychology. An introduction to the basic theories underlying psychotherapeutic process. Explores the primary assumptions of the behavioral, biological, cognitive, humanist-existential, and psychodynamic models. Topics include ethical and professional standards and diversity. Spring.
- PSY 450 Biopsychology 3**  
Prereq.: Six credits in psychology or permission of instructor. Analysis of relationships between bodily processes and behavior.
- PSY 451 Psychological Evaluation 3**  
Prereq.: Three courses in psychology. Principles and problems basic to construction, choice and use of psychological measuring instruments, and study of application to diagnosis. Special Condition: completion of additional project by graduate students. Fall.
- PSY 454 Drugs and Behavior 3**  
Prereq.: PSY 112. Overview of the major classes of psychoactive drugs and their effect on the brain and behavior. Legal drugs, such as alcohol and caffeine, and illegal drugs are considered.
- PSY 458 Human Neuropsychology 3**  
Prereq.: PSY 330 and 450, or permission of instructor. Relationship between the brain and behavior is examined. Topics include disorders of speech and memory, common neurological disorders such as dementia and stroke, and alcohol-related disorders. Spring.
- PSY 460 Behavior Modification: Theory and Practice 3**  
Prereq.: PSY 200 or permission of instructor. Application of learning principles to the modification of both normal and abnormal behavior. The settings for application include areas such as personal, social, and marriage counseling; individual and group psychotherapy; formal and informal education and re-education; personal, vocational, and correctional rehabilitation.
- PSY 470 Personality Psychology: Theories and Research 3**  
Prereq.: Three courses in psychology. Nature of personality theory and critical analysis of major contemporary theories of personality, including empirical evidence relevant to these theories.
- PSY 498 Topics in Psychology 1 TO 3**  
Study of selected topics in psychology. Topics announced each semester. May be repeated with different topics for a total of 6 credits.
- PSY 512 Seminar in Developmental Psychology 3**  
Prereq.: Admission to graduate program or permission of instructor. Study of human development from conception through old age, including analysis of theory and research findings.
- PSY 526 Psychology of Learning 3**  
Prereq.: PSY 512 or equivalent or permission of instructor. Introduction to research and theories of learning with emphasis on implications for classroom procedures.
- PSY 530 Psychopathology 3**  
Prereq.: Admission to M.A. in Psychology or permission of instructor. Psychopathological conditions and their etiologies will be considered in

the context of differing major theoretical perspectives. In-depth information about the diagnosis and assessment of abnormal behavior will be provided. Recent research will be reviewed. Spring.

- PSY 541 Health Psychology 3**  
Prereq.: Admission to graduate program or permission of instructor. Examination of health-related behaviors, stress, risk factors and methods to improve well-being. Mind-body aspects of chronic illness, addiction, and immune system disorders are discussed. Fall.
- PSY 542 Psychology of Stress 3**  
Prereq.: Admission to M.A. in Psychology or permission of instructor. Seminar on the biological, emotional, behavioral and cognitive effects of stress. Critical examination of stress theories and research methodology. Focus on factors that modify the relationship between stress and health outcomes (e.g., social support, optimism). Spring. (O)
- PSY 543 Stress Management: Theory & Research 3**  
Prereq.: Admission to M.A. in Psychology or permission of instructor. Introduction to the field of stress management and biofeedback. A general overview of current theory, research, and practice as well as ethics and the controversies in biofeedback, and other areas of health psychology. Spring. (E)
- PSY 544 Biofeedback: Principles and Practices 3**  
Prereq.: Admission to graduate program in psychology. Basics of theory underlying biofeedback; use of biofeedback equipment; overview of biofeedback assessment, treatment, and evaluation. Fall. (E)
- PSY 545 Introduction to Clinical Psychology 3**  
Prereq.: Admission to M.A. in psychology or permission of instructor. Survey of current clinical practice, theory, and research with an emphasis on ethical issues. Fall.
- PSY 546 Short-Term Psychotherapy and Health Care 3**  
Prereq.: Admission to M.A. in Psychology or permission of instructor. Examination of American health care system and psychotherapy practice. Topics include description of short-term therapy models, ethics, diversity, and controversies. Fall.
- PSY 550 Introduction to Community Psychology 3**  
Introduction to the history, central assumptions and methodologies of community psychology. Fall.
- PSY 551 Primary Prevention 3**  
Prereq.: PSY 550. Intensive examination of the theoretical and empirical underpinnings of primary prevention programs in mental health. Spring.
- PSY 553 Developing Prevention Programs 3**  
Prereq.: PSY 551 or permission of instructor. Development and operation of prevention/empowerment strategies in institutional and/or community settings. Fall.
- PSY 571 Psychology of Women's Health 3**  
Prereq.: Admission to graduate program or permission of instructor. Seminar examining psychological theories and research relevant to women's health. Topics include chronic disease, gynecological health, health beliefs and behaviors, minority women, aging, menopause, stress, role strain, and coping. Spring. (E)
- PSY 590 Advanced Topics in Psychology 3**  
Prereq.: Admission to graduate program or permission of instructor. Study of advanced topics in psychology. Topics will vary and will be announced each semester. May be repeated under different topics for a total of 6 credits. Irregular.
- PSY 591 Advanced Independent Reading and Research in Psychology 3**  
Prereq.: Permission of instructor. Directed advanced independent studies in psychology. On demand.
- PSY 595 Graduate Internship in Psychological Applications 3**  
Prereq.: Permission of instructor. Supervised internship at an agency or institution that provides psychological services. Minimum of 120 hours per semester required. Evaluations will be conducted by faculty and field supervisors. On demand.
- PSY 596 Psychological Research: Design and Analysis I 3**  
Prereq.: Admission to M.A. program in psychology or permission of instructor. Topics include experimental and quasi-experimental design, program evaluation, single case, and survey design, with application of statistical software packages (e.g., SPSS). Each student will plan an independent research project. Fall.
- PSY 597 Psychological Research: Design and Analysis II 3**  
Prereq.: PSY 596. An overview of research methods in psychology, continued from PSY 596. Each student will complete the independent project proposed in PSY 596. Spring.
- PSY 599 Thesis 3**  
Prereq.: 21 credits of graduate work, and a 3.00 overall GPA. Students must consult with their advisor before registering for thesis credits. Preparation of the thesis under the supervision of the thesis advisor.



## Reading

- RDG 500 Independent Study in Reading and Language Arts 3**  
Prereq.: 15 credits in Reading and Language Arts; permission of program advisor; and admission to the master's or Sixth-Year program in Reading and Language Arts. Independent study in the reading and language arts area not covered by regular course offerings. Supervision is given through periodic conferences with the student. Oral presentations are required. On demand.
- RDG 502 Current Trends in Developmental Reading PK-12 3**  
Prereq.: Admission to M.S. or Sixth-Year program. Survey of current reading practices and materials in the schools. Emphasis on developmental reading from pre-school through high school and into the adult years.
- RDG 503 Developmental Reading in PreK-12 3**  
Prereq.: Admission to the M.S. Reading and Language Arts or Sixth-Year program or by permission of the chair of the Department of Reading and Language Arts. Focus on evidence-based instructional practices to promote factors involved in teaching reading readiness, reading in primary grades, word recognition, fluency, and comprehension, as well as means of assessing literacy progress as readers and writers move from emergent literacy to learning to read and into the reading to learn stages. Provides a broad understanding of the processes by which students learn to read and write within the context of today's diverse learning communities.
- RDG 504 Middle School Level Literacy Development 3**  
Prereq.: Admission to M.S. or Sixth-Year program. Foundations, approaches, materials, and techniques for developmental literacy programs at the middle school level. Attention is given to literacy strategies and the use of study skills in both regular and content classrooms.
- RDG 506 Developmental Reading in the Secondary Schools 3**  
Prereq.: Open to students in pre-certification or certification status in secondary or PK-12 post baccalaureate certification programs, or permission of department chair. The Basic Skills Development program in elementary school reviewed. Study of the need for continuing systematic instruction in reading for pupils throughout grades 7-12. Organization of such a program, materials, and methods currently in use, and means of evaluation are considered. 30 hours of field work is required. NOTE: No credit will be given to students who have credit for RDG 440, RDG 505, or RDG 593.
- RDG 507 Topics in Language, Literacy and Culture 1**  
Study of selected topics in areas of language, literacy, and culture. Topics will vary each time the course is offered. May be taken more than once under different topics for a maximum of 3 credits. Irregular.
- RDG 569 Folktelling Art and Technique 3**  
Prereq.: RDG 588 and admission to M.S. or Sixth-Year program in reading and language arts, or permission of department chair. Study of the art and techniques of storytelling. Develop competency in the oral tradition of folktelling. Investigate the planning of study units and activity programs for use in elementary and secondary schools. Irregular.
- RDG 578 Teaching Writing in the Elementary Schools 3**  
Prereq.: Admission to M.S. or Sixth-year program in reading and language arts, or permission of department chair. An integration of theories, practices, and techniques as related to teaching writing in the elementary schools. Students, in conjunction with the instructor, design lessons construct models, and collect children's writing efforts for their level.
- RDG 579 Technology in Reading & Language Arts Instruction 3**  
Prereq.: Admission to M.S. or Sixth-Year program in reading and language arts, or permission of department chair. Intersection of literacy learning and instruction with technology. Assists teachers in transforming technology to meet, support and enhance literacy development of their students. Competencies in web-based, computer and multimedia-based reading and language arts instruction will be developed.
- RDG 582 Introduction to Critical Literacy 3**  
Prereq.: Admission to M.S or Sixth-Year program in reading and language arts, or permission of department chair. Critical investigation of literacy. Examines literacy instruction, the relationship between classroom literacy practices and the curriculum, and the relationship among knowledge, equity, empowerment, class, race, resistance, and literacy. On demand.
- RDG 583 Teaching Writing across the Curriculum I 6**  
Prereq.: Acceptance to the Central Connecticut Writing Project (CCWP). Participants will explore research-based approaches to the teaching of writing, present successful teaching strategies in the area of writing across the curriculum, and write extensively in different genres. The emphasis is on personal and professional writing. Only 3 credits may be counted towards the Master's in English or in Reading and Language Arts with the permission of the CCWP director and advisor. Cross listed with ENG 583. Summer.
- RDG 585 Reading in Content Area 3**  
Prereq.: RDG 502 or RDG 503 or RDG 504 or RDG 506 and admission to M.S. or Sixth-Year program in reading and language arts. Investigation of materials and procedures used for teaching reading in content area. Special emphasis on vocabulary and comprehension development.
- RDG 586 Literacy Instruction for Diverse Populations I 3**

Prereq.: Admission to M.S. or Sixth-Year program in reading and language arts, or permission of department chair. Current trends and issues on language, ethnicity, and social class as they impact on literacy instruction for children of diverse backgrounds with an emphasis on sociolinguistic perspectives.

**RDG 587      Bibliotherapy      3**

Prereq.: Admission to M.S. or Sixth-Year program in reading and language arts, or permission of department chair. Identification, selection, and effective use of books that address problems confronting young people from pre-school age to adolescence. Concerns include physical and mental handicaps, divorce, death, alcoholism, drug abuse, neglect.

**RDG 588      Teaching Children's Literature      3**

Prereq.: Admission to M.S. or Sixth-Year program in reading and language arts, or permission of department chair. Study of wide variety of literature for children. Investigation of the appreciation for literature with children. Competency in storytelling and writing or original stories and poems will also be developed.

**RDG 589      Creative Language Arts      3**

Prereq.: RDG 502 or RDG 503 or RDG 504 or RDG 506 and admission to M.S. or Sixth-Year program in reading and language arts. Creative aspects of language activities both written and oral for elementary school children are considered toward stimulating such work in the classroom. Essential goals of language arts programs will be studied.

**RDG 594      Diagnosis of Reading & Language Arts Difficulties      3**

Prereq.: RDG 502 or RDG 503 or RDG 504, and admission to M.S. or Sixth-Year program in reading and language arts, Reading and Language Arts Consultant Certification, or OCP in reading and language arts. May not be taken concurrently with RDG 595. Study and interpretation of selected tests and instruments useful in analysis of physical, intellectual, social, and emotional factors related to reading difficulties.

**RDG 595      Remedial & Corrective Techniques in Reading & Language Arts      3**

Prereq.: RDG 594 and admission to M.S., Sixth-Year program in reading and language arts, or Reading and Language Arts Consultant Certification, or OCP in reading and language arts. Study of principles of remedial-corrective reading and language arts methods of analysis and interpretation, and materials useful in correction of reading and language arts difficulties.

**RDG 596      Clinical Practices in Reading & Language Arts      6**

Prereq.: RDG 595 and admission to M.S., Sixth-Year program in reading and language arts, or Reading and Language Arts Consultant Certification, or OCP in reading and language arts. Diagnosis and treatment of reading and language arts difficulties and disabilities. Case study prepared for pupil tutored during term.

**RDG 598      Seminar in Reading & Language Arts Research      3**

Prereq.: 15 credits in graduate reading and language arts courses and admission to M.S. or Sixth-Year program in reading and language arts. Advanced studies in reading research as well as basic reading and language arts research studies are reviewed. Emphasis will be on the articulation between research findings and reading and language arts practices in schools. The significance of the findings of research will be studied through prescribed readings, written and oral reports, and seminar discussion.

**RDG 599      Thesis      3 TO 6**

Prereq.: 24 credits of graduate study in Reading & Language Arts; admission to the master's program in reading; and language arts, and a 3.00 overall GPA. Preparation of the thesis under the supervision of thesis advisor and second reader. Oral and written presentation required. RDG 598 required if RDG 599 taken for only 3 credits. On demand.

**RDG 667      Multicultural Literature in the Classroom      3**

Prereq.: RDG 588 and admission to Sixth-Year program in reading and language arts, or Ed.D. program. A variety of teaching methods will be studied and applied to multicultural and multiethnic books for children in the elementary and middle grades. The implementation of various teaching methodologies as part of a whole language learning and teaching philosophy will be explored.

**RDG 675      Reading and Writing as Integrated Process      3**

Prereq.: RDG 589; admission to Sixth-Year program in Reading and Language Arts or permission of department chair. Integration of theories, practices, and techniques as related to the teaching of reading and writing in K-12 grades. Students, in conjunction with the instructor, will focus on teacher as writer and on developing young writers K-12. Students will integrate reading and writing instruction by designing lessons, models and assessments. Irregular.

**RDG 680      Current Trends and Issues in Reading and Language Arts      3**

Prereq.: RDG 502, RDG 503, RDG 591), RDG 504, and RDG 506 and admission to M.S. or Sixth-Year program in reading and language arts, or Ed.D. program. Current trends and current issues in reading and language arts. Focus on recent research and its application to reading and language arts. Courses will focus on recent research and its application to reading and language arts instruction in school settings.

**RDG 686      Literacy Instruction for Diverse Populations II      3**

Prereq.: RDG 586; RDG 667 and admission to Sixth-Year program in reading and language arts, or Ed.D. program. Strategies and techniques for promoting and expanding literacy among children of diverse backgrounds. Models of theoretical frameworks and analytic strategies that address children's diverse educational needs will be practiced.

**RDG 692      Specialized Diagnosis and Remedial Techniques      3**

Prereq.: RDG 594 and 595, and admission to Sixth-Year program in reading and language arts. Specialized diagnostic procedures and materials

in reading for children who are perceptually, neurologically, and psycholinguistically disabled. Role of children's literature, bibliotherapy, and cultural implication of story content are examined. Consultants from specialized areas, such as medicine and psychology will be used as resource persons.

**RDG 694      Organization, Administration, and Supervision of Reading & Language Arts Programs      3**

Prereq.: 15 credits of graduate study in reading and admission to Sixth-Year program in reading and language arts, or Reading and Language Arts Consultant Certification, or OCP in reading and language arts. Study of patterns of organization, administration, evaluation, and supervision of various types of reading and language arts programs in schools.

**RDG 696      Practicum for Reading and Language Arts Consultants      3**

Prereq.: RDG 596 and RDG 694 and admission to Sixth-Year program in reading and language arts, or OCP in reading and language arts. Work experience under guidance of certified reading and language arts consultant for an academic year. Experience includes supervision of reading programs, consultation with school personnel, assessment, clinical practice, professional development, and applied research.

**RDG 697      Practicum for Reading and Language Arts Consultants II      3**

Prereq.: RDG 696. Continuation of RDG 696 work experience under guidance of certified reading and language arts consultant for an academic year. Experience includes supervision of reading programs, consultation with school personnel, assessment, clinical practice, professional development, and applied research.

**RDG 698      Research Seminar      3**

Prereq.: 24 credits of graduate study in reading, and admission to Sixth-Year program in reading and language arts, or OCP in reading and language arts. In-depth individual study of research pertaining to reading materials, programs, and methods. Research reports required.

**RDG 700      Seminar in Literacy      3**

Prereq.: Admission to the Ed.D. program. Studies in literacy research are reviewed. Emphasis on the articulation between research findings and literacy curriculum and practices in schools. Significance of research findings is studied through prescribed reading, written and oral reports and seminar discussions, culminating with an open hearing on a major research presented by the student. On demand.

## School of Engineering and Technology

### SET 590 Topics in International Field Studies 3

Prereq.: Permission of academic advisor. International field study experience related to selected topics in biomolecular sciences, technology management, technology education, and construction management. This course may be used as an elective in the M.S. programs in Technology Education, Technology Management, and Construction Management, and the M.A. program in Biomolecular Sciences. On Demand.

## Science Education

Note: Additional work will be required for graduate credit in 400-level courses.

- SCI 420 History and Nature of Science 3**  
 Prereq.: Three courses in science or mathematics, or permission of department chair. Study of the history and nature of science. Examination of scientist's lives and discoveries through a cultural, political, and economic lens; and how science distinguishes itself from other disciplines' ways of knowing the world by examining contemporary assumptions, issues, and values of science. A safety plan based on state and national recommendations for implementation in the classroom will be required.
- SCI 452 Independent Study in Science 1 TO 6**  
 Prereq.: Approved plan of study by arrangement with the supervising instructor and approval of the science department chair. Includes special work in the laboratory or study of theory to meet the individual requirements in areas not covered by the regular curriculum. May be taken for more than one semester up to a limit of 6 credits. On demand.
- SCI 453 Environmental Interpretation Internship 3**  
 Prereq.: Prior completion of two field trips to environmental education facilities approved by advisory committee and senior standing. Responsible experiences in an environmental education facility. Before commencing the internship, a plan of the internship must be approved by the Advisory Committee on Environmental Interpretation.
- SCI 456 Teaching Science to Young Children 3**  
 Prereq.: Permission of instructor. Develops teaching strategies which assist young children in expanding their awareness, understanding, and appreciation of their natural environment. Teachers will learn active involvement techniques and will prepare hands-on science curriculum materials for use with children from preschool through grade 3. Spring.
- SCI 485 Studies in Science 1 TO 3**  
 Prereq.: Permission of instructor. Selected studies in the sciences which are not offered presently in the curriculum of the science departments. Course may be repeated for different topics, but the student may not take this course for credit under the same topic more than once.
- SCI 500 Science, Technology, and Society 3**  
 Prereq.: Three courses in the natural sciences. Discussion of the nature and values of science and technology and their implications for society. Irregular.
- SCI 518 Teaching Science in the Out-of-Doors 3**  
 Prereq.: Two science courses. Development of leadership skills and instructional techniques necessary for teaching science in the outdoor classroom. The methods and materials for developing and conducting an outdoor education program in science are discussed. Three hours a week; field studies are required. Fall. (O)
- SCI 520 The Physical Sciences 3**  
 Study of basic physical and chemical phenomena with emphasis on materials suitable for use in the elementary grades. Course aims to broaden and deepen background of elementary school teacher of science; opportunity is provided through demonstrations and laboratory work to gain functional understanding of physical science concepts. Spring. (E)
- SCI 530 The Earth Sciences 3**  
 Study of basic earth science phenomena with emphasis on materials suitable for use in the elementary grades. Course aims to broaden and deepen background of elementary school teacher of science; opportunity is provided through demonstrations and laboratory work to gain functional understanding of earth science concepts. Spring. (O)
- SCI 540 Teaching Biological Sciences in the Elementary School 3**  
 Study of biological phenomena with emphasis on materials and experiments suitable for use in the elementary grades. Course aims to broaden and deepen background of the elementary school teacher; opportunity is provided through demonstrations and laboratory work to gain functional understanding of biological science concepts. Fall. (E)
- SCI 555 Teaching of Science in the Elementary School 3**  
 Prereq.: Permission of instructor or chair. Examination of science instruction and assessment strategies in line with the National Science Standards and the State of Connecticut Standards. Fall.
- SCI 557 Science Instruction and Curriculum Development 3**  
 Prereq.: In-service teacher or permission of instructor. Examination and application of elementary and secondary science curriculum, instruction, and assessment strategies in line with the State of Connecticut Standards. Irregular.
- SCI 570 Teaching of Science in the Secondary School 3**



Prereq.: In-service teacher or permission of instructor. Examination of middle-level and secondary science curriculum, instruction, and assessment strategies in line with State of Connecticut science standards. On demand.

**SCI 580      Topics in Science Education      3**

Topics will vary each time course is offered. Combination of lecture, discussion, inquiry sessions, and student presentations. May be taken more than once for credit under different topics. Irregular.

**SCI 581      Independent Study      1 TO 3**

Prereq.: Acceptance into the Master of Natural Science: Science Education Program. Work in laboratory, theory, or research to meet individual requirements in areas not covered by regular curriculum. May be taken more than once for a limit of 6 total credits. Requires approved plan of study by arrangement with the supervising instructor.

**SCI 595      Special Projects in Science Education      3**

Prereq.: Admission to the M.S. program in Natural Sciences: Science Education, completion of at least 15 credits in the planned program (or permission of instructor) and a 3.00 overall GPA. Study of individual and collaborative action research techniques. Requirements include the design and completion of a classroom/school action research project and the preparation and submission of a paper for publication. Spring. (E)

**SCI 598      Research in Science Education      3**

Prereq.: Admission to the M.S. program in Natural Sciences and 15 credits in planned program of Science Education; or permission of instructor. Focus on current global issues related to science education. Students examine current literature and conduct an informal research project on current issues. Requirements include preparation of a research paper. Spring. (O)

**SCI 599      Thesis (Science Education)      3**

Prereq.: SCI 598 and admission to the M.S. program in Natural Sciences: Science Education; 21 credits in planned program; permission of advisor; and a 3.00 overall GPA. Preparation of the thesis under the supervision of the thesis advisor. On demand.

## Social Work

Note: Additional work will be required for graduate credit in 400-level courses.

- SW 433 Independent Studies in Social Work 3**  
Prereq.: Senior standing in the Social Work major and permission of the program director. Student must have a written study proposal approved by the program director prior to registering for this course. Readings and research in selected areas of social work. On demand.
- SW 436 Health and Social Work 3**  
Prereq.: SW 226 and 227; or permission of the instructor. Examination of health issues such as cancer, AIDS, Alzheimer's, and other disabilities; prevention, treatment, and attitudes; policies and programs in both public and private sectors which impinge upon the lives of clients with health problems. Irregular.
- SW 437 Child Welfare I 3**  
Prereq.: SW 226 and 227; or permission of the instructor. Examination of the role of the social worker in meeting the needs and protecting the rights of children. Irregular.
- SW 438 Child Welfare II 3**  
Prereq.: SW 226 and 227; or permission of instructor. Examination of current social issues, such as war, poverty, and divorce, that impact the lives of children. Irregular.
- SW 441 Social Work Practice with Latinos 3**  
Prereq.: Permission of instructor. Critical aspects in understanding the Latino community and how they relate to social work. Micro, mezzo and macro approaches to providing strength-based culturally relevant interventions are highlighted. Irregular. [I]
- SW 442 The Social Consequences of Immigration 3**  
Prereq.: Permission of instructor. Explores the development of immigration policies, social service delivery structures, and practices that help social workers provide services to immigrants and refugees. Irregular. [I]
- SW 478 Current Topics in Social Work 3**  
Prereq.: Permission of instructor. Analysis and evaluation of special topics in the general field of social work. Topics will vary from year to year. If topics vary, may be taken more than once. Irregular.

## Sociology

Note: Additional work will be required for graduate credit in 400-level courses.

### **SOC 411 Oral History for the Social Sciences 3**

Prereq.: SOC 310 or HIST 301 or ANTH 374 or permission of instructor. Examination of oral history as a social science methodological approach. Emphasis on the collection, transcription, analysis, archiving, indexing, and dissemination of primary data. Irregular.

### **SOC 433 Independent Studies in Sociology 1 TO 3**

Advanced study and projects in sociology of special interest to students under the supervision of one or more department members. May be repeated for a maximum of 6 credits. On demand.

### **SOC 452 Organizations, Occupations, and Work 3**

Prereq.: SOC 110 and 3 additional credits in Sociology. Systematic study of large scale, bureaucratic organizations with emphasis on relations among the organization's members, the organization as a social entity and its social and physical environment. Irregular.

## Spanish

Note: Additional work will be required for graduate credit in 400-level courses.

### **SPAN 441 Cross-Cultural Communication 3**

Prereq.: Permission of instructor. Open only to non-native speakers of Spanish. Development of fluency in oral expression. Speech analysis and phonetic theory to improve pronunciation and intonation. Introduction to problems of translation, enhancement of oral competence, and development of cross-cultural understanding. Fall. (E) [I]

### **SPAN 515 Colonial Spanish-American Literature 3**

Prereq.: Permission of instructor. Taught in Spanish. Study of major authors and literary works of the Colonial period in their cultural context. Irregular.

### **SPAN 520 Modernismo 3**

Prereq.: Permission of instructor. Taught in Spanish. Study of the most significant authors of the Modernista period. Irregular.

### **SPAN 525 Contemporary Spanish-American Poetry 3**

Prereq.: Permission of instructor. Taught in Spanish. Study of major Spanish-American poets and poetic themes from the period following Modernismo to the present. Spring. (E)

### **SPAN 526 The Spanish-American Short Story 3**

Prereq.: Permission of instructor. Survey of representative authors and selected works with emphasis on the twentieth century. Course to be taught in Spanish. Irregular.

### **SPAN 530 Contemporary Spanish Novel 3**

Prereq.: Permission of instructor. Taught in Spanish. Study of significant novels from the 1940s to the present. Spring.

### **SPAN 534 Women Writers of the Spanish-Speaking World 3**

Prereq.: Permission of instructor. Taught in Spanish. Discussion of representative works will center around cultural and gender issues. On demand.

### **SPAN 535 Contemporary Spanish-American Novel 3**

Prereq.: Permission of instructor. Taught in Spanish. Study of representative Spanish-American novels from the 1950s to the present. Spring.

### **SPAN 545 The Spanish-American Essay 3**

Prereq.: Permission of instructor. Taught in Spanish. Analysis of major works by authors such as Sarmiento, Marti, Rodo, Reyes, Paz and others. Irregular.

### **SPAN 551 Drama of the Golden Age 3**

Prereq.: Permission of instructor. Taught in Spanish. In-depth study of representative plays by great dramatists of the Golden Age, including Lope de Vega, Tirso de Molina, and Calderon. Spring. (O)

### **SPAN 553 19th-Century Spanish Literature 3**

Prereq.: Permission of instructor. Taught in Spanish. Study of Spanish romanticism and realism with a consideration of their historical background. Irregular.

### **SPAN 560 Structure of Spanish Language 3**

Prereq.: Permission of instructor. Taught in Spanish. Study of syntactical and morphological aspects of the Spanish language. Spring. (E)

### **SPAN 561 Topics in Hispanic Literature 3**

Prereq.: Permission of instructor. Detailed study of a literary figure, movement, or theme. Subject will vary from semester to semester. Irregular.

### **SPAN 571 Generation of '98 3**

Prereq.: Permission of instructor. Detailed study of some major works of authors such as Unamundo, Baroja, Valle Inclin, and Antonio Machado of the Generation of '98 in the context of historical, ideological, and aesthetic trends of their time. Fall. (O)

### **SPAN 572 20th-Century Spanish Literature 3**

Prereq.: Permission of instructor. Taught in Spanish. Representative authors and literary movements of the period following the Generation of '98. Spring. (E)

### **SPAN 576 Cervantes 3**

Prereq.: Permission of instructor. Taught in Spanish. Works of Cervantes with particular emphasis on Don Quixote. On demand.

### **SPAN 588 Topics in the Contemporary Spanish-Speaking World 3**

Prereq.: Permission of instructor. Taught in Spanish. Contemporary society in the Spanish-speaking world, its institutions, traditions, and values.

**SPAN 599 Thesis 3**

Prereq.: Completion of 18 credits of approved graduate study program, approval of advisor, and a 3.00 overall GPA. Preparation of thesis under the supervision of thesis advisor. On demand.

## Special Education

Note: Additional work will be required for graduate credit in 400-level courses.

### **SPED 423 Assessment, Instruction and Curricular Adaptations for Preschoolers 3**

Prereq.: Admission into the Professional Program. Development of Individualized Education Programs, adapting curricula, and the utilization of assessment and teaching strategies to promote the development and independence of preschoolers with disabilities in community and integrated school settings. Taken concurrently with EDEC 423. Field experience required.

### **SPED 430 Characteristics and Education of Individuals with Behavioral/Emotional Disorders 3**

Prereq.: SPED 315 or permission of instructor. Taken concurrently with SPED 431. Overview of the education of behavioral/emotional disorders, autism and attention deficit hyperactivity disorders. Topics include characteristics, identification, etiology, theoretical, and educational approaches. Involves field-experience component.

### **SPED 431 Behavior Management and Social Skills Development 3**

Prereq.: SPED 315 or permission of instructor. Taken concurrently with SPED 430. Examination of methodologies for evaluation, assessment, management of student behavior, and program planning/instruction utilized in special education settings. Involves field-experience component.

### **SPED 433 Educational Assessment for Exceptional Learners 3**

Prereq.: Admission to the Professional Program and SPED 432. Examines formal and informal assessment materials and techniques used in evaluating adaptive skills, processing abilities, and academic achievement in individuals with learning and/or behavior problems. Topics include procedures for test selection/administration, methods for scoring and interpreting test results. Involves field-experience component.

### **SPED 434 Characteristics and Education of Individuals with Developmental Disabilities 3**

Prereq.: Admission to the Professional Program. Taken concurrently with SPED 435. Overview of mental retardation, developmental disabilities, autism and physical disabilities. Topics include characteristics, identification, etiology, theoretical, and educational approaches. Involves field-experience component.

### **SPED 435 Curriculum Adaptations and Teaching Strategies for Learners with Exceptionalities 3**

Prereq.: SPED 433. Taken concurrently with SPED 434. Techniques for assessing social studies, science, and pre-vocational skills, as well as for selecting, developing, and adapting curricula and methods for students with exceptionalities. Involves field-experience component.

### **SPED 436 Language Arts for Learners with Exceptionalities 3**

Prereq.: SPED 432, 433. Taken concurrently with SPED 438. Techniques for planning and delivering instruction in the areas of reading, writing, and oral language specific to students with special needs.

### **SPED 437 Integrative Seminar for Beginning Special Educators 3**

Prereq.: SPED 436. Taken concurrently with SPED 439. Examines collaborative strategies for assessment and program planning. Communication skills, professional ethics and codes of conduct will be examined.

### **SPED 501 Education of the Exceptional Learner 3**

Examines growth and development of students with disabilities, including those identified as gifted and talented, and methods for assessing, planning for and working effectively with these students. Meets State of Connecticut requirement for teacher certification (10 hours of off-campus field experience required).

### **SPED 506 Foundations of Language for the Exceptional Child 3**

Prereq.: Admission to any M.S. education program. Review of the basis of language competence in the exceptional child, including phonology, morphology, semantics, syntax, and other component factors. This course is for teachers certified in education.

### **SPED 510 Inclusive Education 3**

Prereq.: Certification in any area of education or permission of instructor. Identification of the issues, legislation, and litigation affecting inclusion as a method of integrating special needs children in regular education. Methods and assessment strategies of learning which facilitate inclusion along with alternate curriculum and classroom management strategies will be presented.

### **SPED 511 Behavioral/Emotional Disorders 3**

Prereq.: SPED 315 or 501, admission to the School of Graduate Studies and admission to the Special Education program; or permission of the chair. Examination of behavioral/emotional disorders, autism, attention deficit hyperactivity disorders, and schizophrenia, with emphasis on current issues, classroom practices, and contemporary research (10 hours of off-campus field experience required).

### **SPED 512 Learning Disabilities 3**

Prereq.: SPED 315 or SPED 501, admission to the School of Graduate Studies and admission to the Special Education program; or permission of the chair. Characteristics and identification of students with learning disabilities. Impact on reading, writing, mathematics, oral language, cognition, and other performance dimensions. Implications for instruction (10 hours of off-campus field experience required).

**SPED 513 Developmental Disabilities****3**

Prereq.: SPED 315 or SPED 501, admission to the School of Graduate Studies and admission to the Special Education program; or permission of the chair. Examination of developmental disabilities including students with mental retardation, pervasive developmental disorder, cerebral palsy, and other physical disabilities, with emphasis on current issues, classroom practices, and contemporary research (10 hours of off-campus field experience required).

**SPED 514 Cognitive Behavior Management and Social Skill Strategies****3**

Prereq.: SPED 315 or SPED 501, admission to the graduate program in Special Education; or permission of the department chair. Examination of methodologies for evaluation, management of student behavior, program planning, cognitive restructuring, and functional behavior analysis utilized in special education settings (15 hours of off-campus field experience required).

**SPED 515 Assessment in Special Education****3**

Prereq.: SPED 511, 512, 513. Review of methods and materials used in assessing and evaluating the performance of students who may be eligible for special education. Topics include psychometric theory, selecting/administrating tests, scoring, and interpreting and communicating test results/findings. 10 hours of off-campus field experience required. May be taken concurrently with SPED 516.

**SPED 516 Instructional Programming for Students with Exceptionalities****3**

Prereq.: SPED 511, 512, 513. Designing the individualized education program (IEP) and subsequent lesson plans in academic and non-academic areas to meet the needs of exceptional students. 10 hours of off-campus field experience required. May be taken concurrently with SPED 515.

**SPED 517 Instructional Methods for Students with Special Needs - Elementary****3**

Prereq.: SPED 515, 516. Methods associated with planning and implementing instruction, with emphasis on the areas of mathematics, reading, writing, and oral language in the elementary grades (10 hours of off-campus field experience required).

**SPED 518 Instructional Methods for Students with Special Needs - Secondary****3**

Prereq.: SPED 515, 516. Methods associated with planning and implementing instruction in grades 7 through 12. Issues related to academic content, advocacy/self-determination, vocational transition, and functional living are also discussed (10 hours of off-campus field experience required).

**SPED 520 Student Teaching Seminar****1**

Coreq.: SPED 521. Examines current issues in special education which affect teaching and learning including multiculturalism and diversity, leadership, collaboration, professional ethics, and codes of conduct.

**SPED 521 Student Teaching in Special Education - Elementary****3 TO 6**

Prereq.: SPED 517 or 518, and permission of the Director of Field Experiences. Supervised teaching in elementary special education classrooms, agencies, or institutions. Attendance at on-campus seminars is required. The post-baccalaureate certification program has been revised to include two student teaching experiences within the same semester instead of the currently offered one student teaching (6 credits) for each of two semesters. The eight weeks (3 credits for SPED 521) and eight weeks (3 credits for SPED 522) allow for students to complete student teaching in just one semester.

**SPED 522 Student Teaching in Special Education - Secondary****3 TO 6**

Prereq.: SPED 517 or 518, and permission of the Director of Field Experiences. Supervised teaching in secondary special education classrooms, agencies, or institutions. Attendance at on-campus seminars is required. The post-baccalaureate certification program has been revised to include two student teaching experiences within the same semester instead of the currently offered one student teaching (6 credits) for each of two semesters. The eight weeks (3 credits for SPED 521) and eight weeks (3 credits for SPED 522) allow for students to complete student teaching in just one semester.

**SPED 523 Practicum in Special Education - Elementary****3**

Prereq.: SPED 517 or SPED 518, SPED 520. Supervised practicum in elementary special education classrooms. Summer.

**SPED 524 Practicum in Special Education - Secondary****3**

Prereq.: SPED 517 or 518, SPED 520, and permission of department chair. Supervised practicum in secondary special education classrooms. Summer.

**SPED 532 Contemporary Issues in Special Education****1-3**

Prereq.: Certification in education. Overview of current theory and practices in various aspects of special education, including topics in etiology, identification, classification, assessment, and education.

**SPED 534 Advanced Topics in Developmental Disabilities****1-3**

Prereq.: SPED 513 or permission of Special Education advisor or permission of department chair. Overview of current theory and practice in various aspects of developmental disabilities including advanced topics in etiology, identification, classification, assessment and programming. Irregular.

**SPED 536 Autism Spectrum Disorder****3**

Prereq.: Admission to any M.S. education program. Historical and current views regarding the characteristics, etiology, and prognosis of autism spectrum disorder. Current educational and treatment programs will be reviewed. This course is for teachers certified in education. Irregular.

**SPED 541 Issues & Strategies in the Transition Process****3**

Prereq.: Admitted to Master's Degree Program in Special Education. Emphasized the planning process for making a smooth transition from school to post school options for students with disabilities. Promotes the use and values of compatibility analyses, self-determination and natural supports. Irregular.

**SPED 542 Designing Classroom Environments for Creative Learning 3**

Prereq.: Admission to graduate school or permission of department chair. Examines creative practices in assessment, instruction and curriculum development for students with special education needs. Participants share experiences from their own content areas and add to the richness of options in working with students in special education. Summer.

**SPED 560 Positive Classroom Management for Students Receiving Special Education Services 3**

Prereq.: Admission to any M.S. education program. Basic skill and application of reality-oriented verbal strategies and Life Space Crisis Intervention strategies and general classroom management for educators who address the needs of special education students experiencing emotional and/or physical crises. This course is for teachers certified in education. Irregular.

**SPED 566 Legal and Administrative Issues in Special Education 3**

Prereq.: Acceptance to M.S. program in Special Education or permission of department chair. Federal and state laws and regulations for special education are studied. Emphasis is placed on the theories and processes in pupil personnel services including writing an individualized education program (IEP) and organizing and participating in planning placement team (PPT) meetings.

**SPED 577 Integrative Seminar 3**

Prereq.: Certification in special education. Integration of theories, practices, and issues as related to provision and delivery of services to exceptional learners. Students in conjunction with the instructor, will evaluate their current professional skills and develop and carry out an independent study to increase their professional competence. [Note: This course was added back to the catalog on 12.20.10 after being mistakenly deleted earlier.]

**SPED 578 The Juvenile Offender with Special Education Needs 3**

Prereq.: Admission to any M.S. education program. Study of the educational characteristics of the juvenile offender as a special education student, including a review of current educational interventions. This course is for teachers certified in education. Irregular.

**SPED 580 Collaborative Process in Special Education 3**

Prereq.: Teacher certification or permission of department chair. Examination of the interactions between the special educator and the regular classroom teacher, including programming, management, and monitoring, for the purpose of providing supports and services for students with special education needs.

**SPED 581 Assistive Technology in Special Education 3**

Prereq.: Admitted to Master's Degree Program in Special Education. Considering, designing, and implementing a range of assistive technologies for people with individualized education or rehabilitation programs; individualizing instruction through the use of adaptive devices, hardware, and software; applying instructional technology applications to the roles and responsibilities of special educators. Irregular.

**SPED 591 Independent Study in Special Education 3**

Directed independent studies in special education. May be repeated under different topics for a total of 6 credits.

**SPED 595 Topics in Special Education 1 TO 3**

Prereq.: Admission to any M.S. education program. Seminar addressing a specific area of special education, with emphasis on current trends in the field. May be repeated with different topics for a maximum of 6 credits. This course is for teachers certified in education. Irregular.

**SPED 596 Designing Action Research in Special Education (Plan E) 3**

Prereq.: Admission to the M.S. in Special Education, SPED 598, and permission of department chair or instructor. Introduction to action research in special education. Students will identify a topic, conduct a literature review, formulate an appropriate research design plan, and receive CCSU Human Studies Committee approval in partial completion of the Master's Degree Capstone (Plan E) project. Fall.

**SPED 597 Implementing and Documenting Action Research in Special Education 3**

Prereq.: SPED 596. Students implement and document action research design plan formulated in SPED 596. Final report documents results, discussion, and limitations of study. Required presentation supplements the written report. Spring.

**SPED 598 Research in Special Education 3**

Prereq.: Admission to the Special Education master's program; must be taken prior to enrolling in SPED 596. Examines quantitative, qualitative, and single-case design research methods used in special education for assessing the impact of instructional techniques, treatment programs, related services, and behavioral interventions. Students will use research quality indicators to evaluate research methods, approaches, and publications in the special education literature base. Students will use statistical applications to analyze data and conduct analyses. Spring, Summer.





## Statistics

Note: Additional work will be required for graduate credit in 400-level courses.

- STAT 416 Mathematical Statistics II** **3**  
 Prereq.: STAT 315. Continuation of theory and applications of statistical inference. Elements of sampling, point and interval estimation of population parameters, tests of hypotheses, and the study of multivariate distributions.
- STAT 425 Loss and Frequency Distributions and Credibility Theory** **3**  
 Prereq.: STAT 416 (may be taken concurrently). Topics chosen from credibility theory, loss distributions, simulation, and time series. Spring.
- STAT 453 Applied Statistical Inference** **3**  
 Prereq.: Graduate standing with at least one course in statistics or STAT 315 or permission of instructor. Statistical techniques used to make inferences in experiments in social, physical, and biological sciences, and in education and psychology. Topics included are populations and samples, tests of significance concerning means, variances and proportions, and analysis of variance. No credit given to students with credit for STAT 201 or 216. Spring, Summer.
- STAT 455 Experimental Design** **3**  
 Prereq.: STAT 201 or 216 or 416 or permission of instructor. Introduction to experimental designs in statistics. Topics include completely randomized blocks, Latin square, and factorial experiments. Fall. (O)
- STAT 456 Fundamentals of SAS** **3**  
 Prereq.: CS 151 and STAT 201 or 216 or equivalent. Introduction to statistical software. Topics may include creation and manipulation of SAS data sets; and SAS implementation of the following statistical analyses: basic descriptive statistics, hypotheses tests, multiple regression, generalized linear models, discriminant analysis, clustering and analysis, factor analysis, logistic analysis and model evaluation. This course is cross-listed with MKT 444. Spring. (E)
- STAT 465 Nonparametric Statistics** **3**  
 Prereq.: STAT 201 or 216 or 416 or permission of instructor. General survey of nonparametric or distribution-free test procedures and estimation techniques. Topics include one-sample, paired-sample, two-sample, and k-sample problems as well as regression, correlation, and contingency tables. Comparisons with the standard parametric procedures will be made, and efficiency and applicability discussed. Fall. (E)
- STAT 476 Topics in Statistics** **3**  
 Prereq.: Permission of instructor. Topics depending on interest and qualifications of the students will be chosen from sampling theory, decision theory, probability theory, Bayesian statistics, hypothesis testing, time series or advanced topics in other areas. May be repeated under different topics to a maximum of 6 credits. Spring. (O)
- STAT 521 Introduction to Data Mining** **4**  
 Prereq.: STAT 104 or STAT 200 or STAT 215 or STAT 315 or permission of department chair. Data mining models and methodologies. Topics may include data preparation, data cleaning, exploratory data analysis, statistical estimation and prediction, regression modeling, multiple regression, model building, k-means clustering, and classification and regression trees.
- STAT 522 Data Mining Methods** **4**  
 Prereq.: STAT 521; STAT 315; STAT 201 or STAT 216 or STAT 416 or STAT 453 or permission of department chair. Data mining models and methodologies. Topics may include model evaluation techniques, hierarchical clustering methods, logistic regression, k-nearest neighbor classification, decision trees, the C4.5 algorithm, and neural networks. Spring.
- STAT 523 Applied Data Mining** **4**  
 Prereq.: Admission to M.S. in Data Mining and STAT 416 and STAT 522 or permission of department chair. Advanced investigation of data mining models and methodologies. Topics may include dimension reduction methods, Kohonen networks clustering, association rules using the a priori and generalized rule induction algorithms, naive Bayes classification and Bayesian networks, and genetic algorithms. Fall.
- STAT 525 Web Mining** **3**  
 Prereq.: STAT 521 or permission of department chair. Methods and techniques for mining information from web structure, content, and usage. Topics may include web log cleaning and filtering, de-spidering, user identification, session identification, path completion exploratory data analysis for web mining, and modeling for web mining, including clustering, association, and classification. Spring.
- STAT 526 Data Mining for Genomics and Proteomics** **3**  
 Prereq.: STAT 521 or permission of the instructor. Topics include selection of data mining methods appropriate for the goals of a biomedical study (supervised versus unsupervised, univariate versus multivariate), analysis of gene expression microarray data, biomarker discovery, feature selection, building and validation of classification models for medical diagnosis, prognosis, and drug discovery. Fall.
- STAT 527 Text Mining** **3**

Prereq.: STAT 521 or permission of the instructor. Intensive investigation of text mining methodologies, including pattern matching with regular expressions, reformatting data, contingency tables, part-of-speech tagging, and top-down parsing. Extensive use of Perl and Perl modules to analyze text documents. Spring.

**STAT 529 Current Issues in Data Mining 3**

Prereq.: Admission to the M.S. Data Mining program or permission of department chair. Topics depending on interest and qualifications of the students will be chosen from recent developments in data mining, including statistical pattern recognition, statistical natural language processing, bioinformatics, text mining, and analytical CRM. Use of statistical and data mining software. May be repeated under different topics to a maximum of 9 credits. Migration and Attrition. Extensive use of SPSS' Clementine data mining software is required. Irregular.

**STAT 551 Applied Stochastic Processes 3**

Prereq.: STAT 315 and MATH 228 or permission of instructor. An introduction to stochastic processes. Topics include Markov, Poisson, birth and death, renewal, and stationary processes. Statistical inferences of Markov processes are discussed. Fall. (O)

**STAT 567 Linear Models and Time Series 3**

Prereq.: STAT 416. Introduction to the methods of least squares. Topics include general linear models, least squares estimators, inference, hypothesis testing, and forecasting with ARIMA models. Spring.

**STAT 570 Applied Multivariate Analysis 3**

Prereq.: MATH 228; STAT 416 or, with permission of instructor, STAT 201, 216, or 453. Introduction to analysis of multivariate data with examples from economics, education, psychology, and health care. Topics include multivariate normal distribution, Hotelling's  $T^2$ , multivariate regression, analysis of variance, discriminant analysis, factor analysis and cluster analysis. Computer packages assist in the design and interpretation of multivariate data. Spring. (O)

**STAT 575 Mathematical Statistics III 3**

Prereq.: STAT 416 or equivalent. Continuation of theory and applications of statistical inference. Advanced topics in the estimation of population parameters and the testing of hypotheses. Introduction to Bayesian methods, regression, correlation and the analysis of variance. Fall. (E)

**STAT 576 Advanced Topics in Statistics 3**

Prereq.: Permission of instructor. Seminar in probability theory, sampling theory, decision theory, Bayesian statistics, hypothesis testing, or other advanced area. Topic depending on needs and qualifications of students. May be repeated under different topics to a maximum of 6 credits. Irregular.

**STAT 599 Thesis 3**

Prereq.: Permission of advisor, and a 3.00 overall GPA. Preparation of thesis under guidance of thesis advisor for students completing master's requirements under M.S. Plan A in Data Mining. On demand.

## Sustainability

**SUST 500 Social, Political, and Ethical Dimensions of Global Sustainability 3**

Prereq.: Admission to graduate school or permission of instructor. Study of the complex interrelationships between natural, social, and political systems. An interdisciplinary examination of principles, practices, and policymaking that underlie global sustainability including environmental impact on intergenerational equity, public health, social and economic justice, gender equity, education, human rights and democracy. Fall.

**SUST 501 Contemporary Challenges in Environmental Sustainability 3**

Prereq.: Admission to graduate school or permission of instructor. Review of the principles of sustainability. Interdisciplinary discussion of current global environmental challenges and potential sustainable solutions. Topics to be covered include population growth, climate change, water scarcity and pollution, persistent toxics, fossil fuels, and alternative energy resources. Fall.

**SUST 502 Science for Sustainability 3**

Prereq.: Admission to the graduate school or permission of instructor. Interdisciplinary course provides core science background necessary for understanding current environmental problems in sustainability. Emphasizes interrelationships of natural global systems and focuses on global biogeochemical cycles (water, carbon, nitrogen, sulfur), atmospheric chemistry, terrestrial and aquatic ecosystems, biological diversity, and effects of toxics.

## Technology Education

Note: Additional work will be required for graduate credit in 400-level courses.

- TE 420 Manufacturing Systems 3**  
Prereq.: MFG 118 and TE 215; for graduate students, admission to M.S. program in technology education. Laboratory application of the systems and technical means used to manufacture and construct products. Students will create designs, prototypes, tooling, transport devices, advertising strategies, line production techniques, and quality control mechanisms. Lecture/lab. Fall.
- TE 488 Independent Study in Technology Education 1 TO 3**  
Prereq.: Senior or graduate standing and permission of instructor. Directed independent studies in technology education for students who wish to pursue specialized areas which are not covered in regular course offerings. May be repeated with different topics for a maximum of 6 credits. On demand.
- TE 501 Improving Curriculum and Instruction in Technology Education 3**  
Examination of professional practices in teaching technology. Emphasis on current methods in curriculum development, teaching or concept acquisition, and preparing to assess student learning.
- TE 503 Bioengineering Concepts and Applications 3**  
Course will focus on the concepts underlying a wide range of, and the ethical issues of, biotechnologies (DNA, genetics, gene therapy, stem cell research, etc.); and presenting bioengineering concepts to grades 6-12 students. Minimum of 10 hours of field experience in middle or high school setting required.
- TE 506 STEM in Technology and Engineering Education 3**  
Study of techniques for integrating science, technology, engineering and math (STEM) content in an engaged learning technology education curriculum. Irregular.
- TE 510 Computer Applications for Technology and Engineering Education 3**  
Use of computer applications as vehicle to deliver units of study and laboratory activities in technology and engineering education. Emphasis on science, technology, engineering and math (STEM) course content. Irregular.
- TE 513 Professional Strategies for Teaching Technical Subjects to Adults 3**  
Approaches and strategies designed for use with adult learners. The development, presentation and evaluation of student-prepared lessons unique to technical subjects will be emphasized. Irregular.
- TE 520 Readings in Technology 3**  
Study of the nature of technology from a variety of perspectives. Students will explore, in-depth, the issues relative to the creation, use, and control of technology and its impacts on individuals and society.
- TE 540 Curriculum Materials in Technology Education 3**  
Preparation of curriculum guides, instruction sheets, lesson plans, tests, special references, appropriate texts, and use of audio-visual material in technology education and vocational-technical education will be studied and evaluated. Irregular.
- TE 560 Technological Developments 3**  
Study of major technological developments in communication, transportation, and production from a historical perspective. Emphasis on how humans moved from the stone age and the major developments along the way. Irregular.
- TE 588 Internship in Technology and Engineering Education 3**  
Prereq.: Permission of department chair. Guided practice or professional internship relevant to the student's plan of study. Includes work on a project under supervision of a faculty advisor. Projects may be sponsored by a host organization outside of the university. May be repeated with differing topics for a maximum of 6 credits. On demand.
- TE 590 Technology Education Facility Planning 3**  
Emphasis will be given to a systems approach to facility and environmental planning for industrial education, including philosophical commitment, effective laboratory design and plant layout, equipment, selection, and requisition procedure. Irregular.
- TE 595 Topics: Technical Seminar 3**  
Exploration of problems, trends, or emerging technology relevant to technology education programs. May be repeated under different topics for a maximum of 9 credits. Irregular.
- TE 596 Special Projects in Technology Education 3**  
Prereq.: TE 598, 21 credits in planned program and a 3.00 overall GPA. Study of an advanced topic in technology education approved by advisor and a special project co-advisor. Requirements include a paper on the topic. At the option of the advisors, an oral presentation may also

be required. Irregular.

**TE 598      Research in Technology Education**

**3**

Familiarization with techniques and resources associated with research in the student's specialization. Opportunity for practical application will be provided. (To be taken during the first 12 credits of the graduate program.) Spring.

**TE 599      Thesis**

**3**

Prereq.: Completion of 21 credits of graduate work; TE 598 or ED 598 or permission of instructor. Preparation of thesis under guidance of thesis advisor and additional faculty readers for students completing master's requirements under M.S. Plan A. Oral presentation required. Irregular.

## Technology Management

Note: Additional work will be required for graduate credit in 400-level courses.

<b>TM 402</b>	<b>Topics in Technology</b>	<b>1 TO 3</b>
Prereq.: Permission of the department chair. An individualized inquiry of comprehensive study into a selected technical area. The student may elect to examine processes, products, or developmental aspects of modern industry. Open only to Industrial Technology majors. Course may be repeated for a maximum of 6 credits for different topics.		
<b>TM 411</b>	<b>Industrial Hygiene</b>	<b>3</b>
Lectures and laboratory exercises covering evaluation and control of exposure to dust, fumes, mist, vapors, gases, radiation, noise, and abnormal temperatures. Fall.		
<b>TM 414</b>	<b>Accident Investigation &amp; Loss Control</b>	<b>3</b>
Loss control philosophy and techniques and investigation strategies. Background information and specific techniques to develop and implement an effective company-wide and on-site loss control program, personnel responsibilities and total safety program. Spring.		
<b>TM 415</b>	<b>Fire Protection &amp; Prevention</b>	<b>3</b>
Measures related to safeguarding human life and preservation of property in prevention, detection, extinguishing fires. Spring.		
<b>TM 432</b>	<b>Worker/Supervisor Relations</b>	<b>3</b>
To develop the role of worker-supervisor relationships in manufacturing industries by covering such topics as productivity, supervision within contract guides, union/non-union manufacturing conflicts, Method/Time Study implementation. Spring.		
<b>TM 456</b>	<b>HAZWHOPPER &amp; Hazardous Material Management</b>	<b>3</b>
Study of environmental regulations and their impact on industrial operations. Emphasis is on application of statutes, regulations and information sources concerning hazardous materials, waste handling and technical decisions pertinent to environmental and safety issues. Spring.		
<b>TM 458</b>	<b>Productivity Improvement</b>	<b>3</b>
Course deals scientifically with analytical and creative problems affecting time. It covers the principles of methods, design, and work measurement. The student acquires skill in using motion study techniques and learns how to establish standards. Applications to product design, machine and tool design, process planning, production scheduling, plant layout, budgeting, sales prices, manpower requirements, wage incentives, and methods of improvements are studied. Spring.		
<b>TM 464</b>	<b>Six Sigma Quality</b>	<b>3</b>
Prereq.: STAT 104 or permission of department chair. Application of statistical techniques to meet the needs of continuous quality improvement in the industrial environment. Topics include variation, control and capacity, SPC for short run, and advanced process control. Emphasis on developing a continuous quality improvement strategy through supplier certification standards. Fall.		
<b>TM 480</b>	<b>Robotics</b>	<b>3</b>
Overview of the industrial robot. Introduces the student to the science of flexible automata. Emphasizes features, capabilities, programming, selection and applications of industrial robots.		
<b>TM 490</b>	<b>Advanced Six Sigma Quality</b>	<b>3</b>
Prereq.: TM 464. Planning techniques of Failure Mode and Effects Analysis (FMEA), Quality Function Deployment (QFD), and Design of Experiments (DOE) will be presented. Spring.		
<b>TM 500</b>	<b>Product Life Cycle Management</b>	<b>3</b>
Process of managing the complete life cycle of a product or structure from concept through design, manufacture, service, and disposal. Integration of people, data, processes, and business systems are essential elements considered across the entire enterprise. Fall.		
<b>TM 502</b>	<b>Human Relations and Behavior in Complex Organizations</b>	<b>3</b>
Analysis of human relations in technological organizations, including motivation, corporate processes, communication, and power.		
<b>TM 510</b>	<b>Industrial Operations Management</b>	<b>3</b>
Prereq.: Admission to a CCSU graduate program or permission of the department chair. Principles underlying industrial management. Topics include organization for production, industrial risk, product research and development, and the management of capital goods. Spring, Summer.		
<b>TM 511</b>	<b>Safety Training Methods</b>	<b>3</b>
Discuss instructional methods for safety professionals. Covers company needs analysis, training content development, basic facilitation and instructional strategies to increase employee safety awareness. On demand.		
<b>TM 512</b>	<b>Principles of Occupational Safety</b>	<b>3</b>

Development of internal policies of a plant in an accident prevention program for its employees. Topics include safety training, job safety analysis, accident investigation, safety promotion, and record keeping. On demand.

- TM 521 Computer Aided Design and Drafting 3**  
Prereq.: TC 113 or permission of instructor. In-depth utilization of computer technology to create and modify two and three-dimensional engineering drawings. Space geometry, vector analysis and specialized drafting conventions will be used to generate a data base for a variety of design-drafting applications. This course is laboratory-oriented and intended to further the student's knowledge in drawing preparation using the computer and associate peripherals.
- TM 551 Project Management 3**  
Prereq.: Admission to a CCSU graduate program or permission of the department chair. Application of the techniques and tools to manage each state of the project life cycle within the organizational and cost constraints. Utilize project management tools to set goals tied to needs for successful project management. Spring.
- TM 561 Application of Lean Principles 3**  
Tools and techniques of lean manufacturing as they are applied to an entire organization. Core methodologies in lean production include value stream mapping, teaming, productivity improvement, inventory reduction, pull systems, kanban, standard work, and cost reduction. Fall.
- TM 562 Supply Chain Strategy 3**  
Key concepts in managing the flow of goods and information from raw material to end-use customer. Focus on design, analysis and decision-making methods used in industrial procurement. Highlights integration of procurement with operations. Fall.
- TM 563 Strategic Logistics Management 3**  
Issues related to logistics at the global level, emphasizing the integration of manufacturing logistics with operations and procurement to achieve optimal supply chain performance. Spring.
- TM 564 Quality Systems Management 3**  
Emphasis on the development and application of total quality system management (TQM) documents. Students will develop a planned quality document to meet domestic and international standards as defined by ISO-9000 and United States supplier certification programs. Spring.
- TM 565 Logistics: Traffic & Transportation 3**  
Practical techniques for improving the traffic and transportation performance of a company and its supply chain. Topics include: transportation documentation and pricing, inbound/outbound freight control, international transportation, e-logistics and third-party logistics providers. On demand.
- TM 566 Distribution & Warehouse Management 3**  
Methodologies for planning, managing and controlling warehouse/distribution operations in the supply chain. Topics include: equipment selection, warehouse layouts, inventory control and work methods. Topics are linked to measuring productivity and performance of warehouse operations. On demand.
- TM 572 Innovative Leadership 3**  
Utilizes innovative concepts and methods derived from scientific and industrial management. Topics include: Lean management systems, results- and processes-focused leadership behavioral routines, decision-making flaws, value stream maps and leadership credibility and organizational capability building. On demand.
- TM 590 Decision Failure Analysis in Technology Management 3**  
Examines contemporary decisions made by technology managers that result in outcomes unfavorable to the company and its key stakeholders. Topics include: formal root cause analysis identification of practical countermeasures, predicting future failures, and lessons learned. On demand.
- TM 594 Research in Methods Technology 3**  
Prereq.: Admission to a CCSU graduate program or permission of the department chair. Theory and practice of conducting research in technology. Includes study of professional literature, evaluation of data gathering techniques, application of statistical methods to data, formulation and verification of hypothesis. Fall.
- TM 595 Applied Research Capstone Project 3**  
Prereq.: TM 594, permission of advisor, and a 3.00 overall GPA. Completion of an advanced project in technology under the supervision of a faculty member. Requirements include a paper and an oral presentation on the project. On demand.
- TM 596 Technological Issues and Problems 1 TO 3**  
Extensive study of selected technological issues and problems. Course may be repeated for different topics, but student may not take this course for credit under the same topic more than once. Course may be repeated with different topics for a maximum of 6 credits. Irregular.
- TM 599 Thesis 3**  
Prereq.: TM 594 and permission of advisor. Preparation of thesis under the supervision of thesis advisor. Plans A, C, D, and E require completion of 18 credits for programs with 30-35 credits, or 24 credits for programs with greater than 35 credits, and a 3.00 overall GPA. On demand.





## Theatre

Note: Additional work will be required for graduate credit in 400-level courses.

- TH 447 Acting IV 3**  
Prereq.: TH 347 and departmental permission. Performance considerations in scene study and role development, with emphasis on plays of varying styles and different periods. Fall. (O)
- TH 456 Shakespearean Production 3**  
Prereq.: TH 246, 253, and/or permission of instructor. Analysis of selected plays from perspective of actor and director. Students act in and stage scenes as major requirements. Irregular.
- TH 465 Creative Dramatics for Children 3**  
Prereq.: TH 165. Trains teachers to develop the imagination, creativity, and communication skills of children ages 5 through 12. Includes pantomime, theatre games, improvisation, and formal theatre experience. Spring.
- TH 481 Projects: Scenery 3**  
Prereq.: TH 316 and departmental permission. Individual projects in reading, research, or production under guidance of member of theatre staff.
- TH 482 Projects: Costuming 3**  
Prereq.: TH 332 and departmental permission. Individual projects in reading, research, or production under guidance of member of theatre staff.
- TH 489 Studies in Theatre/Drama 3**  
Prereq.: Permission of instructor. Selected area of theatre and/or drama not covered in other courses. Topic varies. May be repeated for credit. Irregular.
- TH 490 Summer Theatre Workshop 3**  
Prereq.: Permission of instructor. Students work with experienced directors in a summer theatre production workshop learning the craft of acting and performing, culminating in a public performance. May be repeated for a maximum of 6 credits. Summer.
- TH 495 Theatre Internship 3 TO 6**  
Prereq.: Permission of department. Substantial work in approved area/regional theatre(s) offering experience or research opportunities unavailable on campus. May be repeated for a total of 12 credits. On demand.

## Vocational-Technical Education

Note: Additional work will be required for graduate credit in 400-level courses.

### **VTE 400 Evaluating Student Achievement in Vocational-Technical Education 3**

Prereq.: VTE 113. Procedures for evaluating student achievement of instructional objectives with application in vocational subjects that is reflective of BEST Portfolios. Spring.

### **VTE 415 Principles of Career and Technical Education 3**

An introduction to the principles and philosophy of vocational education and its impact on society. A brief historical development of career and technical education, supportive legislation, characteristics of the various program fields, delivery systems, and current issues and problems.

### **VTE 450 Principles and Organizations of Cooperative Work Education 3**

The development and organization of work experience programs at the secondary school level. Examines those activities necessary to establish, maintain, and improve cooperative work education programs. Fall.

### **VTE 455 Labor Market Trends and Student Job Readiness 3**

Analysis of factors influencing the work placement of cooperative work education students. Special attention given to the study of present needs as well as anticipated trends in Connecticut's labor market, and the development of a curriculum to establish job readiness skills. Spring.

### **VTE 480 Curriculum Development for Trade Department Heads 3**

Curriculum development for trade department heads at Connecticut technical high schools.

### **VTE 482 Instructional Supervision and School Administration for Trade Department Heads 3**

Instructional supervision and school administration for trade department heads in the Connecticut technical high school system.

### **VTE 490 Topics in Vocational-Technical Education 1 TO 3**

Special purpose programs designed to meet the needs of selected groups of vocational teachers or directed independent studies for individual students. Provides a mechanism that encourages the vocational instructor to elect, with the guidance of University faculty, job-specific and short-term selective experiences to insure the instructor's technical expertise. May be repeated on different topics to a maximum of 6 credits. On demand.

## Women, Gender, and Sexuality Studies

Note: Additional work will be required for graduate credit in 400-level courses.

### **WGSS 469 Readings in Women, Gender, and Sexuality Studies 3**

Prereq.: WGSS 200 (formerly WS 200) and permission of instructor. Graduate students must have permission of instructor. Independent study in women, gender, and sexuality studies of special interest to students under the supervision of one or more affiliated woman, gender and sexuality studies faculty members. NOTE: No credit will be given to students with credit for WS 469.

## Interdisciplinary Programs: Schools of Arts and Sciences, Engineering and Technology

### Computer Information Technology

M.S.

### International Studies

M.S.

### Pre-Health Studies

OCP

# Computer Information Technology

## Faculty

Computer Science: Joan Calvert (director MSCIT), Bradley Kjell, Neli Zlatareva (Dept. phone: 860-832-2710)

Computer Electronics and Graphics Technology: Karen Coale Tracey, Xiobing Hou, Deborah Zanella (Dept. phone: 860-832-1830)

(website: [www.cs.ccsu.edu/cit/index.htm](http://www.cs.ccsu.edu/cit/index.htm))

## Overview

All students earning the Master of Science degree in Computer Information Technology take a common core of six (6) courses, two (2) from each of three departments—the Computer Science Department in the School of Arts and Sciences, the Management Information Systems Department in the School of Business, and the Computer Electronics and Graphics Technology Department in the School of Engineering and Technology. Computer science is focused on the study of algorithms, the software that implements them, the properties of computers, and the processes for creating these technologies. Management Information Systems focuses on the importance of knowledge and information as an organizational resource for timely, quality business decision making and for achieving competitive advantage. Leadership, project, and change management are emphasized throughout the courses. Computer electronics and graphics technology focuses on computer networking, telecommunication, electronics, and the integration of technologies in a hands-on approach to make the computer network run effectively. Students select specializations in either the Computer Science Department or the Computer Electronics and Graphics Technology Department to complete their degrees.

## Admission Requirements

The MS-CIT Admission Committee will consider applications for admission every two weeks, and the committee will make final recommendations on acceptance/rejection of applicants for admittance.

All CCSU policies for graduate program admission are in effect. All applications and official transcripts must be submitted for processing to the Graduate Admissions Office, Davidson Hall, Room 115, along with a \$50 application fee. Formal admittance criteria include the following:

- Official transcripts from all prior undergraduate and graduate programs and coursework;
- 3.00 GPA for graduate and 2.70 undergraduate work;
- If a student has earned a master's degree, a GPA of 3.00 or higher is required (the undergraduate GPA is not considered);
- TOEFL test results with scores no less than 550, or 213 on computer-based tests (if applicable); Additional criteria for admission to the program are as follows.

Additional criteria for admission to the program are as follows. Items requested below should be sent to the MS-CIT Director's office, Maria Sanford Hall, Room 303, Central Connecticut State University, New Britain, CT 06050.

- Résumé and two letters of recommendation to be used in reviewing CIT-related work. For the two letters of recommendation, at least one should come from an individual who can attest to the applicant's work experience; the second letter may be from an individual who can attest to the applicant's academic ability and commitment.

## Conditional Admission

A student may be admitted conditionally if it is determined that additional coursework is needed. The additional coursework will be specified for the applicant and must be completed with a grade of B or better before full admission into the MS-CIT program.

Applicants without the required GPA of at least a 2.40 will not be admitted to the MS-CIT program.

## Notification Process

Confirmation of the MS-CIT Committee's admission recommendation will be electronically sent to the MS-CIT Admissions Committee members, the MS-CIT program director, the dean of the School of Graduate Studies, and the associate director of Graduate Admissions. Records and applications then will be filed in the director's office. Final acceptance notification will come from the dean of the School of Graduate Studies after all necessary supporting documents have been evaluated.

Students admitted into the program will be assigned advisors based on their indicated specializations. The advisor is responsible for monitoring the student's progress toward degree completion. The student and the advisor are responsible for keeping the planned program form current. The student should bring requests for substitutions and transfer credits to the attention of the advisor who subsequently must obtain approval and signatures from MS-CIT faculty members representing the other two specializations and from the dean of the School of Graduate Studies. When approved, such forms will be filed at the Graduate Studies Office. Students may not register for any courses without first meeting with the advisor who will check knowledge of necessary background areas.

## Program

### Master of Science in Computer Information Technology

#### Program Rationale:

Toward the goal of preparing information technology (IT) practitioners for the 21st century, the MS CIT program integrates multiple disciplines of the IT field, including computer science, management information systems, and networking and telecommunications, providing the student with both breadth and depth of knowledge and skill-based expertise in this field.

#### Program Learning Outcomes:

Students in the program are expected to demonstrate:

- theoretical and conceptual mastery of a broad base of computer science, management information systems, and networking and telecommunications skills required for successful careers in the IT field;
- application-based mastery of a broad base of computer science, management information systems, and networking and telecommunications skills required for successful careers in the IT field; and
- the ability to conduct and present applied research through a research team project.

#### Course and Capstone Requirements (33 credits):

Core Courses (18 credits):

CS 501 Foundations of Computer Science

CS 502 Computing and Communications Technology

MIS 501 Managing the IT Value Proposition

MIS 502 Business Payoff of Information Technology and Systems

CET 501 Applied Networking Technology

CET 533 Digital Telecommunications

Specialization (12 credits):

Students select 12 credits from one of two specializations—Computer Science or Networking and Telecommunications Technology, in consultation with an advisor.

#### Specialization 1 — Computer Science electives:

CS 407, 410, 423, 460, 462, 463, 473, 481, 490, 530, 550, 570, 580, 590

**Specialization 2 — Networking and Telecommunications Technology****Electives** (Computer Electronics and Graphics Technology Department):

CET 443, 449, 453, 479, 502, 513, 543, 559; IT 502, 510, 551, 594, 596

Students specializing in either area may take a limited number of Management Information Systems graduate courses, with permission of their advisors, which will count toward their specialization credits: MIS 510, 515, 550, 561, 565, 569.

Capstone (3 credits):

Students may register for the Special Project (Plan C) course upon completion of core requirements and at least three specialization courses.

CIT 595 Capstone in CIT

Note: A maximum of 6 credits at the 400-level is allowed with prior permission of advisor.



## International Studies

The Master of Science in International Studies is an interdisciplinary program that prepares generalists to work in governmental and non-governmental organizations internationally to address issues related to the global human experience. The core of the program is designed to deepen students' knowledge of the historical and contemporary global political economies, theories of international relations, culture, human rights and indigenous epistemologies. The curriculum also permits students to specialize in one of six regions of the world—Africa, East Asia, European Union, Middle East, Slavic Europe and Middle East with a global, theoretical, or conceptual perspective.

The master's program in international studies (30 credits) is individually designed by students and their faculty advisors to ensure that career plans and research interests are accommodated. If a student wishes to travel or work in a different country, these preferences may receive consideration within the program's scope. Another approach involves graduate course selection from a variety of disciplines, including modern languages, history, geography, political science, economics, anthropology, communication and others, provided at the University to develop specializations with a global or theoretical orientation.

To ensure adequate preparation for a career or further study in international affairs, language competency related to the area of specialization is required. Mid-level reading, writing, speaking and comprehension skills may be demonstrated by examination or through appropriate course work.

### Faculty

International Studies Program Director: Dr. Evelyn Newman Phillips ([phillipse@ccsu.edu](mailto:phillipse@ccsu.edu), 860-832-2617)

**African Studies:** Sheri Fafunwa ([fafunwas@ccsu.edu](mailto:fafunwas@ccsu.edu), 860-832-2646) and Warren Perry ([Perryw@ccsu.edu](mailto:Perryw@ccsu.edu), 860-832-2613), *Co-Directors, Center for African Studies, and Co-Coordinator, African Studies Program*

T. Ayeni, F. Best, W. Brown Foster, J. Buxton, C. Carter-Lowery, T. Darko, G. Emeagwali, S. Fafunwa-Ndibe, K. Harris, M. Howell, S. Jones, P. Kyem, S. Lee, P. LeMaire, A. Moemeka, E. Newman Phillips, S. Odesina, P. Osei, C. Ragaven, S. Sogunro, J. Woodruff

**East Asian Studies:** S. Tomoda, *Coordinator* ([tomodas@ccsu.edu](mailto:tomodas@ccsu.edu), 860-832-2892); M. Jones Y. Ju, K. H. Kim, C. S. Lien, J. McKeon, P. Petterson, X. Shen

**European Union/West European Studies:** P. Lapuerta, *Coordinator* ([lapuertap@ccsu.edu](mailto:lapuertap@ccsu.edu), 860-832-2884); R. Benfield, M. Charkiewicz, D. Engwall, C. Liard-Muriente, A. Morales M. Passaro, C. Pesca, L. Petit, P. Petterson, K. Ritzenhoff, L. Uribe

**Latin American Studies:** M. A. Mahony, *Coordinator* ([mahonym@ccsu.edu](mailto:mahonym@ccsu.edu), 860-832-0119); A. Adams, W. Brown-Foster, G. Cueto, J. C. del Alma, F. Donis, V. Garcia, A. Garcia-Lozada, C. Liard-Muriente P. Iannone, C. Liard-Muriente, G. Mejía, S. Mendez-Mendez, B. Merenstein, A. Morales, K. Sugg, L. Uribe

**Middle Eastern Studies:** Ghassan El-Eid, *Coordinator* ([eleid@ccsu.edu](mailto:eleid@ccsu.edu), 860-832-2963); F. Abdollahzadeh, N. Al-Masoud, A. Ayalon, K. Beyard, A. Cannella, A. Antar, G. Emeagwali, F. Farahmand, J. McKeon, N. Mezvinsky, T. Rickard, N. Sadanand, M. Salinas, L. Zidani-Eroglu

**Slavic/East European Studies:** M. Ciscel, *Coordinator* ([ciscelm@ccsu.edu](mailto:ciscelm@ccsu.edu), 860-832-2749); R. Benfield, J. Bergman, M. Biskupski, I. Gotchev, P. Karpuk, D. Kideckel, W. Tracey, E. Wolynska

### Program

#### Master of Science in International Studies

##### Program Rationale:

The Master's of Science in the International Studies program educates students in several key areas of the world: Middle East, Africa, Asia, Western Europe and European Union, Eastern Europe, and Latin America. Students are grounded in theories of

internationalization, history of diverse countries and regions, cross-cultural communication, and cosmologies of various international cultures and are provided programmatic, analytical, and practical skills to address international issues. The program prepares generalists to work in governmental and non-governmental organizations within and outside of the United States to address issues related to the global human experience.

### **Program Learning Outcomes:**

Students in this program will:

- produce a capstone project on internationalism guided by School of Graduate Studies guidelines based on primary research;
- demonstrate their ability to communicate at the intermediate level in the language of the region of their specializations;
- be able to write well-researched, clearly theorized, and analytical papers that explain issues concerning internationalism; and
- understand, through hands-on experiences, the history, culture, environment, and political and economic structures of the region in which they specialize.

### **Admission**

In addition to the regular admission requirements, an applicant for the MS in International Studies program must send a resume and a four-page essay that addresses his/her past experiences, career goals, and the region in which he/she wishes to specialize (select from Africa, East Asia, European Union/Western Europe, Latin America, Slavic/Eastern Europe, and Middle East). Each application must be sent electronically or by mail to the International Studies Director, who will then direct it to the chair of the region in which the student seeks to specialize.

Early applications are encouraged for full consideration. The admission deadline for spring semester is December 1 (priority deadline is November 1); for fall semester the deadline is May 1.

### **Course and Capstone Requirements**

#### **(30 credits in International Studies [Plan A or Plan C])**

Common Core (15 credits; take 5 of the following):

IS 570 Modern World Issues

IS 571 International Diversity and Integration

COMM 543 Intercultural Communication

GEOG 544 The Geography of World Economic Development

LING 515 An Introduction to Sociolinguistics

PS 501 Advanced Studies in International Law

Specialization (9 credits):

Approved courses in one of African Studies, East Asian Studies, European Union/West European Studies, Latin American Studies, Middle Eastern Studies, or Slavic/East European Studies; or approved courses to constitute a cohesive specialization with a global, theoretical, or conceptual perspective.

Research and Capstone Requirements (6 credits):

Plan A: IS 598 Research in International Studies and IS 599

Thesis in International Studies

or

Plan C: IS 598 Research in International Studies and IS 595  
Special Project in International Studies

Note: No more than nine credits at the 400 level, as approved by the graduate advisor, may be counted toward the graduate planned program of study.

### **Language Requirement**

The International Studies program requires that all students have a level of proficiency in the reading, writing, speaking, and understanding of a single modern language-preferably in their areas of geographical specialization-equal to the completion of the Modern Language Department at the 226 level. Fulfillment of this requirement will be determined three possible ways: by a CCSU instructor of the language, the chair of the Department of Modern Language, or a professor who is a native speaker, when the language is not offered as part of the CCSU curriculum.

### **Advisors**

Initially, on acceptance to the program, students will be assigned advisors appropriate to their regional or thematic specializations. This advisor will normally serve as the faculty member supervising the advisee's IS 598 course and thesis, special project or comprehensive examination.

Note: During the 2010-2011 school year, the curriculum will be revised to allow students more options.

## Pre-Health Studies

A Pre-Health Professional Advisory Committee is available to assist students interested in preparing for careers in medicine, dentistry, veterinary medicine, optometry and related fields in the health sciences for which undergraduate training is required prior to admission to other institutions. The Pre-Health Professional Advisory Committee consists of faculty members from the departments of Biology, Biomolecular Sciences, Chemistry and Biochemistry, Physics, and Psychology.

Students interested in pre-health Professional Programs should consult Dr. Peter Osei, program coordinator for the health professions, Department of Biology, NC 339 (860-832-2657), and Dr. Cheryl Watson, chair of the Pre-Health Professional Advisory Committee, Department of Biomolecular Sciences, NC 344 (860-832-2649). Additional information is available at <http://www.prehealth.ccsu.edu>.

### Program Overview

This non-degree certificate program is designed for college graduates whose undergraduate background does not meet the requirements for admission to professional schools of medicine, dentistry, veterinary medicine, etc. This rigorous program provides post-baccalaureate students a formal option to matriculate into a program with the foundation courses and the advisement they need to prepare for applying to professional training schools.

### Admission

Students must have completed a bachelor's degree to participate in the program. Potential students should contact the Graduate Admissions Office to request an application packet. The application requires that official transcripts be sent from all colleges and universities attended and an essay describing why the student is interested in the program. Completed applications should be sent through the Graduate Admissions Office. The Pre-PAC chair will schedule an interview with the applicant, during which an advisory committee (including the Chief Health Professions Advisor) will work with the candidate to develop an individualized planned program of study in keeping with his or her academic background and professional goals.

Applications must be received by the priority deadline of November 1 but no later than December 1 for students wishing both to begin classes in the spring and continue into the summer to be considered for financial aid as matriculated students. However, students may begin the program in any semester and applications will be accepted throughout the year within the graduate admission deadlines of July 1 and December 1. Post-baccalaureate certificate students are classified as graduate students; they may be either part-time or full-time and may qualify for financial aid. Only students matriculated as full-time may take nine or more credits a semester. Part-time and nonmatriculated students are limited to less than nine credits/semester.

### Program Requirements

While each student's academic program will be tailored to meet the individual's specific academic needs and professional goals, a model program that would be appropriate for a student with a minimal science background is shown below. This model program also illustrates the 45-credit upper limit for this certificate program. Smaller academic programs may be possible for students with some science background, with a lower limit of 26 credits. All individual programs must be designed and approved in consultation with the Pre-PAC advisory committee at the admission interview. A maximum of 9 credits in the planned program may be transferred to CCSU.

### Program

#### Official Certificate Program: Post-Baccalaureate Certificate in Pre-Health Studies

#### Model Program\*

#### 45 credits

Life Science (21 credits), including:

BIO 122 General Biology II 4

BMS 201 Principles of Cell and Molecular Biology 4

BMS 306 Genetics 4

or

BMS 316 Microbiology 4

BIO 318/ BMS 318 Anatomy and Physiology I 4

BIO 591 Independent Research Project in Advanced Biology 1

or

BMS 591 Independent Research Project in BMS 1

BIO 319/ BMS 319 Anatomy and Physiology II 4

or

BIO 412/413/ BMS 412/413 Human Physiology and lab 4

Chemistry (16 credits), including:

CHEM 161 General Chemistry I 3

CHEM 162 General Chemistry I Laboratory 1

CHEM 163 General Chemistry II 3

CHEM 164 General Chemistry II Laboratory 1

CHEM 210 Organic Chemistry I 3

CHEM 211 Organic Chemistry I Laboratory 1

CHEM 212 Organic Chemistry II 3

CHEM 213 Organic Chemistry II Laboratory 1

Physics (8 credits) including:

PHYS 121 General Physics I 4

PHYS 122 General Physics II 4

\*For course descriptions and prerequisites for courses numbered lower than 400, please see the Undergraduate Catalog.

Students must maintain a 3.00 (B) cumulative grade point average in order to be in good academic standing and to receive the post-baccalaureate certificate. Upon completion of the planned certificate program, a certificate will be issued from the School of Graduate Studies. (While completion of this program does not lead to a graduate degree, courses at the 400 level or above that are taken as part of this program may be counted toward a master's degree upon the approval of a program advisor, provided that the graduate-syllabus option is elected at the time of course registration in 400-level courses.)



## SCHOOL OF ARTS AND SCIENCES

Susan E. Pease, *Dean*

Richard L. Roth, *Associate Dean*

Mary Horan, *Assistant Dean*

Felton Best, *Assistant to the Dean*

Mary Anne Nunn, *Assistant to the Dean*

Brian Sommers, *Assistant to the Dean*

Robert Wolff, *Assistant to the Dean*

*Phone: 860-832-2600*

*Fax: 860-832-2601*

*Web address: <http://www.ccsu.edu/artsci>*

The School of Arts and Sciences offers the M.A. degree in biological sciences, English, history, graphic information design, mathematics, modern language, public history, and psychology and the M.S. in biological sciences, communication, computer information technology: computer science, criminal justice, data mining, geography, international studies, and natural sciences.

Many academic departments within the School of Arts and Sciences provide the major for the post-baccalaureate certification program for secondary school teachers.

Currently, two graduate-level Official Certificate Programs are offered through the School of Arts and Sciences: the Post-Baccalaureate Certificate in Data Mining and the Post-Baccalaureate Certificate in Public Relations/Promotions. The School also contributes to the interdisciplinary Post-Baccalaureate Certificate in Pre-Health Studies.

A limited number of graduate assistantships are available in each department offering a master's degree program. Students seeking information about assistantships or program requirements should contact the academic department directly. For general information, students may call the Office of the Dean of Arts and Sciences (860-832-2600), located in DiLoreto 112 or the Graduate Studies Office (860-832-2363), located in Barnard Hall.

### Graduate Programs in the School of Arts and Sciences

Anesthesia: M.S.

Art Education: M.S., Teacher Certification, Post-Master's

Biological Sciences: M.A., M.S., Teacher Certification

Chemistry: Teacher Certification

Communication: M.S., OCP

Criminal Justice: M.S.

Data Mining: M.S., OCP

Earth Sciences: Teacher Certification

English: M.A., Teacher Certification, Post-Master's

[General Science](#): Teacher Certification

[Geography](#): M.S.

[History](#): M.A., Teacher Certification, Post-Master's

[Information Design](#): M.A.

[International Studies](#): M.S.

[Mathematics](#): M.A., M.S., Teacher Certification

[Modern Languages](#): M.A., Teacher Certification

[Music Education](#): M.S., Teacher Certification, Post-Master's

[Natural Sciences](#): M.S., Post-Master's

[Physics](#): Teacher Certification

[Psychology](#): M.A.

[Public History](#): M.A.

[Social Studies](#): Teacher Certification

[Spanish](#): Teacher Certification

[TESOL](#): M.S., Teacher Certification



# Biology

## Faculty

Jeremiah Jarrett (Chair, Copernicus 332), Douglas Carter, Tiffany Doan, Sylvia Halkin, Mark Jackson, Joshua King, Jacob Krans, Thomas Mione, Barbara Nicholson, Peter Osei, Clayton Penniman, Ruth Rollin, David Spector (Dept. phone: 860-832-2645)

## Department Overview

The Department of Biology offers programs of study leading to the Master of Arts and Master of Science degrees, as well as courses which may serve as part of the general education requirement for students preparing to teach in fields other than biology. The department has a wide range of modern research equipment in laboratories designed for class and/or individual research studies. Specialized facilities available for faculty and student instruction and research include a greenhouse, herbarium, photosynthesis research laboratory, molecular genetics research laboratory, neurophysiology laboratory, experimental gardens, controlled environment room, and growth chambers. Other shared facilities available are mouse and rat colonies, refrigerator/freezer room, and a computer laboratory.

Through the academic and extracurricular opportunities which the department offers, students are prepared to understand and participate in a wide variety of biological specializations. Students in the graduate programs are expected to expand their understanding of biological concepts, to become familiar with recent developments in biology and to become familiar with library, computer, and laboratory resources for biological research.

## Admission Requirements

The following items are required:

- application for admission to graduate study
- official transcripts from all institutions in which undergraduate and graduate work has been taken
- graduate Record Examination scores for the aptitude and advanced biology tests are recommended but not required
- narrative statement
- letters of recommendation by three college instructors familiar with your ability and record in biology and the related sciences

The first three items above are to be submitted to the School of Graduate Studies Office. When an applicant's admission folder is complete, it will be forwarded to the department chair. The last two items above should be submitted to the department chair. The Departmental Graduate Committee will make a recommendation for acceptance. Students who are accepted will be assigned an advisor at the time of acceptance. If applicable, a thesis advising committee will be assigned after the student begins the program of study.

## Programs

### Master of Arts in Biological Sciences

#### Program Rationale:

The master of arts programs provide study in the biological sciences for those graduate students desiring to major in biology. The programs are designed to fulfill the educational needs of biologists who desire further specialization and/or knowledge of recent advances in the field; students who seek a subject matter masters as an intermediate step toward preparation for work at the doctoral level; and teachers who are interested in specializing in a particular area, or updating their knowledge within the discipline of biology. Specialization may be in such areas as botany, zoology, physiology, ecology, and environmental studies. Each student will be assigned an advisor whose function will be to help the student plan a sound program.

**Program Learning Outcomes:**

Graduate students will:

- demonstrate knowledge in general biology;
- describe scientific methodology and conduct experiments;
- demonstrate a thorough understanding of a specific area of biology;
- be able to read and comprehend primary literature;
- deliver effective oral presentations (poster or PowerPoint); and
- effectively communicate on research in written format.

**Course and Capstone Requirements:**

Note: Additional work, as described in the course syllabi, will be required for graduate credit in 400-level courses. Students may take no more than nine credits of 400-level courses.

**Biological Sciences: General Program, MA**

There are two options (Plan A and Plan B) leading to the Master of Arts degree, both of which require 30 credits.

Both Plan A and B require BIO 500 and 540 in addition to 19-20 credits of directed electives in biology or related fields as approved by advisor. Plan A also requires BIO 599 (6 credits) and thesis defense or BIO 598 (3 credits) and 599 (3 credits) and thesis defense. Plan B requires 3 credits in BIO 590 and/or BIO 591, and BIO 598 (3 credits) and a comprehensive exam.

**Biological Sciences: Ecology and Environmental Science, M.A.****30 credits**

Biology Course Component (24 credits):

(1) BIO 500 Seminar in Biology (1 credit), and BIO 515 Foundations of Ecology (3 credits), and BIO 540 Topics in Advanced Biology (3-4 credits), with a topic focus appropriate to the specialization (may be repeated with different topics). (2) Biology electives: 16-17 additional credits in biology or related fields approved by an Ecology and Environmental Science Advisor. Appropriate courses in the biology electives may include:

BIO 508 Coastal Ecology 3

BIO 509 Coastal Ecology Laboratory 1

BIO 520 Plant Ecology 3

BIO 540 Topics in Advanced Biology 3-4

BIO 571 Advanced Field Studies in Biology 1-4

BIO 590 Focused Study in Advanced Biology 1-4

BIO 598 Research in Biology 3

BIO 402 Evolutionary and Ecological Genetics 3

BIO 405 Ecology 4

BIO 410 Ecological Physiology 4

BIO 421 Marine Invertebrate Biology 4

BIO 425 Aquatic Plant Biology 4

BIO 434 Ecology of Inland Waters 4

BIO 436 Environmental Resources and Management 3

BIO 438 Aquatic Pollution 4

BIO 440 Evolution 3

BIO 444 Plant Taxonomy 3

Capstone Component (6 credits, students may select Plan A or Plan B).

Plan A: Option 1, BIO 599 Thesis (6 credits) and thesis defense or Option 2, BIO 599 Thesis (3 credits) and thesis defense, and BIO 598 Research in Biology (3 credits).

Plan B: Three credits:

BIO 590 Focused Study in Advanced Biology 1-4

and/or

BIO 591 Independent Research Project in Advanced Biology 1-4

BIO 598 Research in Biology 3

and a comprehensive exam.

### **Biological Sciences: Global Sustainability, M.A.**

#### **30 credits**

Sustainability component (9 credits):

SUST 500 Social, Political, and Ethical Dimensions of Global Sustainability 3

SUST 501 Current Challenges in Sustainability 3

SUST 502 Science for Sustainability 3

Biology course component (minimum 15 total credits):

(1) Core 7-8 credits

BIO 500 Seminar in Biology 1

BIO 515 Foundations in Biology 3

BIO 540 Topics in Advanced Biology 3-4

(2) Remaining 7-8 credits from the following as approved by the student's major advisor:

BIO 508 Coastal Ecology 3

BIO 509 Coastal Ecology Laboratory 1

BIO 520 Plant Ecology 3

BIO 540 Topics in Advanced Bio 3-4

BIO 571 Advanced Field Studies in Biology 1-4

BIO 590 Focused Study in Advanced Biology 1-4

BIO 598 Research in Biology 3

BIO 402 Evolutionary and Ecological Genetics 3

BIO 405 Ecology 4

BIO 410 Ecological Physiology 4

BIO 421 Marine Invertebrate Biology 4

BIO 425 Aquatic Plant Biology 4

BIO 434 Ecology of Inland Waters 4

BIO 436 Environmental Resources and Management 3

BIO 438 Aquatic Pollution 4

BIO 440 Evolution 3

BIO 444 Plant Taxonomy 3

Capstone component (6 credits)

Plan A: Option 1, BIO 599, Thesis (6 credits) and thesis defense; or Option 2, BIO 599 Thesis (3 credits) and thesis defense, and BIO 598, Research in Biology (3 credits).

Plan B for specialization: 3 credits in BIO 590 and/or BIO 591, BIO 598 (3 credits), and a comprehensive exam.

### **Master of Science in Biological Sciences: Anesthesia**

**31-33 credits**

*Coordinator: Ruth Rollin*

#### **Program Rationale:**

The MS Biological Sciences: Anesthesia Program is designed for registered nurses who wish to become nurse anesthetists and to expand their background in the areas of biology specific to their disciplines.

#### **Program Learning Outcomes:**

Graduate students will:

- demonstrate a thorough understanding of physiology, pathophysiology, pharmacology, immunology, and the anesthesia-specific areas of patient safety, anesthetic management, and professional role;
- describe scientific methodology and conduct experiments;
- be able to read and comprehend primary literature;
- deliver effective oral presentations (poster or PowerPoint); and
- effectively communicate on research in written format.

#### **Course and Capstone Requirements:**

Professional Education (6 credits):

ED 511 Principles of Curriculum Development 3

EDL 513 Supervision 3

Major Field Requirements (21 credits):

BIO 416 Immunology 3

BIO 500 Seminar in Biology 1-2

BIO 517 Human Anatomy, Physiology and Pathophysiology 6

BIO 518 Pathophysiology and Applied Physiology 3

BIO 528 Pharmacology 4

CHEM 550 Basic Organic and Biological Chemistry 3

Research (4-6 credits):

Plan A:

BIO 598 Research in Biology 3

BIO 599 Thesis 3

and thesis defense

or

Plan B:

BIO 590 Focused Study in Advanced Biology 1-4

BIO 598 Research in Biology 3

Comprehensive exam

Note to prospective anesthesia students: The student must be a licensed registered nurse and satisfactorily complete the program of study in anesthesia at an affiliated hospital-based school of nurse anesthesia which includes 1000 hours of clinical practicum and is 17 months in length. The practicum starts the second summer in the program. A cumulative GPA of 3.00 or higher and grades of C- or better are required to start the clinical practicum. Admission to this program is contingent upon admission to one of the following affiliated schools:

New Britain School of Nurse Anesthesia, New Britain, CT: Greg Fauteux, M.D., medical director, and Joan Dobbins, M.S., CRNA, program director.

Hospital of Saint Raphael School of Nurse Anesthesia, New Haven, CT: Philip J. Noto, M.D., medical director; and Judy Thompson, M.S., DNAP, CRNA, program director.

Memorial Hospital of Rhode Island School of Nurse Anesthesia, Pawtucket, R.I.: Peter Baziotis, M.D., medical director; and Mark Foster, M.A., CRNA, program director.

Note: Additional work, as described in the course syllabi, will be required for graduate credit in 400-level courses. Students may take no more than nine credits of 400-level courses.

## **Master of Science in Biological Sciences: General Program**

**30 credits**

### **Program Rationale:**

The General Program is for biology and science teachers and all others who wish to expand their background in the broad area of biology or who wish to specialize in a particular aspect of this discipline. Students who as undergraduates majored in areas other than biology may also pursue a master's degree in this program. Other courses may be substituted for the professional education component with the advisor's approval.

The planned program of graduate study will be developed by a student and his or her advisor and will be based upon the student's undergraduate record and educational needs.

### **Program Learning Outcomes:**

Graduate students will:

- demonstrate knowledge in general biology;
- describe scientific methodology and conduct experiments;
- demonstrate a thorough understanding of a specific area of biology;
- be able to read and comprehend primary literature;
- deliver effective oral presentations (poster or PowerPoint); and
- effectively communicate on research in written format.

### **Course and Capstone Requirements:**

Professional Education (6-9 credits):

One of the following:

EDF 500 Contemporary Educational Issues 3

EDF 516 School and Society 3

EDF 524 Foundations of Contemporary Theories of Curriculum 3

EDF 525 History of American Education 3

EDF 538 The Politics of Education 3

EDF 583 Sociological Foundations of Education 3

and

Additional course(s) as approved by advisor 3

Biology Requirements (4-5 credits):

BIO 500 Seminar in Biology 1-2

BIO 540 Topics in Advanced Biology 3-4

Directed Electives (10-17 credits):

In biology or related fields as approved by advisor

Research (3-6 credits):

Plan A: BIO 599 Thesis (6 credits)

and thesis defense

or

BIO 598 Research in Biology 3

and

BIO 599 Thesis (3 credits)

and thesis defense

or

Plan B: BIO 598 Research in Biology 3

and comprehensive exam

Note: Additional work, as described in the course syllabi, will be required for graduate credit in 400-level courses. Students may take no more than nine credits of 400-level courses.

### **Master of Science in Biological Sciences: Health Sciences Specialization**

**30-31 credits**

#### **Program Rationale:**

The MS Biological Sciences: Health Sciences Specialization is for those who wish to expand their background in the areas of human biology in preparation for research or work at the doctoral level or in health professions, as well as for teachers wishing to specialize or update their knowledge in the area of human biology.

#### **Program Learning Outcomes:**

Graduate students will:

- demonstrate knowledge in general biology;
- describe scientific methodology and conduct experiments;
- demonstrate a thorough understanding of a specific area of biology;
- be able to read and comprehend primary literature;
- deliver effective oral presentations (poster or PowerPoint); and
- effectively communicate on research in written format.

#### **Course and Capstone Requirements:**

Professional Education (6 credits):

ED 511 Principles of Curriculum Development 3

EDL 513 Supervision 3

Major Field Requirements (18-19 credits):

BIO 412 Human Physiology 3

BIO 413 Human Physiology Laboratory 1

BIO 500 Seminar in Biology 1-2

BIO 518 Applied Physiology 3

BIO 528 Pharmacology 4

BMS 506 Biosynthesis, Bioenergetics and Metabolic Regulation 3

or

CHEM 550 Basic Organic and Biological Chemistry 3

and

Biology Elective (choose one)

BIO 416 Immunology 3

BIO 481 Skeletal Biology 4

BIO 540 Topics in Advanced Biology 3-4

BIO 590 Focused Study in Advanced Biology 1-4

BIO 591 Independent Research Project in Advanced Biology 1-4

BMS 497 Biosynthesis, Bioenergetics and Metabolic Regulation Laboratory 1

BMS 505 Molecular Biology 4

BMS 506 Biosynthesis, Bioenergetics and Metabolic Regulation 3

BMS 562 Developmental Biology 3

Research (6 credits):

BIO 599 Thesis (6 credits)

and thesis defense

or

BIO 598 Research in Biology 3

and BIO 599 Thesis (3 credits)

and thesis defense

Note: Additional work, as described in the course syllabi, will be required for graduate credit in 400-level courses. Students may take no more than nine credits of 400-level courses.

### **Certification in Biology for Secondary Education**

The Department of Biology also evaluates undergraduate and graduate preparation of applicants to the biology certification program in secondary education. This evaluation is done through interviews and/or review of transcripts of prospective candidates who have been admitted to the graduate program. Transcripts are forwarded to the department chair by the School of Education and Professional Studies. The chair of biology or a departmental designee will make recommendations for courses to be completed in the biological area of the student's program. Admission to the Professional Program is contingent on recommendation by the Department of Biology in addition to completion of other requirements.

### **Official Certificate Program: Post-baccalaureate Certificate in Pre-Health Studies**

The Department of Biology contributes to the interdisciplinary Post-baccalaureate Certificate in Pre-Health Studies, a non-degree program designed for college graduates whose undergraduate background does not yet meet the requirements for admission to professional schools of medicine, dentistry, veterinary medicine, or other related fields. The CCSU Pre-Health Professions Advisory Committee (Pre-PAC) is responsible for admitting students to this program and for individually advising them upon entry. Both the Pre-PAC and this Official Certificate Program are described in more detail on the Pre-Health Studies page, [linked here](#).

**Master of Arts in Teaching (MAT): Teacher Education with Specializations in Mathematics (7-12), Sciences (7-12), Spanish (7-12), English (7-12), and Technology and Engineering Education (PK-12)**



The Department of Teacher Education offers a Master of Arts in Teaching (MAT): Teacher Education with specializations in Mathematics, Sciences, Spanish, English, and Technology and Engineering Education. Candidates with documented content knowledge will complete 13 months of full-time study, earning teacher certification and the MAT degree. The program is designed to cross disciplines wherever possible, encouraging candidates to build content teaching expertise in their specializations and relate each discipline to the larger school curriculum. See the Teacher Education page, [linked here](#), for a description of the program.

# Art

## Faculty

Cora Marshall (Chair, Maloney 151), Meyer Alewitz, Cassandra Broadus-Garcia, Jerry Butler, James Buxton, Sherinatu Fafunwa-Ndibe, Sean Patrick Gallagher, Vicente Garcia, Elizabeth Langhorne, Rachel Siporin, Mark Strathy, Ron Todd (Dept. phone: 860-832-2620)

## Department Overview

In the Department of Art, academic experiences are intended to broaden individual talent and artistic abilities; stimulate creative processes; develop skills needed to accomplish career objectives as practicing art professionals or art educators; and afford opportunities to work with dynamic, energetic faculty members who are also active, exhibiting artists. The Department of Art faculty combines a commitment to teaching with a dynamic program of professional activities in the local area, throughout the state of Connecticut, in other regions of the U.S., and abroad. Professional participation includes solo and group exhibitions, conference presentations, and grant receipt and operation, as well as consulting. The Department of Art offers two programs of study: a Master of Science in Art Education degree and a Post-Baccalaureate Teaching Certification program.

## Admissions

### Masters of Science in Art Education

In addition to fulfilling the admission requirements of the School of Graduate Studies, applicants must successfully pass a portfolio review and essay evaluation to be fully admitted into graduate programs in the Department of Art. For complete information regarding the format and content of the portfolio and essay requirements, interested applicants should visit the School of Graduate Studies' website at [www.ccsu.edu/grad](http://www.ccsu.edu/grad) and click on "Additional Application Materials" or visit the Department of Art's website at [www.art.ccsu.edu/masters.htm](http://www.art.ccsu.edu/masters.htm). Interested applicants may also contact the Department of Art directly at 860-832-2620.

### Post-Baccalaureate Teacher Certification Professional Program

Admission to the Post-Baccalaureate Teacher Certification Professional Program depends upon and follows admission to the Graduate School. Post-baccalaureate students must meet all course and fieldwork requirements specified in the Art Education teacher preparation programs and governed by State of Connecticut regulations. This includes satisfying certain general education and subject matter major requirements. For complete information regarding the format and content of the portfolio and essay requirements, interested applicants should visit the Department of Art's website at [www.art.ccsu.edu/postbac.htm](http://www.art.ccsu.edu/postbac.htm).

## General Portfolio Requirements for All Applicants

The portfolio must consist of 15–20 slides or digital images of the applicant's artwork in a variety of media that demonstrate the applicant's best studio practice. It is important that no work submitted be copied from photographs or other works of art. Multiple views are recommended for original work in sculpture, ceramics, 3D design and/or crafts.

## Post-Baccalaureate Certification Portfolio Requirements

Applicants to the Post-Baccalaureate Teacher Certification program must submit a portfolio that contains examples of all of the following:

Still-life drawings and/or paintings that illustrate accurate depictions of form and space.

Landscape and/or architecture (indoor or outdoor) showing successful descriptions of form and space. These must be drawing and/or painting.

Images (any 2D and/or 3D) that illustrate convincing knowledge and translation of the elements and principles of design.

Tonal drawings in pencil, charcoal, or ink, that were executed from life and that depict figure, landscape, or still life, as well as successfully describe the illusion of light defining 3D volume.

## Master of Science in Art Education Portfolio Requirements

Applicants for Master of Science in Art Education must submit a variety of media that demonstrate their best studio practice.

Applicants who intend to focus on a particular studio area, such as drawing, ceramics, or painting, should also include a series of at least five pieces that show a consistent direction, for example, invented figure compositions, portraits, landscapes and/or abstractions.

## Graduate Admission Essay for both the Master of Science in Art Education and Post-Baccalaureate Programs

Applicants must submit a completed essay describing their backgrounds and interest in the program. On the initial page, an applicant should include his or her name and the program to which he or she is applying (Master of Science in Art Education or Post-Baccalaureate). The essay should be two pages, double-spaced. In the essay, applicants should:

give a brief account of their backgrounds in relation to education, occupation, and activities relevant to the field of art and art education;

discuss the reasons for choosing an advanced degree in art, some of the ideas in which they are currently interested, and future areas they would like to explore; and

include a brief discussion of the work that was submitted for the portfolio review.

## Where to Submit Additional Application Materials

The portfolio and essay should be sent as a package directly to the Department of Art at the same time that materials are submitted to the Graduate Admissions Office. Send the portfolio and essay package to:

Central Connecticut State University  
Department of Art, Maloney Hall  
RE: Graduate Admission Materials  
1615 Stanley Street  
New Britain, CT 06050

## Programs

### Master of Science in Art Education

#### Program Rationale:

The Department of Art presently offers a broad-based master's degree which accommodates specializations in art education and/or studio arts (ceramics, painting, illustration, sculpture, printmaking, or others). Both concepts and technical excellence are stressed. The M.S. in Art Education program is designed primarily to meet the needs of experienced art educators who have completed an undergraduate program in the field. The program does not lead to teaching certification.

#### Program Learning Outcomes:

Students accepted into the program are expected to:

engage in aesthetic inquiry to understand their creative practice and the practice of other artists through the process of creating, looking, reading, and writing about these practices; and

increase or develop an understanding of creative idea development, direction, and production by either: a) creating a significant, coherent, highly resolved body of work for exhibition, with accompanying exegesis, (Plan C) or b) writing a traditional thesis that applies methodologies appropriate for art education to examine topics and/or issues within the discipline (Plan A).

#### Course and Capstone Requirements:

33 credits, including thesis/Plan A or exhibition or project/Plan C

Professional Education (12 credits):

ART 500 Problems in Art Education 3  
 ART 598 Research in Art Education 3  
 Art 597 Exhibition Research (Plan C) 3  
 or  
 Art 599 Thesis (Plan A) 3

and one of the following:

EDF 500 Contemporary Educational Issues 3  
 EDF 516 School and Society 3  
 EDF 524 Foundations of Contemporary Theories of Curriculum 3  
 EDF 525 History of American Education 3  
 EDF 538 The Politics of Education 3  
 EDF 583 Sociological Foundations of Education 3

Art Concentration (21 credits):

Department offerings, as approved by faculty advisor

Note: No more than nine credits at the 400 level, as approved by the graduate advisor, may be counted toward the graduate planned program of study.

### **Degree Candidacy**

After completing 15 credits of coursework, the student must apply for Degree Candidacy. The student must present a resume, statement of purpose, and a portfolio of at least five pieces to a committee of the advisor and two other faculty members selected by the student and approved by the advisor. After 27 credits, the student must undergo a final review, including committee approval of the thesis (Plan A) or exhibition/special project (Plan C). The comprehensive exam option (Plan B) is not available. Please follow the directions on the Policies and Degree Requirements page, [linked here](#), concerning the planned program.

## **Post-Baccalaureate Teaching Certification Program in Art Education**

### **Program Rationale:**

Students who already hold a bachelor's degree may pursue teacher certification through our post-baccalaureate program. This program prepares students for teacher certification in Art Education (PK-12) and does not result in a master's degree.

### **Program Outcomes:**

In the post-baccalaureate program, art teacher candidates will:

- develop or increase appropriate techniques and processes in a variety of visual media;
- acquire knowledge of art forms, artists, and art works from diverse historical and contemporary contexts;
- experience a variety of teaching strategies by designing comprehensive, sequential curriculum that is developmentally appropriate; • use a variety of teaching strategies to promote a high level of student understanding and artistic achievement during select field and student teaching experiences; and
- engage in self-evaluation and analysis of their field and teaching experiences to identify areas for personal growth.

### **Planned Program of Study:**

Persons holding a bachelor's degree from an accredited institution with an art-related major or concentration must follow a planned program of graduate study leading to certification in art education NK-12.

The Planned Program of Study is determined and filed with the advisor or chair of the department and must be approved by the office of the School of Graduate Studies to ensure that all certification requirements are satisfied. The Planned Program becomes a contract between the student and his or her advisor.

Post-baccalaureate students must meet the following general education requirements: at least 39 credits of liberal arts coursework, including a

U.S. history survey course, and coursework in each of the following areas—English, mathematics, natural sciences and social sciences, and one course in foreign language or fine arts. Coursework in developmental or life span psychology is a prerequisite for the Professional Program. These candidates are required to have the equivalent of 45 credits in art-related courses and fulfill departmental admissions requirements which include a portfolio review .

**Post Master's Study**

Thirty-credit planned programs of post-master's study in specific studio areas are available with the consent of the chair.

## Teacher Education

### Faculty

Timothy Reagan (Chair, Barnard 226), Gail Cueto (Assistant to the Chair), Elizabeth Aaronsohn, Aram Ayalon, Ronnie Casella, Barbara Clark, Sally Drew, James French, Lynda George, Nancy Hoffman, Maxine Howell, Kurt Love, Daniel Mulcahy, Karen Riem, Susan Seider, Jacob Werblow (Dept. phone: 860-832-2415).

### Department Overview

The Department of Teacher Education is committed to the initial preparation and continuing professional education of those involved in early childhood, elementary and secondary education. Accordingly, the department offers programs leading to a Master of Science degree in the following areas: Early Childhood Education, Educational Studies: Policy or Secondary Education, and Elementary Education. The department offers Post-Baccalaureate Teaching Certificate programs in elementary and secondary education that are both part-time and full-time, and a 30-credit planned program of post-master's study in elementary education.

The department also offers a Master of Arts in Teaching (MAT): Teacher Education with specializations in Mathematics, Sciences, Spanish, and English (7-12) and in Technology and Engineering Education (K-12). Candidates with documented content knowledge complete 13 months of full-time study and, in addition to earning the MAT degree, will receive the necessary preparation to apply for state teacher certification. The program is designed to cross disciplines whenever possible, encouraging candidates to build content teaching expertise in their specializations and relate each discipline to the larger school curriculum. While the schedule of class offerings utilizes evenings and weekends wherever possible and may allow candidates to maintain some employment while completing the program, day-time field experiences and full-time student teaching in assigned public school settings are required elements of the program.

### Programs

**Master of Arts in Teaching (MAT): Teacher Education with Specializations in Mathematics (7-12), Sciences (7-12), Spanish (7-12), English (7-12), and Technology and Engineering Education (K-12)**

Contact: Nancy Hoffman (860-832-2425)

#### Program Rationale:

The MAT program is designed to offer high-quality, full-time, degree-bearing teacher preparation to career changers and traditional-age students who have demonstrated content mastery and wish to expedite their preparation to teach in the shortage areas of mathematics, sciences, English, Spanish, or technology and engineering education. The 13-month program begins in late May each year and uses a cohort model to enhance program completion rates and teacher retention as graduates enter teaching.

Note: Available science certifications include physics, chemistry, earth science, and biology.

#### Program Learning Outcomes:

Graduate students in the program will:

- possess strong knowledge of content, pedagogy, and students;
- use data, content knowledge, and pedagogical content knowledge to critically examine practice for the purpose of improving student learning;
- design and deliver instructional and assessment strategies that facilitate significant learning for all students;
- create a positive and supportive learning environment; and
- act ethically, respectfully, and responsibly in work with students, families, and colleagues.

### Admission Requirements:

The MAT program selectively admits no more than 25 students each year. Admitted students proceed as a cohort group to complete a structured sequence of courses, field experiences, and classroom-based action research.

To be considered for admission, applicants must demonstrate the knowledge, skills, and dispositions expected of teacher candidates. Initial assessments will be made through review of complete applications. Fully qualified candidates will be invited to participate in an admissions interview.

The following qualifications are required for consideration for admission:

- Completion of a bachelor's degree from a regionally accredited institution with a total undergraduate GPA of at least 2.70 and, if applicable, a CCSU undergraduate GPA of at least 2.70. GPA waivers will be considered for applicants who have less than a 2.70 GPA but meet all other admission requirements and have at least a 3.00 GPA in the last 60 hours of coursework. Applicants with a GPA of at least 3.00 in an earned master's degree whose undergraduate GPA does not meet minimum standards will be considered for admission if the GPA in the certification content major is at least 3.00.
- Completion of a major in the content area that meets state certification standards or, in technology and engineering education, presentation of a portfolio documenting that content preparation requirements have been met. Candidates may be required to complete specific prerequisite courses prior to admission.
- Completion of general education coursework that meets current Connecticut State Department of Education (CSDE) standards for certification (currently 39 credits distributed across 5 of 6 areas and including a 3-credit U.S. history survey course). Applicants will be considered for admission if there are fewer than 12 credits of general education outstanding. These standards must be met prior to graduation.
- Scores on Praxis I PPST that meet the current CSDE passing standard or an SAT waiver letter from Connecticut State Department of Education.
- Scores on required state content knowledge examinations in the certification area:

In mathematics, sciences, English, and technology and engineering education, Praxis II scores that meet current CSDE passing standards are required.

In Spanish, ACTFL Oral Proficiency Interview and Writing Proficiency ratings that meet current CSDE passing standards are required. Preference will be given to applicants who score at the Advanced Low level or higher. If the ACTFL scores are more than one year old at the time the application is complete, a confirmatory interview with department faculty will be required.

To document their qualifications, applicants will submit School of Graduate Studies and program applications that include the following materials:

- two sets of official undergraduate and graduate transcripts from all institutions attended except CCSU;
- acceptable scores on Praxis I or SAT waiver letter;
- acceptable scores on the required test of content knowledge;
- a resume documenting educational and work experiences;
- two references that assess the student's ability to work with children and other adults on the reference form provided (signed originals). One reference must be from someone, preferably an education professional, who has observed the student's work with children in the age range the student wishes to teach and can knowledgeably assess potential as a teacher. The second reference should be from someone who has observed and can knowledgeably assess ability to work with other adults. Personal references are not accepted. Preference will be given to confidential references.
- a word-processed essay demonstrating a command of the English language and explaining the experiences and thinking that have led the student to choose (a) a teaching career and (b) this particular certification program. Applicants to the Spanish specialization must submit a second word-processed essay in Spanish, explaining why they believe they would be an effective Spanish teacher.
- evidence of the ability to work with diverse groups of students in an educational setting and an understanding of teaching as a work environment demonstrated through reflection on and documentation of no less than 60 hours of high-quality experience with students at the level the student wishes to teach, including recent experience in a public school setting. See the form "Statement of Experience with Children and Schools" which delineates expectations for this experience.
- evidence of ability to write at graduate school level, demonstrated through submitted essays and either a GRE writing score or a CCSU sit-down writing examination which may be conducted in conjunction with an interview.

- current Connecticut criminal background clearance.

### Course and Capstone Requirements

(47 credits):

All MAT programs include core, specialization, and capstone components.

Core (26 credits):

All MAT candidates complete the following courses

MAT 510 Research on Teaching Diverse Learners 5

MAT 511 Introduction to Special Education 1

MAT 520 Design and Delivery of Instruction 4

MAT 530 Meeting the Needs of Special Learners in the Classroom 3

MAT 531 Literacy and Language Issues in the Classroom 3

MAT 534 Creating Productive Learning Environments 3

MAT 541 Internship Seminar 1

MAT 542 Assessment of Student Learning 3

MAT 551 Perspectives on Educational Policy and Practice 3

Specialization (15 credits):

Each MAT candidate completes one of the following specialization areas.

#### Mathematics

MAT 529 Content Pedagogy in Mathematics 1 3

MAT 539 Content Pedagogy in Mathematics 2 3

MAT 533 Field Experience in Mathematics 3

MAT 540 Internship in Mathematics 6

#### Spanish

MAT 529 Content Pedagogy in Spanish 1 3

MAT 539 Content Pedagogy in Spanish 2 3

MAT 533 Field Experience in Spanish 3

MAT 540 Internship in Spanish 6

#### Sciences

MAT 529 Content Pedagogy in Science 1 3

MAT 539 Content Pedagogy in Science 2 3



MAT 533 Field Experience in Science 3

MAT 540 Internship in Science 6

English

MAT 529 Content Pedagogy in English 1 3

MAT 539 Content Pedagogy in English 2 3

MAT 533 Field Experience in English 3

MAT 540 Internship in English 6

Technology and Engineering Education

MAT 529 Content Pedagogy in Technology Education 1 3

MAT 539 Content Pedagogy in Technology Education 2 3

MAT 533 Field Experience in Technology Education 3

MAT 540 Internship in Technology Education 6

Capstone (6 credits):

All students will be Plan E. All MAT candidates complete the following capstone courses.

MAT 532 Research I: Reading and Designing Educational Research 3

MAT 550 Research II: Conducting and Reporting Action Research 3

### **Master of Science in Early Childhood Education**

Contact: Gail Cueto (860-832-2434)

#### **Program Rationale:**

This program is designed for early childhood educators wishing to pursue graduate study which will extend their knowledge of the theory and practice of early childhood education. The program offerings enable professionals working in the field of early childhood to increase knowledge and skills related to the most effective research-based strategies in teaching, learning, and assessment. Students will have opportunities to analyze, extend, and increase the relevance and responsiveness of their current work with children, particularly as it relates to development and diversity issues.

The program consists of a number of courses in the introductory block, curriculum and instruction block, and specialization block. It also provides the opportunity to develop and implement research skills during the final two semesters of the capstone requirement, during which candidates are enrolled in courses that facilitate the planning and conducting of an action research project in the school or early childhood classroom and/or professional teaching setting in which s/he is employed. An undergraduate degree in, or related to, early childhood education is required for admission to the program.

#### **Program Learning Outcomes:**

Students are expected to:

- demonstrate how to implement curriculum that includes elements that are developmentally appropriate, multicultural, multimedia, integrated, and suitable for inclusive and diverse settings;
- demonstrate effective management and assessment strategies;
- demonstrate improvement in the quality of their teaching skills by self-reflecting and analyzing teaching practices through data collection

and analysis;

- demonstrate best practice teaching as agents of change by designing and conducting action research that is grounded in professional literature and can have a positive impact on early childhood settings and communities;
- assess a variety of early childhood programs in light of their students' developmental stages and cultural and linguistic backgrounds;
- demonstrate knowledge and understanding of the course material in the introductory block courses that incorporate and highlight insights from the study of diversity in schools, socio-cultural and historical issues influencing schools, and research in education;
- demonstrate knowledge of and value for a variety of structures in which young children are reared while demonstrating the ability to build effective reciprocal relationships with parents; and
- identify models for effective school-community partnerships that assist and empower families.

### Course and Capstone Requirements

**(33 credits):**

Core Courses (9 credits)

EDTE 502 Focus on Diversity in Education 3

EDF 516 School and Society 3

EDTE 598 Introduction to Research in Education 3

Professional Courses (9 credits)

EDEC 551 Programs and Curricula in Early Childhood Education 3

EDEC 552 Programs and Curricula in Early Childhood Education II 3

EDEC 554 Observation and Assessment in Early Childhood Education 3

Specializations (9 credits)

Choose from one of the following specializations:

a) Leadership/Directorship:

EDL 513 Supervision 3

EDEC 561 Administration in Early Childhood Education 3

EDEC 553 Family, School and Community Partnerships in Early Childhood Education) 3

b) Working with Families:

EDEC 553 Family, School and Community Partnerships in Early Childhood Education 3

RDG 586 Literacy Instruction for Diverse Populations I 3

Related course approved in advance by advisor (SPED 510 recommended)

c) Diversity in Education:

EDF 510 The Social, Political, and Cultural Context of Urban Schools 3

EDEL 509 Education and the Development of Cultural Understanding 3

## EDEL 485 Creating Classroom Community (K-8) 3

## Capstone Requirement (6 credits)

Special Project, Plan E: EDEL 591 and EDEL 592 (all students are required to enroll in Plan E unless they are exempted for Plan A, the thesis option). Capstone requires the completion of all core and professional courses and at least 6 credits in specialization area. Students are strongly discouraged from taking any other coursework concurrent with EDEL 591. Under no circumstances may students take a course concurrently with EDEL 592.

## Program Sequence:

Students should complete the core requirements before enrolling in the professional and specialization courses. Courses in the professional and specialization areas may be taken concurrently with courses from the core with permission of advisor. All core and professional courses, as well as 6 credits in the specialization block, must be completed prior to taking EDEL 591.

In the case of a student who is not employed in a professional setting with children during the capstone semesters, the student may opt to fulfill Plan A, Thesis Capstone (3 credits). In this case the student must take an additional course, with advisor counsel, to complete the 33 credits in the planned program. The student must also find a faculty member in the department to supervise the thesis work.

Note: A maximum of 6 credits at the 400 level may be taken with the approval of the graduate advisor.

**Master of Science in Educational Studies: Policy and Secondary Education Strands**

Contact: Timothy Reagan (860-832-2574)

**Strand I: Educational Studies with Discipline Specific Specialization****Strand II: Secondary Education****Program Rationale:**

This program is designed to offer educators working in the field of education the opportunity to pursue graduate studies in Educational Studies. There are two strands of study. Strand I: Educational Studies with Discipline Specific Specialization. Strand II: Secondary Education. Strand I, Educational Studies with Discipline Specific Specialization, is designed to increase student knowledge of contemporary education issues, theories, and politics. Strand II, Secondary Education, is designed to increase knowledge and skills related to curriculum and instruction in secondary schools.

The capstone for Strand I, Educational Studies with Discipline Specific Specialization entails the following. Students may choose between two possible capstone experiences: writing a thesis, or completing a Comprehensive Examination. Students who select the thesis also take ED 599 (3 credits). Those who choose the Comprehensive Examination take one additional 500-level EDF course (3 credits).

The capstone for Strand II, Secondary Education is comprised of a capstone block in which the student earns 3 credits for EDSC 586. The capstone prerequisite is completion of all Block 1 courses and at least 12 credits in Blocks 2 and 3.

**Program Learning Outcomes for Educational Studies with Discipline Specific Specialization:**

Students will:

- use social, cultural, political, and historical perspectives to critically analyze and assess policy and school practices;
- demonstrate growth in professional self-knowledge by engaging in reflective inquiry;
- demonstrate research skills through the collection and interpretation of literature-based studies; and
- demonstrate knowledge of how issues of diversity impact schools.

**Program Learning Outcomes for Secondary Education:**

Students are expected to:

- use social, cultural, political, and historical perspectives to critically analyze and assess policy and school practices;

- extend knowledge and understanding of the subjects that they teach, the theories, curriculum and instruction, models and procedures for assessment of learning, and environments for diverse learners;
- demonstrate growth in professional self-knowledge through engaging in reflective inquiry;
- demonstrate research skills through the collection and interpretation of literature-based studies; and
- demonstrate knowledge of educational programs that promote learning for a diverse student body.

**Course and Capstone Requirements for Educational Studies with Discipline Specific Specialization:**

30 credits total

- 15 credits chosen from core EDF courses
- 9 credits of Specialization Area courses
- 3 credits EDTE 598
- 3 credits ED 599 or EDF 500-level course (depending on Capstone choice).

Core courses include:

EDF 500 Contemporary Educational Issues

EDF 516 School and Society

EDF 524 Foundations of Contemporary Theories of Curriculum

EDF 525 History of American Education

EDF 526 Philosophy of Education

EDF 528 Comparative and International Education

EDF 535 Special Topics in Educational Foundations

EDF 538 The Politics of Education

EDF 583 Sociological Foundations of Education

Capstone for Strand I, Educational Studies with Discipline Specific Specialization:

Students may choose between two possible capstone experiences: writing a thesis, or completing a Comprehensive Examination. Students who select the thesis also take ED 599 (3 credits). Those who choose the Comprehensive Examination take one additional 500-level EDF course (3 credits).

Plan A: Thesis and Satisfactory Completion of ED 599

Plan B: Comprehensive Examination and one additional 500-level EDF course

**Strand II: Secondary Curriculum, Foundational and Instructional Issues:**

30 credits total

Introductory Block 1 (9 credits):

EDTE 502 Focus on Diversity in Education

EDF 516 School and Society

EDTE 598 Research in Educational Settings

## Curriculum and Instruction

## Block 2 (9 credits):

EDSC 505 Innovations in Secondary Education

EDSC 556 Instructional Theory and Practice

EDF 524 Foundations of Contemporary Theories of Curriculum

## Specialization Block 3 (9 credits):

Choose from the following options:

a) Foundations: EDF 583, EDF 528, EDF 525, EDF 538, EDF 500

b) Subject areas: Choose 3 courses in the subject area in which certified or in literacy.

## Capstone Block (3 credits):

EDSC 586 (all students are Plan E).

Capstone prerequisite is completion of all Block 1 courses and at least 12 credits in Blocks 2 and 3.

Program Sequence: Students are encouraged to complete the Introductory Block 1 before taking courses in the Curriculum and Instruction and Specialization Blocks 2 and 3. Courses in the Curriculum and Instruction and Specialization Blocks may be taken concurrently with courses from the Introductory Block with permission of advisor.

Note: No more than 9 credits at the 400 level, as approved by the graduate advisor, may be counted toward the graduate planned program of study.

**Master of Science in Elementary Education**

Contact: Gail Cueto (860-832-2434)

**Program Rationale:**

This program is designed for elementary education and K-12 certified teachers wishing to pursue graduate study which extends their knowledge of the theory and practice of elementary education. The program offerings enable working teachers to increase knowledge and skills related to the most effective research-based strategies in teaching, learning, and assessment. Students will have opportunities to analyze, extend, and increase the relevance and responsiveness of their current work in classrooms, particularly as it relates to leadership and diversity issues.

The program consists of a number of courses in the introductory block, curriculum and instruction block, and specialization block. It also provides the opportunity to develop and implement research skills in the final two semesters of the capstone requirement, during which candidates are enrolled in courses that facilitate the planning and conducting of an action research project in the school classroom and/or professional teaching setting in which they are employed. Teacher certification in either elementary, early childhood, middle-level education, or an NK-12 special area is required for admission to the program.

**Program Learning Outcomes:**

Students are expected to:

- demonstrate and implement varied instructional, assessment, management, and technological strategies that facilitate learning for diverse students;
- demonstrate improvement in the quality of students' teaching skills by self-reflecting and analyzing teaching practices through data

collection and analysis;

- demonstrate best practice teaching as agents of change by designing and conducting action research grounded in professional literature to have an impact on schools and their surrounding communities;
- assess a variety of teaching strategies in light of research-based practices around developmental stages and cultural/linguistic backgrounds; and
- demonstrate knowledge and understanding of the course material in the introductory block courses that incorporate and highlight insights from the study of diversity in schools, socio-cultural and historical issues influencing schools, and research in education.

### Course and Capstone Requirements

#### (33 credits):

Core Courses (9 credits)

EDTE 502 Focus on Diversity in Education 3

EDF 516 School and Society 3

EDTE 598 Introduction to Research in Education 3

Professional Courses (9 credits)

EDEL 508 Current Trends in Elementary Education 3

EDEL 512 Assessment of Learning 3

EDEL 529 Analysis of Teaching 3

Specializations (9 credits)

Choose from one of the following specializations:

1. Diversity in Education: Three from

EDEL 509 Education and the Development of Cultural Understandings 3

EDEL 485 Creating Classroom Community (K-8) 3

RDG 586 Literacy Instruction for Diverse Populations I 3

LING 497 Second Language Acquisition 3

2. Working with Families: Three from

SPED 580 Collaborative Process in Special Education 3

SPED 510 Inclusive Education 3

or other SPED course approved by advisor

EDEC 553 Family, School and Community Partnerships in Early Childhood Education 3

RDG 586 Literacy Instruction for Diverse Populations I 3

EDEL 485 Creating Classroom Community (K-8) 3

3. Subject Area Curriculum: Three from

FA 490 Integrating the Fine Arts for the Young Learner 3

SCI 555 Teaching Biological Sciences in the Elementary School 3

MATH 506 Teaching Number Concepts in the Elementary Grades 3 or

MATH 507 Teaching Geometry and Measurement in the Elementary Grades 3 or

MATH 508 Teaching Probability and Statistics in the Elementary Grades 3 or

MATH 509 Teaching Algebraic Thinking in the Elementary Grades 3

EDEL 537 Social Studies Methods (1-6) 3

RDG course (500 level)

EDEL 485 Creating Classroom Community (K-8) 3

4. Literacy: Three from

500-level RDG courses

TESOL courses (LING 497 and RDG 586 are recommended.)

Capstone Requirement (6 credits)

Special Project, Plan E: EDEL 591 and EDEL 592 (all students are required to enroll in Plan E unless they are exempted for Plan A, the thesis option). Capstone requires the completion of all core and professional courses and at least 6 credits in specialization area. Students are strongly discouraged from taking any other coursework concurrent with EDEL 591. Under no circumstances may students take a course concurrently with EDEL 592.

Program Sequence:

Students should complete the core requirements before enrolling in the professional and specialization courses. Courses in the professional and specialization areas may be taken concurrently with courses from the core with permission of advisor. All core and professional courses, as well as 6 credits in the specialization block, must be completed prior to taking EDEL 591.

In the case of a student who is not employed in a professional setting with children during the capstone semesters, the student may opt to fulfill Plan A, Thesis Capstone (3 credits). In this case, the student must take an additional course, with advisor counsel, to complete the 33 credits in the planned program. The student must also find a faculty member in the department to supervise the thesis work.

Note: A maximum of six credits in 400-level courses may be taken, with the approval of the graduate advisor.

### **Post-Master's Study**

A 30-credit planned program of post-master's study is available in elementary education. Programs are planned with a faculty advisor on an individual basis to meet the professional development aspirations of the student.

### **Post-Baccalaureate Teacher Certification Programs**

Students who already hold a bachelor's degree may pursue teacher certification through our post-baccalaureate programs. These programs prepare students for teacher certification and do not result in a master's degree. Additional policies governing these certification programs are found in the Undergraduate Catalog. Students can seek certification in the following fields.

- Elementary Education
- Secondary Education in the following subjects: Biology, Chemistry, Earth Sciences, English, French, General Science, German, History, Italian, Mathematics, Physics, Social Studies and Spanish

- NK-12 Education in the following subjects: Art, Music, Physical Education, TESOL, Technology and Engineering Education

Information on admission to the post-baccalaureate programs can be found on the School of Education and Professional Studies page, [linked here](#).

Students may enroll part time or full time, extended over a number of years in any certification field. Each student will, together with an advisor, submit a planned program of graduate study which would satisfy all certification requirements. Each planned program is individualized, based on the student's previous college course work, CCSU program requirements, and state certification requirements.



# Communication

## Faculty

Serafin Mendez-Mendez (Chair, Robert

C. Vance Academic Center 317), Jose Carlos Del Ama, Robert Fischbach, Glynis Fitzgerald, Yanan Ju, Andrew Moemeka, Christopher Pudlinski, Karen Ritzenhoff, Benjamin Sevitch, Jeffrey B. Teitler, Cornelius Benjamin Tyson, Cindy White (Dept. phone: 860-832-2690)

## Department Overview

Organizations are defined by their ability to communicate and learn. Their identities are shaped by the relationships that are developed among employees, the public, and other key stakeholders. Their services, products, and expertise have value only when they are communicated successfully to the right audience. And these achievements are a direct consequence of how effectively they know their audience. Our graduates understand these principles and the processes necessary for mastering them.

Graduate students in communication receive special attention in a close knit community of thoughtful colleagues. The program is personalized—only about 15-20 new students enter the program each year. Working closely with faculty, each student develops a program that builds on his/her specific interests and skills.

Through coursework, students gain expertise in using traditional and contemporary media technology to communicate with various stakeholders (publics) inside and outside an organization. They study theories of communication and learn to apply these theories in both an internal (organizational) and external (public relations) context.

Students graduate with a solid theoretical background and specific technical skills that are immediately applicable to the job market or continuing with postgraduate education.

## Programs

### The Master of Science in Communication

#### Program Rationale:

Graduate study in communication is designed to provide students with academic experiences that enable them to evaluate, develop, shape, and change the communication environment within organizations (organizational communication), as well as between organizations and their target audiences (public relations), using traditional and contemporary media technologies.

#### Program Learning Outcomes:

Students will be expected to:

- understand communication processes, internal and external, of an organization;
- demonstrate the ability to write appropriately in both academic and professional settings;
- employ research methods in the diagnosis of communication problems within organizations and between organizations and their target audiences, including those resulting from intercultural differences;
- apply problem-solving, decision-making, and negotiation strategies in complex relational situations within organizations;
- examine the use and impact of information, communication, and new media technologies in the design and evaluation of public relations, strategic communication campaigns, and other organizational applications; and
- develop and practice sound and ethical reasoning.

**Course and Capstone Requirements****(33 credits):**

The program comprises two sections, a 15-credit core of foundational courses and 18 credits of advisor-approved directed electives. A capstone experience consisting of Plan A (6-credit Thesis) or Plan B (Comprehensive Examination) or Plan C (Special Project) is required for graduation.

## Core Courses (15 credits):

COMM 500 Introduction to Graduate Studies in Communication 3

COMM 501 Theories of Human Communication within an Organizational Context 3

COMM 503 Research Methods in Communication 3

COMM 505 Persuasive Communication 3

COMM 504 Organizational Communication Audits 3

or

COMM 507 Campaign Planning and Evaluation 3

## Directed Electives (12-18 credits):

Students will select from the following courses approved by the faculty advisor. A planned program of study should be completed no later than 6 credits into the student's program. The student may specialize in either track or may select courses from both tracks. To specialize in a particular track, at least 3 courses must be selected from that particular track.

**Organizational Communication Track**

COMM 450 Communication Skills for Training and Development 3

COMM 504 Organizational Communication Audits 3

COMM 522 Corporate Communication 3

COMM 551 Policy Issues in Organizational Communication 3

COMM 562 Communication and High-Speed Management 3

**Public Relations Track**

COMM 451 Environmental Communication 3

COMM 454 Communication and Social Change 3

COMM 506 Case Studies in Public Relations 3

COMM 507 Campaign Planning and Evaluation 3

COMM 508 Public Relations Writing Strategies 3

**General Electives**

COMM 543 Intercultural Communication 3

COMM 544 Strategies in Negotiation and Conflict Resolution 3

COMM 585 Special Topics 3

**Outside Courses**

TM 464 Six Sigma Quality 3

TM 500 Product Life Cycle Management 3

TM 502 Human Relations and Behavior in Complex Organizations 3

TM 564 Quality Systems Management 3

STAT 453 Applied Statistical Inference 3

Capstone (0-6 credits):

Plan A: COMM 590 Independent Study (3 credits)

and COMM 599 Thesis (3 credits)

or

Plan B: Comprehensive Examination

or

Plan C: COMM 597 Special Project (3 credits)

To complete degree requirements, students have the option of a thesis (Plan A) or a comprehensive examination (Plan B) comprised of a written exam followed by an oral exam or a Special Project (Plan C). Programs will be designed jointly by the departmental advisors and the students to provide the greatest educational and career opportunities.

**Official Certificate Program: Post-Baccalaureate Certificate in Public Relations/Promotions**

This non-degree certificate program, offered by the Department of Communication, is designed for college graduates wishing to expand or update their knowledge of public relations/promotions, but who are not ready to commit to graduate programs leading to a master's degree. The program provides students with a formal option for post-baccalaureate studies. Courses completed as part of this certificate program may later be applied to the department's master program if admission requirements for that program are successfully met and if courses meet the School of Graduate Studies policy for a six-year time limit.

**Program Requirements**

The Post-Baccalaureate Certificate Program in Public Relations/Promotions will require the student to complete a four-course, 12-credit sequence consisting of COMM 505 Persuasive Communication, COMM 506 Principles and Processes of Communication Campaigns, COMM 507 Campaign Planning and Evaluation, and COMM 508 Public Relations Writing Strategies. One other course from the department's master's degree program in communication can be substituted for one of the four courses listed above with permission of the student's academic advisor. More information about these courses can be found at [www.communication.ccsu.edu/grad.htm](http://www.communication.ccsu.edu/grad.htm). The student must achieve a 3.00 (B) GPA in order to receive the post-baccalaureate certificate. Up to 12 credits may be applied to the M.S. in Communication degree; admissions to the M.S. is required.

**Admission**

Students seeking admission to the M.S. in Communication program must present an undergraduate average of B (3.00). Students with an undergraduate GPA of 2.70 through 2.99, or who have been out of school for five years and possess significant professional experience, may apply to be considered for conditional acceptance.

Students who meet the above requirements should submit an Application for Graduate Admission, official copies of transcripts, and their application fee directly to the School of Graduate Studies Office. A current resume, a writing sample comprised of 500 to 1,000 words which

expresses their goals for graduate study and future professional aspirations, and names and contact information (including email addresses) of three references should be sent directly to the chair of the Department of Communication. No action will be taken until all of the above materials have been received.

## Criminology and Criminal Justice

### Faculty

Raymond Chip Tafrate (Chair, Vance 208-200), Kathleen Bantley, Stephen Costanza, Stephen Cox, Jennifer Hedlund, Amy Hyman Gregory, Damon Mitchell, Shamir Ratansi, Reginald Simmons (Dept. phone: 860-832-3005)

### Department Overview

The Criminal Justice graduate program requires 30 credits of course work, including five core courses, three elective courses, and a capstone project. While all graduate students are required to complete core courses, students are allowed to select elective courses that match their individual academic and career interests.

### Admissions

Admission to the Master of Science degree program in Criminal Justice is made on a competitive basis two times per year. Applications for the fall semester must be completed and received by May 1. Applications for the spring semester must be completed and received by December 1. The number of students accepted in any semester is dependent on available openings in the program, which may fluctuate from semester to semester.

Applicants will be notified by May 30 (for fall admission) and December 30 (for spring admission) regarding acceptance decisions. Some applicants who are not accepted into the program may be put on a waiting list. Applicants on the waiting list may be admitted as additional openings in the program become available. Applicants accepted into the program will be contacted and asked to confirm their intentions to enter the program. Newly admitted applicants who do not register for courses by June 20 (for fall admission) and January 10 (for spring admission) risk losing a spot in courses because enrollment may be made available to students on the waiting list.

In addition to standard University graduate admission requirements, the department requires:

1. A minimum grade point average (GPA) of 3.00 on a 4.00 scale
2. One undergraduate social science research methods course with a grade of "C" or better
3. One undergraduate elementary statistics course with a grade of "C" or better
4. A formal application essay that focuses on (a) academic and work history, (b) reasons for pursuing graduate studies in criminal justice, and (c) future career goals
5. Resume

Consideration in the admissions process is given to selecting applicants from diverse areas of the criminal justice field (e.g., law enforcement, corrections, alternative sanctions, treatment and rehabilitation, and analysis). Students who do not meet these requirements may request consideration for admission with special requirements. No students may register for graduate-level criminal justice courses without first being admitted to the program.

### Program

#### Master of Science in Criminal Justice

#### Program Rationale:

The master of science degree is designed to provide students with the knowledge and skills required for leadership positions in the criminal justice system and continued study at the doctoral level. The criminal justice graduate program strongly emphasizes the application of theory and research in executive decision-making, policy development and analysis, and the treatment of offenders.

#### Program Learning Outcomes:

Our goal is that upon completion of this program students will have skills and abilities consistent with the following objectives:

- collect and analyze data to evaluate criminal justice policies and programs;
- present research proposals and findings to criminal justice professionals;
- analyze functions and relations between diverse criminal justice systems; and
- apply social and psychological models of crime and intervention to relevant offender populations.

Core courses are designed to help students:

- understand the purpose and function of criminal justice agencies organized under the rubrics of police, courts, and corrections;
- critically analyze the organizational effectiveness of criminal justice agencies;
- understand how society comes to define certain behaviors as criminal and how these definitions can be effected by the race, gender, and socio-economic status of the law maker, as well as the law breaker;
- assess the effectiveness of criminal justice policies and programs through the application of research methods, statistics, and criminological theory; and
- understand the root causes of crime and the effects of social, economic, political, psychological, and biological factors on crime.

### **Course and Capstone Requirements**

#### **(30 credits):**

Core Courses:

CJ 501 Proseminar on the Nature of Crime 4

CJ 510 Proseminar on Law and Social Control 3

CJ 520 Proseminar on the Administration of Justice 3

CJ 533 Research Methods in Criminal Justice 4

CJ 534 Quantitative Analysis in Criminal Justice Research 4

Elective Courses (choose three):

CRM 450 Drugs and Society 3

CRM 475 Controlling Anger and Aggression 3

CJ 525 Program Planning and Evaluation 3

CJ 530 Offender Profiles 3

CJ 535 Correctional Counseling 3

CJ 539 Delinquency and Control 3

CJ 560 Sexual Offending 3

CJ 573 Managing Criminal Justice Organizations 3

CJ 575 Developing Criminal Justice Organizations 3

CJ 577 Advanced Independent Reading and Research in Criminal Justice 1-3

CJ 578 Special Topics in Criminal Justice 3

CJ 580 Public Policy in the Criminal Justice System 3

Elective courses are designed to allow students to develop knowledge and skills in areas that specifically match their individual academic and career interests. Students desiring a concentration in behavioral sciences and the offender are encouraged to consider courses such as CRM 450, CRM 475, CJ 530, CJ 535, CJ 539, and CJ 560. Students desiring a concentration in organizational functioning are encouraged to consider courses such as CJ 525, CJ 573, CJ 575, and CJ 580.

Capstone Project (choose one):

CJ 597 Agency Collaborative Project 3

CJ 599 Thesis 3

The capstone project is an original piece of research conducted by the student and completed under the supervision of a faculty advisor.

Note: No more than nine credits at the 400 level, as approved by the graduate advisor, may be counted toward the graduate planned program of study.

## Mathematical Sciences

### Faculty

Timothy Craine (Chair, Marcus White 108), Frank Bensics, Roger Bilisoly, Nelson Castaneda, Yuanqian Chen, Robert Crouse, Dariusz Dziuda, Ivan Gotchev, S. Louise Gould, Philip Halloran, Chun Jin, Shelly Jones, Robin S. Kalder, Daniel Larose, Frederic Latour, Sally Lesik, Eran Makover, Jeffrey McGowan, Adele Miller, Daniel S. Miller, Maria Mitchell, Oscar Perdomo, Luis Recoder-Núñez, Thomas Roman, Krishna Saha, Rachel Schwell, David Smith, Roger Vogeler, Charles Waiveris (Dept. phone: 860-832-2835)

### Department Overview

The Department of Mathematical Sciences offers programs leading to the Master of Science and Master of Arts degrees. Master of Arts candidates may specialize in general mathematics, computer science, statistics, or actuarial mathematics. Master of Science candidates may pursue a program for certified elementary or secondary school teachers or enroll in the data mining program. The department also offers a Sixth-Year Certificate in Mathematics Education Leadership. Students may also enroll in a program leading to certification to teach mathematics at the secondary level.

### Admissions

The Department of Mathematical Sciences may, at its discretion, admit an applicant with a GPA between 2.40 and 2.70 on an unconditional basis provided that the prospective student has both sufficient undergraduate coursework and standardized test scores that meet any of the following standards:

- GRE (math subject area): 600 (45th percentile)
- GRE (general test quantitative reasoning): 720 (80th percentile)
- GMAT (quantitative): 50 (95th percentile)

### Programs

#### Master of Science in Mathematics for Certified Elementary and Middle School Teachers

##### Program Rationale:

The Master of Science in Mathematics provides certified elementary and middle school teachers with additional content and pedagogical knowledge that will make them effective elementary or middle school teachers. (Note: There are two tracks in this program, one focusing on elementary grades and the other on middle grades.)

##### Program Learning Outcomes:

Students in this program will be expected to:

- deepen their comprehension of mathematics by re-examining, in detail, the mathematics topics taught in elementary or middle school, using topics introduced in the undergraduate program as a basis to build an increased understanding of the underlying mathematical structure;
- develop as reflective practitioners and self-motivated life-long learners who strive for continual improvement in their teaching and seek to facilitate deep student learning;
- understand emerging research on the psychological and intellectual development of children and adolescents and develop their understanding of current research on the teaching and learning of mathematics, trends and issues in mathematics curriculum, and the effective use of technology, data gathering and hands-on methods in the teaching of mathematics;



- acquire skills necessary to conduct research in mathematics education; and
- acquire skills necessary to make creative contributions to the field, such as writing, collecting data, and developing their own curriculum activities.

**Course and Capstone Requirements:**

(Plans A and C are offered as options. No more than nine credits at the 400 level may be counted toward the degree.)

Professional Education (3 credits):

One of the following:

EDF 500 Contemporary Educational Issues 3

EDF 516 School and Society 3

EDF 524 Foundations of Contemporary Theories of Curriculum 3

EDF 525 History of American Education 3

EDF 538 The Politics of Education 3

EDF 583 Sociological Foundations of Education 3

Elementary/ Middle School Mathematics Education Core (12 credits):

Elementary school track:

MATH 506 Teaching Number Concepts in the Elementary Grades 3

MATH 507 Teaching Geometry and Measurement in the Elementary Grades 3

MATH 508 Teaching Probability and Statistics in the Elementary Grades 3

MATH 509 Teaching Algebraic Thinking in the Elementary Grades 3

or

Middle school track:

MATH 536 Teaching Number Concepts in the Middle Grades 3

MATH 537 Teaching Geometry and Measurement in the Middle Grades 3

MATH 538 Teaching Probability and Statistics in the Middle Grades 3

MATH 539 Teaching Algebraic Thinking in the Middle Grades 3

Mathematics Electives (6 credits):

Choose two courses from

MATH 449 Mathematics Laboratory for Elementary School 3

MATH 504 Topics in Mathematics 1-3

MATH 534 Techniques in Diagnosis and Remediation for the Teaching of Mathematics K-12 3

MATH 580 Directed Study in Mathematics 1-3

STAT 453 Applied Statistical Inference 3

General Electives (6 credits):

Courses chosen from the electives listed above, graduate education courses and MATH 531, as approved by faculty advisor.

Research (3 credits):

MATH 598 Research in Mathematics Education

Capstone:

Plan A: 33 credits consisting of 30 credits from the above listings plus MATH 599 (3 credit Thesis).

Plan C: 33 credits consisting of 30 credits from the listings above plus MATH 590 Special Project in Mathematics (3 credits).

Note: Once a graduate student has elected one of the two plans, A or C, any change to the other plan must be made prior to the completion of 21 graduate credits and requires the approval of the student's advisor and the dean, School of Graduate Studies.

### **Master of Science in Mathematics for Certified Secondary Teachers**

#### **Program Rationale:**

The Master of Science in Mathematics provides teachers of secondary mathematics with additional content and pedagogical knowledge that will make them more effective in their profession.

#### **Program Learning Outcomes:**

Students in this program will be expected to:

- deepen their comprehension of mathematics by studying advanced topics not covered in undergraduate curriculum and thus develop the dispositions of life-long learners of mathematics;
- develop as reflective practitioners, striving for continual improvement in their teaching and student learning;
- understand current research on teaching and learning mathematics, trends in mathematics curriculum, and the effective use of technology in the teaching of mathematics;
- acquire skills necessary to conduct research in mathematics education; and
- acquire skills necessary to make creative contributions to the field, such as writing, collecting data, and developing curriculum activities.

#### **Course and Capstone Requirements:**

(Plans A and C offered as options. No more than nine credits may be earned in 400-level courses.)

General Education Electives (3 credits):

As approved by faculty advisor

Educational Foundations (3 credits):

Chosen from:

EDF 500 Contemporary Educational Issues 3

EDF 516 School and Society 3

EDF 524 Foundations of Contemporary Theories 3

EDF 525 History of American Education 3

EDF 538 The politics of Education

EDF 583 Sociological Foundations of Education 3

Secondary Mathematics Education (9 credits):

MATH 547 Reflective Practice in Teaching Mathematics

plus 6 credits chosen from:

MATH 504 Topics in Mathematics 1-3

MATH 534 Techniques in Diagnosis and Remediation for the Teaching of Mathematics - K-12 3

MATH 540 Curriculum Problems in School Mathematics 3

MATH 543 Secondary School Algebra with Technology from Advanced View point 3

MATH 544 Secondary School Geometry with Technology from an Advanced View point 3

MATH 580 Directed Study in Mathematics 1-3

Mathematics and Statistics Content

Courses (12 credits):

No more than six credits in courses with the STAT designation. One course must be STAT 453 unless this course was taken as an undergraduate. Courses to be chosen from MATH 421, 440, 468, 469, 470, 477, 491, 515, 516, 519, 520, 523, 525, 526, STAT 453, 455, 567

Research in Mathematics Education (3 credits): MATH 598

Capstone:

Plan A: 33 credits consisting of 30 credits from the above plus MATH 599 (3 credit thesis)

Plan C: 33 credits consisting of 30 credits from the above plus MATH 590 (3 credit-Special Project)

Note: Once a graduate student has elected one of the two plans, A or C, any change to the other plan must be made prior to the completion of 21 graduate credits and requires the approval of the student's advisor and the dean, School of Graduate Studies.

## Master of Arts in Mathematics-General

### Program Rationale:

The Master of Arts in Mathematics-General provides an abstract introduction to mathematics at an advanced level. This program is suitable for students wishing to improve their mathematics backgrounds before applying to doctoral programs, for candidates interested in teaching at the community-college level, and for high school teachers looking both to broaden and deepen their understanding so as to advance their teaching.

Program Learning Outcomes:

Students in this program will be expected to:

- deeply understand analytic arguments, using such common notions as epsilon/delta, infinite sums, and limits, as well as considerations for more general spaces than the real numbers, such as spaces of functions;

- develop a basic understanding of measure theory and use it to study the Lebesgue integral;
- deeply understand basic algebraic and discrete notions, such as facts about vector spaces and counting arguments, and expand this to include ideas about rings and fields;
- develop a basic understanding of Galois theory;
- follow and create analytic proofs involving abstract metric spaces;
- follow and create algebraic proofs, with an understanding of groups, rings, and fields; and
- independently investigate advanced topics in mathematics and present results to others in a clear way.

### Course and Capstone Requirements

#### (30 credits):

Requirements (18 credits):

MATH 515 Abstract Algebra I 3

MATH 516 Abstract Algebra II 3

MATH 519 Principles of Real Analysis I 3

MATH 520 Principles of Real Analysis II 3

MATH 523 General Topology 3

MATH 526 Complex Variables 3

Electives as approved by faculty advisor (12 credits). These may include 3 credits for the thesis for a student electing Plan A. No more than 9 credits may be earned from 400-level courses.

Capstone Experience:

Plan A: Thesis (MATH 599, 3 credits). Students electing this option must also pass one qualifying examination\* in an area not related to the thesis topic.

Plan B: Comprehensive Exam. Students selecting this option must pass two of three qualifying examinations\* (in the areas of algebra, analysis, or topology) and also give oral presentations on topics approved by their advisors.

\* Students must apply for qualifying examinations after completing appropriate coursework with the approval of their advisors. Applications are available in the School of Graduate Studies or on the web at [www.ccsu.edu/grad](http://www.ccsu.edu/grad) under Graduate Forms (Degree Candidacy/Non Capstone Qualifying Form).

Note: Applicants to the program are expected to have completed the equivalent of MATH 152, 221, 222, 228, 366, and 377 in addition to any necessary prerequisites for courses required in the planned program of graduate study.

### Master of Arts in Mathematics with Specialization in Computer Science

#### Program Rationale:

The Master of Arts in Mathematics with Specialization in Computer Science provides an abstract introduction to mathematics at an advanced level, combined with an introduction to some advanced topics in computer science. This program is suitable for students wishing to improve their mathematics backgrounds before applying to doctoral programs and for professionals in the informational sciences.

**Program Learning Outcomes:**

Students in this program will be expected to:

- deeply understand analytic arguments, using such common notions as epsilon/delta, infinite sums, and limits, and expand this to include such considerations for more general spaces than the real numbers, such as spaces of functions;
- develop a basic understanding of measure theory and use it to study the Lebesgue integral;
- deeply understand basic algebraic and discrete notions, such as facts about vector spaces and counting arguments, and expand this to include ideas about rings and fields; and
- develop an understanding of the fundamentals of computer science and the application of mathematics to computer programming and/or software engineering.

**Course and Capstone Requirements****(30 credits):**

The student will choose a specialization in computer programming techniques and numerical methods or computer systems and software engineering. The student and faculty advisor will work out an appropriate plan of study within the framework of the following requirements.

Requirements:

Basic Mathematics Courses (12 credits) - Three (3) of the following courses:

MATH 515 Abstract Algebra I 3

MATH 516 Abstract Algebra II 3

MATH 519 Principles of Real Analysis I 3

MATH 520 Principles of Real Analysis II 3

and one (1) of the following:

MATH 523 General Topology 3

MATH 526 Complex Variables 3

STAT 551 Applied Stochastic Processes 3

Electives appropriate to the area of specialization as approved by the faculty advisor (18 credits); no more than nine of these credits may be earned in 400-level courses.

Comprehensive Examination

**Master of Arts in Mathematics with Specialization in Actuarial Science****Program Rationale:**

The Master of Arts in Mathematics with Specialization in Actuarial Science provides students with an understanding of the mathematical foundations of actuarial work and the professional development process. Consistent with this, the program provides course work which covers a substantial portion of the material on the first four examinations of the Society of Actuaries and the Casualty Actuarial Society. Students are encouraged to begin taking professional exams during their course of study. In conjunction with this, students are exposed to complementary disciplines, such as applied statistics or data mining.

**Program Learning Outcomes:**

Learning outcomes are consistent with those of the North American actuarial societies and the International Actuarial Association. Students in this program will be expected to:

- construct both deterministic and stochastic valuation models;
- have a working knowledge of insurance and financial instruments, including derivatives; and
- estimate both parametric and nonparametric models for frequency and severity and use the models to estimate the distribution of total losses and the probability of ruin.

### Course and Capstone Requirements

**(30 credits):**

(Plans A, B and C are offered as options.)

The student and faculty advisor will work out an appropriate plan of study within the framework of the following requirements.

Requirements:

Actuarial Core (8 credits): Actl 565  
and 566

Additional courses as approved by the advisor, including:

1. 9 credits chosen from ACTL 480, 481, 482, 580,
2. 9 credits designated STAT or MATH at the 400 or 500 level, and
3. 1-4 additional credits in actuarial science, mathematics, or statistics.

No more than nine credits in the program may be earned in 400-level courses.

Capstone:

**Plan A:** Thesis (Math 599, 6 credits) with 27 credits of course work

**Plan B:** Comprehensive Exam with 30 credits of course work

**Plan C:** Special Project in Mathematics (MATH 590, 3 credits) with 30 credits of course work

### Master of Arts in Mathematics with Specialization in Statistics

#### Program Rationale:

The Master of Arts in Mathematics with Specialization in Statistics prepares students for a career or advanced study in statistics by understanding the discipline as a collection of inferential tools derived mathematically from models and/or assumptions.

#### Program Learning Outcomes:

Students in this program will be expected to:

- comprehend the theory behind methods of statistical inference;
- develop proficiency in the design and analysis of univariate, multivariate, stochastic, and categorical data;

- become familiar with regression, log linear, and time series models;
- understand and apply parametric and nonparametric procedures; and
- develop expertise in using the latest statistical analysis software.

### Course and Capstone Requirements

**(30 credits):**

(Plans A, B and C are offered as options.)

The student and faculty advisor will work out an appropriate plan of study within the framework of the following requirements.

Requirements:

Statistics Core (6 credits): STAT 567 and 575

Three courses chosen from ACTL 565, 566; MATH 470, 477, 519, 520; STAT 551 (9-11 credits)

Electives appropriate to the area of specialization (10-15 credits): No more than nine credits in the program may be earned in 400-level courses.

Capstone:

**Plan A:** Thesis (Math 599) (6 credits) with 27 credits of course work

**Plan B:** Comprehensive Exam with 30 credits of course work

**Plan C:** Special Project in Mathematics (MATH 590) (3 credits) with 30 credits of course work

Note: Once a graduate student has elected one of the three plans A, B or C, any change to one of the other plans must be made prior to the completion of 21 graduate credits and requires the approval of the student's advisor and the dean, School of Graduate Studies.

### Master of Science in Data Mining

#### Program Rationale:

The Master of Science in Data Mining prepares students to find interesting and useful patterns and trends in large data sets. Students are provided with expertise in state-of-the-art data modeling methodologies to prepare them for information-age careers.

#### Program Learning Outcomes:

Students in the program will be expected to:

- approach data mining as a process, by demonstrating competency in the use of CRISP-DM (the Cross-Industry Standard Process for Data Mining), including the business understanding phase, the data understanding phase, the exploratory data analysis phase, the modeling phase, the evaluation phase, and the deployment phase;
- be proficient with leading data mining software, including WEKA, Clementine by SPSS, and the R language;
- understand and apply a wide range of clustering, estimation, prediction, and classification algorithms, including k-means clustering, BIRCH clustering, Kohonen clustering, classification and regression trees, the C4.5 algorithm, logistic Regression, k-nearest neighbor, multiple regression, and neural networks;

- understand and apply the most current data mining techniques and applications, such as text mining, mining genomics data, and other current issues; and
- understand the mathematical statistics foundations of the algorithms outlined above.

### Admission Requirements

The minimum required undergraduate GPA for prospective candidates for the Master of Science in data mining is 3.00. Conditional admission may be granted to candidates with undergraduate GPAs as low as 2.40, conditioned on a student receiving no grades lower than a B in the first three core courses in the program.

The following materials are required, in addition to the materials required by the School of Graduate Studies.

1. A formal application essay of 500-1000 words that focuses on (a) academic and work history, (b) reasons for pursuing the Master of Science in data mining, and (c) future professional aspirations. The essay will also be used to demonstrate a command of the English language.
2. A detailed, itemized letter explaining whether and how the candidate has fulfilled each of the program prerequisites that applicants to the Master of Science in data mining program are expected to have completed, or be in the process of completing:
  - MATH 221 Calculus II;
  - STAT 315 Mathematical Statistics I; and
  - a second-semester course in under-graduate statistics.

Students may be admitted on condition that they complete these prerequisite courses with a grade of B or better. These prerequisite courses are regularly offered in the classroom, and some may be offered online, for students who are missing one or more of these courses.

In their letters, candidates are asked to show which courses on which transcripts are being used to fulfill each of these prerequisites. In particular, the candidate is asked to consider that mathematical statistics is calculus-based and represents a different approach beyond the usual undergraduate statistics course. Therefore, a course description or syllabus for the mathematical statistics course should be attached to the letter. If a candidate has not had courses that would fulfill certain program pre-requisites, the candidate should so indicate. The candidate is reminded that conditional admission may be granted for students needing to complete any or all of the program prerequisites.

3. Two letters of recommendation, one each from the academic and work environment (or two from academia if the candidate has not been employed).

The application and all transcripts should be sent to the Graduate Admissions Office. The deadline for submitting applications for the fall semester is May 1. The other materials, including the formal application essay, the prerequisites letter, and the two letters of recommendation, should be sent to:

Dr. Daniel T. Larose

Re: MS in Data Mining Admissions Materials

Department of Mathematical Sciences

Marcus White 118

Central Connecticut State University

New Britain, CT, 06050

Note: Only hard copy materials are acceptable. No attachments to e-mails or other electronically transmitted material will be considered in admissions decisions.

### Course and Capstone Requirements

**(36 credits):**

Core Courses (27 credits)



The following courses are required of all students. (All courses three credits unless otherwise indicated.)

STAT 416 Mathematical Statistics II

STAT 521 Introduction to Data Mining (4 credits)

STAT 522 Data Mining Methods (4 credits)

STAT 523 Applied Data Mining (4 credits)

STAT 525 Web Mining

STAT 526 Data Mining for Genomics and Proteomics

STAT 527 Text Mining

STAT 570 Applied Multivariate Analysis

Thesis Course (3 credits)

STAT 599 Thesis

All students must elect capstone Plan A, thesis. Students must make presentations of their theses on the CCSU campus. Students who cannot come to campus must make a web presentation of their thesis.

Elective Courses (6 credits)

Choose any two courses from the following list:

CS 570 Topics in Artificial Intelligence

CS 580 Topics in Database Systems and Applications

STAT 455 Experimental Design

STAT 529 Current Issues in Data Mining

STAT 551 Applied Stochastic Processes

STAT 567 Linear Models and Time Series

STAT 575 Mathematical Statistics III

Other appropriate graduate course, with permission of advisor

Note: New students may take the first course in the program while working on the prerequisites for the more advanced courses.

Note: No more than nine credits at the 400 level, as approved by the graduate advisor, may be counted toward the graduate planned program of study.

### **Graduate Certificate in Data Mining**

#### **Program Prerequisites:**

Applicants to the Graduate Certificate in Data Mining program are expected to have completed, or be in the process of completing, a second semester course in undergraduate or graduate statistics. Students may be admitted on condition that they complete these prerequisite courses with a grade of B or better.

**Admission Criteria:**

Students must hold a bachelor's degree from a regionally accredited institution of higher education. The undergraduate record must demonstrate clear evidence of ability to undertake and pursue studies successfully in a graduate field.

A minimum undergraduate GPA of 3.00 on a 4.00 point scale (where A is 4.00), or its equivalent, and good standing (3.00 GPA) in all post-baccalaureate course work is required. Conditional admission may be granted to a candidate with an undergraduate GPA as low as 2.40, only if the student receives no grades lower than a B in his/her first three core courses in the program.

The following materials, in addition to those required by the School of Graduate Studies, are required:

- a formal application essay of 500-1000 words, focusing on academic and work history, reasons for pursuing the Graduate Certificate in Data Mining, and future professional aspirations. The essay will also be used to demonstrate a command of the English language;
- a detailed, itemized letter explaining how the candidate has fulfilled the program prerequisites-or that he/she is in the process of completing a second semester course in undergraduate or graduate statistics. In the letter, candidates are asked to explain which courses on each transcript are being used to fulfill each of these prerequisites. If all prerequisite courses have not been taken, the candidate should so indicate. Conditional admission may be granted for students needing to complete any or all of the program prerequisites; and
- two letters of recommendation.

The application and all transcripts should be sent to the Graduate Admissions Office. The other materials, including the formal application essay, the prerequisites letter, and the two letters of recommendation, should be sent to:

Dr. Daniel T. Larose

Re: Graduate Certificate in Data Mining Admissions Materials

Department of Mathematical Sciences

Marcus White 118

Central Connecticut State University

New Britain, CT, 06050

Note: Only hard copy materials are acceptable. No attachments to emails or other electronically transmitted material will be considered in admission decisions.

**Course Requirements (18 credits):**

Required Courses (12 credits)

STAT 521 Introduction to Data Mining 4

STAT 522 Data Mining Methods 4

STAT 523 Applied Data Mining 4

Elective Courses (6 credits)

Choose two of:

STAT 525 Web Mining

STAT 526 Data Mining for Genomics and Proteomics

STAT 527 Text Mining

STAT 529 Current Issues in Data Mining

Other graduate-level data mining or statistics course, with approval of program coordinator.

## Sixth-Year Certificate in Mathematics Education Leadership

### Program Rationale

The overall objective of the Sixth Year Certificate Degree in Mathematics Education Leadership is to develop highly skilled and knowledgeable educators who can play leadership roles in their schools and districts to improve student learning in mathematics. There are two tracks within this degree to meet the objectives of our graduates. One track leads to the department chair certification (DCC). The other track leads to the intermediate administrator certification (IAC).

### Program Learning Outcomes

When students complete this program they will be effective leaders in mathematics and as such will have the following abilities:

- Effective leaders in mathematics education possess deep content knowledge of the mathematics that is taught in the school, with a focus on grades K-12, and are able to analyze any mathematics curriculum in terms of its logical, psychological, and sociological sources.
- Effective leaders in mathematics education are knowledgeable about research on the learning and teaching of mathematics and its impact in the classroom.
- Effective leaders in mathematics education examine cultural connections with mathematics and mathematics education and are aware of equity issues, such as gender, race, ethnicity, social class, language acquisition, access to technology, and achievement.
- Effective leaders in mathematics education understand how to use assessment as a tool for continued program improvement.
- Effective leaders in mathematics education apply their deep understanding of curriculum, learning, teaching, the social context of education, and assessment issues to the challenges of improving teaching and learning in their school and district.

### Admission Requirements

This is a cohort program. The first cohort began the program in August 2009 and is expected to complete the program in 2011 or 2012. The next cohort begins the program in August 2011, with new cohorts starting every alternating year thereafter.

Admission to the program requires that the candidate meet the following requirements.

- Master's degree, preferably in mathematics or mathematics education. Applicants with master's degrees in other fields may be asked to successfully complete additional mathematics courses as a condition for admission.
- Minimum of three years experience teaching mathematics within grades K-12.
- Praxis II (secondary mathematics-Exam 0061) for applicants without secondary certification. Students who have not taken Praxis II may be conditionally admitted. Such students will be able to enroll in a one-credit review course (MATH 440) in order to prepare for this examination. For spring 2009 applicants, this course will be offered during the Spring 2009 semester and again in the Summer 2009 semester.

Applicants will be expected to have passed STAT 453 (Applied Statistical Inference) or its equivalent with a B or higher. Applicants who do not meet this requirement may be admitted on condition that they successfully complete STAT 453 within the first year, earning a B or higher.

Applicants are strongly encouraged to become certified as BEST (Beginning Educator Support and Training) mentors, if appropriate to current teaching position.

Students who are admitted to this sixth year program are guaranteed acceptance into the Department Chair Certification Track and may, upon completion of EDL 655, apply for candidacy for the Intermediate Administrator Track to the Department of Educational Leadership through the School of Graduate Studies.

Application deadline is May 1 for admission to the program for summer 2009 matriculation. Review of applications will begin March 1. Applicants will be notified of admission decisions by June 15.

### Course and Capstone Requirements

Department Chair Certification (DCC) Track (33 credits):

*August of first year*

EDL 655 Leadership and Supervision 3

*Fall of first year*

MATH 611 Mathematics Curriculum K-8 Theory and Implementation 3

*Spring of first year*

MATH 612 Mathematics Curriculum 7-14 Theory and Implementation 3

MATH elective 3

*Summer of second year*

MATH 615 The Cultural Context of Mathematics Education 3

STAT 453 Applied Statistical Inference 3 (if needed)

*Fall of second year*

MATH 613 Research on the Learning of Mathematics 3

MATH elective 3

*Spring of second year*

MATH 614 Research on the Teaching of Mathematics 3

EDL 514 Administration 3

*Summer of third year*

MATH 616 Assessment in Mathematics Education 3

*Fall of third year*

MATH 622 Internship in Mathematics Education Leadership 2

Intermediate Administrator Certification (IAC) Track (37 credits):

*August of first year*

EDL 655 Leadership and Supervision 3

*Fall of first year*

MATH 611 Mathematics Curriculum K-8 Theory and Implementation 3

Students notified of acceptance to IAC track

*Spring of first year*

MATH 612 Mathematics Curriculum 7-14 Theory and Implementation 3

*Summer of second year*

MATH 615 The Cultural Context of Mathematics Education 3

STAT 453 Applied Statistical Inference 3 (if needed)

*Fall of second year*

MATH 613 Research on the Learning of Mathematics 3

EDL 610 School Leadership I 3

*Spring of second year*

MATH 614 Research on the Teaching of Mathematics 3

EDL 611 School Leadership II 3

*Fall of third year*

EDL 615 Understanding External Environments of School Leadership I 3

EDL 690 Internship in Educational Leadership I: Theory and Practice 2

*Spring of third year*

EDL 616 Understanding External Environments of School Leadership II 3

EDL 691 Internship in Educational Leadership II: Research and Practice 2

*Summer of third year*

MATH 616 Assessment in Mathematics Education 3

Prepare for Connecticut Administrators Test

**Master of Arts in Teaching (MAT): Teacher Education with Specializations in Mathematics (7-12), Sciences (7-12), Spanish (7-12), English (7-12), and Technology and Engineering Education (PK-12)**

The Department of Teacher Education offers a Master of Arts in Teaching (MAT): Teacher Education with specializations in Mathematics, Sciences, Spanish, English, and Technology and Engineering Education. Candidates with documented content knowledge will complete 13 months of full-time study, earning teacher certification and the MAT degree. The program is designed to cross disciplines wherever possible, encouraging candidates to build content teaching expertise in their specialization and relate each discipline to the larger school curriculum. See the Teacher Education program, [linked here](#), for a description of the program.



## English

### Faculty

Stephen Cohen (Chair, Willard 304), Stuart Barnett, Burlin Barr, Candace Barrington, Anthony Cannella, David Cappella, Matthew Ciscel, Mary Collins, Robert Downing, Christine Doyle, Robert Dunne, Brian Folker, Jaclyn Geller, Gilbert Gigliotti, Susan Gilmore, Heidi A. Hartwig, Thomas Hazuka, John A. Heitner, Beverly A. Johnson, Jason Jones, Paul Karpuk, Seunghun Lee, Eric Leonidas, Vivian Martin, Melissa A. Mentzer, Mary Anne Nunn, Steven D. Ostrowski, Aimee Pozorski, Rae C. Schipke, Ravi Shankar, Katherine Sugg, Heather Urbanski, Leyla Zidani-Eroglu (Dept. phone: 860-832-2740)

### Department Overview

The Department of English offers graduate study leading to a Master of Arts degree in English, Master of Science degree in Teaching English to Speakers of Other Languages (TESOL), Graduate Official Certificate in TESOL, teacher certification in English, and K-12 certification in TESOL.

### Programs

#### Master of Arts in English

##### Program Rationale:

The Master of Arts in English program is designed for students who wish to pursue the advanced study of English and American literature. The program offers students the opportunity to refine and expand both their knowledge of literature written in English and their facility with its criticism. The program begins with an introduction to the theory and practice of literary criticism and research and continues with coursework allowing students to work with faculty in small classes to investigate the discipline of literary studies and the scope of British and American literature from their beginnings to the present day. In this way, the MA program supports students' pursuit of careers in teaching at the elementary, middle, or secondary school level (or enhances the skills and qualifications of those already teaching); helps prepare students for further advanced study in a doctoral program; and gives them the tools necessary for other careers involving the reading, writing, and analysis of texts.

The program offers over 20 courses each year on a broad range of topics reflecting the diverse interests of the English Department's faculty. Typical approaches include in-depth examinations of individual authors, comparative studies of two or more authors, explorations of established or emergent literary forms, historical treatments of particular periods, and investigations of important critical or theoretical methods. Independent studies and guided readings are also available to allow students to pursue interests not addressed in scheduled courses.

With its diverse, engaged faculty and structured but flexible program, the MA in English offers both full-time and part-time students a thorough, rigorous training in British and American literature and literary studies that allows students to tailor their experiences to meet their professional and intellectual needs and interests.

##### Program Learning Outcomes:

Students in the program are expected to:

- demonstrate a familiarity with several theoretical approaches to the study of literature;
- appropriately and effectively compare examples of literature drawn from a variety of periods, genres, and/or national cultures; and
- write effectively, in terms of composition and argumentation.

##### Admission:

To qualify for the Master of Arts degree program in English, an applicant must have a baccalaureate degree in English or American literature or a closely related field from an accredited college or university, or 30 hours of appropriate undergraduate coursework in the discipline (as approved by departmental review). Additional undergraduate credits will be required of students who lack sufficient preparation in literature.

Applicants must have a GPA of at least 3.00 on a four-point scale both in overall undergraduate and (if applicable) graduate course work and in English courses. Conditional admission may be offered to students who do not meet all of these requirements. Applicants must also submit the following:

To the Graduate Recruitment and Admissions Office:

- Graduate Application Form
- Official undergraduate and (if applicable) graduate transcripts from every institution attended except CCSU
- Application fee

To the English Department (Attn. Director of Graduate Studies), at the same time that application materials are submitted to the Graduate Recruitment and Admissions Office:

- Letter of application detailing reasons for wishing to pursue graduate study in English
- Two letters of recommendation from individuals familiar with the applicant's academic or professional work
- A writing sample of 10-15 pages showcasing the applicant's strongest analytical or critical writing about literature. Work written for previous courses is acceptable (indeed encouraged), but "creative" pieces (poetry, fiction, or memoir) are not appropriate.

No applications will be considered until all materials have been received. Applications will be evaluated by the department on an ongoing basis.

Students in the MA program will be assigned an English Department advisor upon admission. Before registering for course work, students should read the program brochure "English Master of Arts Program Student Handbook" (available from the department) and consult with their advisors. Students must file planned programs in consultation with their advisors before completing 16 credits of graduate course work.

### **Course and Capstone Requirements:**

#### **(30 credits)**

#### **Plan A (Thesis)**

ENG 598 Research in English\* 3

ENG 500 Seminar in American Literature 3

ENG 501 Seminar in British Literature 3

ENG 530 Topics in Literary Periods 3

ENG 540 Topics in Literature and Theory 3

ENG 599 Thesis 3

12 credits of English electives at the 400 and 500 levels, with no more than nine

credits at the 400 level, as approved by the faculty advisor 12

#### **Plan B (Comprehensive Examination)**

ENG 598 Research in English\* 3

ENG 500 Seminar in American Literature 3

ENG 501 Seminar in British Literature 3

ENG 530 Topics in Literary Periods 3

ENG 540 Topics in Literature and Theory 3

15 credits of English electives at the 400 and 500 levels, with no more than nine

credits at the 400 level, as approved by the faculty advisor 15

\*To be completed during the first year of graduate study.

### **Post-Baccalaureate Teacher Certification in English**

Certification in English is a non-degree program offered to persons with a bachelor's degree (normally in English) whose undergraduate course work does not meet State of Connecticut certification requirements for secondary English teachers. Courses taken to complete certification requirements may not be used to complete the English Department's MS or MA degree programs. A minimum of six credits in English at CCSU is required before student teaching.

### **Master of Science in Teaching English to Speakers of Other Languages (TESOL)**

#### **Program Rationale:**

The Master of Science degree in Teaching English to Speakers of Other Languages (TESOL) is a plan of study especially designed for those students with an interest in language and linguistics who wish to work with non-English speaking students here or abroad.

The TESOL program prepares teachers to use modern methods to meet the varying instructional needs of students of English as a second language or foreign language while encouraging such students to maintain their native languages and cultural competencies. Students receive a thorough grounding in practical skills and methods of language teaching to develop communicative competence and appropriate academic skills in English and to become professionally competent on issues involving the nature of language and language acquisition and the role of language in society.

#### **Program Learning Outcomes:**

Students in the program are expected to:

- write effectively, both technically and in terms of the field-appropriate style of analysis and argumentation;
- demonstrate content knowledge with associated analytical skills in the following fields: syntax, phonology, sociolinguistics, TESOL methods, and second language acquisition;
- identify and select teaching and assessment practices in accordance with universal principles in language teaching underlying the continuous bidirectional relationship between theoretical and applied subfields of linguistics;
- use different methods of instruction in the teaching of English and development of relevant communicative and academic skills for speakers of other languages and to evaluate these methods in light of what is known about processes of language acquisition and educational development; and
- understand the rules of language use and change in society, the importance of idiom and usage, and the nature of dialect differences and their social value.

#### **Admission:**

To qualify for the Master of Science degree program in TESOL, an applicant must have completed three credits of study in a second language (non-native speakers of English may use English to satisfy this requirement). Applicants must have a GPA of 2.70 on a four-point scale both in overall undergraduate and (if applicable) graduate course work. Applicants who do not meet all of the requirements satisfactorily may be admitted conditionally at the discretion of the department.

Applicants must submit the following to the Graduate Admissions Office:

- Graduate Application Form;
- Official undergraduate and (if applicable) graduate transcripts from every institution attended except CCSU; and
- Application fee.

No applications will be considered until all materials have been received.

Before degree candidates register for course work they should read the program brochure and consult with their assigned advisors at the start of their programs. Additional information may be obtained from the advisor and in this catalog under General Information.

#### **Course and Capstone Requirements:**



This program offers Plan A (33 credits plus a thesis) and Plan B (36 credits and a comprehensive examination).

TESOL Specialization (21 credits):

LING 400 Linguistic Analysis 3

LING 496 TESOL Methods 3

LING 497 Second Language Acquisition 3

LING 512 Modern Syntax 3

LING 513 Modern Phonology 3

LING 515 An Introduction to Sociolinguistics 3

One course from:

LING 533 Second Language Composition 3

LING 535 Second Language Testing 3

LING 596 TESOL Practicum 3

Research (3 credits):

LING 598 Research in TESOL and

Applied Linguistics

Professional Education (6 credits):

At least one of the following courses and an additional course in the same area:

EDF 500 Contemporary Educational Issues 3

EDF 516 School and Society 3

EDF 524 Foundations of Contemporary Theories of Curriculum 3

EDF 525 History of American Education 3

EDF 538 The Politics of Education 3

EDF 583 Sociological Foundations of Education 3

and an additional course (3 credits) at the 500 level as approved by advisor

All planned programs and course sequences must be approved by a TESOL advisor prior to registration. Degree candidates must file a planned program before completing 16 credits of graduate coursework.

Students may elect **Plan A** only with the approval of an advisor in the program. Plan A students take LING 599 Thesis while writing the thesis.

**Plan B** students take one more general elective course. General electives are graduate course offerings as approved by the student's advisor, courses drawn from the departments of anthropology, English, modern languages, geography, history, political science, or other relevant fields.

It is expected that a degree candidate will have control of the English language beyond mere communicative adequacy. It shall be the joint decision of the TESOL faculty whether a degree candidate's control of spoken and/or written English is appropriate to the profession. The faculty will recommend various remedies for any candidate whose control of English is deemed deficient.

**Post-Baccalaureate Teacher Certification in TESOL**

Certification in TESOL is a non-degree program offered to persons with a bachelor's degree whose undergraduate course work does not meet State of Connecticut certification requirements for English as a second language teacher in the public school system. Certification may be obtained for the PK-12 level.

A minimum of 15 credits in TESOL content areas is required before student teaching. Interested candidates may contact the TESOL program for further information.

**Master of Arts in Teaching (MAT): Teacher Education with Specializations in Mathematics (7-12), Sciences (7-12), Spanish (7-12), English (7-12), and Technology and Engineering Education (PK-12)**

The Department of Teacher Education offers a Master of Arts in Teaching (MAT): Teacher Education with specializations in Mathematics, Sciences, Spanish, English, and Technology and Engineering Education. Candidates with documented content knowledge will complete 13 months of full-time study, earning teacher certification and the MAT degree. The program is designed to cross disciplines wherever possible, encouraging candidates to build content teaching expertise in their specializations and relate each discipline to the larger school curriculum. See the Teacher Education page, [linked here](#).

# Geography

## Faculty

Peter Kyem (Chair, DiLoreto 208), Richard Benfield, Charles Button, Patricia Houser, Cindy Pope, Xiaoping Shen, Brian Sommers, Ivan Turnipseed (Department phone: 860-832-2785)

## Department Overview

Central Connecticut State University has the oldest and largest graduate program in geography in Connecticut. The graduate program was initiated in 1962 with a Master of Science in Social Science for in-service teachers who desired to complete the requirements for their permanent teaching certificates. However, the program's emphasis has changed since state approval was granted in 1976 to offer a Master of Science in Geography. Since that time, students have used the latter degree in the pursuit of a variety of career goals. In 2010, the Geography Department began offering a master's degree in geography, with a specialization in global sustainability.

The department has a fully equipped Geographic Computer Laboratory that includes 18 computers and an extensive software collection, as well as two printers, two scanners, and one plotter, for geographic information systems, digital cartography, remote sensing, planning, and tourism and hospitality studies. There is also a Physical/Environmental Geography Laboratory available for student use.

## Admissions

The M.S. degree programs are available to all individuals who meet the admissions requirements. The Graduate Record Examination is not an admission requirement. An undergraduate major or minor in geography is desirable but not required of applicants. However, those with deficient academic preparation may be asked to complete up to four courses of remedial work at the undergraduate level. Details are available from the Department of Geography.

## Program

### Master of Science in Geography

#### Program Rationale:

The master's program in Geography is based on students' interests and faculty expertise. Each graduate student's planned program of study is custom-designed to provide the best possible preparation for the career or future PhD study chosen by the student.

#### Program Emphases:

Students enrolled in the M.S. in Geography program may emphasize any of the following areas:

- urban and regional planning
- environmental studies
- travel and tourism
- cultural and world regional geography
- computer mapping or geographic information systems

#### Program Goals and Learning Outcomes:

The graduate program in Geography strives to achieve the following goals:

1. to create an environment in which students learn about the breadth, depth, and complexity of the human experience through the study of Geography;
2. to produce students who have an informed appreciation and understanding of geographical thought, its philosophical background and debates, and the interpretation of geographical literature;

3. to produce graduates who have an informed appreciation and understanding of the research methods in geography and the social sciences in general by completing a research thesis or project under academic supervision and guidance; and
4. to prepare students for professional careers or further studies and research in Geography.

Each Geography MS graduate on completion of their degree will have achieved the following learning outcomes to a satisfactory level as judged by the appropriate performance indicators established for use in the program assessment of student achievement.

1. demonstrate an ability to develop a research proposal and carry out independent research
2. have an in-depth understanding and mastery of the literature in Geography and in at least one geographic subfield
3. demonstrate an ability to present and defend research work in oral, written and graphic forms
4. demonstrate technical skills in the collection, analysis and mapping of geographic data, critical-thinking skills, plus written and verbal communication skills
5. apply geographic knowledge and skills to a range of problems faced by businesses, industry, government, etc.
6. write effectively and persuasively about the key principles, theories, and issues of geography, especially in the student's area of specialization; thesis plan A students will be able to write at an advanced scholarly level.

### **Course and Capstone Requirements:**

Students enrolled in the graduate program must comply with all requirements in the current graduate catalog.

Students select Plan A, B, or C.

Plan A, which requires 30 credits, includes a thesis (GEOG 599); 12 credits of core courses, including GEOG 500, 514 or 516 or 518, 530 or 542, 598; 9-12 credits of geography electives selected in consultation with an advisor; and 3-6 credits of electives selected from other disciplines in consultation with an advisor. Thesis guidelines are available from the appropriate Dean's office.

Plan C, which also requires 30 credits, includes a special project (GEOG 595) instead of a thesis.

Others may select Plan B, in which a comprehensive exam and GEOG 597 is completed instead of a thesis or special project. The 30 credits required are the same as in Plan A (thesis) and Plan C (special project) except that GEOG 597, as well as the comprehensive examination, substitutes for GEOG 599 and GEOG 595, respectively, in the Plan B (comp exam) option.

### **Geography Electives:**

9 credits of directed electives in geography.

(Up to 9 credit hours total may be 400-level courses that are listed in the graduate catalog.)

### **Global Sustainability Specialization:**

30 credits total, plus any additional prerequisite courses.

Program Rationale:

The M.S. in Geography: Global Sustainability Specialization is designed to enable students to examine global environmental, social, and economic challenges facing society and to explore possible sustainable solutions to these challenges.

Program Learning Outcomes:

Graduate students will:

- Demonstrate the ability to explain sustainability in the global context.
- Demonstrate an empirical grasp of the human-environment relationship.
- Be able to apply geographic theories and methods to research and communicate sustainability issues.

Course and Capstone Requirements:

Core Geography Courses (12 credits):

GEOG 500 Graduate Studies in Geography

GEOG 530 Graduate Internship in Geography

GEOG 598 Research in Geography

GEOG 595 (Plan C) Special Project in Geography or GEOG 599 (Plan A) Thesis; Plan B not available

Specialization Courses (9 credits):

SUST 500 Social, Political, and Ethical Dimensions of Sustainability

SUST 501 Contemporary Challenges in Environmental Sustainability

SUST 502 Science for Sustainability

Geography Electives:

9 credits of directed electives in geography.

(Up to 9 credit hours total may be at the 400-level courses that are listed in the graduate catalog.)

Each graduate student's planned program of graduate study is custom designed to provide the best possible preparation for the career selected, and can include practical work experience to apply classroom theory.

## **Certification**

Graduate study in geography does not lead to teacher certification.

## **Advisement**

Contact the Graduate Studies Advisor or the Chair of Department in DiLoreto 208 (860-832-2785), or write to the:

Department of Geography  
Central Connecticut State University  
New Britain, CT 06050 U.S.A.



# History

## Faculty

Glenn Sunshine (Chair, DiLoreto 206), Jay Bergman, M. B. B. Biskupski, Gloria Emeagwali, Leah Glaser, Briann Greenfield, Katherine Hermes, Mark Jones, Elias Kapetanopoulos, Mary Ann Mahony, Kate McGrath, Norton Mezvinsky, Heather Munro Prescott, Matthew Specter, John Tully, Matthew Warshauer, Louise Williams, Robert Wolff (Dept. phone: 860-832-2800)

## Department Overview

The Department of History provides an M.A. degree in history and an M.A. degree in public history. The department, in cooperation with other departments in the social science areas, offers various programs for teachers and presents courses for the general education of graduate students in other fields of specialization.

Admission to the degree programs in the department requires the prerequisite of an undergraduate history major or its equivalent, generally interpreted as 30 credits in history and closely related fields. A graduate student lacking this prerequisite will be required to take courses for undergraduate credit to make up any deficiency.

Each student taking a major or a concentration in history will be assigned to a graduate advisor who will assist the student in designing the planned program of graduate study. All graduate student planned programs in history require the approval of the advisor and department chair.

## Admissions

To be considered for admission to the M.A. in history or the M.A. in public history, applicants must have an undergraduate or cumulative GPA of 3.00 or higher, as well as a degree in history or related field. Applicants who do not meet these admissions standards, but who have an undergraduate or cumulative GPA between 2.70 and 2.99, may be considered for conditional admission. In order to be recommended for full acceptance, conditionally admitted students must complete HIST 501 with a B or better.

Students who do not meet the undergraduate GPA requirements for admittance or conditional admittance to the graduate program in history may take up to three courses (nine credits) in graduate-level history courses as a non-matriculated student. Those earning a minimum 3.30 GPA for these courses may apply for conditional admittance to the graduate program. Those students must also provide two letters of recommendation from CCSU History Department faculty. Once conditionally admitted, those students who achieve a B+ or above in HIST 501 will be fully admitted into the program.

Prospective graduate students without an undergraduate degree in history, but who meet the GPA requirements for full admission to the graduate program, should meet with the History Department chair or a History Department graduate advisor to determine the requisite courses needed for admission. At minimum, those students will receive a conditional admittance and must complete HIST 501 with a B or better.

For consideration, all application materials must be received by the Department of History no later than December 1 for spring admissions and May 1 for fall admissions. Applicants who do not meet the fall admissions deadline may enroll in courses on a non-matriculated basis, subject to course availability.

Applicants should submit the following materials to the Graduate Admissions Office:

- the application for Graduate Admission
- official copies of transcripts
- application fee

In addition, applicants must submit the following materials to the History Department:

- two letters of recommendation (recommendation forms are available at [www.ccsu.edu/grad/Additional\\_Material/Hist\\_rec.html](http://www.ccsu.edu/grad/Additional_Material/Hist_rec.html))
- a statement of purpose describing the applicant's academic interests in history, not to exceed 350 words. Applicants for the M.A. in public history should also address their professional goals and career aspirations.

## Programs

### Master of Arts in History

#### Program Rationale:

The MA degree in history is offered for students who desire to do further historical study and research beyond the bachelor's degree. It serves students interested in graduate study of U.S., modern European, and comparative world history. The degree is designed to meet the varied needs and interests of students seeking an advanced degree in history. For secondary teachers, it fulfills Connecticut State Department of Education requirements and may lead to other employment opportunities. Some who earn the MA will use it as a foundation for undertaking doctoral work in history, law, government, international affairs, and other relevant fields.

Because the majority of students in the master's program are employed full-time during the day, graduate courses are offered in the evening, usually on a one-night-a-week basis. This schedule allows students time to complete regular assignments, carry on research, and make regular progress toward the MA degree.

#### Program Learning Outcomes:

Students completing the MA will be expected to:

- demonstrate an understanding of historiography and its relevance for the study of history;
- develop historical arguments and present them effectively, orally and in writing;
- produce examples of various types of historical writing, such as book reviews, bibliographic essays, research papers, prospectus, and theses; and
- present original historical arguments using both primary and secondary sources.

### Course and Capstone Requirements

#### (30 credits, including a thesis):

Admission criteria: Acceptance into the CCSU Graduate Program and approval of the History Department.

Three 500-level history courses (9 credits)

Three additional history courses (9 credits) including:

HIST 501 The Professional Historian

HIST 599, Thesis (6 credits)

Electives in related fields (6 credits)

Candidates will be required to demonstrate the ability to translate material in their fields in one foreign language, except in those cases where, upon the request of a candidate in U.S. history, a substitute skill or subject is approved by the department. Candidates must make application in the department to take the language examination. Deadlines are October 10, for the fall examination; March 10, for the spring.

The fields of concentration available in the M.A. program are U.S. history, European history, and comparative world history. No more than nine credits can be taken at the 400 level.

### Master of Arts in Public History

#### Program Rationale:

Public historians are front-line interpreters, bringing historical knowledge to a broad public audience beyond the traditional academic classroom. The Masters of Arts in Public History is designed to prepare students for careers in history museums, historical societies, historic preservation, cultural resource management, government agencies, heritage tourism, and other fields in which history is presented to public and client-based audiences. The degree also provides K-12 history educators with tools to energize their classroom teaching. Students receive traditional



training in the areas of historical research, writing, and interpretation, along with job specific skills and the hands-on experience necessary to become efficient and ethical stewards of the past. This degree is also appropriate for those seeking to pursue further study in American history or public history at the doctoral level.

For more information, visit the department's website at [www.history.ccsu.edu/ma\\_pubhist.html](http://www.history.ccsu.edu/ma_pubhist.html).

### **Program Learning Outcomes:**

Students in the program will be expected to:

- conduct original research;
- interpret primary sources;
- evaluate the historiography of a specific historical topic;
- demonstrate knowledge of public history practices and techniques; and
- communicate effectively with a non-academic or client-based audience.

### **Course and Capstone Requirements**

**(33 credits, including an internship and project [Plan C]):**

Admission criteria: Acceptance into the CCSU Graduate Program and approval of the History Department.

Public history courses required (graduate courses specific to public history) (18 credits):

HIST 501 The Professional Historian 3

HIST 510 Seminar in Public History 3

HIST 511 Topics in Public History 6

(taken twice with different topics)

HIST 521 Public History Internship 3

HIST 595 Public History Research Project (Plan C) 3

General history courses to be taken from the following list (9 credits):

HIST 560 Seminar in American History 3-6

HIST 565 Seminar in 17th- and 18th-Century America 3

HIST 566 U.S. Civil War and Reconstruction 3

HIST 570 Immigration in American History 3

HIST 540 Seminar in European History 3-6

HIST 563 The Age of Jackson 3

HIST 512 Connecticut Encounters 3

Two elective courses (6 credits), chosen in consultation with an advisor. At least one of these courses (3 credits) must be taken in a discipline other than history.

Additional non-course requirement: Each student must attend five professional conferences as part of his/her program.

For more information, contact Briann Greenfield, PhD, at 860-832-2821, [greenfieldb@ccsu.edu](mailto:greenfieldb@ccsu.edu).

### **Certification**

The Department of History in cooperation with the School of Education and Professional Studies offers courses of study leading to secondary teacher certification in history and in history and social studies. Information about current Connecticut teacher certification requirements may be obtained from the Office of the Dean, School of Education and Professional Studies.

### **Post-Master's Study**

Individually designed 30-credit programs of post-master's study are available for qualified students.

## Design (Graphic/Information)

### Faculty

Eleanor Thornton (Chair, Vance 324), Wujun Wang (Dept. phone: 860-832-2557)

### Department Overview

The Department of Design (Graphic/Information) provides an academic structure for the advancement of graphic and information design studies and degrees at the University. The department was established to promote professional studies in the expanding areas of graphic design, website design, multimedia design and digital imaging. The degree program is unique in curriculum and structure, including course work in design practice, marketing, management, computer applications, design theory, research methods, history of design and internship. The program, similar to the actual practice of design, addresses not only the theoretical, creative and technical aspects of visual design, but business applications as well. Faculty members have backgrounds in graphic design, fine art, advertising, illustration, communication, computer science, website design, multimedia design, and presentation.

### Facilities

The Department of Design maintains state-of-the-art computer laboratories and a print center that are dedicated to various aspects of design study. Faculty and staff with professional software training and design background operate these facilities.

### Admissions

Applicants for the Master of Arts degree in Information Design must hold a bachelor's degree from a regionally accredited institution of higher education. The undergraduate record must demonstrate clear evidence of ability to undertake and pursue successfully advanced study in the graduate field.

*In addition to standard University graduate admission requirements, the Department of Design requires that successful applicants submit the following materials:* items 1 and 2 to the CCSU Graduate Admissions Office and items 3 and 4 to the attention of the Department of Design (Graphic/Information) Graduate Admissions Committee.

1. Minimum undergraduate grade point average of 3.00 on a 4.00 scale.
2. Transcripts that demonstrate 12 credits of undergraduate course work in graphic design with a grade of "B" or better, of which three credits must be at the 400 level. These courses will be reviewed by the department for discipline-specific content as it relates to the M.A. in Information Design.
3. Application essay.
4. Slide or CD-ROM portfolio (10 examples of applicant's graphic design work). The portfolio must meet department admissions committee approval for design quality. Collaborative projects must be clearly identified as such and include a detailed description of each student's contribution.

Note: Successful applicants will be expected to take a technical competency test prior to admission to DES designated courses requiring computer use.

## Program

### Master of Arts in Information Design

#### Program Rationale:

The Master of Arts in Information Design prepares graduates to take leadership positions in the design industry, including graphic design,

publishing, advertising, multimedia design, web design, digital imaging, and corporate information design.

Graduates are expected to meet the challenges presented by the theoretical, creative, and technical aspects of the rapidly changing field of visual design and its business applications through the development of the analytic and critical skills required to create, direct, present, and evaluate effective design solutions.

### **Program Learning Outcomes:**

Students are expected to:

1. Master advanced design theory, process and application;
2. Develop analytic and critical skills required to create, direct, and evaluate effective design solutions; and
3. Develop in-depth problem solving and research skills necessary for the creation and presentation of effective design solutions.

### **Course and Capstone Requirements**

#### **(36 credits):**

Core Courses (21 credits):

MKT 470 Integrated Marketing Communication 3

BUS 590 Business Topics 3

DES 499 Computer Applications for Graphic/Information Design 3

DES 501 Graphic/Information Design Theory I 3

DES 502 Graphic/Information Design Theory II 3

DES 520 Advanced History of Design 3

DES 598 Research Methods in Design 3

Specialization (9 credits):

DES 503 Graphic/Information Design Practice I 3

DES 504 Graphic/Information Design Practice II 3

DES 537 Advanced Design Internship 3

Directed Elective (3 credits):

DES, MIS, CS, COMM, MGT, MKT, BUS or ART course as approved by advisor

Capstone (3 credits):

DES 597 Research Project (Plan C) 3

The capstone requirement is a research project supervised and approved by the graduate advisor and Graduate Faculty Committee. The research project also requires final approval by the dean, School of Graduate Studies.

Note: Students enrolled in the following courses will be assessed a \$65 Design Lab Fee: DES 436, 438, 439, 465, 498, 499, 503, 504, 597, 598. Contact the department for additional information.

Note: Students are limited to six credits of DES designated course work per semester without permission of advisor and department chair.

Note: No more than nine credits at the 400 level, as approved by the graduate advisor, may be counted toward the graduate planned program of study.

## Modern Languages

### Faculty

Lilián Uribe (Chair, Davidson 212), Mariá Lourdes Casas, Antonio García-Lozada, Jakub Kazecki, Paloma Lapuerta, Gustavo Mejía, Ángela Morales, Maria Passaro, Carmela Pesca, Shizuko Tomoda (Dept. phone: 860-832-2875)

### Department Overview

The Department of Modern Language plays a pivotal role in the academic mission of the University and, in particular, of the School of Graduate Studies. We recognize that the world in which we live and work is global, interdependent, dynamic, and pluralistic. We understand that communication involves the cultural, linguistic, and social dimensions of languages. Winner of the Graduate Community of Scholars Award in 2004, the Department of Modern Language is proud of its dedication to language learning and international studies.

The Department is actively engaged in the professional development of language teachers. Master degree programs, with specialization in Italian, Spanish, and Spanish Language and Hispanic Cultures, offer a wide variety of language, culture, and literature courses, which not only provide students with an aesthetic appreciation of the Italian and Spanish cultures but also give them a better understanding of self, of other cultures, and of the complexities of the human nature. The Modern Language Department offers a master of arts degree program for teachers and other qualified persons wishing to pursue language, culture, and literature work at the graduate level. Offerings are also available to non-degree candidates possessing the prerequisites for any given course.

Students who specialize in Italian or Spanish will develop, with their advisor, a program of study that takes into consideration their educational background and degree of competency in the language.

Students interested in a program leading to certification to teach language in the elementary and secondary schools may consult the Office of the Dean of the School of Education and Professional Studies.

Information about foreign language proficiency tests may be obtained from the Department of Modern Language.

### Graduate Certification in French German, Italian, and Spanish

Students seeking certification to teach a foreign language must:

- apply to the Graduate Admission Office as a non-degree graduate student seeking certification. Once accepted to the School of Graduate Studies, determination is made for a plan of study;
- have an interview with the departmental committee to assess oral competency and gain acceptance into Professional Program; recommendations are made by committee to the School of Education and Professional Studies;
- complete the equivalent of an undergraduate major (36 credits), professional core requirements and student teaching block. Students with insufficient undergraduate preparation must make up deficiencies by taking at least two courses at the graduate level. These courses do not count toward a graduate degree.

### Programs

#### Master of Arts in Modern Language

**30 credits**

#### Program Rationale:

The Master of Arts in Modern Language is designed for students wishing to pursue language, culture, and literature work at the graduate level.

#### Program Learning Outcomes:

Students in this program are expected to demonstrate:

- an understanding of different literary approaches and research;
- an ability to analyze major works of literature in the language in which graduate work will be undertaken;
- knowledge of topics related to the cultures of the language in which graduate work is undertaken; and
- competence in the grammar and knowledge of the structure of each language in which graduate work is undertaken.

#### **Admissions:**

Applicants for this degree program should have a baccalaureate degree with a minimum of 24 credits in preparation in each language in which graduate work will be undertaken. Only Italian or Spanish may be chosen as the language of specialization. With approval of the advisor, candidates with sufficient backgrounds in a second language may be permitted to include up to two appropriate graduate courses in this language in their programs.

The department's Graduate Studies Committee reserves the right to assess a candidate's oral and writing proficiency through an oral interview or written sample.

#### **Course and Capstone Requirements:**

Note: No more than nine credits at the 400 level may be counted toward the graduate planned program of study.

The MA program offers a selection of four specializations:

#### **1. Specialization in Spanish**

30 credits (Plan A or Plan B)

Core (6 credits):

SPAN 560 Structure of Spanish Language 3

ML 598 Research in Modern Languages 3

Directed Electives (15 credits):

Literature: Choose 12 credits from SPAN 515, 520, 525, 526, 530, 535, 545, 551, 553, 571, 572, 576, ML 500

Culture and Civilization: SPAN 534 or 588, or ML 550

Electives (6-9 credits):

Selected in consultation with advisor

Capstone (0-3 credits):

SPAN 599 (Plan A) or Comprehensive

Examination (Plan B)

#### **2. Specialization in Italian:**

30 credits (Plan A or Plan B)

Core (6 credits):

ML 598 Research in Modern Languages

ITAL 560 Advanced Written Italian

Directed Electives (15 credits). Select Option 1 or Option 2:

Option 1

Four literature courses as approved by advisor.

Select from:

ITAL 470 14th-Century Italian Literature

ITAL 476 16th-Century Italian Literature

ITAL 561 Topics in Italian Literature (may be repeated up to 3 times with different topics)

ITAL 571 20th-Century Italian Literature

ML 500 Studies in Modern Languages

and

one culture and civilization course:

ITAL 588 Topics in Italian Cultural Studies

(may be repeated up to 3 times with different topics)

Option 2

ML 550 Intensive Studies in Modern Languages (6 or 9 credits) (may be

repeated up to 3 times with different topics)

and 6 or 9 credits selected from Option 1

Electives (6-9 credits):

Courses as approved by advisor, including

but not restricted to: ITAL 588, ITAL 488, ITAL 561, ITAL 588, IS 590, IS 596

Capstone (0-3 credits):

Plan A (3 credits): Thesis (ITAL 599)

or

Plan B: Comprehensive Examination

### **3. Specialization in Hispano-North American Inter-University Master's Degree in Spanish Language and Hispanic Cultures:**

30 credits (Plan A or B)

Students must complete nine credits of their planned programs of study at the University of Salamanca during a six-week summer session.

Core (6 credits):

SPAN 560 Structure of Spanish Language 3

ML 598 Research in Modern Languages 3



Directed Electives (15 credits):

Literature: Choose 12 credits from SPAN 515, 520, 525, 526, 530, 535, 545, 551, 553 571, 572, 576, ML 500

Culture and Civilization: Choose 3 credits from SPAN 534, 588, ML 550

Electives (6-9 credits):

Selected in consultation with advisor.

Capstone (0-3 credits):

SPAN 599 (Plan A) or Comprehensive

Examination (Plan B).

Note: Nine credits will be transferred as substitutes from the University of Salamanca as electives.

#### **4. Specialization in Italian or Spanish for Certified Teachers .**

Rationale:

This specialization is designed for Italian or Spanish teachers wishing to pursue further coursework in language, culture, and literature as well as in foreign language theory and methodology at the graduate level. Students who are teachers will develop, with their advisors, programs of study that take into consideration their educational background and degree of competency in the language.

Program Learning Outcomes:

In addition to the above mentioned learning outcomes, students in this specialization also are expected to demonstrate knowledge of major educational issues.

Admissions:

In addition to our general graduate admission criteria, students interested in this specialization for Certified Teachers must be certified, and have a baccalaureate degree, with at least 24 credits of the language in college or equivalent preparation, before being admitted to this program.

Courses and Capstone Requirements: 30 credits (Plan C):

Professional Education (6-9 credits):

ML 490 Teaching World Languages II: Acquisition in Young Children for Teachers of World Languages (3 credits)

ML 492 Topics in Language Teaching (3 credits)

Additional course as approved by advisor.

Core (6 credits):

ITAL 560 Advanced Written Italian or SPAN 560, Structure of Spanish Language (3 credits)

ML 598 Research in Modern Languages (must be completed within the first fifteen credits of planned program) (3 credits)

Directed Electives (9 credits):

One culture/civilization course and two literature courses.

Electives (3-6 credits):

As approved by advisor.

Capstone (3 credits):

ML 595 (Plan C)

**Master of Arts in Teaching (MAT): Teacher Education with Specializations in Mathematics (7-12), Sciences (7-12), Spanish (7-12), English (7-12), and Technology and Engineering Education (PK-12)**

The Department of Teacher Education offers a Master of Arts in Teaching (MAT): Teacher Education with specializations in Mathematics, Sciences, Spanish, English, and Technology and Engineering Education. Candidates with documented content knowledge will complete 13 months of full-time study, earning teacher certification and the MAT degree. The program is designed to cross disciplines wherever possible, encouraging candidates to build content teaching expertise in their specializations and relate each discipline to the larger school curriculum. See the Teacher Education program, [linked here](#), for a description of the program.

## Music

### Faculty

Charles Menoche (Chair, Welte 212), Daniel D'Addio, Brian Kershner, Carl Knox, Linda Laurent, N. Carlotta Parr (Coordinator of Graduate Studies, Welte 210), Pamela Perry, Julie Ribchinsky, Thomas Seddon (Dept. phone: 860-832-2912)

### Department Overview

The Department of Music offers a variety of programs in music education for the graduate student by qualified faculty of diverse training and expertise. In addition to the faculty listed above, the department has an outstanding part-time faculty of professional musicians, many from the Hartford and New Haven symphonies, who teach applied music and related subjects.

The Summer Music Institute (SMI) offers graduate courses in music education taught by both resident and guest faculty members. A brochure of the SMI program is available each year in March (860-832-2912). Information about SMI can also be found on the department's website at <http://www.music.ccsu.edu>.

Programs of study in music education include an M.S. degree, certification program, and the post-master's planned program.

### Admissions

In addition to the requirements of the School of Graduate Studies, application to the Department of Music requires the following:

- An application to the Department of Music
- An essay\*
- A portfolio\*
- A theory examination\*\*
- Evidence of proficiency in technology\*\*\*
- A Personal Interview

\*For essay and portfolio requirements, refer to the Department of Music's website at <http://www.music.ccsu.edu> or call Dr. N. Carlotta Parr, Coordinator of Graduate Studies, at 860-832-3317.

\*\*While this examination is primarily a placement examination, a low score could influence the decision about an applicant's acceptance.

\*\*\*If a candidate does not provide evidence of proficiency in technology (notation and sequencing), he/she will be required to take a notation or sequencing course as one of his/her electives (at least two credits).

## Programs

### Master of Science in Music Education

#### Program Rationale:

The Master of Science in Music Education degree program is designed to provide the certified music teacher with professional training beyond

the baccalaureate degree in music education, performance, composition, music theory, music history, and education. Graduates are expected to meet the challenges presented by the philosophical, pedagogical, theoretical, and musical aspects of the field through the development of the analytic and critical skills required to solve contemporary problems in various aspects of music and music education.

### **Program Learning Outcomes:**

Students in the program are expected to:

- demonstrate knowledge about different philosophies of music education and develop a philosophical foundation for careers;
- demonstrate knowledge about current issues and trends in music education and education;
- demonstrate an ability to organize, interpret, synthesize, and evaluate knowledge in music, music education, and education;
- demonstrate competence in aural, written, and communication skills and an ability to disseminate knowledge in a scholarly, coherent, and organized manner; and
- understand and evaluate research in music education and conduct research.

### **Course and Capstone Requirements (minimum of 33 credits):**

The student in the M.S. in Music Education program must complete Plan B-Comprehensive Exam and either Plan A-Thesis or Plan C-Special Project, both of which total 33 credits. Students selecting Plan C may complete either MUS 597A or MUS 597B.

Professional Education (3 credits):

One of the following:

EDF 500 Contemporary Educational Issues 3

EDF 516 School and Society 3

EDF 524 Foundations of Contemporary Theories of Curriculum 3

EDF 525 History of American Education 3

EDF 538 The Politics of Education 3

EDF 583 Sociological Foundations of Education 3

Music (21-27 credits):

Students must:

Take the following core courses (15 credits):

MUS 470 Musical Structure and Style 3

MUS 509 Comparative Musical Studies 3

MUS 504 Principles and Foundations of Music Education 3

MUS 510 Current Issues in Music Education 3

MUS 598 Research in Music Education 3

One of the following (2 credits):

MUS 502 Topics in Music Education 1-3

MUS 503 Topics in Instrumental Music Education 1-3

MUS 505 Topics in Pedagogy and Curriculum 1-3

MUS 506 Topics in Choral Music Education 2

MUS 512 Topics in String Pedagogy 2

MUS 551 Orff-Schwerk Teacher Training Course Level 1 3

MUS 56 Orff-Schwerk Teacher Training Course Level 2 3

MUS 557 Topics in General Music Education 2

MUS 559 Topics in High School Music Curriculum 2

Take at least 4 credits from the following:

MUS 501 Topics in Music 1-3

MUS 507 Topics in Conducting 1-3

MUS 508 Topics in Choral Literature 2

MUS 515 Topics in Digital Synthesizer Techniques 2

MUS 540 Chamber Ensemble 1

MUS 578 Advanced Applied Music or Conducting 2

MUS 579 Topics in Improvisation 2

MUS 590 Sinfonietta 1

MUS 591 Chorus 1

MUS 592A Wind Symphony 1

Up to 6 credits in music education, music, or advisor-approved electives outside the discipline.

Culminating Project (3 credits):

Plan B: Comprehensive Exam\*

and one of the following:

Plan A: MUS 599 Thesis

Plan C: MUS 597A Capstone Project in Music

Plan C: MUS 597B Performance or Conducting Recital

\*All students must take the Comprehensive Exam, as well as one of the other capstone options.

Note: Students enrolled in the following courses will be assessed an Applied Music Fee - \$200.00 for 1/2 hour lesson and \$400.00 for full hour lesson (MUS 578). Contact the department for additional information.

Note: No more than six credits at the 400 level, as approved by the graduate advisor, may be counted toward the graduate planned program of study.

### **Certification in Music Education**

A student who holds a bachelor's degree but who is not certified in music education may apply for acceptance into the graduate certification program. Upon satisfactory completion of a musicianship exam and audition, the student will consult with the chair of the Department of Music in order to establish a planned program for certification. Course work used to gain certification may not be used toward a graduate degree program. Students must meet all requirements for admission to the Professional Program in the School of Education and Professional Studies. For information on admission to the Professional Program, see the School of Education and Professional Studies page, [linked here](#).

In addition to the requirements of the School of Graduate Studies, application to the Department of Music requires the following:

- A completed application form to the Department of Music
- An essay\*
- An audition\*
- A theory examination\*\*
- A personal interview

\*For essay and audition requirements, refer to the Department of Music's website at <http://www.music.ccsu.edu> or call 860-832-2912.

\*\* While this examination is primarily a placement examination, a low score could influence the decision about an applicant's acceptance.

### **Post-Master's Study in Music Education**

Music educators with a master's degree may apply for acceptance into post-master's study. Upon satisfactory completion of a musicianship exam, students will be assigned an advisor to assist in designing a 30-credit planned program.

## Natural Sciences

### Faculty

Faculty of the Department of Physics and Earth Sciences, including Science Education (Dept. phone: 860-832-2930). See departmental listings for details.

### Overview

Track I provides for advanced study in physics or earth sciences. Track II is for certified teachers in elementary and secondary schools. This program is developed on an individual basis according to goals identified by the student and the advisor.

### Program

#### Master of Science in Natural Sciences

##### Program Rationale:

The MS in Natural Sciences for Track I expands the knowledge of the physical or earth science content areas. Track II, for certified teachers from grades K-12, expands upon inquiry and curriculum development and assessment in the science content areas, with a focus on the CT Science Standards. Both tracks provide opportunities for students to tailor their selections of study in their areas of interest and career goals.

##### Program Learning Outcomes:

Graduate students are expected to demonstrate:

- a deep understanding of scientific inquiry methods;
- acquisition of scientific content knowledge;
- an understanding of the history and nature of science; and
- skills necessary to advance in educational scholarship.

##### Course and Capstone Requirements (30 credits):

Core Requirements:

SCI 500 Science, Technology and Society

Either Track I or Track II

##### Track I-Physics or Earth Science

Specialization (12-24 credits):

Courses in either Physics or Earth Science as approved by advisor

Cognate (0-12 credits):

Courses in a related field or fields as

approved by advisor

Research/Capstone (3-9 credits):

Research (PHYS 598 or ESCI 598) and/or Thesis (PHYS 599 or ESCI 599)

Plan A or Plan B can be chosen.

### **Track II-Science Education Specialization (for Certified Elementary and Secondary School Teachers)**

Professional Education (6-9 credits):

One of the following:

EDF 500 Contemporary Educational Issues 3

EDF 516 School and Society 3

EDF 524 Foundations of Contemporary Theories of Curriculum 3

EDF 525 History of American Education 3

EDF 538 The Politics of Education 3

EDF 583 Sociological Foundations of Education 3

and

Additional courses as approved by advisor

Science (15-18 credits):

Science courses as approved by advisor

Research (6 credits):

SCI 595 Special Projects in Science Education 3

SCI 598 Research in Science Education 3

Note:

Plan A: 30 credits, including three credits of Thesis (SCI 599)

Plan C: 33 credits

Note: No more than six credits at the 400 level, as approved by the graduate advisor, may be counted toward the graduate planned program of study. Only students admitted before Fall 2002 are allowed nine credits at the 400 level, as approved by the graduate advisor.

### **Post-Master's Study**

Thirty-credit planned programs of post-master's study are available for elementary teachers and secondary school science teachers.





## Physics and Earth Sciences

### Faculty

Ali A. Antar (Chair, Copernicus 50601), Marsha Bednarski, Mark Evans, Kristine Larsen, Peter LeMaire, Steven B. Newman, Jennifer Piatek, Nanjundiah Sadanand, Nimmi Parikh Sharma, Jeffrey Thomas, Luisito Tongson, Michael Wizevich (Dept. phone: 860-832-2930)

### Department Overview

Located in Copernicus Hall, the facilities of the Physics and Earth Sciences Department include numerous introductory and intermediate/advanced laboratories as well as two teaching laboratories, an observatory containing a 16-inch telescope, a 100-seat planetarium, and a 400-kv Van de Graaff linear accelerator. The fully equipped weather center includes a National Weather Service Facsimile System, Internet capability, two rooftop satellite data retrieval systems and a fully operational color Doppler weather radar monitoring system.

In addition to teaching, the faculty pursue many areas of interest including: atomic collisions; solid state; general relativity; astrophysics; ground water pollution; public planetarium productions; lunar, planetary and deep sky observing; weather forecasting and analysis, and climatology of thunderstorm and hurricane activity in Connecticut; science education, particle physics, applied holography, and general relativity. Wherever possible, students enrolled in programs are encouraged to join with the faculty in their ongoing studies in these and other areas.

The department offers specializations in the Master of Science in Natural Sciences. For details of the program, see the Natural Sciences page, [linked here](#).

### Program

**Master of Arts in Teaching (MAT): Teacher Education with Specializations in Mathematics (7-12), Sciences (7-12), Spanish (7-12), English (7-12), and Technology and Engineering Education (PK-12)**

The Department of Teacher Education offers a Master of Arts in Teaching (MAT): Teacher Education with specializations in Mathematics, Sciences, Spanish, English, and Technology and Engineering Education. Candidates with documented content knowledge will complete 13 months of full-time study, earning teacher certification and the MAT degree. The program is designed to cross disciplines wherever possible, encouraging candidates to build content teaching expertise in their specializations and relate each discipline to the larger school curriculum. See the Teacher Education program, [linked here](#), for a description of the program.

# Psychology

## Faculty

Laura Bowman (Chair, Marcus White 212), Carrie Andreoletti, Carol Shaw Austad, Paul Chu, James Conway, Joanne DiPlacido, Francisco Donis, Carolyn Fallahi, Marianne Fallon, Marc Goldstein, Susan Holt, Steven Horowitz, Laura Levine, Marisa Mealy, Lauren Perdue, Jason Sikorski, Bradley Waite, Rebecca Wood (Dept. phone: 860-832-3100)

## Department Overview

The Department of Psychology offers the Master of Arts in Psychology with options for three specializations: general, community, or health. Students must select the specialization that best suits their needs. The department also offers courses to meet general elective requirements of graduate students in other disciplines. The MA program is intended for full- or part-time students. Most courses are offered in the evening. Each student will be assigned an advisor who will assist in developing an approved MA planned program.

## Admission

For admission, a BA degree with a minimum of 18 credits in psychology is preferred; courses in statistics and research methods, with a minimum grade of B, are required. A minimum undergraduate grade point average of 2.75 and a 3.00 in psychology courses, three letters of reference (at least two from academic sources), and a personal statement are required. The application deadline for spring admission is December 1, and April 25 is the deadline for fall admission. Further information can be found at [www.psychology.ccsu.edu/](http://www.psychology.ccsu.edu/).

## Programs

### Master of Arts in Psychology

#### Program Rationale:

The Master of Arts program is designed to prepare students for careers in the field of human services or as preparation for further graduate study.

#### Program Learning Outcomes:

Upon completion of the MA program in psychology, students should demonstrate the following:

- proficiency with researching, summarizing, and critically evaluating scholarly literature;
- the advanced skills necessary to comprehend, design, and conduct rigorous academic research;
- professional-level skill in scholarly presentations, including the ability to write and publish in peer-reviewed academic journals and to present at professional conferences;
- an ability to critically analyze and integrate psychological theory in applied and real-life situations; and
- expertise within an area of psychology (community psychology, health psychology, or other area of focus).

#### Course and Capstone Requirements:

### M.A. Program

The program requires 36 to 42 credits, including a thesis. A common core of 18 credits is required for all students.

Common Core:

PSY 512 Seminar in Developmental Psychology 3

PSY 545 Introduction to Clinical Psychology 3

PSY 550 Introduction to Community Psychology 3

PSY 596 Psychological Research: Design and Analysis I 3

PSY 597 Psychological Research: Design and Analysis II 3

PSY 599 Thesis (defense required) 3

### **Specialization in General Psychology**

#### **36 credits**

The general psychology specialization is designed to give students the opportunity to follow their interests. The specialization provides solid preparation in core areas of psychology, including developmental, clinical, and community psychology and research methodology. General psychology MA graduates often go on to doctoral programs, but many also work in a variety of research and human services settings.

Common Core (18 credits)

Directed electives as approved by advisor (18 credits)

### **Specialization in Community Psychology**

#### **36 credits**

The community psychology specialization is designed to train students to be active practitioners in the prevention field or prepare them for further study. It emphasizes developing and delivering interventions that can prevent the onset of psychological problems such as substance abuse, interpersonal violence, and depression. Most of our graduates work in the program planning and development level of local and state government, non-profit organizations, and schools, although some work in direct service positions.

Common Core (18 credits)

Specialization:

PSY 551 Primary Prevention 3

PSY 553 Developing Prevention Programs 3

PSY 595 Graduate Internship in Psychological Applications 3

Directed electives as approved by advisor (9 credits)

### **Specialization in Health Psychology**

#### **42 credits**

The health psychology specialization is designed to prepare students for a career in the field of health psychology or for further graduate study. MA graduates often go on to doctoral programs, and others work in a variety of research and human service settings where they can apply knowledge of health-related behaviors, stress, disease risk factors, and methods to improve health and chronic illness. Some also work

in the area of prevention.

Common Core (18 credits)

Specialization:

PSY 541 Health Psychology 3

PSY 542 Psychology of Stress 3

PSY 543 Stress Management: Theory and Research 3

PSY 530 Psychopathology 3

PSY 551 Primary Prevention 3

PSY 595 Graduate Internship in Psychological Applications 3

Choose 2 additional electives (6 credits) from the following:

PSY 458 Human Neuropsychology 3

PSY 526 Psychology of Learning 3

PSY 544 Biofeedback: Principles and Practices 3

PSY 546 Short-Term Psychotherapy and Health Care 3

PSY 553 Developing Prevention Programs 3

PSY 571 Psychology of Women's Health 3

PSY 590 Advanced Topics in Psychology 3

PSY 591 Advanced Independent Reading and Research in Psychology 3

Note: A maximum of six credits at the 400 level may be included, with approval of faculty advisor, in the planned program of study.

## SCHOOL OF BUSINESS

**Siamack Shojai, *Dean***

**Sharon R. Braverman, *Assistant Dean***

***Phone: 860-832-3205 (School)***

***Fax: 860-832-3219***

***Web address: <http://www.ccsu.edu/business>***

The School of Business prepares undergraduates for entry-level positions in business organizations through programs in accounting, international business, finance, management, management information systems, and marketing. The School doesn't offer any graduate programs.

## SCHOOL OF EDUCATION AND PROFESSIONAL STUDIES

**Mitchell Sakofs, *Acting Dean***

**Elaine Wilson, *Associate Dean***

**Anne Pautz, *Assistant Dean***

**Phone: 860-832-2100**

**Fax: 860-832-2109**

**Web address: <http://www.ccsu.edu/education>**

The mission of the School of Education and Professional Studies is to prepare professionals for service in our communities. It does this through Post Baccalaureate graduate programs that lead to Connecticut teacher certification and through Master's degree, Sixth-Year Certificate, and Doctorate programs that provide advanced certification and professional development to education and counseling professionals. These programs allow students with strong liberal arts and content area backgrounds to acquire the professional knowledge and skills necessary to practice in their chosen fields.

Programs in the School of Education and Professional Studies are accredited by:

- Commission on Collegiate Nursing Education (CCNE)
- American Association of Colleges of Nursing (AACN)
- Council on Rehabilitation Education (CORE)
- Council for Accreditation of Counseling and Related Educational Programs (CACREP)
- American Association of Marriage and Family Therapy (AAMFT)
- Commission on Accreditation for Marriage and Family Therapy Education (COAMFTE)
- Commission on Accreditation of Allied Health Education Programs (CAAHEP)
- Commission on Accreditation of Athletic Training Education (CAATE)
- Council on Social Work Education (CSWE)
- Connecticut State Department of Education
- National Council for the Accreditation of Teacher Education (NCATE).

In addition, the School of Education and Professional Studies is a member of the American Association of Colleges of Teacher Education (AACTE) and an active participant on the Teacher Education Council of State Colleges and Universities (TECSCU).

The education programs also hold national recognitions from the following NCATE-affiliated organizations:

- Association for Childhood Education International (ACEI)
- Council for Exceptional Children (CEC)
- Educational Leadership Constituent Consortium (ELCC)
- International Reading Association (IRA)
- National Association for Sports and Physical Education (NASPE)
- National Association for the Education of Young Children (NAEYC)
- International Technology and Engineering Educators' Association/Council on Technology Teachers Education (ITEA/CTTE)

- Teachers of English to Speakers of Other Languages (TESOL)
- National Council of Teachers of Mathematics (NCTM).

In addition to providing rigorous graduate programs, faculty from the School of Education and Professional Studies have established active partnerships with affiliated community schools. These partnerships provide students with the opportunity to pursue fieldwork, internships, and action research projects at exemplary clinical sites. The School also operates campus-based centers that provide services to the community. This extensive network of partnerships provides both students and members of our community with outstanding educational opportunities and services.

Below is a listing of Post Baccalaureate, Master's degree, post-Master's, and Doctoral programs by department.

## **Graduate Programs in the School of Education and Professional Studies**

### *Counseling and Family Therapy*

M.S., Counselor Education with specializations in:

- School Counseling
- Professional and Rehabilitation Counseling
- Student Development in Higher Education

M.S., Marriage and Family Therapy

O.C.P., Advanced Official Certificate Program in Professional and Rehabilitation Counseling

### *Educational Leadership*

M.S., Educational Leadership

M.S., Educational Technology

Sixth-Year Certificate, Educational Leadership

Ed.D., Educational Leadership

Advanced Official Certificate Program, Superintendent of Schools

Official Certificate Program, Global Leadership and Literacy

### *Physical Education and Human Performance*

Post Baccalaureate Program, Teacher Certification in Physical Education

M.S., Physical Education

Post Master's Study, Physical Education

### *Reading and Language Arts*

M. S., Reading and Language Arts

Sixth-Year Certificate, Reading and Language Arts

Advanced Official Certificate Program, Reading and Language Arts



*Special Education*

Post Baccalaureate Program, Teacher Certification in Special Education

M.S., Special Education

*Teacher Education*

Post Baccalaureate Program, Teacher Certification, Elementary Education

Post Baccalaureate Program, Teacher Certification, Secondary Education

Post Baccalaureate Program, Teacher Certification, All Level Education

M.S., Early Childhood Education

M.S., Educational Studies

M.S., Elementary Education

M.A.T., Master of Arts in Teaching

Post Master's Study

## Counseling and Family Therapy

### Faculty

Connie Tait (Chair, Barnard 230), Ralph Cohen, H. Jane Fried, Cherie King, Vernon Percy, Judith Rosenberg, Daniel Wiener (Department Secretary, Sarah Atkinson; phone: 860-832-2154)

### Department Overview

The counseling and family therapy programs at Central Connecticut State University prepare students for professional careers in Marriage and Family Therapy, School Counseling, Rehabilitation Counseling, Drug and Alcohol Recovery Counseling, Mental Health Counseling and Student Development in Higher Education. Courses are designed to develop student competence in the application of theory-based counseling models, to understand the concerns of diverse client populations and to enhance students' personal and professional development. The practicum and clinical internship provide students with valuable opportunities to apply their skills in a field-based setting under close supervision. Students must obtain departmental approval prior to beginning their practicums.

Programs are accessible to full- and part-time students, offering flexible advising hours and classes in the late afternoons and evenings.

### Programs

#### Master of Science in Counselor Education with Specialization in School Counseling

##### Program Rationale:

The School Counseling Program prepares students for professional careers as counselors in elementary, middle, and high schools. Emphasis is on a comprehensive and developmental model of school counseling that is described in the National Standards for School Counseling of the American School Counseling Association and a document entitled "Best Practices for School Counseling in Connecticut." The curriculum follows the standards of the Council for the Accreditation of Counseling and Related Education Programs (CACREP) and the certification requirements of the Connecticut State Department of Education.

##### Program Learning Outcomes:

Students in this program will be expected to:

- demonstrate knowledge of theory, practice, and ethical standards relative to the practice of school counseling;
- demonstrate appropriate counseling techniques and interventions for use within the academic, career, and personal/social domains;
- demonstrate the ability to consult and collaborate with teachers, staff, administrators, and community-based organizations in understanding and meeting the needs of all students;
- promote understanding and appreciation for diverse populations and cultures; and
- demonstrate knowledge of federal and state laws pertinent to the role, function, and services of the school counselor.

##### Course and Capstone Requirements (48-51 credits):

Graduates are prepared for positions as counselors in public and private schools. The program is designed to meet the certification requirements of the State of Connecticut and the Council for Accreditation of Counseling and Related Educational Programs.

Core Courses (12 credits):

CNSL 500 The Dynamics of Group Behavior 3

CNSL 501 Theories and Techniques in Counseling 6

## CNSL 503 Supervised Counseling Practicum 3

## Specialized Courses (33 credits):

CNSL 504 Professional Studies in Counseling 3

CNSL 506 Counseling Children &amp; Adolescents 3

CNSL 520 Guidance Principles, Organization and Administration 3

CNSL 521 Career Counseling and Development 3

CNSL 522 Appraisal Procedures in Counseling 3

CNSL 524 Consulting in the Schools 3

CNSL 525 Multicultural Counseling 3

CNSL 526 Principles of Comprehensive School Counseling 3

CNSL 568 Alcohol and Drug Counseling 3

CNSL 591 Supervised School Guidance Internship  
(three credits for two semesters) 6

## Research (3 credits)

CNSL 598 Research in Counseling 3

## Capstone (0-3 credits):

Plan A: CNSL 599 Thesis 3

or

Plan B: Comprehensive Exam (consists of a major case presentation done in conjunction with the student's internship experience)

**Prerequisite Courses for Plan B (To be completed while in the program):**

Life Span Development (PSY 512) 3

Exceptional Learner (SPED 501) 3

Educational Foundations (EDF 500) 3

**Fingerprint Based Background Check**

Effective July 1, 2010, Connecticut law requires all students in educator certification programs to undergo state and national criminal history background checks before participating in school-based field experiences. The procedures for obtaining the background checks and the length of time they are valid is established by the State Department of Education and the local RESC, and cannot be changed. Students are responsible for the cost of the background check and will be provided with the necessary consent forms and other documents needed to conduct it. As part of the background check, students need to be fingerprinted. Students who fail to pass the background check may be unable to complete their chosen degree program at Central Connecticut State University. The University is not responsible for a student's inability to complete their chosen degree or certification program.

Graduate students who are not currently employed in the Public School will need to complete the background check before being placed in field experiences or doing research in the schools. Current school employees with background checks in place but who are placed in field experiences or do research outside of the district where they are employed may also be required to complete a new background check.

**Master of Science in Counselor Education with Specialization in Professional and Rehabilitation Counseling**

**Program Rationale:**

The Professional and Rehabilitation Counseling specialization prepares students to pursue employment in a variety of rehabilitation and mental health agencies. Students may choose a track in either Rehabilitation Counseling, Rehabilitation Counseling with a drug and alcohol recovery focus, or Mental Health Counseling. The Professional and Rehabilitation Counseling specialization provides the foundational coursework necessary for individuals interested in national certification as Certified Rehabilitation Counselors (CRC) and/or meeting State of Connecticut Department of Public Health requirements for becoming a Licensed Professional Counselor (LPC). The curriculum is also approved by the Connecticut Certification Board for students pursuing credentials as Licensed Alcohol and Drug Counselors (LADC). There are additional post-master's training requirements for both LPC and LADC candidates. The Professional and Rehabilitation Counseling specialization is accredited by the Commission on Rehabilitation Education (CORE).

**Program Learning Outcomes:**

Students in the program will be expected to:

- exhibit behaviors and attitudes appropriate to the professional and rehabilitation counseling profession;
- demonstrate pertinent and professionally relevant knowledge in the 10 CORE and 9 NBCC curriculum content areas;
- demonstrate professional behaviors and practice in professional and rehabilitation counseling settings;
- demonstrate knowledge of current ethical and legal guidelines that influence one's behavior as a counselor; and
- demonstrate core skills that provide the foundations to understand the professional and rehabilitation counseling process and become more aware of one's interpersonal interactions.

**Course and Capstone Requirements (60 credits):**

Core (30 credits):

CNSL 500 The Dynamics of Group Behavior 3

CNSL 501 Theories and Techniques in Counseling 6

CNSL 503 Supervised Counseling Practicum 3

CNSL 504 Professional Studies in Counseling 3

CNSL 507 Methods of Group Facilitation 3

CNSL 521 Career Counseling and Development 3

CNSL 522 Appraisal Procedures in Counseling 3

CNSL 568 Alcohol and Drug Counseling 3

CNSL 598 Research Methods in Counseling 3

Students in the Mental Health track are required to take an additional 24 credits:

CNSL 525 Multicultural Counseling 3

CNSL 560 Introduction to Rehabilitation Counseling 3

CNSL 561 Advanced Rehabilitation Counseling 3

CNSL 563 Medical Aspects of Rehabilitation Counseling 3

CNSL 564 Rehabilitation and Disability Case Management 3

or

MFT 541 Introduction to Theories of Family Systems 3

CNSL 571 Mental Health Counseling 3

CNSL 575 Co-Occurring Disorders and Mental Health Counseling 3

CNSL 580 Special Topics Seminars 1-3

or

CNSL 599 Thesis 3 (see Plan A capstone)

Students in the Rehabilitation Counseling track are required to take an additional 24 credits:

CNSL 525 Multicultural Counseling 3

CNSL 560 Introduction to Rehabilitation Counseling 3

CNSL 561 Advanced Rehabilitation Counseling 3

CNSL 563 Medical Aspects of Rehabilitation Counseling 3

CNSL 564 Rehabilitation and Disability Case Management 3

CNSL 571 Mental Health Counseling 3

CNSL 575 Co-Occurring Disorders and Mental Health Counseling 3

CNSL 580 Special Topics Seminars 1-3

or

CNSL 599 Thesis 3 (see Plan A capstone)

Students in the Drug and Alcohol Recovery Counseling track are required to take an additional 24 credits:

CNSL 525 Multicultural Counseling 3

CNSL 560 Introduction to Rehabilitation Counseling 3

CNSL 561 Advanced Rehabilitation Counseling 3

CNSL 563 Medical Aspects of Rehabilitation Counseling 3

CNSL 564 Rehabilitation and Disability Case Management 3

CNSL 571 Mental Health Counseling 3

CNSL 575 Co-Occurring Disorders and Mental Health Counseling 3

CNSL 580 Special Topics Seminars 1-3

or

CNSL 599 Thesis 3 (see Plan A capstone)

In addition, all students are required to take:

Internship (6 credits):

CNSL 594 Supervised Clinical Practice Professional Counseling 3 (two semesters fall & spring for a total of 6 credits)

Capstone (0-3 credits):

Plan A: CNSL 599 Thesis 3

or

Plan B: Comprehensive Exam 0

(consists of a major case presentation done in conjunction with the student's internship experience)

Note: It is expected that prior to beginning the supervised counseling practicum (CNSL 503) all Professional and Rehabilitation Counseling students will complete PSY 512. Students in the drug and alcohol recovery program must also complete PSY 454 (Drugs & Behavior) prior to beginning practicum.

**Master of Science in Counselor Education with Specialization in Student Development in Higher Education****Program Rationale:**

The mission of the student development master's degree program is to prepare graduates to function effectively as student development specialists in rapidly changing institutions of higher education. Students are trained to understand and to meet the developmental needs of college students, taking into account worldviews and expectations which are influenced by age, ethnic background, national origin, gender, sexual orientation, disability status, and other "non-traditional" perspectives. Graduates are prepared to function as student affairs professionals in higher education settings, such as student activities, academic advising, career counseling, orientation, first-year experience programs, residence halls, and learning centers.

**Program Learning Outcomes:**

Students in the program are expected to:

- demonstrate knowledge of theory, practice, and ethical standards relative to the practice of student development in higher education;
- demonstrate appropriate counseling, advising, and group facilitation techniques for use with students, staff, and faculty in higher education;
- demonstrate the ability to collaborate with colleagues throughout their institutions for purposes of creating and assessing learning experiences for students;
- identify a wide range of worldviews based on culture and life experience, including their own, and use this understanding to communicate effectively across cultural and personal differences; and
- demonstrate knowledge of federal and state laws pertinent to roles and functions of student affairs professionals and to the responsible management of colleges and universities.

**Course and Capstone Requirements (42-45 credits):**

Core Courses (12 credits):

CNSL 500 The Dynamics of Group Behavior 3

CNSL 501 Theories and Techniques in Counseling 6

CNSL 503 Supervised Counseling Practicum 3

Directed Electives (30 credits):

CNSL 521 Career Counseling and Development 3

CNSL 525 Multicultural Counseling 3

CNSL 530 Student Development in Higher Education 3

CNSL 531 Student Services in Higher Education 3

CNSL 532 Program Design in Student Services 3

CNSL 533 Legal, Financial, and Policy Issues in Student Affairs 3

CNSL 592 Supervised Internship in Higher Education (two semesters) 6

ED 598\* Research in Education 3

Additional course as approved by advisor 3

Capstone (0-3 credits):

Plan A: CNSL 599 Thesis 3

or

Plan B: Comprehensive Exam (consists of a major case presentation done in conjunction with the student's internship experience)

\*ED 598 may be waived by advisor based on undergraduate record of statistics and research.

### **Admission Requirements for School Counseling, Professional and Rehabilitation Counseling, and Student Development in Higher Education**

Admissions to the School Counseling, Professional and Rehabilitation Counseling, and Student Development in Higher Education programs are made on a competitive basis only one time per year. All applications must be completed and received by May 1 for fall admission of the following academic year to the School Counseling program and the Professional and Rehabilitation Counseling program. Applicants for the Student Development in Higher Education program may apply as either full-time or part-time students. The application deadline for admission as a full time student is March 1. Full-time students take 9 credits during fall and spring semesters, follow a prescribed program schedule, attend during the summer, and complete the program in 19 months as a cohort. The application deadline for part-time students is May 1. Part-time students may take 3 or 6 credits per semester and must complete the program within 6 years. Their program of study is arranged with their advisor. Candidates for admission will be selected on the basis of the following criteria:

1. Grade point average: Minimum 2.70 grade point average (GPA) for all under-graduate courses and a 3.00 for all graduate courses, based on a 4.00 point scale where A is 4.00
2. Three recommendations from individuals able to testify to the student's suitability as a prospective counselor.
3. A 2-3 page typewritten (double spaced) essay describing the following:
  - a. Reasons for entering the counseling profession.
  - b. Personal and professional experiences that influenced you to pursue the counseling profession.
  - c. Personal characteristics you believe will contribute to your success as a counselor.
4. A personal interview by the program's faculty admissions committee. The committee will assess the student's personal attributes and life experiences that might contribute to the student's potential for success as a professional counselor.

### **Additional Admissions Requirements for School Counseling**

1. Documentation that the applicant has successfully passed all three parts of the Praxis I PPST Test or qualifies for a waiver. More information about the PRAXIS I PPST tests may be obtained by calling 1-800-742-9476 or by accessing the PRAXIS website at [www.ets.org/praxis](http://www.ets.org/praxis). Applications for the PRAXIS I PSST tests and information about the waiver are available in the kiosk outside of the Office of the Dean, School of Education and Professional Studies, in Henry Barnard Hall.

### **Master of Science in Marriage and Family Therapy**

#### **Program Rationale:**

The Marriage and Family Therapy (MFT) program leads to a Master's of Science in Marriage and Family Therapy (MSMFT). The program is designed to prepare students for professional careers as marriage and family therapists in a wide variety of settings and roles. First, students are taught theories and techniques of practice in individual and group counseling modalities, as well as developmental theory. The foundation of the specialized training in marriage and family therapy is systems theory, serving as the linchpin for the study of clinical theories and practices that are taught in preparation for clinical training. The philosophy of the program is that a student must integrate theories and techniques as tools for enhancing one's effectiveness as an agent of intervention and change. The program does so by interweaving theory and practice throughout the duration of the training process via graduated practical experiences while studying theory. Thus, through the process of study and practice, the student has an opportunity to incorporate a wide array of learning gradually and comprehensively. The end product of such training is a therapist who is well-grounded in theory and who has had nurturing through an on-going training and supervisory process to use him/herself effectively, professionally, and ethically as an agent of change at a variety of levels. The curriculum is designed to meet academic and clinical requirements for Connecticut licensure for marital and family therapists and AAMFT Clinical Membership.

Clinical placements and intensive faculty supervision emphasize the development of effective therapeutic skills to meet the challenges of the new climate in health care service delivery. Emphasis is also placed on the development of the "person of the therapist." A key theme of the program is respect for diversity of people and lifestyles in families. The program has been awarded accreditation by AAMFT's Commission on

**MFT Educational Outcomes (EO):**

1. To develop competent entry-level Marriage and Family Therapists at point of graduation
2. To advance and disseminate the Metaframeworks paradigm as a valued systemic basis for teaching and practicing marriage and family therapy
3. To promote *culturally-informed and respectful* systemic mental health practice
4. To promote leadership in the MFT field among our students, faculty, and graduates

**Student Learning Outcomes (SLO):**

As a result of successful completion of the MFT program, students will:

1. Demonstrate knowledge in the major schools of marriage and family therapy;
2. Demonstrate proficiency in practices of systemically-oriented therapy approaches to human problems in a variety of clinical settings;
3. Demonstrate an articulated personal model of therapy upon which they base their intervention, derived from Metaframeworks;
4. Show professional identities as Marriage and Family Therapists through participation in activities that facilitate the process of socialization in the field;
5. Demonstrate knowledge as consumers of MFT relevant research and ongoing professional enrichment through the valuing of continued self study and skill development;
6. Demonstrate awareness, knowledge, and skills in providing culturally informed MFT;
7. Demonstrate ability to apply the standards of ethical professional conduct in the field; and
8. Show a strong and clear sense of self as an intervener in human problems.

**Clinical Training in the MFT Program :**

During the second year of the MFT program, students complete a practicum experience for two semesters, in which they are placed in approved clinical sites in the community for 12 hours per week and receive an hour of supervision per week by an agency supervisor. This experience provides students with basic skills and techniques in interviewing, clinical assessment, and case management. Students attend a weekly course seminar for one hour per week with a faculty instructor. There are over 60 approved training sites across the state, including mental health centers, youth service bureaus, family service agencies, hospitals, and schools.

Following the practicum, each student undertakes a 12-month, intensive (20-25 hours per week) internship in an approved clinical facility, where the intern may hone his/her skills as an "apprentice" clinician under the mentorship of an on-site supervisor and oversight of a faculty supervisor. The internship is designed to be a much more extensive experience than the practicum experience, with the intern assuming primary responsibility for 12-15 clinical cases per week. The student can expect much guidance during the internship experience, with over three hours per week spent in supervision to discuss clinical assessment, case dynamics, skill development, and use of self in the role of "therapist." By the end of the program, students must complete 500 clinical contact hours with a minimum of 100 hours of supervision of those clinical contact hours under an AAMFT Approved Supervisor.

**Course and Capstone Requirements****(51 credits):**

Prerequisites (12 credits):

PSY 512 Seminar in Developmental Psychology 3

CNSL 500 The Dynamics of Group Behavior 3

CNSL 501 Theories and Techniques in Counseling 6



Marriage and Family Therapy specialization (51 credits) - thesis optional:

MFT 541\* Introduction to Theories of Family Systems 3

MFT 542 Professional, Ethical, and Legal Issues in Marriage and Family Therapy 3

MFT 543 The Family Life Cycle 3

MFT 544 Families in Context: Gender and Cultural Dimensions 3

MFT 551 Structural/Strategic & Behavioral Family Therapies 3

MFT 552 Experiential, Intergenerational and Psychodynamic Family Therapies 3

MFT 554 Couples therapy 3

MFT 555 Dysfunctional Family Processes 3

MFT 556 Systemic Perspectives on Mental Disorders 3

MFT 557 Action Methods in Marital and Family Therapy 3

MFT 583 Marriage and Family Therapy Practicum I 3

MFT 584 Marriage and Family Therapy Practicum II 3

MFT 585 Marriage and Family Therapy Internship  
(3 credits in each of 3 consecutive semesters)\*\* 9

MFT 598 Research Methods in Marriage and Family Therapy 3

Elective required\*\*\* 3

\* This course is taken during the pre-candidacy period along with the three prerequisite courses as a condition for degree candidacy.

\*\* See Capstone requirement (below).

\*\*\* May be any graduate course that fits coherently with the student's academic goals, on approval from his or her advisor. The Thesis course (CNSL 599) is not considered an elective (Plan A) and is an additional three (3) credits.

During the third semester of MFT 585 (Internship), on completion of a minimum of 300 of the 500 clinical hours required for graduation, all students must complete a capstone project consisting of a comprehensive written examination of a clinical case seen by the student, as well as an oral presentation of the case to MFT faculty and peers. This project is designed to help the student integrate his/her learning experiences in the program. In addition, students also may elect to complete Plan A (Thesis), which adds an additional three (3) credits in the program. Students who pursue the thesis option are also required to complete the clinical capstone during the spring semester of MFT 585.

## Admission Requirements for the Marriage and Family Therapy Program

The decision to admit a student into pre-candidacy status for the MFT program is based strictly on the student's grade point average. The admission standard for this program requires a minimum of 2.70 grade point average (GPA) based on a 4.00 point scale where A is 4.00. Students with grade point averages between 2.40 and 2.69 may appeal their denials for admission and request conditional admission. The conditional admission program is a non-candidacy arrangement that allows students to demonstrate the ability to perform successfully in a graduate degree program. It is afforded on a space-available basis to students who are able to demonstrate their potential through additional coursework, relevant life experiences, and/or recommendations from individuals qualified to testify to the students' suitability to be prospective Marriage and Family Therapists. Full admission to the program is not guaranteed—all conditions placed on the student for admission must be met successfully. All students who are accepted into the department are granted pre-candidacy status and are assigned an academic advisor. The advisor will orient the student regarding prerequisites, course scheduling, potential course transfers and substitutions, and the planned program of study.

All students are accepted into the Marriage and Family Therapy program as pre-candidates. Pre-candidacy status allows the student to begin taking classes (see below).

To qualify for Degree Candidacy, students must complete the prerequisite courses (CNSL 500, CNSL 501, and PSY 512) and MFT 541 with a grade of B or better, submit two recommendation forms (supplied by the department and available on-line), and receive favorable ratings on the "Attitudes and Attributes" scale by instructors for CNSL 501 and MFT 541. On completion of these requirements, students meet with their advisors to complete their Planned Programs of Study and the Application for Degree Candidacy. These documents are submitted to the dean of the School of Graduate Studies for final approval and acceptance into the program as Degree Candidates.

The deadline for applying for admission for the fall semester is May 1; the deadline for applying for the spring semester is December 1.

For additional information, please see the MFT program website:

[http://www.education.ccsu.edu/Departments/Counseling\\_and\\_Family\\_Therapy/Marriage\\_and\\_Family\\_Therapy.asp](http://www.education.ccsu.edu/Departments/Counseling_and_Family_Therapy/Marriage_and_Family_Therapy.asp)

## Other Programs

### Post-Master's Study

Post-master's study is available only to graduates of CCSU's Department of Counseling and Family Therapy who are applying to the Professional and Rehabilitation Counseling program. Candidates who complete the master's degree in counseling may be able to continue their education at Central Connecticut State University by applying for admissions to post-master's plan programs in Counseling specialties. Once accepted the student and advisor will develop a planned program of study that must consist of a minimum of 30 credits that are completed within a six-year time period.

### Advanced Official Certificate Program in Professional Counseling

The Advanced Official Certificate Program in Professional Counseling is designed for practicing counselors who already hold a master's degree in counseling or psychology and are preparing for state licensure or advanced practice as a Professional Counselor. A certificate in advanced graduate work in Professional Counseling is issued upon completion of 7-18 credits of selected 500-level courses, with a grade of B or better, designated for the certificate program. Candidates for the OCP who are interested in licensure are responsible for working with the Connecticut Department of Public Health regarding specific required coursework for their Licensed Professional Counselor (LPC) eligibility.

### Admission criteria for the Advanced Official Certificate Program in Professional Counseling:

- Master's degree in counseling or psychology with an overall GPA of 3.00 or higher
- Completion of the application process: Students must formally apply to Graduate Admissions by completing the application form, paying the non refundable application fee of \$50 and having official transcripts for each course taken sent by each previously attended University (excluding CCSU) directly to Graduate Admissions
- Three current professional recommendations
- Written essay - description of student's motivation for advanced graduate study, past experience and future professional goals
- Interview with program faculty

All students will be required to take Orientation to Professional Counseling, a one-credit course.



## Educational Leadership

### Faculty

Anthony Rigazio-DiGilio (Chair, Barnard 231), Farough Abed (Ed. Tech. Coordinator, Barnard 308), Karen Beyard (Ed.D. Director, Barnard 320, 860-832-2152), Ethan Heinen, Penelope Lisi, Ellen Retelle, Olusegun Sogunro, Barry Sponder, Betty Sternberg, Sheldon Watson (Dept. phone: 860-832-2130)

### Departmental Overview

The Department of Educational Leadership seeks to prepare well-educated and competent practitioners who are capable of improving the quality of education for Connecticut's children. The Department values interdisciplinary collaboration in fulfilling its goal; as such, faculty associated with the Center for Multicultural Research and Education, Educational Technology, and Educational Leadership work together to design programs which will prepare professional educators with the skills and dispositions needed to create learning environments where all learners will be successful. The Department of Educational Leadership offers a Master of Science in Educational Technology, a Master of Science in Educational Leadership, a Sixth-Year Certificate leading to certification as an intermediate administrator or supervisor, a superintendent certificate program, a Certificate in Global Leadership and Literacy, and a Doctorate in Educational Leadership (Ed.D.). Non-degree programs leading only to certification are not available in this department.

CCSU has contractual arrangements with institutions of higher education in Jamaica. Under the auspices of these agreements the Educational Leadership Department offers its master's degree to Jamaican educators wishing to update their educational credentials. Fifteen credits of the program are offered on site in Jamaica; students accepted to the program must attend 12 credits on the CCSU campus to complete all requirements.

### Fingerprint-Based Background Check

Effective July 1, 2010, Connecticut law requires all students in teacher/educator certification programs to undergo state and national criminal history background checks before participating in school-based field experiences. The procedures for obtaining the background checks and the length of time they are valid is established by the State Department of Education and the local RESC and cannot be changed. Students are responsible for the cost of the background check and will be provided with the necessary consent forms and other documents needed to conduct it. As part of the background check, students need to be fingerprinted. Students who fail to pass the background check may be unable to complete their chosen degree program at Central Connecticut State University. The University is not responsible for a student's inability to complete their chosen degree or certification program.

Graduate students who are not currently employed in the Public Schools will need to complete the background check before being placed in field experiences or doing research in the schools. Current school employees with background checks in place but who are placed in field experiences or do research outside of the district where they are employed may also be required to complete a new background check.

### Programs

#### Master of Science in Educational Leadership

#### Program Rationale:

The master's degree in educational leadership is designed to prepare teacher leaders who are capable of enhancing the effectiveness of their organizations. There are two strands from which students may choose. Strand I: Educational Leadership (30 credits) is designed to prepare graduates to assume teacher leadership positions within their schools or organizations. Strand II: Curriculum Leadership (30 credits) is designed to prepare graduates to assume roles involving curriculum renewal and evaluation.

**Program Learning Outcomes:**

Students in the program are expected to:

- design, implement, and evaluate instructional programs to promote student learning;
- develop learning programs that are responsive to cultural and learning differences;
- conduct fair, equitable, and effective classroom supervision;
- design, implement, and evaluate professional development activities that promote teacher learning;
- use standardized and classroom-based student performance data to improve student learning; and
- understand, interpret, and critique educational research.

The admission standard for the Educational Leadership M.S. program includes either a 3.00 undergraduate GPA or a 2.70 GPA with a 3.00 upper-level GPA.

**Course and Capstone Requirements:**

Core Requirements (18 credits):

EDF 500 Contemporary Educational Issues 3

or one of:

EDF 516 School and Society 3

EDF 524 Foundations of Contemporary Theories of Curriculum 3

EDF 525 History of American Education 3

EDF 538 The Politics of Education 3

EDF 583 Sociological Foundations of Education 3

and

ED 511 Principles of Curriculum Development 3

EDL 513 Supervision 3

ED 517 Evaluation 3

ED 540 Educational Motivation and the Learning Process 3

ED 598 Research in Education 3

Strand Requirements and Electives

(12 credits)

Strand I - Educational Leadership

Required courses (6 credits):

EDL 514 Administration 3

EDL 555 Leadership for Culturally Diverse Schools 3

Elective courses (6 credits):

Students select advisor-approved elective courses to complete their graduate programs

Strand II - Curriculum Leadership

Required courses (6 credits):

EDL 551 Curriculum Leadership 3

EDL 555 Leadership for Culturally Diverse Schools 3

Elective courses (6 credits):

Students select advisor-approved elective courses to complete their graduate programs

Note: While students may take some courses as non-matriculated students, they must be accepted into the program before taking a fourth 500-level course. 500-level courses beyond the third course will not count toward program completion.

## Master of Science in Educational Technology

### Program Rationale:

The educational technology program is an applied curriculum based on a balanced approach of theory (knowledge) and hands-on experience. The goal of this program is to provide leadership in ET for teachers in the public schools. Graduate students will gain knowledge and experience in the following areas:

- instructional design process;
- visual design;
- visual literacy;
- working with a range of software programs;
- working with a range of interactive delivery systems (video, audio, print, Web, multimedia, animation, etc.);
- applying design and production skills to various instructional outcomes;
- applying assessment rubrics (formative and summative evaluation) to completed instructional-based projects; and
- troubleshooting technology problems.

A unique feature of the educational technology program is that all courses build on one another to provide maximum relevance, linkage, and unity. The master's program in educational technology underscores the need for competency and mastery for each course to be based on knowledge and performance. Students are assessed on how well they are able to apply their skills and knowledge to course projects. The performance criteria are as follows:

- Content design: Does the project content reflect sound instructional strategies?
- Visual design: Does the overall look and appearance of the project capture the learners' attention and interest?

- Technical considerations: Are technical decisions such as programming and visual and audio manipulation functional? Does the project work?
- Evaluation: Does the program teach? Is there change in behavior?

**Program Learning Outcomes:**

Students are expected to:

- apply technology skills in the development of instruction;
- understand and apply instructional design process;
- apply production skills in the development of instruction;
- apply evaluation standards to various instructional programs;
- understand and apply the technology integration process;
- understand and apply inquiry skills in educational technology research; and
- demonstrate leadership skills in applying instructional technology in the work environments.

**Course and Capstone Requirements:**Core Courses (27 credits):

EDT 500 Instructional Design and Evaluation I

EDT 501 Message Design and Production

EDT 510 Design Tools

EDT 512 Computer-based Instruction

EDT 521 Interactive Multimedia for Instruction I

EDT 522 Instructional Design and Evaluation II

EDT 531 Interactive Multimedia for Instruction II

EDT 532 Distance Learning and Networking I

EDT 533 Distance Learning and Networking II

Professional Education (3 credits):

One of the following:

EDF 500 Contemporary Educational Issues

EDF 516 School and Society

EDF 524 Foundations of Contemporary Theories of Curriculum

EDF 525 History of American Education

EDF 538 The Politics of Education

EDF 583 Sociological Foundations of Education

or

EDT 514 Integrating Technology in the Classroom Curriculum (ET majors must choose this course)

Research and Capstone Requirements (6 credits):

Plan A: Thesis

Plan E:

EDT 598 Inquiry in Educational Technology

EDT 597 Final Project

Note: Plan A (Thesis) or Plan E (Special Project) may be selected in consultation with the advisor.

EDT 597 Final Project

The purpose of the Master's Final Project (MFP) is to allow graduate students to complete a comprehensive instructional project. The scope of MFP experience is large and is different from a classroom project. It is meant to act as a synthesis of students' total classroom experiences. It is a culminating experience that allows graduate students to perform their skills in an independent manner. The student must bear the responsibility of the decisions and actions taken at every level of the project. The faculty's role is one of a sounding board and not to influence or provide further training.

Students in the program cannot begin the MFP without submitting a comprehensive proposal. In addition, students must have completed 24 credits of work before enrolling in the summer EDT 597 Final Project course.

Computer prerequisite: A valid CCSU BlueNetID (username) and password. Graduate students must also have a personal computer and e-mail account.

**Special Service Course (undergraduate and graduate):**

EDT 490 Instructional Computing

Note: Students interested in a School Library Media Specialist cross-endorsement should contact the Connecticut State Department of Education Certification Office.

**Sixth-Year Certificate in Educational Leadership**

**Program Rationale:**

This program is designed to prepare graduates to serve in administrative roles within public and private school organizations. Successful graduates will be eligible for certification as an intermediate administrator/supervisor.

**Program Learning Outcomes:**

Students in the program are expected to:

- understand how learning occurs and how people process information, acquire skills, and develop thoughtful inquiring minds;
- apply change theory to create continuous organizational renewal processes;
- use a variety of approaches to assess student learning, teacher development, parent satisfaction, and organizational effectiveness;



- be able to collaborate with colleagues, parents, and local business and social organizations to create optimum learning environments; and
- understand the legal, ethical, and policy environments of their work as school administrators.

### Admissions Requirements

Admissions to this program is limited and highly competitive. The department accepts applications for summer and fall semesters only. All application and supporting materials for admission to the program must be received by May 1 for students taking EDL 590 in the summer and December 1 for students taking EDL 590 in the spring. In addition to meeting the general requirements, admission to the Sixth-Year Certificate program will be based on the completion of EDL 590 and submission of an application portfolio evaluated on the following criteria:

- Possess a master's degree from a regionally accredited institution of higher education
- Attained a 3.30 minimum post-baccalaureate cumulative grade-point average (GPA) on a four-point scale or its equivalent
- Have a minimum of three years of teaching experience and possess, or be eligible for, a Connecticut teaching certificate (Students who do not hold an educator's certificate issued by the Connecticut State Department of Education must also pass Praxis I)
- Two letters of reference from school administrators
- A formal essay which focuses on (1) the reasons that led the candidate to the area of school leadership, and (2) future career goals
- Materials required from the EDL 590 course: Leaders as Learners: Educational Leadership and Self-Assessment
- Successful presentation of the application portfolio to a team of faculty members.

EDL 590 will be offered only twice a year and students may enroll with permission of the chair. All applicants must take this course in either the spring or summer semester. Application portfolio presentations will be scheduled at the end of the EDL 590 course.

### Course Requirements

The Sixth-Year Certificate in Educational Leadership, including recommendation for certification for the Intermediate Administrator/Supervisor, requires a minimum of 30 credits. Requirements include completion of EDL 590, 24 credits of professional core and 3-6 credits of advisor-approved electives.

Pre-admission Course Requirement (3 credits):

EDL 590 Leaders as Learners: Educational Leadership and Self-Assessment 3

Professional Core (24 credits):

EDL 605 Leadership in Teaching and Learning I 3

EDL 606 Leadership in Teaching and Learning II 3

EDL 610 School Leadership I 3

EDL 611 School Leadership II 3

EDL 615 Understanding External Environments of School Leadership I 3

EDL 616 Understanding External Environments of School Leadership II 3

EDL 690 Internship in Educational Leadership I 2

EDL 691 Internship in Educational Leadership II 2

EDL 692 Internship in Educational Leadership III 2

Electives (3-6 credits of advisor-approved electives)

Note: To receive certification, students must also pass a performance-based examination administered by the State of Connecticut. The State of Connecticut also requires 50 months of teaching experience prior to licensure and completion of a designated course in special education, which may be used as part of the elective requirements.

### **Doctor of Education (Ed.D.) in Educational Leadership**

#### **Program Rationale:**

The doctorate in education (Ed.D.) has been designed for delivery to a cohort of full-time educational professionals on weekends, evenings, and during the summer. The program has many innovative features and serves teachers and administrators in PreK-12 education who want to prepare for a variety of leadership positions: principals, lead teachers, department heads, curriculum and assessment specialists, assistant superintendents, and superintendents. The Ed.D. is based on the premise that learning takes place through an integration of course work and experiences that stem from a clear conception of leadership, the knowledge base of the field, and a structure that allows doctoral students and faculty to collaborate on shared work improving education in the State of Connecticut.

#### **Program Learning Outcomes:**

Students are expected to:

- create collaborative learning communities which reflect sensitivity to the ethical and moral obligations of leaders to design and implement programs that promote positive learning for all;
- create and sustain a powerful vision of teaching and learning that promotes individual and organizational learning through assessment, professional development, program evaluation, and action research;
- demonstrate an appreciation for diversity by creating a culture of success that is connected to salient historical, philosophical, cultural, community, and political contexts;
- use technology to support and advance learning, improve communication, and process information; and
- research, collect, analyze, and interpret data that informs the change process; evaluate research critically; apply research to determine best practice; and provide leadership for research that improves teaching and learning.

#### **Admissions**

Admission to the program is available in alternate years for a cohort of 25 students. Deadline for admission is December 1. To be considered for admission to the Ed.D. in Educational Leadership, applicants must have earned a master's degree in an appropriate discipline or professional field and have professional goals that are consistent with the goals and beliefs of the program. Admission to the program is open to all qualified applicants without regard to age, race, sex, religion, physical disability, or national origin.

## Admission Criteria

The following minimum criteria have been established for admission into the Ed.D. Program:

1. Master's degree from an accredited institution of higher education in a discipline or professional field that is relevant to the Ed.D. Program
2. 3.00 GPA on all graduate coursework
3. Two positive letters of reference from leaders in education familiar with the applicant's work
4. Detailed résumé that illustrates important work-related experiences
5. Acceptable scores on the Graduate Record Examination (within five years of admission and including a writing assessment)
6. An acceptable personal statement covering three important topics:
  1.
    - o Career goals
    - o Reasons for pursuing a doctorate
    - o Ability and commitment to devote four weeks to summer study for the first two summers of the program and some additional on-campus summer study during the third or fourth summers
7. If selected as a finalist, a satisfactory interview with the admission committee

## Admission Process

The application packet for the Ed.D. can be obtained from the Graduate Admissions Office, the Office of the School of Graduate Studies, or from the Graduate Studies and Ed.D. Program websites. Admission decisions are determined by a faculty admissions committee.

## Program of Study

The program is divided into four major components: (1) a required core in educational leadership; (2) a specialty area; (3) a series of inquiry-oriented seminars; and (4) the dissertation component. These components and the credits required in each component are summarized below.

Component I:

Core in Educational Leadership (18 credits)

Component II:

Specialty area in one of the following (15 credits):

- Administrative Leadership
- Curriculum and Literacy

Component III:

Inquiry Seminars (16 credits)

Component IV:

Capstone: Dissertation and Dissemination (14 credits)

*Total: minimum 63 credits*

Component I establishes the *foundational core* of the program with particular emphasis in education leadership and teaching and learning. Four core courses are required of all candidates. Courses include: EDF 700; EDL 701, 702, 705; and EDT 700. All courses in the core are open only to Ed.D. students.

Component II includes a specialty area of the student's choice. Two specializations are available:

- *Administrative Leadership*. This specialization is for students who aspire for administrative positions in public schools. It could lead to certification for intermediate administrator (a State of Connecticut certificate) and the superintendency.
- *Curriculum and Literacy*. This specialization is for students who plan leadership careers in PK-12 settings such as reading and curriculum specialists. It includes courses in literacy, curriculum, and instructional leadership.

Component III of the program includes research courses, field-based inquiry projects, and a series of seminars designed to help students understand the processes of inquiry. Component III leads into and facilitates Component IV.

Component IV is the completion of the dissertation and dissemination of the results of the students' study to appropriate audiences. Special course work in research and ongoing inquiry projects will culminate with the completion of the student's dissertation. More information about all of these components is available on the program's website.

*Please note that students take 10 credits during each of the first two summers in the program, and additional courses during evenings and some Saturdays during the first two academic years. During the third year and beyond, the focus is on dissertation requirements, including some on-campus study during the last summer of study.*

### **Candidate Assessment**

The curriculum of the Ed.D. program has been designed to align with national and state standards for doctoral studies in the field of educational leadership and with the program's conceptual framework. Prior to being granted the Ed.D. degree, each candidate completes a dissertation and demonstrates proficiency on each program standard. Criteria for judging performance on other standards are described in the *Assessment and Dissertation Handbook*.

During the second year of the program, each Ed.D. candidate completes a summative electronic portfolio. This portfolio consists of evidence (artifacts, evaluations, projects, and reflections) gathered from the beginning of the program. All entries must be tied to the program's conceptual framework and to the program's advanced leadership standards. Candidates present their portfolios to a committee of faculty, including their dissertation advisors.

### **Course and Capstone Requirements:**

Foundational Core (18 credits):

EDF 700 The Purposes of Education in America 3

EDL 705 Leadership to Promote Effective Teaching & Learning 6

EDT 700 Topics in Leadership for Technology in Schools 3

EDL 701 Leading Organizational Change I: Theory 3

EDL 702 Leading Organizational Change II: Program Development & Evaluation 3

Inquiry Seminars and Dissertation (30 credits required; up to six additional credits optional):

EDL 710 Inquiry Seminar I: The Study of Human & Organizational Learning Research I 3

EDL 712 Inquiry Seminar III: Quantitative and Qualitative Research II 3

EDL 713 Inquiry Seminar IV: Study of Organizational Change 2

EDL 714 Inquiry Seminar V: Advanced Research Design 3

EDL 715 Inquiry Seminar VI: The Dissertation Proposal 3

EDL 716 Inquiry Seminar VII: Dissertation I 2

EDL 717 Inquiry Seminar VIII: Dissertation II 5

EDL 718 Inquiry Seminar IX: Dissertation III 5

EDL 719 Inquiry Seminar X: Dissertation IV 1  
(may be repeated for up to 6 credits over three calendar years)

EDL 720 Inquiry Seminar XI: Disseminating Research Findings 2

Specialty Study (15 credits of electives in Administrative Leadership or Curriculum and Literacy):

Administrative Leadership

EDL 610 School Leadership I 3

EDL 611 School Leadership II 3

EDL 615 Understanding External Environments of School Leadership I 3

EDL 616 Understanding External Environments of School Leadership II 3

EDL 634 Seminar in Curriculum Development 3

EDL 652 Advanced Topics in Educational Leadership 1-6

EDL 681 The Superintendency I: Leading District Operations 3

EDL 682 The Superintendency II: Board and Public Relations 3

EDL 690 Internship in Educational Leadership I 2

EDL 691 Internship in Educational Leadership II 2

EDL 692 Internship in Educational Leadership III 2

EDL 695 Internship: The Superintendency I 3

EDL 696 Internship: The Superintendency II 3

EDL 697 Readings and Conference (repeated for up to 6 credits) 1-6

#### Curriculum and Literacy

RDG 667 Multicultural Literature in the Classroom 3

RDG 675 Reading and Writing as Integrated Process 3

RDG 680 Current Trends and Issues in Reading and Language Arts 3

RDG 686 Literacy Instruction for Diverse Populations II 3

RDG 698 Research Seminar 3

RDG 700 Seminar in Literacy 3

EDL 634 Seminar in Curriculum Development 3

EDL 652 Advanced Topics in Educational Leadership 1-6

EDL 697 Readings and Conference (repeated for up to 6 credits) 1-6

### **Advanced Official Certificate Program in Superintendent of Schools**

Total credits: 12-15

The program is designed for educational professionals seeking certification as a School District Superintendent. The core program consists of two courses on theory and research (EDL 681 and EDL 682) and two courses on practice (EDL 695 and EDL 696). Candidates who have completed their graduate work at CCSU will be required to take 12 credits. Candidates who have completed their graduate work at other institutions will be required to complete 15 semester hours as mandated by State Department of Education. Courses to be approved by advisor are dependent on student's prior coursework.

### **Official Certificate Program in Global Leadership and Literacy**

Total credits: 12

This graduate program focuses on international education practices and provides opportunities for educational professionals to study best practice in other countries, to reflect on their own approaches to leadership for teaching and learning, to learn first-hand about other cultures, and to enhance their capacity to effectively educate all of our children.

The OCP consists of four, three-credit graduate courses:

EDF 528 Comparative and International Education 3

EDL 555 Leadership for Culturally Diverse Schools 3

ED 540 Educational Motivation and the Learning Process 3

EDL 652 Advanced Topics in Educational Leadership 3

These courses will be offered in host countries (e.g., Finland, Jamaica, South Africa, China) and on campus for a two week period in the summer and winter sessions. Students completing the OCP will be expected to have at least one course offered at an international site as part of their 12 credits.



## Physical Education and Human Performance

### Faculty

David Harackiewicz (Chair, Kaiser 0180), Jan Bishop, Antone Caputo, Catherine Fellers, Kimberly Kostelis, Thomas McCarthy, Peter Morano, Victoria Morley, Katherine Pirog, Susan Smith, Mike Voight, Sean Walsh (Dept. phone: 860-832-2155)

### Department Overview

The Department of Physical Education and Human Performance offers courses leading to a Master of Science Degree in Physical Education for certified teachers and professionals in the allied fields of exercise science and sports medicine. Also available is undergraduate course work leading to Connecticut teacher certification in physical education.

### Programs

#### Master of Science in Physical Education

##### Program Rationale:

The graduate program of Physical Education is designed to: (1) increase the competency of teachers of physical education and (2) provide valuable subject matter for professionals in exercise science and sports medicine.

An undergraduate program in physical education from an accredited institution of higher education is preferred for admission to the master's degree program.

##### Program Learning Outcomes:

Students in the program are expected to:

- interpret and determine appropriate application of any one or combination of the following theories: pedagogical (Pedagogy), psychological and sociological (Sport); biomechanical and physiological (Exercise Science);
- read and interpret research and apply significant findings to their profession; and
- expand and integrate knowledge of fitness, health, and wellness and apply it to the field of teaching or exercise science.

##### Admissions Requirements:

Admission to the School of Graduate Studies

##### Course and Capstone Requirements

##### (30 credits):

Electives and Professional Education:

3-6 credits of courses other than Physical Education as approved by faculty advisor. Students who are Certified Teachers must take a minimum of one Professional Education graduate course.

Core courses:

15-18 credits of department offerings as approved by faculty advisor. All students must take a minimum of one course from the Exercise Science category.

#### I. PEDAGOGY

PE 500 Improving Student Learning in Physical Education (Spring even years)



PE 505 Instructional Tools for Physical Education (Fall even years)

PE 510 Instructional Models for Physical Education (Fall odd years)

PE 520 Current Issues in Physical Education (Spring odd years)

PE 590 Independent Study/Topics in Physical Education (Irregular)

## II. SPORT

EXS 507 Human Perspectives in Sport (Spring odd years)

EXS 515 Sport, Physical Activity and Exercise Psychology (Spring even years)

PE 524 Sport, Physical Education, Athletics and the Law (Fall even years)

PE 525 Concepts in Athletic Administration (Fall odd years)

## III. EXERCISE SCIENCE

EXS 519 Sport Biomechanics (Fall even years)

EXS 522 Physical Activity and Health (Spring odd years)

EXS 523 Essentials of Sports Performance Training (Summer even years)

EXS 530 Nutrition for Health, Fitness & Sport Performance (Summer odd years)

EXS 590 Independent Study/Topics in Exercise Science and Sports Medicine (Irregular)

EXS 592 Advanced Physiology of Sport and Exercise (Fall odd years)

## IV. RESEARCH (6-9 credits):

PE 597 Research in Physical Education and Exercise Science I (Fall; required for all plans)

NOTE: Students must take before successful completion of 12 credit hours

PE 598 Research in Physical Education and Exercise Science II (Spring; required for all plans)

NOTE: Students must take before successful completion of 24 credit hours

PE 599 Thesis (Irregular; PLAN A ONLY)

Capstone Requirement:

Plan A (Thesis)

Or

Plan B (Comprehensive

Exam)

Note: No more than 9 credits at the 400 level, as approved by the graduate advisor, may be counted toward the graduate planned program of study.

## Post-Baccalaureate Program for Certification in Physical Education

Students who already hold a bachelor's degree may pursue teacher certification in Physical Education through our post-baccalaureate program. This program prepares students for PK-12 teacher certification and does not result in a master's degree. For information on admission to this program, see the School of Education and Professional Studies page, [linked here](#).

### **Post-Master's Study**

A 30-credit planned program of post-master's study is available for the professional physical educator who wishes to expand or update knowledge of physical education and the related fields of exercise science and health fitness.

## Reading and Language Arts

### Faculty

Helen R. Abadiano (Chair, Barnard 2090000), Elene Demos, Julia Kara-Soteriou, Catherine Kurkjian, Cara M. Mulcahy, Jesse Turner, Lynda Valerie, Kenneth J. Weiss (Dept. phone: 860-832-2175; Dept. website: [www.reading.ccsu.edu](http://www.reading.ccsu.edu))

### Department Overview

The Department of Reading and Language Arts is committed to promoting and enhancing quality instruction in reading and language arts. Preparing literacy leaders for service in our communities is the overarching mission of the department and is consistent with and closely aligned to the theme of preparing leaders for service in our communities embraced by the School of Education and Professional Studies. The underlying principles of our mission are derived from our professional standards as defined by the International Reading Association and NCTE and by state mandates. Accordingly, the department offers a Master of Science degree program and a Sixth-Year Certificate in Reading and Language Arts. The Master of Science degree offers strands in Classroom Instruction in Reading and Language Arts, and Corrective and Remedial Reading and Language Arts. The master's program also offers a strand in Reading-Mathematics. The strand in Corrective and Remedial Reading and Language Arts leads to a reading specialist certification by the State of Connecticut. The Sixth-Year Certificate program may include courses leading to a reading consultant certification by the State of Connecticut. An Advanced Official Certificate Program in Reading and Language Arts is also available for candidates who have completed a Master of Science degree in Reading and Language Arts. All programs require practicum, clinical, or field-based experiences under close supervision in order to provide candidates with opportunities to apply their skills. The Department of Reading and Language Arts collaborates with the Doctor of Education in Educational Leadership program in offering a specialty area in literacy leading to consultant certification. It is also home to the Central Connecticut Writing Project under the National Writing Project.

CCSU has contractual arrangements with institutions of higher education in Jamaica. Under the auspices of these agreements the Reading and Language Arts Department offers its master's degree to Jamaican educators wishing to update their educational credentials. Fifteen credits of the program are offered on site in Jamaica; students accepted to the program must attend 12 credits on the CCSU campus to complete all requirements.

### Admission

To apply to the Department of Reading and Language Arts Master of Science degree or Sixth-Year Certificate program, a candidate must submit an application for graduate admission, official copies of transcripts, and application fee directly to the School of Graduate Studies. Other admission requirements for the Master of Science degree program in Reading and Language Arts are explained in the admissions packet which can be downloaded from the department website at [www.reading.ccsu.edu/Applications/](http://www.reading.ccsu.edu/Applications/)

Program\_Applications.htm. Admission requirements include (1) letters of recommendation, (2) application essay, (3) department interview, (4) teaching certification and experience qualifications, and (5) basic computer literacy. A Connecticut teaching certification and a special education course are required for candidates seeking endorsement as remedial reading and language arts teachers or reading and language arts consultants.

Candidates seeking endorsement as a Reading and Language Arts Consultant in the State of Connecticut must apply to the School of Graduate Studies and the Department of Reading and Language Arts for admission to the Advanced Official Certificate Program. In addition to the general requirements for admission to the Reading and Language Arts program, the candidate must have completed a Master of Science degree in Reading and Language Arts.

### Program Requirements

**Electronic Program Portfolio:** An Electronic Program Portfolio (EPP) is required of all Master of Science degree and Sixth-Year Certificate candidates graduating from the Department of Reading and Language Arts. EPP is also required for candidates in the Advanced Official Certification Program. The candidate and the program advisor develop the e-portfolio during the course work phase of the candidate's program. The e-portfolio will be a reflection of candidate competencies from areas recommended by the Connecticut State Department of Education and the International Reading Association. Evidence of membership to a state/regional, national and/or international professional organization in Reading and Language Arts, as well as attendance or participation in state/regional and/or national/international conferences for each year a candidate is enrolled in the program must be included in the e-portfolio.

**CCSU "NT" Account:** A CCSU "NT" account is required for all courses in the graduate programs in Reading and Language Arts. An "NT" account may be obtained via the CCSU Computer Center.

**Program Evaluation:** Candidates in the Master of Science degree and Sixth-Year Certificate program in Reading and Language Arts must meet with their program advisors-for evaluation of their academic performances, dispositions, and work experiences with diverse groups-three times throughout their programs of study. A Master of Science degree candidate must meet with his/her program advisor (1) following completion of 15 graduate credits toward planned program of study, (2) after 24 graduate credits toward planned program of study or for approval for comprehensive exam or thesis writing, and (3) for final evaluation during the graduation semester. A Sixth-Year degree candidate must meet with his/her program advisor (1) following completion of 15 graduate credits toward planned program of study, (2) after 24 graduate credits toward planned program of study or upon completion of RDG 696 Practicum for Reading and Language Arts Consultants, and (3) for final evaluation during the graduation semester. Candidates in the Advanced Official Certification Program must meet with program advisor for evaluation of their academic performance, disposition, and work experience with diverse groups, following an agreed evaluation schedule as indicated in their planned program of study. All candidates are expected to have their electronic program portfolios and Work Experience with Diverse Groups charts accessible for evaluation. Failure to comply with program evaluation schedule may result in a registration block the following semester.

### Planned Program of Graduate Study

Following admission to the Master of Science degree and Sixth-Year Certificate program in Reading and Language Arts, candidates must meet with their assigned program advisors to complete planned programs of graduate study. Only courses approved in the planned program of study will be counted toward graduation.

Note: M.S. and Sixth-Year Certificate candidates may transfer up to six credits of courses, including on-line courses, from accredited institutions upon recommendation of the program advisor and approval of the department chair. No transfer credits will be allowed after a candidate's planned program of study has been approved.

## Programs

### Master of Science Degree Programs in Reading and Language Arts

#### Program Rationale:

The Master of Science degree in Reading and Language Arts is designed to prepare literacy professionals who are knowledgeable and competent in providing quality support, to enhance students' literacy learning, and who meet the standards for reading professionals as defined by the International Reading Association and by state mandates. The master's program offers three strands. Strand I: Classroom Instruction in Reading and Language Arts (30 credits) is designed to prepare teachers for teaching reading and language arts to diverse groups of students in a classroom context. Strand II: Reading-Mathematics (30 credits) is designed to prepare teachers to teach both literacy and numeracy to diverse groups of students in a classroom context. Strand III: Corrective and Remedial Reading and Language Arts (30 credits) is designed to prepare teachers to become reading specialists in compliance with the state standards for advanced certification in remedial reading and remedial language arts.

The candidate's planned program of graduate study totals a minimum of 30 credits and must include the following: either Plan A: RDG 599 Thesis (6 credits) or RDG 599 (3 credits) and RDG 598 Seminar in Reading and Language Arts Research (3 credits) or Plan B: RDG 598 Seminar in Reading and Language Arts Research (3 credits) and Comprehensive Exam, including a field of study (27 credits).

A planned program of graduate study will be developed by the candidate and the program advisor. Based on the program advisor's evaluation of candidate's needs, background, and experiences in reading and language arts, a candidate may need to complete additional coursework for his/her planned program of graduate study and therefore may exceed the minimum of 30 credits.

#### Program Learning Outcomes:

The Master of Science degree program in Reading and Language Arts is based on the IRA/NCTE standards for reading professionals. In order to prepare knowledgeable and competent reading and language arts classroom teachers and/or reading specialists, students in the program are expected to:

- meet the IRA standards for reading professionals;
- provide leadership, through modeling and mentoring colleagues and other support staff, and acquire a wide range of instructional practices, approaches, methods, and curriculum materials to facilitate their reading and writing instruction;

- be knowledgeable in various assessments appropriate for a wide range of diversity in the classroom, including technologically based assessments, and are able to select, administer, and interpret assessments to enhance student learning and to communicate results to educational stakeholders;
- create a literate environment to facilitate successful reading and writing for all children; and
- continue to be lifelong learners and scholars, through reading, research, and professional development, and leaders in advocating to advance the professional research base to expand knowledge-based practices.

### **Course and Capstone Requirements:**

#### **Strand in Classroom Instruction in Reading and Language Arts**

##### **(non-certification track)**

The Strand in Classroom Instruction in Reading and Language Arts totals 30 credits. The candidate's planned program of graduate study requires the following reading and language arts courses:

RDG 503 Developmental Reading in PK-12 3

RDG 585 Reading in Content Area 3

RDG 589 Creative Language Arts 3

and includes courses from the following:

RDG 502 Current Trends in Developmental Reading PK-12 3

RDG 569 Folktelling Art and Technique 3

RDG 578 Teaching Writing in the Elementary Schools 3

RDG 579 Technology in Reading & Language Arts Instruction 3

RDG 582 Introduction to Critical Literacy 3

RDG 586 Literacy Instruction for Diverse Populations I 3

RDG 587 Bibliotherapy 3

RDG 588 Teaching Children's Literature 3

#### **Strand in Reading-Mathematics**

##### **(non-certification track)**

The strand in Reading-Mathematics totals 30 credits. The candidate's planned program of graduate study requires the following reading and language arts courses:

RDG 503 Developmental Reading in PK-12 3

RDG 585 Reading in Content Area 3

RDG 589 Creative Language Arts 3

and includes courses from the following:

RDG 502 Current Trends in Developmental Reading PK-12 3

RDG 578 Teaching Writing in the Elementary Schools 3

RDG 579 Technology in Reading and Language Arts Instruction 3

RDG 582 Introduction to Critical Literacy 3

RDG 586 Literacy Instruction for Diverse Population I 3

RDG 588 Teaching Children's Literature 3

The remaining 12-15 credits are mathematics courses recommended by the department of mathematical sciences.

Strand in Corrective and Remedial Reading and Language Arts (certification track)

The Strand in Corrective and Remedial Reading and Language Arts totals 30 credits and requires the clinical sequence-RDG 594, 595, and 596- and the following courses:

RDG 503 Developmental Reading in PK-12 3

RDG 585 Reading in Content Area 3

RDG 589 Creative Language Arts 3

The rest of a candidate's planned program of graduate study may include courses from the following:

RDG 502 Current Trends in Developmental Reading PK-12 3

RDG 569 Folktelling Art and Technique 3

RDG 578 Teaching Writing in the Elementary Schools 3

RDG 579 Technology in Reading and Language Arts Instruction 3

RDG 582 Introduction to Critical Literacy 3

RDG 586 Literacy Instruction for Diverse Population I 3

RDG 587 Bibliotherapy 3

RDG 588 Teaching Children's Literature 3

## SIXTH-YEAR CERTIFICATE IN READING AND LANGUAGE ARTS

### Program Rationale:

The Sixth-Year Certificate in Reading and Language Arts program leads to the award of the professional certificate. This program may include course work required for endorsement as a Reading and Language Arts Consultant in the State of Connecticut. The certification-track program is designed to provide opportunities for the candidate to examine reading and language arts from a perspective beyond classroom teaching. The candidate's planned program of graduate study is developed by the candidate and the program advisor. Course requirements will be based on the candidate's needs in terms of fulfilling professional and personal goals. Related areas of study may be developed in disciplines such as Elementary Education, Educational Leadership, Educational Technology, Mathematics, and Special Education. A minimum of 15 credits of 600-level courses is required in both the certification track and the non-certification track programs for the certificate.

### Program Learning Outcomes:

The Sixth-Year Certificate in Reading and Language Arts program expands on CCSU's master of science degree program in reading and language arts and is based on the IRA/NCTE standards for reading professionals. In order to prepare knowledgeable and competent literacy professionals and/or literacy coaches, students in the program are expected to:

- meet the IRA standards for reading professionals and/or the Connecticut state standards for advanced certifications in reading and language arts;
- provide leadership through modeling and mentoring to ensure that classroom teachers and other support staff acquire a wide range of instructional practices, approaches, methods, and curriculum materials to facilitate their reading and writing instruction;

- be knowledgeable of various assessments appropriate for a wide range of diversity in the classroom, including technologically based assessments, and able to mentor and support classroom teachers and other professionals in the selection, administration, and interpretation of assessments to enhance student learning and to communicate results to education stakeholders;
- support and mentor classroom teachers and other professionals in creating a literate environment to facilitate successful reading and writing for all children; and
- continue to be lifelong learners and scholars, through reading, research, and professional development, and leaders in planning and implementing professional development programs for teachers and other professionals, as well as in advocating to advance the professional research base to expand knowledge-based practices.

### **Course and Capstone Requirements:**

#### **Reading/Language Arts Consultant Certification Track**

The candidate's planned program of study totals a minimum of 30 credits and must include the following:

RDG 588 Teaching Children's Literature 3

RDG 692 Specialized Diagnosis and Remedial Techniques 3

RDG 694 Organization, Administration, and Supervision of Reading & Language Arts Programs 3

RDG 696 Practicum for Reading and Language Arts Consultants 3

RDG 697 Practicum for Reading and Language Arts Consultants II 3

RDG 698 Research Seminar 3

Required prerequisites:

RDG 503 Developmental Reading in PK-12 3

RDG 585 Reading in Content Area 3

RDG 589 Creative Language Arts 3

RDG 594 Diagnosis of Reading and Language Arts Difficulties 3

RDG 595 Remedial and Corrective Techniques in Reading & Language Arts 3

RDG 596 Clinical Practices in Reading & Language Arts 6

A candidate may need to complete additional coursework for his/her planned program of study and therefore may exceed the minimum of 30 credits.

#### **Sixth-Year Certification in Reading and Language Arts Non-Certification Track**

Research (3 credits):

RDG 698 Research Seminar 3

Related Area of Study (6 credits)

Area of Specialization (15-18 credits)

Electives (3-6 credits)

Required prerequisites:

RDG 503 Developmental Reading in PK-12 3

RDG 585 Reading in Content Area 3

RDG 589 Creative Language Arts 3

### **Advanced Official Certificate Program in Reading and Language Arts**

This is a non-degree program providing coursework to lead to endorsement as a Reading and Language Arts Consultant in the State of Connecticut. Candidates are expected to have a Master of Science degree in Reading and Language Arts and to take courses required by the State of Connecticut for Reading and Language Arts Consultant Certification, including prerequisite courses when necessary. The required courses are as follows, for a total of 15 to 27 credits of coursework:

RDG 588 Teaching Children's Literature 3

RDG 692 Specialized Diagnosis & Remedial Techniques 3

RDG 694 Organization, Administration, and Supervision of Reading and Language Arts Programs 3

RDG 696 Practicum for Reading and Language Arts Consultants 3

RDG 697 Practicum for Reading and Language Arts Consultants II 3

Required prerequisites:

RDG 594 Diagnosis of Reading & Language Arts Difficulties 3

RDG 595 Remedial & Corrective Techniques in Reading & Language Arts 3

RDG 596 Clinical Practices in Reading & Language Arts 6



## Special Education

### Faculty

Mitchell Beck (Chair, Barnard 22001), John Foshay, William Nelson, Joan Nicoll-Senft, Ernest Pancsofar (Dept. phone: 860-832-2400)

### Department Overview

The quality of educational services for children and youth with exceptionalities resides in the abilities, qualifications, and competences of the personnel who provide the services (CEC, 1988). Consistent with the mission of the School of Education and Professional Studies (SEPS) of preparing leaders for service in our communities, it is the mission of the Department of Special Education to:

- prepare current and future educators to effectively meet the academic and social needs of individuals with disabilities;
- promote effective and equitable access to the general education curriculum for individuals with disabilities; and
- empower teachers to be leaders in their schools by way of planning, implementing, and evaluating research-based practices for ongoing school improvement.

### Programs

#### Master of Science in Special Education for Students Already Certified (Strands A and B)

##### Program Rationale:

The Master of Science in Special Education is designed to prepare general education teachers to possess the knowledge, skills, and professional dispositions to develop effective teaching and learning environments for individuals with disabilities. This program track is designed for students who already hold teaching credentials in Connecticut. In this specialization students take course work designed to broaden and/or deepen their knowledge of the field. The curriculum for this program is aligned with the standards of the Council for Exceptional Children (CEC).

##### Program Learning Outcomes:

Students in this program will be expected to:

- demonstrate knowledge of historical foundations, classic studies, major contributors, and current issues related to special education;
- demonstrate knowledge of laws and policies that affect individuals with disabilities, their families, and their educational programming;
- promote practices that reduce the over-representation of culturally/linguistically diverse students in programs for individuals with disabilities;
- broaden and/or deepen their knowledge of individual learning differences, instructional strategies, and collaboration in special education;
- implement action research processes to contribute to improved special education services to individuals with disabilities; and
- promote professional and ethical practices in the field of special education.

#### Master of Science in Special Education for Students Already Certified in Special Education (Strand C)

##### Strand C (30 credits)

Professional Education (6 credits):

SPED 566 Legal and Administrative Issues in Special Education 3

SPED 532 Contemporary Issues in Special Education 3

Strand C (15 credits):

Electives—students usually take 15 credits of advanced-level course work in special education. Up to 6 credits of related course work from other departments may be included at the advisor's discretion.

Research (9 credits):

SPED 598 Research in Special Education 3

SPED 596 Designing Action Research in Special Education (Plan E) 3

SPED 597 Implementing and Documenting Action Research in Special Education (Plan E) 3

### **Master of Science in Special Education for Students Already Certified in Other Areas (Strand A)**

#### **Strand A (30 credits)**

*Completion of Planned Program does not lead to cross endorsement in special education*

Professional Education (6 credits):

SPED 566 Legal and Administrative Issues in Special Education 3

SPED 532 Contemporary Issues in Special Education 3

Strand A (15 credits):

Choose 6 credits from:

SPED 511 Behavioral/Emotional Disorders 3

SPED 512 Learning Disabilities 3

SPED 513 Developmental Disabilities 3

Choose at least 9 credits from:

SPED 506 Foundations of Language for the Exceptional Child 3

SPED 510 Inclusive Education 3

SPED 536 Autism Spectrum Disorder 3

SPED 560 Positive Classroom Management for Students Receiving Special Education Services 3

SPED 578 The Juvenile Offender with Special Education Needs 3

SPED 580 Collaborative Process in Special Education 3

SPED 581 Assistive Technology in Special Education 3

SPED 595 Topics in Special Education 1-3

Note: Other courses offered in the Department of Special Education may be substituted as they become available; i.e., special topics.

Research (9 credits):

SPED 598 Research in Special Education 3

SPED 596 Designing Action Research in Special Education (Plan E) 3

SPED 597 Implementing and Documenting Action Research in Special Education (Plan E) 3

## Master of Science in Special Education for Students with Certification in Other Areas of Education Seeking Cross Endorsement in Special Education (Strand B)

### Program Rationale:

The Master of Science in Special Education is designed to prepare general education teachers to possess the knowledge, skills and professional dispositions to develop effective teaching and learning environments for individuals with disabilities. This program track is designed for students who have certification in elementary education or a 7-12 secondary subject certificate in biology, business, chemistry, earth science, English, history/social studies, mathematics, or physics. Strand B both leads to a master's degree and provides coursework that may lead to a cross endorsement for either elementary or secondary (including middle school) education. Students in Strand B must have a current Connecticut certification. The curriculum for this program is aligned with the standards of the Council for Exceptional Children (CEC). Courses required in Strand B are aligned with the certification requirements of the Connecticut State Department of Education.

### Program Learning Outcomes:

Students in this program will be expected to:

- demonstrate knowledge of foundational issues in special education and their impact on the field;
- demonstrate knowledge of the development and characteristics of learners, individual learning differences, and appropriate instructional strategies;
- promote effective learning environments and social interactions for individuals with disabilities;
- demonstrate knowledge of typical and atypical language development, cultural implications of language development, and alternative approaches to communication;
- further their knowledge of instructional planning, assessment, and collaboration to address the learning differences of individuals with a wider variety of academic problems;
- implement action research processes to contribute to improved special education services to individuals with disabilities; and
- promote professional and ethical practices in the field of special education.

### Strand B (36-39 credits)

*Completion of Planned Program leads to an endorsement in special education.*

Professional Education (3 credits):

SPED 532 Contemporary Issues in Special Education 3

Strand B (24 credits):

SPED 511 Behavioral/Emotional Disorders 3

SPED 512 Learning Disabilities 3

SPED 513 Developmental Disabilities 3

SPED 514 Cognitive Behavior Management and Social Skills Strategies 3

SPED 515 Assessment in Special Education 3

SPED 516 Instructional Programming for Students with Exceptionalities 3

SPED 517 Instructional Methods for Students with Special Needs—Elementary 3

or

SPED 518 Instructional Methods for Students with Special Needs—Secondary 3

and one of the following:

SPED 521 Student Teaching in Special Education—Elementary 3

SPED 522 Student Teaching in Special Education—Secondary 3

SPED 523 Practicum in Special Education—Elementary 3

SPED 524 Practicum in Special Education—Secondary 3

Research (9 credits):

SPED 598 Research in Special Education 3

SPED 596 Designing Action Research in Special Education (Plan E) 3

SPED 597 Implementing and Documenting Action Research in Special Education (Plan E) 3

### **Post-Baccalaureate Certification in Special Education**

#### **Program Rationale:**

This non-degree program is designed for students who, after receiving an undergraduate degree that did not lead to teacher certification (i.e., psychology, sociology, general sciences, human services, mathematics, business, liberal arts, etc.), want to pursue coursework leading to teacher certification in special education. The curriculum for this program is aligned with the standards of the Council for Exceptional Children (CEC) and the certification requirements of the Connecticut State Department of Education.

#### **Program Learning Outcomes:**

Students in the program are expected to:

- demonstrate knowledge of foundational issues in special education and their impact on the field;
- demonstrate knowledge of the development and characteristics of learners, individual learning differences, and appropriate instructional strategies;
- promote effective learning environments and social interactions for individuals with disabilities;
- demonstrate knowledge of typical and atypical language development, cultural implications of language development, and alternative approaches to communication;
- demonstrate knowledge of instructional planning, assessment, and collaboration to address the learning differences of individuals with disabilities; and
- promote professional and ethical practices in the field of special education.

#### **Course and Capstone Requirements:**

Professional Requirements (13 credits)

30 hours of verified field experience with regular education students; 10 hours of verified field experience with exceptional learners.

EDTE 315 Principles of Learning: Elementary 4

SPED 501 Education of the Exceptional Learner 3

RDG 315 Comprehensive Reading Instruction I 3

MATH 113 Structure of Mathematics I: Number Systems 3

Specialization Requirements (31 credits)

SPED 511 Behavioral/Emotional Disorders 3

SPED 512 Learning Disabilities 3

SPED 513 Developmental Disabilities 3

SPED 514 Cognitive Behavior Management and Social Skills Strategies 3

SPED 515 Assessment in Special Education 3

SPED 516 Instructional Programming for Students with Exceptionalities 3

SPED 517 Instructional Methods for Students with Special Needs- Elementary 3

SPED 518 Instructional Methods for Students with Special Needs- Secondary 3

SPED 520 Student Teaching Seminar 1

SPED 521 Student Teaching in Special Education-Elementary (eight weeks) 3

SPED 522 Student Teaching in Special Education-Secondary (eight weeks) 3

Note: It is the student's responsibility to consult the advisor on a regular basis since program policies and procedures are subject to change.

Students must be sure to consider prerequisite requirements before registering for courses. Numerical listing does not necessarily indicate correct sequence.

In addition to maintaining a 3.00 overall average, students must maintain a B- (2.70) average in special education courses to be recommended for certification.

The School of Education and Professional Studies requires students to complete a departmental performance assessment in order to qualify for student teaching and to complete the Professional Program. In addition, students are expected to abide by the standards outlined in the current *Undergraduate Catalog* for maintaining good standing in the Professional Program.

Admission to the Professional Program is a prerequisite for SPED 515-522, EDTE 315, and RDG 315.

SPED 516, 517, and 518 may be counted toward a master's degree in special education.

## Teacher Education

### Faculty

Timothy Reagan (Chair, Barnard 226), Gail Cueto (Assistant to the Chair), Elizabeth Aaronsohn, Aram Ayalon, Ronnie Casella, Barbara Clark, Sally Drew, James French, Lynda George, Nancy Hoffman, Maxine Howell, Kurt Love, Daniel Mulcahy, Karen Riem, Susan Seider, Jacob Werblow (Dept. phone: 860-832-2415).

### Department Overview

The Department of Teacher Education is committed to the initial preparation and continuing professional education of those involved in early childhood, elementary and secondary education. Accordingly, the department offers programs leading to a Master of Science degree in the following areas: Early Childhood Education, Educational Studies: Policy or Secondary Education, and Elementary Education. The department offers Post-Baccalaureate Teaching Certificate programs in elementary and secondary education that are both part-time and full-time, and a 30-credit planned program of post-master's study in elementary education.

The department also offers a Master of Arts in Teaching (MAT): Teacher Education with specializations in Mathematics, Sciences, Spanish, and English (7-12) and in Technology and Engineering Education (K-12). Candidates with documented content knowledge complete 13 months of full-time study and, in addition to earning the MAT degree, will receive the necessary preparation to apply for state teacher certification. The program is designed to cross disciplines whenever possible, encouraging candidates to build content teaching expertise in their specializations and relate each discipline to the larger school curriculum. While the schedule of class offerings utilizes evenings and weekends wherever possible and may allow candidates to maintain some employment while completing the program, day-time field experiences and full-time student teaching in assigned public school settings are required elements of the program.

### Programs

**Master of Arts in Teaching (MAT): Teacher Education with Specializations in Mathematics (7-12), Sciences (7-12), Spanish (7-12), English (7-12), and Technology and Engineering Education (K-12)**

Contact: Nancy Hoffman (860-832-2425)

#### Program Rationale:

The MAT program is designed to offer high-quality, full-time, degree-bearing teacher preparation to career changers and traditional-age students who have demonstrated content mastery and wish to expedite their preparation to teach in the shortage areas of mathematics, sciences, English, Spanish, or technology and engineering education. The 13-month program begins in late May each year and uses a cohort model to enhance program completion rates and teacher retention as graduates enter teaching.

Note: Available science certifications include physics, chemistry, earth science, and biology.

#### Program Learning Outcomes:

Graduate students in the program will:

- possess strong knowledge of content, pedagogy, and students;
- use data, content knowledge, and pedagogical content knowledge to critically examine practice for the purpose of improving student learning;
- design and deliver instructional and assessment strategies that facilitate significant learning for all students;
- create a positive and supportive learning environment; and
- act ethically, respectfully, and responsibly in work with students, families, and colleagues.

### Admission Requirements:

The MAT program selectively admits no more than 25 students each year. Admitted students proceed as a cohort group to complete a structured sequence of courses, field experiences, and classroom-based action research.

To be considered for admission, applicants must demonstrate the knowledge, skills, and dispositions expected of teacher candidates. Initial assessments will be made through review of complete applications. Fully qualified candidates will be invited to participate in an admissions interview.

The following qualifications are required for consideration for admission:

- Completion of a bachelor's degree from a regionally accredited institution with a total undergraduate GPA of at least 2.70 and, if applicable, a CCSU undergraduate GPA of at least 2.70. GPA waivers will be considered for applicants who have less than a 2.70 GPA but meet all other admission requirements and have at least a 3.00 GPA in the last 60 hours of coursework. Applicants with a GPA of at least 3.00 in an earned master's degree whose undergraduate GPA does not meet minimum standards will be considered for admission if the GPA in the certification content major is at least 3.00.
- Completion of a major in the content area that meets state certification standards or, in technology and engineering education, presentation of a portfolio documenting that content preparation requirements have been met. Candidates may be required to complete specific prerequisite courses prior to admission.
- Completion of general education coursework that meets current Connecticut State Department of Education (CSDE) standards for certification (currently 39 credits distributed across 5 of 6 areas and including a 3-credit U.S. history survey course). Applicants will be considered for admission if there are fewer than 12 credits of general education outstanding. These standards must be met prior to graduation.
- Scores on Praxis I PPST that meet the current CSDE passing standard or an SAT waiver letter from Connecticut State Department of Education.
- Scores on required state content knowledge examinations in the certification area:

In mathematics, sciences, English, and technology and engineering education, Praxis II scores that meet current CSDE passing standards are required.

In Spanish, ACTFL Oral Proficiency Interview and Writing Proficiency ratings that meet current CSDE passing standards are required. Preference will be given to applicants who score at the Advanced Low level or higher. If the ACTFL scores are more than one year old at the time the application is complete, a confirmatory interview with department faculty will be required.

To document their qualifications, applicants will submit School of Graduate Studies and program applications that include the following materials:

- two sets of official undergraduate and graduate transcripts from all institutions attended except CCSU;
- acceptable scores on Praxis I or SAT waiver letter;
- acceptable scores on the required test of content knowledge;
- a resume documenting educational and work experiences;
- two references that assess the student's ability to work with children and other adults on the reference form provided (signed originals). One reference must be from someone, preferably an education professional, who has observed the student's work with children in the age range the student wishes to teach and can knowledgeably assess potential as a teacher. The second reference should be from someone who has observed and can knowledgeably assess ability to work with other adults. Personal references are not accepted. Preference will be given to confidential references.
- a word-processed essay demonstrating a command of the English language and explaining the experiences and thinking that have led the student to choose (a) a teaching career and (b) this particular certification program. Applicants to the Spanish specialization must submit a second word-processed essay in Spanish, explaining why they believe they would be an effective Spanish teacher.
- evidence of the ability to work with diverse groups of students in an educational setting and an understanding of teaching as a work environment demonstrated through reflection on and documentation of no less than 60 hours of high-quality experience with students at the level the student wishes to teach, including recent experience in a public school setting. See the form "Statement of Experience with Children and Schools" which delineates expectations for this experience.
- evidence of ability to write at graduate school level, demonstrated through submitted essays and either a GRE writing score or a CCSU sit-down writing examination which may be conducted in conjunction with an interview.

- current Connecticut criminal background clearance.

### Course and Capstone Requirements

(47 credits):

All MAT programs include core, specialization, and capstone components.

Core (26 credits):

All MAT candidates complete the following courses

MAT 510 Research on Teaching Diverse Learners 5

MAT 511 Introduction to Special Education 1

MAT 520 Design and Delivery of Instruction 4

MAT 530 Meeting the Needs of Special Learners in the Classroom 3

MAT 531 Literacy and Language Issues in the Classroom 3

MAT 534 Creating Productive Learning Environments 3

MAT 541 Internship Seminar 1

MAT 542 Assessment of Student Learning 3

MAT 551 Perspectives on Educational Policy and Practice 3

Specialization (15 credits):

Each MAT candidate completes one of the following specialization areas.

#### Mathematics

MAT 529 Content Pedagogy in Mathematics 1 3

MAT 539 Content Pedagogy in Mathematics 2 3

MAT 533 Field Experience in Mathematics 3

MAT 540 Internship in Mathematics 6

#### Spanish

MAT 529 Content Pedagogy in Spanish 1 3

MAT 539 Content Pedagogy in Spanish 2 3

MAT 533 Field Experience in Spanish 3

MAT 540 Internship in Spanish 6

#### Sciences

MAT 529 Content Pedagogy in Science 1 3

MAT 539 Content Pedagogy in Science 2 3



MAT 533 Field Experience in Science 3

MAT 540 Internship in Science 6

English

MAT 529 Content Pedagogy in English 1 3

MAT 539 Content Pedagogy in English 2 3

MAT 533 Field Experience in English 3

MAT 540 Internship in English 6

Technology and Engineering Education

MAT 529 Content Pedagogy in Technology Education 1 3

MAT 539 Content Pedagogy in Technology Education 2 3

MAT 533 Field Experience in Technology Education 3

MAT 540 Internship in Technology Education 6

Capstone (6 credits):

All students will be Plan E. All MAT candidates complete the following capstone courses.

MAT 532 Research I: Reading and Designing Educational Research 3

MAT 550 Research II: Conducting and Reporting Action Research 3

### **Master of Science in Early Childhood Education**

Contact: Gail Cueto (860-832-2434)

#### **Program Rationale:**

This program is designed for early childhood educators wishing to pursue graduate study which will extend their knowledge of the theory and practice of early childhood education. The program offerings enable professionals working in the field of early childhood to increase knowledge and skills related to the most effective research-based strategies in teaching, learning, and assessment. Students will have opportunities to analyze, extend, and increase the relevance and responsiveness of their current work with children, particularly as it relates to development and diversity issues.

The program consists of a number of courses in the introductory block, curriculum and instruction block, and specialization block. It also provides the opportunity to develop and implement research skills during the final two semesters of the capstone requirement, during which candidates are enrolled in courses that facilitate the planning and conducting of an action research project in the school or early childhood classroom and/or professional teaching setting in which s/he is employed. An undergraduate degree in, or related to, early childhood education is required for admission to the program.

#### **Program Learning Outcomes:**

Students are expected to:

- demonstrate how to implement curriculum that includes elements that are developmentally appropriate, multicultural, multimedia, integrated, and suitable for inclusive and diverse settings;
- demonstrate effective management and assessment strategies;
- demonstrate improvement in the quality of their teaching skills by self-reflecting and analyzing teaching practices through data collection

and analysis;

- demonstrate best practice teaching as agents of change by designing and conducting action research that is grounded in professional literature and can have a positive impact on early childhood settings and communities;
- assess a variety of early childhood programs in light of their students' developmental stages and cultural and linguistic backgrounds;
- demonstrate knowledge and understanding of the course material in the introductory block courses that incorporate and highlight insights from the study of diversity in schools, socio-cultural and historical issues influencing schools, and research in education;
- demonstrate knowledge of and value for a variety of structures in which young children are reared while demonstrating the ability to build effective reciprocal relationships with parents; and
- identify models for effective school-community partnerships that assist and empower families.

## Course and Capstone Requirements

### (33 credits):

Core Courses (9 credits)

EDTE 502 Focus on Diversity in Education 3

EDF 516 School and Society 3

EDTE 598 Introduction to Research in Education 3

Professional Courses (9 credits)

EDEC 551 Programs and Curricula in Early Childhood Education 3

EDEC 552 Programs and Curricula in Early Childhood Education II 3

EDEC 554 Observation and Assessment in Early Childhood Education 3

Specializations (9 credits)

Choose from one of the following specializations:

a) Leadership/Directorship:

EDL 513 Supervision 3

EDEC 561 Administration in Early Childhood Education 3

EDEC 553 Family, School and Community Partnerships in Early Childhood Education) 3

b) Working with Families:

EDEC 553 Family, School and Community Partnerships in Early Childhood Education 3

RDG 586 Literacy Instruction for Diverse Populations I 3

Related course approved in advance by advisor (SPED 510 recommended)

c) Diversity in Education:

EDF 510 The Social, Political, and Cultural Context of Urban Schools 3

EDEL 509 Education and the Development of Cultural Understanding 3

## EDEL 485 Creating Classroom Community (K-8) 3

## Capstone Requirement (6 credits)

Special Project, Plan E: EDEL 591 and EDEL 592 (all students are required to enroll in Plan E unless they are exempted for Plan A, the thesis option). Capstone requires the completion of all core and professional courses and at least 6 credits in specialization area. Students are strongly discouraged from taking any other coursework concurrent with EDEL 591. Under no circumstances may students take a course concurrently with EDEL 592.

## Program Sequence:

Students should complete the core requirements before enrolling in the professional and specialization courses. Courses in the professional and specialization areas may be taken concurrently with courses from the core with permission of advisor. All core and professional courses, as well as 6 credits in the specialization block, must be completed prior to taking EDEL 591.

In the case of a student who is not employed in a professional setting with children during the capstone semesters, the student may opt to fulfill Plan A, Thesis Capstone (3 credits). In this case the student must take an additional course, with advisor counsel, to complete the 33 credits in the planned program. The student must also find a faculty member in the department to supervise the thesis work.

Note: A maximum of 6 credits at the 400 level may be taken with the approval of the graduate advisor.

**Master of Science in Educational Studies: Policy and Secondary Education Strands**

Contact: Timothy Reagan (860-832-2574)

**Strand I: Educational Studies with Discipline Specific Specialization****Strand II: Secondary Education****Program Rationale:**

This program is designed to offer educators working in the field of education the opportunity to pursue graduate studies in Educational Studies. There are two strands of study. Strand I: Educational Studies with Discipline Specific Specialization. Strand II: Secondary Education. Strand I, Educational Studies with Discipline Specific Specialization, is designed to increase student knowledge of contemporary education issues, theories, and politics. Strand II, Secondary Education, is designed to increase knowledge and skills related to curriculum and instruction in secondary schools.

The capstone for Strand I, Educational Studies with Discipline Specific Specialization entails the following. Students may choose between two possible capstone experiences: writing a thesis, or completing a Comprehensive Examination. Students who select the thesis also take ED 599 (3 credits). Those who choose the Comprehensive Examination take one additional 500-level EDF course (3 credits).

The capstone for Strand II, Secondary Education is comprised of a capstone block in which the student earns 3 credits for EDSC 586. The capstone prerequisite is completion of all Block 1 courses and at least 12 credits in Blocks 2 and 3.

**Program Learning Outcomes for Educational Studies with Discipline Specific Specialization:**

Students will:

- use social, cultural, political, and historical perspectives to critically analyze and assess policy and school practices;
- demonstrate growth in professional self-knowledge by engaging in reflective inquiry;
- demonstrate research skills through the collection and interpretation of literature-based studies; and
- demonstrate knowledge of how issues of diversity impact schools.

**Program Learning Outcomes for Secondary Education:**

Students are expected to:

- use social, cultural, political, and historical perspectives to critically analyze and assess policy and school practices;

- extend knowledge and understanding of the subjects that they teach, the theories, curriculum and instruction, models and procedures for assessment of learning, and environments for diverse learners;
- demonstrate growth in professional self-knowledge through engaging in reflective inquiry;
- demonstrate research skills through the collection and interpretation of literature-based studies; and
- demonstrate knowledge of educational programs that promote learning for a diverse student body.

**Course and Capstone Requirements for Educational Studies with Discipline Specific Specialization:**

30 credits total

- 15 credits chosen from core EDF courses
- 9 credits of Specialization Area courses
- 3 credits EDTE 598
- 3 credits ED 599 or EDF 500-level course (depending on Capstone choice).

Core courses include:

EDF 500 Contemporary Educational Issues

EDF 516 School and Society

EDF 524 Foundations of Contemporary Theories of Curriculum

EDF 525 History of American Education

EDF 526 Philosophy of Education

EDF 528 Comparative and International Education

EDF 535 Special Topics in Educational Foundations

EDF 538 The Politics of Education

EDF 583 Sociological Foundations of Education

Capstone for Strand I, Educational Studies with Discipline Specific Specialization:

Students may choose between two possible capstone experiences: writing a thesis, or completing a Comprehensive Examination. Students who select the thesis also take ED 599 (3 credits). Those who choose the Comprehensive Examination take one additional 500-level EDF course (3 credits).

Plan A: Thesis and Satisfactory Completion of ED 599

Plan B: Comprehensive Examination and one additional 500-level EDF course

**Strand II: Secondary Curriculum, Foundational and Instructional Issues:**

30 credits total

Introductory Block 1 (9 credits):

EDTE 502 Focus on Diversity in Education

EDF 516 School and Society

EDTE 598 Research in Educational Settings

## Curriculum and Instruction

## Block 2 (9 credits):

EDSC 505 Innovations in Secondary Education

EDSC 556 Instructional Theory and Practice

EDF 524 Foundations of Contemporary Theories of Curriculum

## Specialization Block 3 (9 credits):

Choose from the following options:

a) Foundations: EDF 583, EDF 528, EDF 525, EDF 538, EDF 500

b) Subject areas: Choose 3 courses in the subject area in which certified or in literacy.

## Capstone Block (3 credits):

EDSC 586 (all students are Plan E).

Capstone prerequisite is completion of all Block 1 courses and at least 12 credits in Blocks 2 and 3.

Program Sequence: Students are encouraged to complete the Introductory Block 1 before taking courses in the Curriculum and Instruction and Specialization Blocks 2 and 3. Courses in the Curriculum and Instruction and Specialization Blocks may be taken concurrently with courses from the Introductory Block with permission of advisor.

Note: No more than 9 credits at the 400 level, as approved by the graduate advisor, may be counted toward the graduate planned program of study.

**Master of Science in Elementary Education**

Contact: Gail Cueto (860-832-2434)

**Program Rationale:**

This program is designed for elementary education and K-12 certified teachers wishing to pursue graduate study which extends their knowledge of the theory and practice of elementary education. The program offerings enable working teachers to increase knowledge and skills related to the most effective research-based strategies in teaching, learning, and assessment. Students will have opportunities to analyze, extend, and increase the relevance and responsiveness of their current work in classrooms, particularly as it relates to leadership and diversity issues.

The program consists of a number of courses in the introductory block, curriculum and instruction block, and specialization block. It also provides the opportunity to develop and implement research skills in the final two semesters of the capstone requirement, during which candidates are enrolled in courses that facilitate the planning and conducting of an action research project in the school classroom and/or professional teaching setting in which they are employed. Teacher certification in either elementary, early childhood, middle-level education, or an NK-12 special area is required for admission to the program.

**Program Learning Outcomes:**

Students are expected to:

- demonstrate and implement varied instructional, assessment, management, and technological strategies that facilitate learning for diverse students;
- demonstrate improvement in the quality of students' teaching skills by self-reflecting and analyzing teaching practices through data

collection and analysis;

- demonstrate best practice teaching as agents of change by designing and conducting action research grounded in professional literature to have an impact on schools and their surrounding communities;
- assess a variety of teaching strategies in light of research-based practices around developmental stages and cultural/linguistic backgrounds; and
- demonstrate knowledge and understanding of the course material in the introductory block courses that incorporate and highlight insights from the study of diversity in schools, socio-cultural and historical issues influencing schools, and research in education.

### Course and Capstone Requirements

#### (33 credits):

Core Courses (9 credits)

EDTE 502 Focus on Diversity in Education 3

EDF 516 School and Society 3

EDTE 598 Introduction to Research in Education 3

Professional Courses (9 credits)

EDEL 508 Current Trends in Elementary Education 3

EDEL 512 Assessment of Learning 3

EDEL 529 Analysis of Teaching 3

Specializations (9 credits)

Choose from one of the following specializations:

1. Diversity in Education: Three from

EDEL 509 Education and the Development of Cultural Understandings 3

EDEL 485 Creating Classroom Community (K-8) 3

RDG 586 Literacy Instruction for Diverse Populations I 3

LING 497 Second Language Acquisition 3

2. Working with Families: Three from

SPED 580 Collaborative Process in Special Education 3

SPED 510 Inclusive Education 3

or other SPED course approved by advisor

EDEC 553 Family, School and Community Partnerships in Early Childhood Education 3

RDG 586 Literacy Instruction for Diverse Populations I 3

EDEL 485 Creating Classroom Community (K-8) 3

3. Subject Area Curriculum: Three from

FA 490 Integrating the Fine Arts for the Young Learner 3

SCI 555 Teaching Biological Sciences in the Elementary School 3

MATH 506 Teaching Number Concepts in the Elementary Grades 3 or

MATH 507 Teaching Geometry and Measurement in the Elementary Grades 3 or

MATH 508 Teaching Probability and Statistics in the Elementary Grades 3 or

MATH 509 Teaching Algebraic Thinking in the Elementary Grades 3

EDEL 537 Social Studies Methods (1-6) 3

RDG course (500 level)

EDEL 485 Creating Classroom Community (K-8) 3

4. Literacy: Three from

500-level RDG courses

TESOL courses (LING 497 and RDG 586 are recommended.)

Capstone Requirement (6 credits)

Special Project, Plan E: EDEL 591 and EDEL 592 (all students are required to enroll in Plan E unless they are exempted for Plan A, the thesis option). Capstone requires the completion of all core and professional courses and at least 6 credits in specialization area. Students are strongly discouraged from taking any other coursework concurrent with EDEL 591. Under no circumstances may students take a course concurrently with EDEL 592.

Program Sequence:

Students should complete the core requirements before enrolling in the professional and specialization courses. Courses in the professional and specialization areas may be taken concurrently with courses from the core with permission of advisor. All core and professional courses, as well as 6 credits in the specialization block, must be completed prior to taking EDEL 591.

In the case of a student who is not employed in a professional setting with children during the capstone semesters, the student may opt to fulfill Plan A, Thesis Capstone (3 credits). In this case, the student must take an additional course, with advisor counsel, to complete the 33 credits in the planned program. The student must also find a faculty member in the department to supervise the thesis work.

Note: A maximum of six credits in 400-level courses may be taken, with the approval of the graduate advisor.

### **Post-Master's Study**

A 30-credit planned program of post-master's study is available in elementary education. Programs are planned with a faculty advisor on an individual basis to meet the professional development aspirations of the student.

### **Post-Baccalaureate Teacher Certification Programs**

Students who already hold a bachelor's degree may pursue teacher certification through our post-baccalaureate programs. These programs prepare students for teacher certification and do not result in a master's degree. Additional policies governing these certification programs are found in the Undergraduate Catalog. Students can seek certification in the following fields.

- Elementary Education
- Secondary Education in the following subjects: Biology, Chemistry, Earth Sciences, English, French, General Science, German, History, Italian, Mathematics, Physics, Social Studies and Spanish

- NK-12 Education in the following subjects: Art, Music, Physical Education, TESOL, Technology and Engineering Education

Information on admission to the post-baccalaureate programs can be found on the School of Education and Professional Studies page, [linked here](#).

Students may enroll part time or full time, extended over a number of years in any certification field. Each student will, together with an advisor, submit a planned program of graduate study which would satisfy all certification requirements. Each planned program is individualized, based on the student's previous college course work, CCSU program requirements, and state certification requirements.



## Conceptual Framework

The conceptual framework is the guiding document that shapes and informs both the programs and the philosophy of the School of Education and Professional Studies. It also aligns closely with the professional standards that define program quality. Directly linked to our curriculum, the conceptual framework provides a basis for rigorous program assessment and consequently, for improvement of program outcomes.

The unifying theme for the conceptual framework is "Preparing Professionals for Service in Our Communities." The conceptual framework is comprised of the following themes and connected elements:

1. The education professional as active learner
  - a. possesses strong content knowledge in the arts and sciences;
  - b. communicates in multiple forms to diverse audiences;
  - c. possesses pedagogical knowledge for content to be taught; and
  - d. engages in habits of critical thinking and problem solving.
2. The education professional as facilitator of learning for all students
  - a. applies knowledge of human development across the life span (including physical, cognitive, social, and emotional growth);
  - b. respects and values all learners;
  - c. addresses the diversity of learning environments; and
  - d. understands the learning process and applies instructional and assessment strategies and technologies to facilitate learning.
3. The education professional as reflective and collaborative practitioner
  - a. makes informed and ethical decisions;
  - b. accepts responsibility for student learning;
  - c. engages in opportunities for professional growth; and
  - d. collaborates with colleagues, families, and the school community.

## Connecticut Certification Procedures

The Connecticut State Board of Education is responsible for issuing teaching certificates required to teach in Connecticut public schools. Certification regulations are subject to change and the Connecticut State Board of Education requires students to meet the certification regulations in effect at the time they apply for certification. Therefore students are urged to apply for certification as soon as they complete their program and required certification tests.

The assistant dean of Education and Professional Studies is the CCSU Teacher Certification Officer. Questions concerning certification that cannot be answered by a department may be addressed to the assistant dean.

The instructions for downloading and completing the application for Connecticut certification can be found outside Barnard Hall 203. The completed forms are returned to the same office. While the assistant dean of the School of Education and Professional Studies recommends students completing CCSU programs for Connecticut certification, it is the State of Connecticut's Bureau of Certification that makes the final determination about granting a certification.

## Out-of-State Certification Procedures for CCSU Graduates

Most states have interstate agreements with the Connecticut State Department of Education to accept Connecticut teacher preparation programs in lieu of their own approved teacher preparation programs. Other requirements will need to be met for certification outside of Connecticut. Any state application that requires verification of completion of an Approved Program should be referred to the assistant dean of the School of Education and Professional Studies. The assistant dean will complete the forms and return them.

Teacher candidates who do not plan to teach in Connecticut immediately should still obtain Connecticut certification so they are covered by reciprocity agreements with other states.

## Post-Baccalaureate Programs for Teacher Certification

Students who already hold a bachelor's degree may pursue teacher certification through our Post-Baccalaureate Certification and the Master's of Arts in Teaching programs. Post-baccalaureate programs do not result in master's degrees. Students can seek certification in the following fields:

- Elementary Education;
- Secondary Education in the following subjects: biology, chemistry, earth sciences, English, French, general science, German, history/social studies, Italian, mathematics, physics, and Spanish;
- Pre-Kindergarten/Kindergarten through grade 12 (PK/K-12) Education in the following subjects: art, music, physical education, special education, TESOL, and technology and engineering education; and
- Master of Arts in Teaching—see the Department of Teacher Education section of this catalog for information.

Admission to the Post-Baccalaureate Certification programs involves two distinct application processes. First, students must apply to the School of Graduate Studies through the CCSU Graduate Admissions Office. Students are admitted to the School of Graduate Studies at the pre-certification level and begin the program at this level. Once students have begun the program, they then apply for admission to the Professional Program for Teacher Certification through the Office of the Dean of Education and Professional Studies. Students admitted to the Professional Program for Teacher Certification are designated teacher candidates. Registration for professional-level education courses is restricted to teacher candidates admitted to the Professional Program for Teacher Certification.

### Professional Program Admission and Planned Program

The Professional Program for Teacher Certification applications are located outside of Barnard Hall, Room 203. Applications to the Professional Program for Teacher Certification are processed twice a year. Submission deadlines are September 10 and February 10. The Professional Program Application has complete instructions about requirements for each program. Criteria for admission to the Professional Program include admission to a post-baccalaureate graduate program, current enrollment in classes at CCSU, an overall undergraduate Grade Point Average (GPA) from all institutions attended of 2.70 GPA, passing scores or a waiver for the Praxis I tests, an additional complete set of official transcripts (transcripts submitted to Graduate Admissions cannot be used), letters of reference addressing the students' potential as teachers, an essay, and other program-specific materials listed on the application. Students also must participate in a Professional Program interview.

In addition to the overall undergraduate GPA, several programs have GPA requirements in their major for admission to the Professional Program. Art Education, English, History and Social Studies, and Physical Education, require a 3.00 GPA in the content area, while Mathematics requires a 2.70 GPA in the major.

The application review and admission process takes from 6 to 8 weeks and is completed before pre-registration for the following semester.

The Connecticut State Department of Education will issue a Praxis I waiver based on specific SAT, ACT, PAA, or GRE scores. Testing and waiver requirements are subject to change by the State of Connecticut without prior notification. Information about the waiver application and criteria for receiving a Praxis I waiver are available at Henry Barnard 203 or from the Connecticut State Department of Education at <http://www.ctcert.org/>. Information on registering for the Praxis tests are also available at Henry Barnard 203 or from Educational Testing Service at [www.ets.org](http://www.ets.org). Students should allow 10–12 weeks to receive Praxis I scores or waivers.

**Program Planning.** Post-baccalaureate students must meet all course and laboratory requirements specified in particular teacher education programs. Students in post-baccalaureate certification programs also are required to satisfy certain general education and subject matter major requirements, regardless of their bachelor's degree areas.

A transcript evaluation is completed for each student to identify the specific courses that must be completed for certification. An official "Planned Program" is prepared for the student based on this evaluation as part of the Graduate Studies admission process.

- Connecticut certification regulations are subject to change without notice to teacher candidates. These changes can impact the official Planned Program. Teacher candidates must meet the certification regulations in place at the time they apply to the Connecticut State Department of Education for certification, regardless of what their Planned Programs required. Advisors work with teacher candidates to adjust their planned programs to reflect changes in regulations. It is essential that teacher candidates regularly review their Planned Programs with their advisors so that changes in regulations can be incorporated into the official Planned Programs. Teacher candidates are responsible for insuring that their Planned Programs meet all certification requirements that will be in effect at the time they plan to complete their certification programs.
- All post-baccalaureate certification students, regardless of program, must have the following general education courses:
  - PSY 236 or a developmental or life span psychology course;
  - HIST 161 or HIST 162 or a survey of American history course; and
  - Coursework in four of the following areas: sciences, mathematics, English, fine arts, foreign language.

These are requirements of the State of Connecticut and cannot be waived by advisors or the University. A course in developmental or life span psychology is a prerequisite for courses in the Professional Program.

- The Planned Program for all teacher education candidates, except for those in Special Education, must include the following Professional Program courses: SPED 315 (or 501), EDF 415, EDTE 314, 315, or 316, methods courses, student teaching, a course in educational technology, and other courses as required by the teacher candidate's specific program. These courses are restricted to teacher candidates admitted to the Professional Program. Special Education programs have different requirements listed under the special education department.
- Once the Planned Program has been prepared, students should meet with their designated advisors to develop sequence and schedule plans to complete the programs in a timely manner.
- Note: Most 400-level courses and all 300-level and below courses that apply to post-baccalaureate teacher certification programs are found in the *Undergraduate Catalog*.

**Field Experiences.** Post-baccalaureate certification programs incorporate school-based field experiences each semester to accompany campus-based classes. The final semester of the program is full-time, semester-long student teaching. These experiences provide teacher candidates the opportunities to apply and develop their pedagogical knowledge. By their very nature, these experiences are completed during the school day and teacher candidates are responsible for arranging to attend and complete these experiences at their assigned schools.

CCSU does not accept prior teaching experience or current employment in the schools for program field experiences or student teaching.

### Fingerprint-Based Background Check

Effective July 1, 2010, Connecticut law requires all students in teacher or educator certification programs to undergo state and national criminal history background checks before participating in school-based field experiences. The procedures for obtaining the background checks and the length of time they are valid is established by the State Department of Education and the local RESC, and cannot be changed. Students are responsible for the cost of the background check and will be provided with the necessary consent forms and other documents needed to conduct it. As part of the background check, students need to be fingerprinted. Students who fail to pass the background check may be unable to complete their chosen degree or certification program at Central Connecticut State University. The University is not responsible for a student's inability to complete their chosen degree or certification program.

Post Baccalaureate students who are currently employed in the Public Schools but whose fingerprinting is not current or was

not completed through CREC may be required to complete the background check again before participating in field experiences in the schools. Current school employees with background checks in place but who are placed in field experiences outside of the district where they are employed may also be required to complete a new background check.

## Professional Program for Teacher Certification Policies

All policies of the Professional Program for Teacher Certification apply to all students admitted to the Professional Program, regardless of the program level of the student. A more complete description of policies can be found in the *Undergraduate Catalog*.

**Appeals Process for Professional Program Students.** Denial of admission to the professional program for teacher certification, removal from the professional program, denial of approval to participate in field experiences or student teaching, or removal from field experiences or student teaching are academic decisions that reflect careful and deliberate judgment by faculty. Factors that are considered in such decisions include, but are not limited to, the adequate development of the student, professional program requirements and performance standards, the Connecticut Code of Professional Responsibility for Teachers, professional performance standards and attributes mandated by the Connecticut State Department of Education, National Council for the Accreditation of Teacher Education standards, and the professional program's unique responsibilities to children and schools.

The University recognizes that on occasions there may be an error or palpable injustice in the determination of denial of admission to the professional program, removal from the professional program, denial of approval to participate in field experiences or student teaching, or removal from field experiences or student teaching. A student who believes that an error or a palpable injustice has occurred in procedures in arriving at a decision may pursue an appeal. A copy of the full appeals policy may be obtained from the office of the dean of the School of Education and Professional Studies. Please note, a particular decision cannot be appealed under multiple decision types covered by the appeals policies (i.e. admission to the professional program, removal from the professional program, denial of approval to participate in field experiences or student teaching, or removal from field experiences or student teaching).

**Appeal for Admission GPA Waiver.** A student whose undergraduate cumulative GPA is below 2.70 may appeal for a waiver of the admission GPA requirements. Students who have been denied admission because of the GPA requirement may write a letter of appeal to the dean of the School of Education and Professional Studies for a waiver of the GPA requirement presenting compelling evidence of both of the following:

- Demonstrated academic ability in recent coursework showing an exemplary pattern of performance different from prior undergraduate coursework; and
- Intervening life experience, e.g., working with children or in a profession/vocation that has contributed to the applicant's growth and maturity as a prospective teacher.

The appeal will be reviewed by the School of Education and Professional Studies appeals committee. The committee will make a recommendation to the dean, who will make the final decision.

Students who are denied admission to the professional program for reasons other than GPA may contact the assistant dean to discuss issues concerning the application.

**Restricted Professional Course Work.** Most education courses offered in the teacher education programs require admission to the Professional Program for Teacher Certification. Students who have not been admitted to a teacher education program are not allowed to enroll in restricted courses.

**Repeat Policy.** An exception to the [course repeat policy](#) exists in the School of Education and Professional Studies which requires that departmental permission be granted to repeat any professional program course, including courses from which the student has withdrawn. Teacher candidates must submit the request for permission to repeat any of these courses to the chair of Teacher Education before adding the course to their schedule for a second time. Once teacher candidates have the chair's approval, the School of Education and Professional Studies will utilize the most recent CCSU GPA in its calculations of the 2.70 minimum total GPA requirement for continuation in the professional program.

**Retention Criteria.** Once admitted to a particular teacher education program, a post-baccalaureate student is expected to maintain:

- a 3.00 GPA overall and in the Professional Program;
- appropriate or professional behavior, attitudes, attributes, and responses in various contexts in which teachers and teacher candidates serve;
- acceptable performance during field experiences or Student Teaching;
- acceptable performance on performance assessments;
- adherence to the Connecticut Code of Professional Responsibility for Teachers;
- confidentiality of all information concerning colleagues and students obtained during the educational process; and
- integrity and honesty in written and verbal communications, documentation, and coursework at all times.





## Regulatory Changes and the Professional Program

State of Connecticut certification regulations require that certification applicants meet the regulations in place at the time the certification application is submitted to the Connecticut State Department of Education, regardless of when the teacher candidate completed the certification program. State regulations, including course and testing requirements, may change at any time. Teacher candidates enrolled in the Professional Program at the time of the regulatory change will be notified of any changes so their curriculum can be adjusted to address the changes. Teacher candidates are responsible for insuring that their Planned Programs are adjusted to meet all certification requirements that will be in effect at the time they plan to complete their certification programs. CCSU does not notify alumni of changes in regulations.

Teacher candidates and alumni may apply for certification at any time after completing their certification program. Teacher candidates are urged to apply for Connecticut certification during their last semester of coursework or immediately upon completion of the program to avoid possibly being required to meet additional certification requirements. Teacher candidates who do not plan to teach in Connecticut immediately should still obtain Connecticut certification so they are covered by reciprocity agreements with other states.

## Title II Reporting

Federal Title II of the Higher Education Act of 1998 mandates that institutions of higher education that have teacher preparation programs must report the pass rates on certification tests for their program completers. Any institution that has been identified as "low performing" by the State must also report this designation to the public.

CCSU defines "program completer" as a student who has met the academic requirements of the Professional Program for Teacher Certification. The students complete a rigorous program of study that is widely recognized for its quality and is nationally accredited by the National Council for Accreditation of Teacher Education (NCATE). Students complete subject/content area requirements equivalent to non-education majors in the same fields. In addition, students receive a thorough grounding in pedagogy and extensive school-based field experiences to prepare them to be educational leaders in the learning communities of Connecticut. There were 268 program completers identified in the 2008-09 cohort. They took a total of 935 individual Praxis tests, passing 923 of those tests. This yielded a summary institutional passing rate of 95%. Statewide, many institutions guarantee a 100% pass rate by requiring Praxis II tests in addition to academic requirements for program completion. This practice yields a statewide summary pass rate of 98%.

## School of Education and Professional Studies Centers

**The Center for Multicultural Research and Education** (Barnard Hall 231) provides a variety of professional development programs and opportunities for K-12 and university faculty to support development of education that is multicultural. The Center also disseminates research information, articles, and curriculum materials and supports efforts to recruit students of diverse cultural backgrounds to the teacher preparation and professional programs.

**The Center for Innovation in Teaching and Technology** (CITT), located in Barnard Hall 302-308, provides Educational Technology graduate and undergraduate students with opportunities to design instructional interactive outcomes through state-of-the-art technology such as multi-media, print, video, animation, audio, and web-based systems.

**The Literacy Center of Central Connecticut State University** (Barnard Hall 219) provides free one-to-one tutoring services for students in grades one through eight who are experiencing difficulty with reading and writing. Students are taught by certified and experienced teachers, who are completing the required clinical experience for Reading Specialist endorsement in the state of Connecticut. Students benefit from intensive, individualized, and ongoing assessment to determine their specific reading and/or writing needs. Students also benefit from the use of innovative instructional practices that promote reading and writing. The Center coordinates the tutoring program during the fall and spring semesters, and occasionally during the summer term. Faculty of the Department of Reading and Language Arts direct the operations of the Center and closely supervise the teachers working with students throughout their clinical practice. For information, contact Dr. Jesse Turner, director of the Literacy Center, at 860-832-2178 or email [turnerj@ccsu.edu](mailto:turnerj@ccsu.edu). Clinical faculty include Dr. Elene S. Demos (860-832-2183 / [demos@ccsu.edu](mailto:demos@ccsu.edu)) and Dr. Lynda M. Valerie (860-832-2176 / [valerie\\_lym@ccsu.edu](mailto:valerie_lym@ccsu.edu)).

## Office of Field Experiences

### Student Teaching

Holly Hollander, Director (860-832-2417)

All students in elementary, all level, secondary, and special education programs who are seeking initial certification by the State of Connecticut are required to complete full-time student teaching. Prospective student teachers must complete a student teaching application form which is available on the Office of Field Experiences website. The application and its related materials must be submitted by the given dates. To student teach in the fall semester, applications must be submitted in the preceding spring semester, no later than February 15, for all level student teachers and March 1 for elementary and secondary student teachers. Applications to student teach in the spring semester must be submitted in the preceding fall semester, no later than September 15, for all level student teachers and October 1 for elementary and secondary student teachers. Students must include their letters of acceptance to the Professional Program of the School of Education and Professional Studies with their applications for student teaching. Please refer to the website at <http://www.ccsu.edu/ofe> for information on additional materials that must accompany application. Applications are accepted by appointment only.

Student teaching courses (EDEL 430 and EDSC 414, 415, 417, 419, 420, 421, 428, 429 and 435) may not be taken or repeated without permission of the Director of Field Experiences, as well as the chairs of the student's major department and teacher education. Students may not take any additional courses while student teaching except for the related seminar.

## School of Engineering and Technology

**Zdzislaw B. Kremens, *Dean***

**Olusegun Odesina, *Associate to the Dean and Graduate Coordinator***

**Nancy Krackowsky, *Associate Dean***

**Phone: 860-832-1800**

**Fax: 860-832-1804**

**Web address: <http://www.set.ccsu.edu>**

The School of Engineering and Technology provides a broad range of educational and career enhancement opportunities in engineering and technological disciplines through a balance of theory and application that enhances individual's contributions to the global marketplace. Our students develop the knowledge and confidence needed to meet today's modern challenges in their chosen professional careers.

The School of Engineering and Technology has maintained state-of-the-art technical laboratories. Students are provided the opportunity to develop an understanding of tools, materials and instrumentation related to their technical specializations.

### GRADUATE PROGRAMS IN THE SCHOOL OF ENGINEERING AND TECHNOLOGY

[Biomolecular Sciences](#): M.A.

[Construction Management](#): M.S., OCP

[Engineering Technology](#): M.S.

[Technology and Engineering Education](#): M.S., Teacher Certification

[Technology Management](#): M.S., OCP

## Biomolecular Sciences

### Faculty

James P. Mulrooney (Chair, Copernicus 204); Michael A. Davis, Betsy Dobbs-McAuliffe, Barry Hoopengardner, Martin A. Kapper, Thomas R. King, Kathy A. Martin-Troy, Cheryl L. Watson (Dept. office: Copernicus Rm 204; Dept. phone: 860-832-3560)

### Department Overview

The Department of Biomolecular Sciences offers instruction in molecular biology, cell biology, genetics, and physiology that is strongly integrated with the theory and practice of molecular biological research. The department offers an M.A. in Biomolecular Sciences degree and an Official Certificate Program in Cell and Molecular Biology, and also contributes to the interdisciplinary Post-Baccalaureate Certificate in Pre-Health Studies program.

Located in Copernicus Hall, the Department of Biomolecular Sciences includes a wide range of modern research equipment in laboratories designed both for class instruction and for independent student research. Special facilities include a protein purification and analysis facility, a cell culture facility, a molecular genetics research laboratory, a laboratory animal care suite, and several computer laboratories. Student-centered biomolecular research activity is also promoted, fostered, and supported by the Biotechnology Institute at CCSU, an interdisciplinary organization (housed in the Department of Biomolecular Sciences) that is dedicated to developing graduates with excellent research skills.

### Admission Requirements

The application process begins with the submission of an application for admission to graduate study, as well as official transcripts from all institutions where graduate or undergraduate work has been done, to the Graduate Admissions Office (Davidson 115; 860-832-2350). Graduate Record Examination (GRE) scores for the aptitude and advanced biology tests are optional, but, if available, these should also be submitted to the Graduate Studies Office. In addition, applicants should submit narrative statements describing their academic goals, and two or three letters of recommendation directly to the chair of the Department of Biomolecular Sciences. These materials will be reviewed by the Department Graduate Committee, and students who are accepted will be assigned a program committee that will work with each student to develop a planned program of academic study.

### Programs

#### Master of Arts in Biomolecular Sciences

##### Program Rationale:

The Master of Arts in Biomolecular Sciences is designed to fulfill the educational needs of biologists who desire further specialization and/or knowledge of recent advances in cell and molecular aspects of biology, students who seek an immersion in cell and molecular biology as an intermediate step toward preparation for work at the doctoral level, and teachers who are interested in furthering their knowledge in molecular and cellular biology.

##### Program Learning Outcomes:

Graduate students will:

- demonstrate knowledge in biomolecular science, including an understanding of:
  - i. the connection between molecular properties and cellular activities,
  - ii. the connection between cellular activities and biological responses,
  - iii. cellular structure and function, including chemical composition, physiochemical and functional organization of organelles, and

basic cellular metabolism,

- iv. major cellular processes, including DNA replication, gene regulation, protein structure and function, cell signaling, and differentiation,
- v. the role of molecular and cellular processes in human health and disease,
- vi. contemporary techniques used in cell and molecular biology;

- be able to evaluate papers from the scientific literature and present oral and written critiques;
- develop research questions and the approach they will use to address that question; and
- successfully complete a research project, analyze and evaluate the data generated and present their findings in both an oral and written format.

### Course and Capstone Requirements:

Each student will be assigned a graduate committee that will help the student plan a sound program of study.

There are two options (Plan A and Plan B) leading to the Master of Arts in Biomolecular Sciences degree, both of which require a total of 30 credits, made up of a Course Component and a Capstone Component.

Course Component (24-27 credits)

BMS 500 Seminar in BMS 1

BMS 540 Advanced Topics in BMS 3-4

BMS 572 Laboratory Rotation in Cell and Molecular Biology 1

and biomolecular course electives (18-22 credits in BMS or related fields) from the following courses or others as approved by the advisor:

BMS 412 Human Physiology

(413) (with optional lab) 3-4

BMS 415 Advanced Exploration in Cell, Molecular &

Physiological Biology 3

BMS 505 Molecular Biology 4

BMS 506 Biosynthesis, Bioenergetics, and Metabolic Regulation

(497) (with optional lab) 3-4

BMS 516 Medical Microbiology 3

BMS 519 Physiology of Human Aging 3

BMS 540 Advanced Topics in BMS 3-4

BMS 562 Developmental Biology 3

BMS 570 Advanced Genetics 3

BMS 590 Focused Study in Advanced BMS 1-4

CHEM 456 Toxicology 3

CHEM 458 Advanced Biochemistry 3

BIO 416 Immunology 3

BIO 449 Plant Physiology

(450) (with optional lab) 3-4

Capstone Component (3-6 credits)

Plan A:

Option 1-BMS 599 Thesis (6 credits) and a thesis defense

or Option 2-BMS 599 Thesis (3 credits) and BMS 591 Independent Research Project in BMS (3 credits) and a thesis defense

or

Plan B:

BMS 591 Independent Research Project in BMS (3 credits) and a Comprehensive Exam.

Note: No more than 9 credits at the 400-level will be allowed in the graduate Planned Program of Study.

### **Official Certificate Program: Post-Baccalaureate Certificate in Cell and Molecular Biology**

#### **Program Overview**

This non-degree certificate program is designed for college graduates wishing to expand or update their knowledge of modern cell and molecular biology, but who are not ready to commit to graduate programs leading to the master's degree. This post-baccalaureate certificate program provides these students a formal option for acquiring both advanced instruction and academic advisement.

#### **Admission**

Students must have completed a bachelor's degree to participate in the program. Potential students should contact the Office of Graduate Admissions to request an application packet. The application requires official transcripts from all colleges and universities attended and an essay describing why the student is interested in the program. Completed applications will be filed with the Graduate Admissions Office. The biomolecular sciences chair will schedule an interview with the applicant, during which an advisory committee will work with the candidate to develop an individualized plan of study in keeping with their academic backgrounds and professional goals. The advisory committee will make admission recommendations to the department which will make final admission decisions on a rolling basis. Successful applicants will have a 2.70 undergraduate cumulative grade point average and course prerequisites must be met, including BMS 102 and 103 (or BIO 121), BMS 190, 201, 290; and CHEM 161, 162, 163, and 164; or equivalent. Post-baccalaureate students will be classified as graduate students; they may be either part-time or full-time and may qualify for financial aid. Only students matriculated as full-time may take nine or more credits a semester. Part-time and nonmatriculated students are limited to less than nine credits/semester.

#### **Program Requirements**

The Official Certificate Program in Cell and Molecular Biology will require 18-20 credits in approved cell and molecular biology courses (see below), including BMS 572, BMS 591 and at least two cell and molecular biology courses that include laboratory instruction. Any individual program must be selected and approved in consultation with the biomolecular sciences advisor. A minimum of 15 credits in the planned program must be taken at CCSU.

#### **Program**

Research Component:

BMS 572 Laboratory Rotation in Cell and Molecular Biology 1

BMS 591 Independent Research Project in BMS 2



## Laboratory Science Component:

2 courses with lab from the following:

BMS 412/413 Human Physiology (with lab) 4

BMS 505 Molecular Biology 4

BMS 506/497 Biosynthesis, Bioenergetics, and Metabolic Regulation  
(with lab) 4

BMS 540 Advanced Topics in BMS 4

BIO 449/450 Plant Physiology/Investigations in Plant Physiology 4

## Elective Component:

7-9 credits elected from any additional Laboratory Science course(s) listed above and/or from the following:

BMS 412 Human Physiology 3

BMS 415 Advanced Exploration in Cell, Molecular &  
Physiological Biology 3

BMS 506 Biosynthesis, Bioenergetics, and Metabolic Regulation 3

BMS 516 Medical Microbiology 3

BMS 519 Physiology of Human Aging 3

BMS 540 Advanced Topics in BMS 3

BMS 562 Developmental Biology 3

BMS 570 Advanced Genetics 3

BMS 590 Focused Study in Advanced BMS 3-4

BIO 449 Plant Physiology 3

BIO 416 Immunology 3

CHEM 456 Toxicology 3

CHEM 458 Advanced Biochemistry 3

Note: To enroll in BMS 572 or 591, students need to have a planned program approved by the biomolecular sciences advisor.

The student must maintain a 3.00 (B) cumulative grade point average in order to be in good academic standing and to receive the post-baccalaureate certificate. Upon completion of the planned certificate program, a certificate will be issued from the dean, School of Graduate Studies. (While completion of this program does not lead to a graduate degree, courses at the 400-level or above that are taken as part of the post-baccalaureate certificate program may be counted towards a master's degree, provided that the graduate-syllabus option is elected at the time of course registration in all 400-level courses; all master's program admissions and degree requirements are met; and the courses are part of a planned program of study approved by the master's degree advisor. Students must apply for the MA through Graduate Admission.)

**Official Certificate Program: Post-baccalaureate Certificate in Pre-Health Studies**

The Department of Biomolecular Sciences contributes to the interdisciplinary Post-baccalaureate Certificate in Pre-Health Studies, a non-degree program designed for college graduates whose undergraduate background does not yet meet the requirements for admission to professional

schools of medicine, dentistry, veterinary medicine, or other related fields. The CCSU Pre-Health Professions Advisory Committee (Pre-PAC) is responsible for admitting students to this program and for individually advising them upon entry. Both the Pre-PAC and this Official Certificate Program are described in more detail on the [Pre-Health Studies](#) page, linked here.

# Construction Management

## Faculty

Jacob P. Kovel (Chair, Manufacturing and Construction Management, Copernicus 2120920, kovelj@ccsu.edu); Graduate advisors: Raymond Perreault, Linda Reeder, Edward Sarisley (Dept. phone: 860-832-1830)

## Overview

The Construction Management master's degree program provides students with the educational experiences that help create managers capable of developing and running construction and construction-related companies. In order to reach this objective, the program focuses on the skills required to understand and control daily business operations. All students will develop an understanding of company financial operations, construction law, risk management, and the different methods of project delivery. They will be able to apply this knowledge in the business environment. Additional topics will be personalized to meet each student's individual needs, whether in technical or managerial areas. The program stresses student and industry interaction, experiential learning, and industry-related research.

## Programs

### Master of Science in Construction Management

#### Program Rationale:

The mission of the master's program in construction management is to provide a program of advanced study designed to serve the technological and managerial needs of individuals pursuing a construction management career. The aim of graduate education is to provide students with the environment to develop knowledge and skills to make contributions to their disciplines and to the rapidly changing world. It is the program's objective to help develop Connecticut's construction work force at all levels.

Changes in the construction management profession are causing more construction professionals to consider the master's degree, rather than the bachelor's, as the terminal degree. Furthermore, an increasing number of professional organizations across the nation are beginning to view the master's degree as an entry-level professional degree for practicing managers. This is currently the prevalent situation for construction managers. Several construction management professional organizations, including the Construction Management Association of America, the Construction Financial Management Association, and the American Institute of Constructors, are espousing licensure programs that have advanced education requirements.

#### Program Learning Outcomes:

Students in the program will be expected to:

- analyze a financial balance sheet for a construction company, understanding how each component impacts financial decisions made by the company;
- analyze an annual income statement for a construction company and use it as a tool for projecting company trends;
- perform a construction project risk assessment;
- evaluate bond and insurance proposals for both construction companies and projects;
- analyze a basic construction contract and be able to assess it against other contracts;
- comprehend the various options available for dispute resolution in the construction industry;
- understand the impacts of different project delivery systems on the construction process; and
- conduct research on technology-based issues and prepare technical papers in support of that research.

**Course and Capstone Requirements:**

The Construction Management Masters program is a 33-credit program consisting of 15 credits of common core (CM 505, CM 515, CM 545, CM 575, and TM 594), 15-18 credits of electives selected jointly by the student and advisor, and a three-credit Plan C (Applied Research) capstone (TM 595) or a zero-credit Plan B (Comprehensive Exam) capstone. Students without a formal construction management education will be required to take CM 500 (Fundamentals of Construction Management) as a prerequisite to admission into the program.

Elective courses are subject to the following constraints:

- not more than 9 credits of non-construction management courses;
- not more than 6 credits of courses at the 400 level unless specifically approved in writing by the departmental graduate studies committee; and
- submission of an individual plan of study requiring faculty approval.

Selected elective courses

9 credits from the following:

CM 435 Construction Superintendency 3

CM 455 Construction Project Management 4

CM 500 Fundamentals of Construction Management

CM 525 Construction Equipment Operation and Management 3

CM 565 Construction Labor Relations 3

CM 596\* Topics in Construction Management 3

\*Can use more than once for different topics

6-9 credits from the following:

ETC 405 Applied Structural Systems

ETC 476 Environmental Technology

ETC 550 Global Positioning Systems Application

ETC 556 Architectural and Civil Engineering Technology CAD

ETC 571 Design and Construction of Concrete Structures

ETC 573 Foundation Analysis and Design

ETC 574 Ground Improvement Techniques

ETC 575 Earth and Earth-Supported Structures

ETC 577 Engineering Technology Project Administration

ETC 578 Value Engineering for AEC

SET 590 Topics in International Field Studies

TM 502 Human Relations and Behavior in Complex Organizations

TM 521 Computer Aided Design and Drafting

TM 551 Project Management

TM 572 Innovative Leadership

### **Official Certificate Program in Construction Management**

Participants must successfully complete the following courses (12 credits): CM 435, 500 or 505, 515, 575. Up to 12 credits may be applied to the MS in Construction Management (provided the six-year time limit for the master's is met).

# Engineering Technology

## Faculty

A. Gates, P.E. (Chair, Engineering, Copernicus 2350900, 860-832-1823); N. Al-Masoud; C. Anderson, P.E.; S. Basim, P.E.; P. F. Baumann; M. Gadalla; E.J. Maydock; V. Naoumov; O.A. Powell, P.E.; Z. Prusak; and T. Vasko, P.E.

(Dept. phone: 860-832-1815; Fax: 832-1811; website: [www.set.ccsu.edu](http://www.set.ccsu.edu))

## Overview

The Master of Science in Engineering Technology graduate program offers two specializations - Civil/Construction and Mechanical/Manufacturing. The Master of Science in Engineering Technology degree is a planned program of study requiring 30 credits of graduate courses, including the written and oral capstone requirement. The Master's degree program consists of two areas of study - the Foundation Studies (12 credits) and the Engineering Technology Specialization (15 credits). The candidate selects one Specialization, either in Civil/Construction Engineering Technology or Manufacturing/Mechanical Engineering Technology. The Capstone requirement (three credits) has two options of study: Plan A-Research Thesis with written dissertation and oral defense; or Plan C-Research Project with a design project, written report, and oral defense. The graduate candidate must be accepted into the graduate program and have his/her planned program approved by the graduate advisor. According to graduate policy on courses, no more than nine credits of 400-level courses, as approved by the graduate advisor, can be applied towards the MSET degree.

## Program

### Master of Science in Engineering Technology

#### Program Rationale:

The Master of Science in Engineering Technology is designed for the working professional who has a BS in Engineering Technology or Engineering and desires further development and/or knowledge of recent advances in established or emerging technologies in the Civil/Construction or Manufacturing/Mechanical specializations.

The Master of Science in Engineering Technology with a specialization in Civil/Construction Engineering Technology is designed for the working professional to continue his or her education at night at CCSU. The program will extend the knowledge of students into areas of established and emerging technologies in Architecture/Engineering/

Construction (AEC) industries, including the study of Geographic Information Systems (GIS), Global Positioning Systems (GPS), site development, urban hydrology, construction engineering administration, and infrastructure rehabilitation and management.

The Master of Science in Engineering Technology with a specialization in Manufacturing/Mechanical Engineering Technology provides students with academic experience in applied engineering methods in the areas of mechanical and manufacturing. Specialization areas focus on advanced materials, manufacturing and assembly, project administration, and technical management. Technical electives include mechanical design and analysis, manufacturing methods, materials, quality control, and applied engineering management. The program is designed to provide applied engineering methods to aid graduates and engineers in remaining current with technology, improve productivity, and assist with advancement into leadership positions in industry.

#### Program Learning Outcomes:

Master of Science in Engineering Technology students will be expected to:

- identify, formulate, and solve technical problems;
- design and conduct experiments and to analyze and interpret data;
- execute a project to meet desired needs; and
- communicate effectively in oral, written, visual, and graphic modes.

## Course and Capstone Requirements

(30 credits):

## I. Foundation Studies (12 credits)

Six credits are encumbered and six credits are electives selected from University courses approved for graduate study by the Engineering Department and the department offering the course.

ET 592 Research and Development of Experiments 3

STAT 453 Applied Statistical Inference 3

Elective, to be approved by the graduate advisor 3

Technical elective (ET, ETC, ETM, CM, or EMEC 400- or 500-level, approved by graduate advisor) 3

## II. Engineering Technology Specialization:

Student selects one Specialization and completes 15 credits of graduate courses in a planned program approved by advisor.  
Specialization-Civil/Construction Engineering Technology (15 credits)

ETC 571 Design and Construction of Concrete Structures 3

ETC 577 Engineering Technology Project Administration 3

ET or ETC (500-level elective approved by advisor) 3

ET, ETC, or CM (500-level elective approved by advisor) 3

ET or ETC (400- or 500-level elective approved by advisor) 3

Specialization-Manufacturing/Mechanical Engineering Technology (15 credits)

ETM 517 Automated Assembly and Manufacturing Cell Design 3

ETM 523 Contemporary Engineering Materials 3

ET elective (one 500- or 400-level course) 3

ET electives (two 500-level courses) 6

## III. Capstone Requirement: (3 credits)

The master candidate must select either Plan A, Thesis, or Plan C, Research in Engineering Technology, and each requires a written and oral defense of the research.

Plan A: ET 599 Thesis, 3 credits. The preparation of analytical research and thesis under the supervision of a graduate advisor requires a written and oral defense.

or

Plan C: ET 598 Research in Engineering Technology, 3 credits. An applied engineering project conducted under the supervision of graduate advisor. Requires written report and oral defense. Extensive projects may be approved for up to 6 credits (in such case one, not two, ET 500-level electives will be required).





## Technology and Engineering Education

### Faculty

James DeLaura (Chair, Copernicus 2350900, delaura@ccsu.edu); Michele Dischino, Patrick Foster, David Sianez, Michael Vincenti (Dept. phone: 860-832-1850)

### Department Overview

The graduate programs in Technology and Engineering Education are designed to meet the needs of teachers who have completed an undergraduate program in technology education. However, individuals with technical or engineering degrees who are interested in teaching in industry or at a community college or university would benefit by completing a graduate degree in technology and engineering education. In addition, elementary educators interested in integrating educational disciplines (especially the integration of mathematics, science, technology and social science) would find a graduate degree in technology and engineering education very suitable. The programs provide a maximum amount of flexibility. Students, in consultation with their advisors, may plan programs of study uniquely fitted to their needs.

Many of the graduate students pursuing a master's degree in Technology and Engineering Education are employed as technology education instructors in secondary schools; instructors/supervisors in industry education programs; instructors in community colleges and technical schools; instructors/supervisors in government agencies; and technology education instructors in overseas dependent schools.

The Department of Technology and Engineering Education offers graduate programs in the following areas.

## Programs

### Master of Science in Technology and Engineering Education

#### Program Rationale:

The Master of Science in Technology and Engineering Education is designed to develop the professional competencies of technology and engineering educators so that they may successfully progress in their professions.

The program is a balance of liberal arts, research, and professional and technology education courses leading to a Master of Science in Technology and Engineering Education degree. A minimum of 30 credits of study in approved graduate courses is required. The program is designed for flexibility in meeting the needs of the individual students. Programs of study are individualized through electives and independent study.

The primary purpose of the program is to develop the professional competencies of technology education instructors so that they may successfully progress in their chosen fields.

#### Program Learning Outcomes:

Technology and Engineering Education graduate students will be expected to:

- identify and document an area of technical expertise;
- develop technical research skills;
- demonstrate areas of professional competencies by taking two of three professional education courses from a recommended list;
- update their technical competencies and understandings in their major areas;
- analyze and evaluate recent issues in their fields, such as curriculum innovations and strategies for program improvement and/or implementation; and

- explain how the relationship between their fields and the academic disciplines impacts the development of their students.

With the guidance of an advisor, students select from the following plans: Plan A (30 credits including a thesis); Plan B (30 credits and comprehensive examination), or Plan C (30 credits including a special project).

#### **Course and Capstone Requirements:**

Professional Education (6-9 credits):

One of the following:

EDF 500 Contemporary Educational Issues 3

EDF 516 School and Society 3

EDF 524 Foundations of Contemporary Theories of Curriculum 3

EDF 525 History of American Education 3

EDF 538 The Politics of Education 3

EDF 583 Sociological Foundations of Education 3

and

Additional electives as approved by the faculty advisor - students may focus on instruction, curriculum development, administration/supervision, special education, or research.

Technology and Engineering Education offerings approved by advisor (12-21 credits)

Research (3-6 credits):

TE 598 Research in Technology Education  
(required as part of first 12 credits of the graduate program)

ED 599 Thesis (for Plan A)

or

TE 596 Special Projects in Technology Education (for Plan C)

or

Comprehensive Examination (for Plan B)

Note: No more than nine credits at the 400 level, as approved by the graduate advisor, may be counted toward the graduate planned program of study, for the M.S. degree.

#### **Technology and Engineering Education Certification Program for College Graduates**

This post-baccalaureate certification program provides courses for college graduates, regardless of previous major, to teach technology and engineering education. This program, comprised of technical and professional courses, is offered in the late afternoon and evenings. The number of courses required to complete the program is contingent upon each student's previous industrial experience and formal degree work.

This program provides a unique opportunity for individuals seeking a career change. A minimum undergraduate cumulative grade point average of 2.70 is required for admission to this program. All students must first apply to the Graduate Admission Office. Once the student is accepted into the certification program, an advisor will be assigned who will assist in planning a program of graduate and undergraduate courses which incorporate certification requirements of the state of Connecticut. For additional information please contact the Chair, Department of Technology and Engineering Education.

**Master of Arts in Teaching (MAT): Teacher Education with Specializations in Mathematics (7-12), Sciences (7-12), Spanish (7-12), English (7-12), and Technology and Engineering Education (PK-12)**

The Department of Teacher Education offers a Master of Arts in Teaching (MAT): Teacher Education with specializations in Mathematics, Sciences, Spanish, English, and Technology and Engineering Education. Candidates with documented content knowledge will complete 13 months of full-time study, earning teacher certification and the MAT degree. The program is designed to cross disciplines wherever possible, encouraging candidates to build content teaching expertise in their specializations and relate each discipline to the larger school curriculum. See the Teacher Education program, [linked here](#), for a description of the program.

**Post-Master's Study**

The student must have an appropriate master's degree and consult with a TE graduate advisor to plan a program of advanced study.

# Technology Management

## Faculty

Jacob P. Kovel (Chair, Manufacturing and Construction Management, Copernicus 2120920, kovelj@ccsu.edu); Graduate advisors: Bob Emiliani, Dan Kirby, Paul Resetarits, Ravindra Thamma, Haoyu Wang (Dept. phone: 860-832-1830)

## Overview

The Master of Science in Technology Management provides students with academic experiences that enable them to develop professionally and effectively lead change and improve processes in business and industry. Flexibility is the cornerstone of this degree. Core program requirements focus on product management, operations management, leadership, project management, and financial analysis. Directed electives may include Lean management, supply chain management, computer networking, and environmental and occupational safety. Each student's graduate plan of study is designed in collaboration with faculty advisors to meet individual needs. This graduate degree program will appeal to students with established careers as technical managers in corporations and individuals who aspire to leadership positions in business and industry.

## Programs

### Master of Science in Technology Management

#### Program Rationale:

The Master of Science in Technology Management Program is designed to fulfill the educational needs of students and working professionals whose career paths are directed toward management in technologically-oriented organizations.

#### Program Learning Outcomes:

Graduate students in the program will be expected to:

- communicate effectively in written, oral, graphic, and visual modes;
- understand the management of projects, human resources, and technology;
- function effectively on teams and within a diverse environment; and
- have knowledge of contemporary issues and an understanding of the impact of technology applications from a global perspective.

#### Course and Capstone Requirements:

The Master of Science in Technology Management consists of three different plans. A is 33 credits with a thesis, B is 33 credits with comprehensive exams and C is 33 credits with a research project.

a. All three plans have a core curriculum (18 credits) as follows:

TM 500 Product Life Cycle Management

TM 510 Industrial Operations Management

TM 551 Project Management

TM 572 Innovative Leadership

TM 594 Research in Methods Technology

AC 521 Accounting and Performance Measurement for Lean Enterprises

b. Directed electives. These are graduate courses in technology at the 400- and 500-level, as approved by a faculty advisor. This allows the student flexibility to develop a specialization. Students selecting a strand will take four courses in that strand, five if the Plan B option is chosen.

### **Strands**

Some examples could include, but are not limited to:

- Lean Manufacturing and Six Sigma
- Supply Chain and Logistics
- Environmental and Occupational Safety
- Computer Networking

c. All three plans have capstone course requirements of 0-3 credits.

Plan A: TM 599 Thesis

Plan B: Comprehensive exam

Plan C: TM 595 Applied Research Capstone Project

Note: No more than nine credits at the 400 level, as approved by the graduate advisor, may be counted toward the graduate planned program of study.

### **Official Certificate Program in Environmental Health and Occupational Safety**

Participants must successfully complete the following courses (12 credits): TM 414, 456, 511, 512; nine credits of which may be applied as electives to the M.S. in Technology Management (provided six-year time limit for the master's is met).

### **Official Certificate Program in Lean Manufacturing and Six Sigma**

Participants must successfully complete the following courses (12 credits): TM 464, 490, 510, 561. Up to 12 credits may be applied to the M.S. in Technology Management (provided the six-year time limit for the master's is met).

### **Official Certificate Program in Supply Chain and Logistics**

Participants must successfully complete the following courses (12 credits): TM 562, 563, 565, 566. Up to 12 credits may be applied to the M.S. in Technology Management (provided the six-year time limit for the master's is met).

