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The School of Arts and Sciences offers the M.A. degree in biological sciences, English, history, 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.

## ART

### Faculty

Cora Marshall (Chair, Maloney 151), Meyer Alewitz, Cassandra Broadus-Garcia, James Buxton, Sherinatu Fafunwa-Ndibe, Sean Patrick Gallagher, Vicente Garcia, Faith Hentschel, 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

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." Interested applicants can 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.

#### 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:

1. Still-life drawings and/or paintings that illustrate accurate depictions of form and space.
2. Landscape and/or architecture (indoor or outdoor) showing successful descriptions of form and space. These must be drawing and/or painting.
3. Images (any 2D and/or 3D) that illustrate convincing knowledge and translation of the elements and principles of design.
4. 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

1. Applicants for Master of Science in Art Education must submit a variety of media that demonstrate their best studio practice.
2. 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

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:

1. give a brief account of their backgrounds in relation to education, occupation, and activities relevant to the field of art and art education;
2. 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

## Program

### 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  
ART 598 Research in Art Education

- ART 597 Exhibition Research (Plan C)  
or  
ART 599 Thesis (Plan A)  
and one of the following: EDF 500, 516,  
524, 525, 538, 583

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 page 12 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 course work, 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.

## BIOLOGY

### Faculty

Jeremiah Jarrett (Chair, Copernicus 332),  
Douglas Carter, Tiffany Doan, Sylvia Halkin,  
Mark Jackson, 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, 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 educa-

tional 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, MA 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 Bio.	3–4
BIO 590	Focused Study in Advanced Biology	1–4
BIO 598	Research in Biology	3
BIO 405	Ecology	4
BIO 410	Ecological Physiology	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
BIO 480	Animal Behavior	3
BIO 488	Animal Behavior Laboratory	2

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 in BIO 590 and/or BIO 591, and 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 Dev.  
EDL 513 Supervision

Major Field Requirements (21 credits):

BIO 416 Immunology  
BIO 500 Seminar in Biology  
BIO 517 Human Anatomy, Physiology  
and Pathophysiology  
BIO 518 Applied Physiology  
BIO 528 Pharmacology  
CHEM 550 Basic Organic and Biological  
Chemistry

Research (4–6 credits):

Plan A:

BIO 598 Research in Biology  
BIO 599 Thesis (3 credits)

and thesis defense

or

Plan B:

BIO 590 Focused Study in Advanced  
Biology

BIO 598 Research in Biology  
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. Admission to this program is contingent upon admission to one of the following affiliated schools:

New Britain School of Nurse Anesthesia, New Britain, CT: John Satterfield, M.D., medical director, and Joan Dobbins, M.S., CRNA, program director.

Hospital of St. Raphael, New Haven, CT: Philip J. Noto, M.D., medical director, School of Anesthesia; and Judy Thompson, M.S., CRNA, program director.

Memorial Hospital of Rhode Island, Pawtucket, R.I.: Peter Baziotis, M.D., medical director, School of Anesthesia; 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  
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

and

Additional course(s) as approved by advisor

Biology Requirements (4–5 credits):

BIO 500 Seminar in Biology  
BIO 540 Topics in Advanced Biology

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 and BIO 599 Thesis (3 credits)  
and thesis defense

or

Plan B: BIO 598 Research in Biology 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  
EDL 513 Supervision

Major Field Requirements (18–19 credits):

BIO 412 Human Physiology  
BIO 413 Human Physiology  
Laboratory  
BIO 500 Seminar in Biology  
BIO 518 Applied Physiology  
BIO 528 Pharmacology  
BMS 506 Biosynthesis, Bioenergetics  
and Metabolic Regulation

or

CHEM 550 Basic Organic and Biological Chemistry  
Biology Elective (choose from BIO 416, 540, 590, 591; BMS 497, 505, 506, or 562)

Research (6 credits):

BIO 599 Thesis (6 credits) and thesis defense  
or

BIO 598 Research in Biology 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 page 93.

### 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 page 68 of this catalog for a description of the program.

## 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 post-graduate 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

COMM 501 Theories of Human Communication within an Organizational Context

COMM 503 Research Methods in Communication

COMM 505 Persuasive Communication

COMM 504 Organizational Communication Audits

or

COMM 507 Campaign Planning and Evaluation

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

COMM 504 Organizational Communication Audits

COMM 522 Corporate Communication

COMM 551 Policy Issues in Organizational Communication

COMM 562 Communication and High-Speed Management

#### Public Relations Track

COMM 451 Environmental Communication

COMM 454 Communication and Social Change

COMM 506 Case Studies in Public Relations

COMM 507 Campaign Planning and Evaluation

COMM 508 Public Relations Writing Strategies

#### General Electives

COMM 543 Intercultural Communication

COMM 544 Strategies in Negotiation and Conflict Resolution

COMM 585 Special Topics

COMM 590 Independent Study

#### Outside Courses

IT 464 Six Sigma Quality

IT 500 Industrial Applications of Computers

IT 502 Human Relations and Behavior in Complex Organizations

IT 564 Quality Systems Management

STAT 453 Applied Statistical Inference

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.

## COMPUTER INFORMATION TECHNOLOGY

#### Faculty

Computer Science: Joan Calvert (director MSCIT), Bradley Kjell, Neli Zlatareva (Dept. phone: 860-832-2710)

Management Information Systems: Marianne D'Onofrio, Michael Gendron (phone: 860-832-3297)

Computer Electronics and Graphics Technology: Farid Farahmond, Karen Coale Tracey (Dept. phone: 860-832-1830) (website: [www.cs.ccsu.edu/cit/index.htm](http://www.cs.ccsu.edu/cit/index.htm))

#### Overview

The Master of Science Computer Information Technology program is offered

by the Department of Computer Science and the Computer Electronics and Graphics Technology Department, School of Engineering and Technology, in conjunction with the Management Information Systems Department, School of Business. For details of the program, see page 91 of this catalog.

## CRIMINOLOGY AND CRIMINAL JUSTICE

### Faculty

Raymond Chip Tafrate (Chair, Vance 410), Kathleen Bantley, Stephen Costanza, Stephen Cox, Ronald Fernandez, Jennifer Hedlund, 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 lawbreaker;
- 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 540	Assessing and Developing Performance in Criminal Justice Organizations	3
CJ 560	Sexual Offending	3
CJ 575	Organizational Development and Evaluation of Criminal Justice Organizations	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 540, 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.

## DESIGN (GRAPHIC/ INFORMATION)

### Faculty

Susan Vial (Chair, Vance 324), Nikita Prokhorov, Eleanor Thornton, 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
  - BUS 590 Business Topics
  - DES 499 Computer Applications for Graphic/Information Design
  - DES 501 Graphic/Information Design Theory I
  - DES 502 Graphic/Information Design Theory II
  - DES 520 Advanced History of Design
  - DES 598 Research Methods in Design
- Specialization (9 credits):
- DES 503 Graphic/Information Design Practice I
  - DES 504 Graphic/Information Design Practice II
  - DES 537 Advanced Design Internship

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)  
 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.

## ENGLISH

### Faculty

Gilbert Gigliotti (Chair, Willard 304), Stuart Barnett, Burlin Barr, Candace Barrington, Anthony Cannella, David Cappella, Matthew Ciscel, Stephen Cohen, Mary Collins, Robert Dowling, Christine Doyle, Robert Dunne, Brian Folker, Jaclyn Geller, 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, Laurence Petit, 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), teacher certification in English, and K–12 certification in TESOL.

### Programs

#### MASTER OF ARTS IN ENGLISH

##### Program Rationale:

The Master of Arts in English degree is offered to students who wish to devote their programs to the advanced study of English and American literature. The Master of Arts diploma specifies a graduate degree in English, a prerequisite for further graduate work in English.

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 literature 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:

- learn to write effectively, both technically and in terms of composition and argumentation;
- learn to read and interpret literature effectively;
- master research skills and learn to use secondary sources effectively in constructing their own treatments of literature;
- learn to compare examples of literature drawn from a variety of periods, genres, and/or national cultures; and
- acquire the ability to apply critical theory to the study of literature.

##### 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 course work 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. Chair, English Graduate Committee), 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		

**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		

\*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
LING 496	TESOL Methods
LING 497	Second Language Acquisition
LING 512	Modern Syntax
LING 513	Modern Phonology
LING 515	An Introduction to Sociolinguistics

One course from:

LING 533	Second Language Composition
LING 535	Second Language Testing
LING 596	TESOL Practicum

Research (3 credits):

LING 598	Research in TESOL and Applied Linguistics
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Professional Education (6 credits):

At least one of the following courses and an additional course in the same area:

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

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 course work.

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 page 78 of this catalog for a description of the program.

## GEOGRAPHY

### Faculty

Xiaoping Shen (Chair, DiLoreto 208), Richard Benfield, Charles Button, D'Arcy Dornan, John Harmon, Peter Kwaku Kyem, Cindy Pope, Brian Sommers, David Truly (Dept. 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.

Geography is the science of location. The geography faculty teaches students how to use effectively maps and air photos, gather information about places, and make computer analyses. Students use this knowledge to learn about how people use the land in different places, and what impacts humans.

The Department of Geography has fully equipped cartography, air photo interpretation and microcomputer laboratories available for student use. The microcomputer lab includes a network of IBM PC-compatible computers, to include an extensive software collection along with digitizers and plotters for automated cartography, computer graphics and geographic information systems. CCSU has a map depository for the Defense Mapping Agency and the U.S. Geological Survey, with close to 30,000 sheets in our collection. The department also receives planning reports, maps and documents from cities, towns and regions throughout the Northeast.

In addition the Department of Geography provides internships and part-time employment for students in a variety of town, regional, state, and private planning agencies and offers consulting services, workshops and short courses as part of its outreach program.

### 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 M.S. in Geography has been used as a springboard by those interested in further graduate study. Several graduates have gone on to Ph.D. programs at major universities. However, most graduate students are interested in using the M.S. in Geography as a terminal degree that will prepare them for careers in several technical areas.

#### Program Learning Outcomes:

Graduate students in this program will:

- know the major theories and important figures in the development of geography;
- be able to use geography outside the classroom; and
- be able to conduct and communicate the results of geographic research.

#### 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.

Program Specializations — Students enrolled in the M.S. in Geography program may specialize in 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

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 chair 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 (including HIST 501) (9 credits)  
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 (taken twice with different topics)	6
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
HIST 565 Seminar in 17th- and 18th-Century America
HIST 566 U.S. Civil War and Reconstruction
HIST 570 Immigration in American History
HIST 540 Seminar in European History
HIST 563 The Age of Jackson
HIST 512 Connecticut Encounters

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.

## MATHEMATICAL SCIENCES

### Faculty

Timothy Craine (Chair, Marcus White 108), Frank Bensics, Roger Bilisoly, Nelson Castaneda, Yuanqian Chen, Robert Crouse, Darius 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 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. Students may also enroll in a program leading to certification to teach mathematics at the secondary level.

The department plans to offer a Sixth-Year Certificate Program in Mathematics Education Leadership upon completion of the approval process by the Connecticut Department of Higher Education and the Board of Governors. Once approved, the program will be listed on the graduate website at [www.ccsu.edu/grad](http://www.ccsu.edu/grad) and on the graduate application. Students interested in pursuing this degree should contact the department.

### 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 course work 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  
 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

Elementary/ Middle School Mathematics Education Core (12 credits):

Elementary school track:

MATH 506 Teaching Number Concepts in the Elementary Grades

MATH 507 Teaching Geometry and Measurement in the Elementary Grades

MATH 508 Teaching Probability and Statistics in the Elementary Grades

MATH 509 Teaching Algebraic Thinking in the Elementary Grades

or

Middle school track:

MATH 536 Teaching Number Concepts in the Middle Grades

MATH 537 Teaching Geometry and Measurement in the Middle Grades

MATH 538 Teaching Probability and Statistics in the Middle Grades

MATH 539 Teaching Algebraic Thinking in the Middle Grades

Mathematics Electives (6 credits):

Choose two courses from

MATH 449 Mathematics Laboratory for Elementary School

MATH 504 Topics in Mathematics

MATH 534 Techniques in Diagnosis and Remediation for the Teaching of Mathematics K–12

MATH 580 Directed Study in Mathematics  
 STAT 453 Applied Statistical Inference

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 comple-

tion 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, 516, 524, 525, 538 or 583

Secondary Mathematics Education (9 credits):

MATH 547 plus 6 credits chosen from MATH 504, 534, 540, 543, 544 and 580

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  
MATH 516 Abstract Algebra II  
MATH 519 Principles of Real Analysis I  
MATH 520 Principles of Real Analysis II  
MATH 523 General Topology  
MATH 526 Complex Variables

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 MATH 515, 516, 519 and 520; and one (1) of MATH 523, 526 and STAT 551.

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:

- 9 credits chosen from ACTL 480, 481, 482, 580,
- 9 credits designated STAT or MATH at the 400 or 500 level, and
- 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.

- 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 undergraduate 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 prerequisites, 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.

- 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 com-

pleted, 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.

**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 page 78 of this catalog for a description of the program.

**MODERN LANGUAGES**

**Faculty**

Lilián Uribe (Chair, Davidson 212), Gloria Caliendo, Mariá Lourdes Casas, Antonio García-Lozada, Paloma Lapuerta, Cheng Sing Lien, Gustavo Mejía, Ángela Morales, María 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 master of science and master of arts degree programs 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 SCIENCE IN SPANISH FOR CERTIFIED TEACHERS**

**Program Rationale:**

The master of science degree program in Spanish is designed for teachers wishing to pursue language, culture, and literature work at the graduate level. Students who specialize in Spanish will develop, with their advisors, programs of study that take into consideration their educational backgrounds and degree of competency in the language.

**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 Spanish and Spanish American literature;
- knowledge of topics related to the cultures of Spain and Spanish America;
- competence in Spanish grammar and knowledge of language structure; and
- knowledge of major educational issues.

**Admissions:**

Elementary or secondary schools teachers electing a specialization in Spanish are expected to have a baccalaureate degree, with at least 24 credits of the language in college or equivalent preparation, before being admitted to this program.

The department's Graduate Studies Committee reserves the right to assess a candidate's oral and written proficiency in Spanish through an oral interview or written sample.

**Course and Capstone Requirements (30 credits [Plan A or B]):**

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

Core (6 credits):

SPAN 560 Structure of Spanish Language 3  
 ML 598 Research in Modern Languages (must be completed within the first 15 credits of planned program) 3

Directed Electives (9 credits):

One culture/civilization course and two literature courses as approved by advisor

Electives (3–9 credits):

As approved by advisor

Capstone (0–3 credits)

SPAN 599 (Plan A) or Comprehensive Examination (Plan B)

Note: A maximum of nine credits at the 400 level is allowed.

## MASTER OF ARTS IN MODERN LANGUAGE

### 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. Its offerings are also available to non-degree candidates possessing the prerequisites for any given course.

### 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. Certified teachers whose oral and written proficiency skills are of sufficient caliber may include up to six credits in professional education in their programs.

The department's Graduate Studies Committee reserves the right to assess a candidate's oral and writing proficiency in 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.

### Specialization in French

#### 30 credits (Plan A or Plan B)

*Note: The University is currently not accepting applications to the Master of Arts in Modern Language, specialization in French.*

### 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  
 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)

### Specialization in Italian

#### 30 credits (Plan A or Plan B)

Core (6 credits):

ML 598 Research in Modern Languages  
 ITAL 460 Advanced Written Italian

Directed Electives (15 credits):

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 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

ML550 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

Note: A maximum of nine credits at the 400 level is allowed.

### 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
- 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.

**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 page 78 of this catalog 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:

1. Take the following core courses (15 credits):
  - MUS 470 Musical Structure and Style
  - MUS 509 Comparative Musical Studies
  - MUS 504 Principles and Foundations of Music Education
  - MUS 510 Current Issues in Music Education
  - MUS 598 Research in Music Education

2. One of the following (2 credits): MUS 502, 503, 505, 506, 512, 551, 556, 557, 559

3. Take at least 4 credits from the following: MUS 501, 507, 508, 515, 540, 578, 579, 590, 591, 592A

4. 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 page 62.

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

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

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

SCI 598 Research in Science Education

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 major on page 55 of this catalog.

### 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 page 78 of this catalog for a description of the program.

## POLITICAL SCIENCE

The Department of Political Science does not offer a graduate program, but an agreement between the University of Connecticut and Central Connecticut State University makes it possible for qualified undergraduate students at CCSU to enroll in up to four graduate-level courses in UConn's Master of Public Administration program and later apply these credits toward the M.P.A. Part-time students who have a bachelor's degree may take up to three courses at the graduate level before applying for the M.P.A. program. UConn M.P.A. students may take approved courses at CCSU's campus. There is some exchange of faculty between the two schools. Questions about the specifics of the cooperative program should be addressed to the M.P.A. director at UConn or to the chair of the Political Science Department at CCSU.

CCSU courses that have been approved for credit toward the M.P.A. are the following:

PS 446	The Budgetary Process
PS 448	The Politics of Human Services

Outside of the M.P.A. program, courses numbered 400 or higher which are offered by the department and listed elsewhere in this catalog may be included on planned programs of graduate study if approved by the student's advisor and the appropriate dean.

## PSYCHOLOGY

### Faculty

Bradley Waite (Chair, Marcus White 209), Carrie Andreoletti, Carol Shaw Austad, Laura Bowman, Paul Chu, James Conway, Joanne DiPlacido, Francisco Donis, Douglas Engwall, Carolyn Fallahi, Marianne Fallon, Carol Ford, Marc Goldstein, Steven Horowitz, Laura Levine, Charles Mate-Kole, Marisa Mealy, Lauren Perdue, Jason Sikorski, 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
PSY 545	Introduction to Clinical Psychology
PSY 550	Introduction to Community Psychology
PSY 596	Psychological Research: Design and Analysis I
PSY 597	Psychological Research: Design and Analysis II
PSY 599	Thesis (defense required)

##### 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 and to 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
PSY 553	Developing Prevention Programs
PSY 595	Graduate Internship in Psychological Applications

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
PSY 542	Psychology of Stress
PSY 543	Stress Management: Theory and Research
PSY 544	Biofeedback: Principles and Practices
PSY 530	Psychopathology
PSY 551	Primary Prevention
PSY 595	Graduate Internship in Psychological Applications

Choose 2 additional electives (6 credits) from the following: PSY 458, 526, 546, 553, 571, 590, 591.

Note: A maximum of six credits at the 400 level may be included, with approval of faculty advisor, in the planned program of study.

## SCIENCE EDUCATION

### Faculty

Marsha Bednarski (Coordinator, Physics and Earth Sciences Dept., Copernicus 532; 860-832-2943)

For details of the program, see Natural Sciences: Track II on page 55 of this catalog.

### POST-MASTER'S STUDY

Thirty-credit planned programs of post-master's study are available for elementary teachers and secondary school science teachers.

## SCHOOL OF ARTS AND SCIENCES CENTERS

The **Copernican Planetarium and Observatory** (Copernicus Hall) includes a full-function, optical planetarium, which seats 108 people and is used for classes and programs for the community. The observatory, located on the roof of Copernicus Hall, is used for astronomical instruction for Physics and Earth Sciences classes. It also supports student research in astronomical photography and observation using a modern 16-inch Casagrain reflector and other telescopes.

The **Institute for Science Education**, coordinated by the Department of Biological Sciences, offers summer courses for middle, junior high, and high school science teachers. Science faculty and students work with middle and secondary school teachers on topics to enhance pre-college science preparation and encourage students to pursue careers in science.

The **Multimedia Language Learning Center** (Barnard 336) provides students with state-of-the-art technology for language study and cultural enrichment. The lab is equipped with audio, film, video and laser disc technology and a scanner, as well as web-capable computers for interactive learning.

The **Polish Studies Center** (DiLoreto 208-23) was established in an effort to foster within both the Polish-American and the American communities an awareness of Poland's culture, history, and civilization. In 1997 Connecticut's first, and New England's second, Endowed Chair in Polish and Pol-

ish-American Studies was established at CCSU. The Polish Studies Center offers courses in Polish history, politics, culture and civilization, language, and the Polish community in America. The Center's other resources include the Polish Heritage Book Collection, the Connecticut Polish-American Archive, the Annual Fiedorczyk Lecture in Polish-American Studies, the Milewski Polish Studies lecture, the Godlewski Evening of Polish Culture, educational materials for teachers, movies, exhibits and scholarship aid for Polish-American students and for students pursuing Polish Studies.

The **Copernicus Science Computing Laboratory**, located in the Francis J. Rio Interdisciplinary Science Center (Copernicus 227), serves the faculty and students in the natural and physical sciences. The Computing Lab houses 20 networked PCs and Macs, as well as two laser printers, two inkjet printers, a scanner and a multimedia projector.

The **Weather Center** is a fully functional weather forecasting facility, including a satellite downlink to the National Weather Service, computer data retrieval capability, color weather radar and satellite access. It supports forecasting for the University community as well as faculty and student research in the atmospheric sciences.

The **Writing Center** (Willard 305) provides one-to-one tutorials and small-group workshops to help members of the CCSU community improve their writing in areas such as drafting compositions, preparing research papers and taking essay exams. Appointments for tutorials are available Monday through Friday from 9 a.m. to 4 p.m. by calling 860-832-2765.