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The School of Engineering and Technology provides a broad range of educational and career enhancement opportunities in engineering and technological disciplines through a balance of theory and application that enhances individual's contributions to the global marketplace. Our students develop the knowledge and confidence needed to meet today's modern challenges in their chosen professional careers.

The School of Engineering and Technology has maintained state-of-the-art technical laboratories. Students are provided the opportunity to develop an understanding of tools, materials and instrumentation related to their technical specializations.

BIOMOLECULAR SCIENCES

Faculty

James P. Mulrooney (Chair, Copernicus 204); Michael A. Davis, Betsy Dobbs-McAuliffe, Barry Hoopengardner, Martin A. Kapper, Thomas R. King, Kathy A. Martin-Troy, Cheryl L. Watson (Dept. office: Copernicus Rm 204; Dept. phone: 860-832-3560)

Department Overview

The Department of Biomolecular Sciences offers instruction in molecular biology, cell biology, genetics, and physiology that is strongly integrated with the theory and practice of molecular biological research. The department offers an M.A. in Biomolecular Sciences degree and an Official Certificate Program in Cell and Molecular Biology, and also contributes to the interdisciplinary Post-Baccalaureate Certificate in Pre-Health Studies program.

Located in Copernicus Hall, the Department of Biomolecular Sciences includes a wide range of modern research equipment in laboratories designed both for class instruction and for independent student research. Special facilities include a

protein purification and analysis facility, a cell culture facility, a molecular genetics research laboratory, a laboratory animal care suite, and several computer laboratories. Student-centered biomolecular research activity is also promoted, fostered, and supported by the Biotechnology Institute at CCSU, an interdisciplinary organization (housed in the Department of Biomolecular Sciences) that is dedicated to developing graduates with excellent research skills.

Admission Requirements

The application process begins with the submission of an application for admission to graduate study, as well as official transcripts from all institutions where graduate or undergraduate work has been done, to the Graduate Admissions Office (Davidson 115; 860-832-2350). Graduate Record Examination (GRE) scores for the aptitude and advanced biology tests are optional, but, if available, these should also be submitted to the Graduate Studies Office. In addition, applicants should submit narrative statements describing their academic goals, and two or three letters of recommendation directly to the chair of the Department of Biomolecular Sciences. These materials will be reviewed by the Department Graduate Committee, and students who are accepted will be assigned a program committee that will work with each student to develop a planned program of academic study.

Programs

MASTER OF ARTS IN BIOMOLECULAR SCIENCES

Program Rationale:

The Master of Arts in Biomolecular Sciences is designed to fulfill the educational needs of biologists who desire further specialization and/or knowledge of recent advances in cell and molecular aspects of biology, students who seek an immersion in cell and molecular biology as an intermediate step toward preparation for work at the doctoral level, and teachers who are interested in furthering their knowledge in molecular and cellular biology.

Program Learning Outcomes:

Graduate students will:

- demonstrate knowledge in biomolecular science, including an understanding of:

- i) the connection between molecular properties and cellular activities,
 - ii) the connection between cellular activities and biological responses,
 - iii) cellular structure and function, including chemical composition, physiochemical and functional organization of organelles, and basic cellular metabolism,
 - iv) major cellular processes, including DNA replication, gene regulation, protein structure and function, cell signaling, and differentiation,
 - v) the role of molecular and cellular processes in human health and disease,
 - vi) contemporary techniques used in cell and molecular biology;
- be able to evaluate papers from the scientific literature and present oral and written critiques;
 - develop research questions and the approach they will use to address that question; and
 - successfully complete a research project, analyze and evaluate the data generated and present their findings in both an oral and written format.

Course and Capstone Requirements:

Each student will be assigned a graduate committee that will help the student plan a sound program of study.

There are two options (Plan A and Plan B) leading to the Master of Arts in Biomolecular Sciences degree, both of which require a total of 30 credits, made up of a Course Component and a Capstone Component.

Course Component (24–27 credits)			
BMS 500	Seminar in BMS		1
BMS 540	Advanced Topics in BMS		3–4
BMS 572	Laboratory Rotation in Cell and Molecular Biology		1
and biomolecular course electives (18–22 credits in BMS or related fields) from the following courses or others as approved by the advisor:			
BMS 412	Human Physiology		
(413)	(with optional lab)		3–4
BMS 415	Advanced Exploration in Cell, Molecular & Physiological Biology		3
BMS 505	Molecular Biology		4
BMS 506	Biosynthesis, Bioenergetics, and Metabolic Regulation		
(497)	(with optional lab)		3–4
BMS 516	Medical Microbiology		3

BMS 519	Physiology of Human Aging	3
BMS 540	Advanced Topics in BMS	3–4
BMS 562	Developmental Biology	3
BMS 570	Advanced Genetics	3
BMS 590	Focused Study in Advanced BMS	1–4
CHEM 456	Toxicology	3
CHEM 458	Advanced Biochemistry	3
BIO 416	Immunology	3
BIO 449	Plant Physiology (with optional lab)	3–4

Capstone Component (3–6 credits)

Plan A:

Option 1—BMS 599 Thesis (6 credits) and a thesis defense
or Option 2—BMS 599 Thesis (3 credits) and BMS 591 Independent Research Project in BMS (3 credits) and a thesis defense

or

Plan B:

BMS 591 Independent Research Project in BMS (3 credits) and a Comprehensive Exam.

Note: No more than 9 credits at the 400-level will be allowed in the graduate Planned Program of Study.

OFFICIAL CERTIFICATE PROGRAM: POST-BACCALAUREATE CERTIFICATE IN CELL AND MOLECULAR BIOLOGY

Program Overview

This non-degree certificate program is designed for college graduates wishing to expand or update their knowledge of modern cell and molecular biology, but who are not ready to commit to graduate programs leading to the master's degree. This post-baccalaureate certificate program provides these students a formal option for acquiring both advanced instruction and academic advisement.

Admission

Students must have completed a bachelor's degree to participate in the program. Potential students should contact the Office of Graduate Admissions to request an application packet. The application requires official transcripts from all colleges and universities attended and an essay describing why the student is interested in the program. Completed applications will be filed with the Graduate Admissions Office. The biomolecular sciences chair will schedule an interview with the applicant, during which an advisory committee will work with the candidate to develop an individualized plan

of study in keeping with their academic backgrounds and professional goals. The advisory committee will make admission recommendations to the department which will make final admission decisions on a rolling basis. Successful applicants will have a 2.70 undergraduate cumulative grade point average and course prerequisites must be met, including BMS 102 and 103 (or BIO 121), BMS 190, 201, 290; and CHEM 161, 162, 163, and 164; or equivalent. Post-baccalaureate students will be classified as graduate students; they may be either part-time or full-time and may qualify for financial aid. Only students matriculated as full-time may take nine or more credits a semester. Part-time and nonmatriculated students are limited to less than nine credits/semester.

Program Requirements

The Official Certificate Program in Cell and Molecular Biology will require 18–20 credits in approved cell and molecular biology courses (see below), including BMS 572, BMS 591 and at least two cell and molecular biology courses that include laboratory instruction. Any individual program must be selected and approved in consultation with the biomolecular sciences advisor. A minimum of 15 credits in the planned program must be taken at CCSU.

Program

Research Component:

BMS 572	Laboratory Rotation in Cell and Molecular Biology	1
BMS 591	Independent Research Project in BMS	2

Laboratory Science Component:

2 courses with lab from the following:

BMS 412/ 413	Human Physiology (with lab)	4
BMS 505	Molecular Biology	4
BMS 506/ 497	Biosynthesis, Bioenergetics, and Metabolic Regulation (with lab)	4
BMS 540	Advanced Topics in BMS	4
BIO 449/ 450	Plant Physiology/ Investigations in Plant Physiology	4

Elective Component:

7–9 credits elected from any additional Laboratory Science course(s) listed above and/or from the following:

BMS 412	Human Physiology	3
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BMS 415	Advanced Exploration in Cell, Molecular & Physiological Biology	3
BMS 506	Biosynthesis, Bioenergetics, and Metabolic Regulation	3
BMS 516	Medical Microbiology	3
BMS 519	Physiology of Human Aging	3
BMS 540	Advanced Topics in BMS	3
BMS 562	Developmental Biology	3
BMS 570	Advanced Genetics	3
BMS 590	Focused Study in Advanced BMS	3–4
BIO 449	Plant Physiology	3
BIO 416	Immunology	3
CHEM 456	Toxicology	3
CHEM 458	Advanced Biochemistry	3

Note: To enroll in BMS 572 or 591, students need to have a planned program approved by the biomolecular sciences advisor.

The student must maintain a 3.00 (B) cumulative grade point average in order to be in good academic standing and to receive the post-baccalaureate certificate. Upon completion of the planned certificate program, a certificate will be issued from the dean, School of Graduate Studies. (While completion of this program does not lead to a graduate degree, courses at the 400-level or above that are taken as part of the post-baccalaureate certificate program may be counted towards a master's degree, provided that the graduate-syllabus option is elected at the time of course registration in all 400-level courses; all master's program admissions and degree requirements are met; and the courses are part of a planned program of study approved by the master's degree advisor. Students must apply for the MA through Graduate Admission.)

OFFICIAL CERTIFICATE PROGRAM: POST-BACCALAUREATE CERTIFICATE IN PRE-HEALTH STUDIES

The Department of Biomolecular Sciences contributes to the interdisciplinary Post-baccalaureate Certificate in Pre-Health Studies, a non-degree program designed for college graduates whose undergraduate background does not yet meet the requirements for admission to professional schools of medicine, dentistry, veterinary medicine, or other related fields. The CCSU Pre-Health Professions Advisory Committee (Pre-PAC) is responsible for admitting students to this program and for individually advising them upon entry. Both the Pre-PAC and this Official Certificate Program are described in more detail on pages 93 and 94.

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)

Overview

The Master of Science Computer Information Technology program is offered by the Department of Computer Electronics and Graphics Technology and the Computer Science Department, School of Arts and Sciences, in conjunction with the Department of Management Information Systems, School of Business. The Computer Electronics and Graphics Technology Department oversees the specialization in Networking and Telecommunications Technology. For details of the program, see page 91 of this catalog.

CONSTRUCTION MANAGEMENT

Faculty

Jacob P. Kovel (Chair, Manufacturing and Construction Management, Copernicus 2120920, kovelj@ccsu.edu); Graduate advisors: Stuart Bennett, Raymond Perreault, Edward Sarisley, Mamoon Hammad (Dept. phone: 860-832-1830)

Overview

The Construction Management master's degree program provides students with the educational experiences that help create managers capable of developing and running construction and construction-related companies. In order to reach this objective, the program focuses on the skills required to understand and control daily business operations. All students will develop an understanding of company financial opera-

tions, construction law, risk management, and the different methods of project delivery. They will be able to apply this knowledge in the business environment. Additional topics will be personalized to meet each student's individual needs, whether in technical or managerial areas. The program stresses student and industry interaction, experiential learning, and industry-related research.

Programs

MASTER OF SCIENCE IN CONSTRUCTION MANAGEMENT

Program Rationale:

The mission of the master's program in construction management is to provide a program of advanced study designed to serve the technological and managerial needs of individuals pursuing a construction management career. The aim of graduate education is to provide students with the environment to develop knowledge and skills to make contributions to their disciplines and to the rapidly changing world. It is the program's objective to help develop Connecticut's construction work force at all levels.

Changes in the construction management profession are causing more construction professionals to consider the master's degree, rather than the bachelor's, as the terminal degree. Furthermore, an increasing number of professional organizations across the nation are beginning to view the master's degree as an entry-level professional degree for practicing managers. This is currently the prevalent situation for construction managers. Several construction management professional organizations—including the Construction Management Association of America, the Construction Financial Management Association, and the American Institute of Constructors—are espousing licensure programs that have advanced education requirements.

Program Learning Outcomes:

Students in the program will be expected to:

- develop a financial balance sheet for a construction company, understanding how each component impacts financial decisions made by the company;
- prepare an annual income statement for a construction company and use it as a tool for projecting company trends;
- perform a construction project risk assessment;

- evaluate bond and insurance proposals for both construction companies and projects;
- review and understand a basic construction contract and be able to assess it against other contracts;
- comprehend the various options available for dispute resolution in the construction industry;
- understand the impacts of different project delivery systems on the construction process; and
- conduct research on technology-based issues and prepare technical papers in support of that research.

Course and Capstone Requirements:

33 credit program consisting of 15 credits of common core (CM 505, CM 515, CM 545, CM 575, IT 594), 15–18 credits of electives selected jointly by the student and advisor, and a three-credit Plan C (Applied Research) capstone (IT 595) or a zero-credit Plan B (Comprehensive Exam) capstone. Students without a formal construction management education will be required to take CM 500 (Fundamentals of Construction Management) as a prerequisite to admission into the program.

Elective courses are subject to the following constraints:

- not more than 9 credits of non-construction management courses;
- not more than 6 credits of courses at the 400 level unless specifically approved in writing by the departmental graduate studies committee; and
- submission of an individual plan of study requiring faculty approval.

Selected elective courses

9 credits from the following:

CM 435	Construction Superintendency
CM 455	Construction Project Management
CM 525	Construction Equipment Operation and Management
CM 565	Construction Labor Relations
CM 596	Topics in Construction Management

6–9 credits from the following:

ETC 550	Global Positioning Systems Application
ETC 556	Architectural and Civil Engineering Technology CAD
ETC 578	Value Engineering for AEC
IT 502	Human Relations and Behavior in Complex Organizations

IT 521	Computer Aided Design and Drafting
IT 551	Project Management

OFFICIAL CERTIFICATE PROGRAM IN CONSTRUCTION MANAGEMENT

Participants must successfully complete the following courses (12 credits): CM 435, 500 or 505, 515, 575. Up to 12 credits may be applied to the MS in Construction Management (provided the six-year time limit for the master's is met).

ENGINEERING TECHNOLOGY

Faculty

A. Gates, P.E. (Chair, Engineering, Copernicus 2350900, 860-832-1823); N. Al-Masoud; C. Anderson, P.E.; S. Basim, P.E.; P. F. Baumann; L. Lema, CMfgE; E.J. Maydock; V. Naoumov; O.A. Powell, P.E.; and Z. Prusak (Dept. phone: 860-832-1815; Fax: 832-1811; website: www.technology.ccsu.edu)

Overview

The Master of Science in Engineering Technology graduate program offers two specializations — Civil/Construction and Mechanical/Manufacturing. The Master of Science in Engineering Technology degree is a planned program of study requiring 30 credits of graduate courses, including the written and oral capstone requirement. The Master's degree program consists of two areas of study — the Foundation Studies (12 credits) and the Engineering Technology Specialization (15 credits). The candidate selects *one* Specialization, either in Civil/Construction Engineering Technology or Manufacturing/Mechanical Engineering Technology. The Capstone requirement (three credits) has two options of study: Plan A—Research Thesis with written dissertation and oral defense; or Plan C—Research Project with a design project, written report, and oral defense. The graduate candidate must be accepted into the graduate program and have his/her planned program approved by the graduate advisor. According to graduate policy on courses, no more than nine credits of 400-level courses, as approved by the graduate advisor, can be applied towards the MSET degree.

Program

MASTER OF SCIENCE IN ENGINEERING TECHNOLOGY

Program Rationale:

The Master of Science in Engineering Technology is designed for the working professional who has a BS in Engineering Technology or Engineering and desires further development and/or knowledge of recent advances in established or emerging technologies in the Civil/Construction or Manufacturing/Mechanical specializations.

The Master of Science in Engineering Technology with a specialization in Civil/Construction Engineering Technology is designed for the working professional to continue his or her education at night at CCSU. The program will extend the knowledge of students into areas of established and emerging technologies in Architecture/Engineering/Construction (AEC) industries, including the study of Geographic Information Systems (GIS), Global Positioning Systems (GPS), site development, urban hydrology, construction engineering administration, and infrastructure rehabilitation and management.

The Master of Science in Engineering Technology with a specialization in Manufacturing/Mechanical Engineering Technology provides students with academic experience in applied engineering methods in the areas of mechanical and manufacturing. Specialization areas focus on advanced materials, manufacturing and assembly, project administration, and technical management. Technical electives include mechanical design and analysis, manufacturing methods, materials, quality control, and applied engineering management. The program is designed to provide applied engineering methods to aid graduates and engineers in remaining current with technology, improve productivity, and assist with advancement into leadership positions in industry.

Program Learning Outcomes:

Master of Science in Engineering Technology students will be expected to:

- identify, formulate, and solve technical problems;
- design and conduct experiments and to analyze and interpret data;
- execute a project to meet desired needs; and
- communicate effectively in oral, written, visual, and graphic modes.

Course and Capstone Requirements (30 credits):

I. Foundation Studies (12 credits)

Six credits are encumbered and six credits are electives selected from University courses approved for graduate study by the Engineering Department and the department offering the course.

ET 592	Research and Development of Experiments	3
STAT 453	Applied Statistical Inference	3
Elective, to be approved by the graduate advisor		3
Technical elective (ET, ETC, ETM, CM, or EMEC 400- or 500-level, approved by graduate advisor)		3

II. Engineering Technology Specialization: Student selects *one* Specialization and completes 15 credits of graduate courses in a planned program approved by advisor.

Specialization—Civil/Construction Engineering Technology (15 credits)

ETC 571	Design and Construction of Concrete Structures	3
ETC 577	Engineering Technology Project Administration	3
ET or ETC (500-level elective approved by advisor)		3
ET, ETC, or CM (500-level elective approved by advisor)		3
ET or ETC (400- or 500-level elective approved by advisor)		3

Specialization—Manufacturing/Mechanical Engineering Technology (15 credits)

ETM 517	Automated Assembly and Manufacturing Cell Design	3
ETM 523	Contemporary Engineering Materials	3
ET elective (one 500- or 400-level course)		3
ET electives (two 500-level courses)		6

III. Capstone Requirement: (3 credits)

The master candidate must select either Plan A, Thesis, or Plan C, Research in Engineering Technology, and each requires a written and oral defense of the research.

Plan A: ET 599 Thesis, 3 credits. The preparation of analytical research and thesis under the supervision of a graduate advisor requires a written and oral defense.

or

Plan C: ET 598 Research in Engineering Technology, 3 credits. An applied engineering project conducted under the

supervision of graduate advisor. Requires written report and oral defense. Extensive projects may be approved for up to 6 credits (in such case one, not two, ET 500-level electives will be required).

TECHNOLOGY MANAGEMENT

Faculty

Jacob P. Kovel (Chair, Manufacturing and Construction Management, Copernicus 2120920, kovelj@ccsu.edu); Graduate advisors: Bob Emiliani, Dan Kirby, Paul Resetarits, Ravindra Thamma (Dept. phone: 860-832-1830)

Overview

The Master of Science in Technology Management provides students with academic experiences that enable them to develop professionally and effectively direct change and productivity in business and industry. Flexibility is the cornerstone of this degree. Core program requirements focus on managerial responsibility, human relations and communication processes, project management, financial analysis, applied research and use of the computer as an industrial tool. Directed electives may include internal marketing strategies, product research and control and development of technical skills, as well as total quality system management. Graduate study plans in technology are individually designed by faculty advisors to prepare responsible professionals in the field. The needs and interests of students with established careers as technical managers in corporations are considered, as well as those individuals who aspire to leadership positions in business and industry. Some of the courses for this degree are offered online.

Programs

MASTER OF SCIENCE IN TECHNOLOGY MANAGEMENT

Program Rationale:

The Master of Science in Technology Management Program is designed to fulfill the educational needs of students and working professionals whose career paths are directed toward management in technologically-oriented organizations.

Program Learning Outcomes:

Graduate students in the program will be expected to:

- communicate effectively in written, oral, graphic, and visual modes;
- understand the management of projects, human resources, and technology;
- function effectively on teams and within a diverse environment; and
- have knowledge of contemporary issues and an understanding of the impact of technology applications from a global perspective.

Course and Capstone Requirements:

The Master of Science in Technology Management is a 33-credit master's, consisting of three different plans. Plan A is 30 credits with a three-credit thesis; Plan B is 33 credits with comprehensive exam; and Plan C is 30 credits with a three-credit applied research project.

- a. All three plans have a core curriculum (18 credits) as follows:

IT 500	Industrial Applications of Computers
IT 502	Human Relations and Behavior in Complex Organizations
IT 510	Industrial Operations Management
IT 551	Project Management
IT 594	Research in Methods Technology
AC 521	Accounting and Performance Measurement for Lean Enterprises

- b. Directed electives. These are graduate courses in technology at the 400 and 500 level, as approved by a faculty advisor. This allows the student flexibility to develop a specialization.

Strands

Some examples could include, but are not limited to:

- Lean Manufacturing and Six Sigma
- Supply Chain and Logistics
- Environmental and Occupational Safety

- c. All three plans have capstone course requirements of 0–3 credits.

Plan A: IT 599 Thesis (3 credits)

Plan B: Comprehensive exam

Plan C: IT 595 Applied Research Project (3 credits)

Note: No more than nine credits at the 400 level, as approved by the graduate advisor,

may be counted toward the graduate planned program of study.

OFFICIAL CERTIFICATE PROGRAM IN ENVIRONMENTAL HEALTH AND SAFETY

Participants must successfully complete the following courses (12 credits): IT 414, 456, 511, 512; nine credits of which may be applied as electives to the M.S. in Technology Management (provided six-year time limit for the master's is met).

OFFICIAL CERTIFICATE PROGRAM IN LEAN MANUFACTURING AND SIX SIGMA

Participants must successfully complete the following courses (12 credits): IT 464, 490, 510, 561. Up to 12 credits may be applied to the M.S. in Technology Management (provided the six-year time limit for the master's is met).

OFFICIAL CERTIFICATE PROGRAM IN SUPPLY CHAIN AND LOGISTICS

Participants must successfully complete the following courses (12 credits): IT 562, 563, 565, 566. Up to 12 credits may be applied to the M.S. in Technology Management (provided the six-year time limit for the master's is met).

TECHNOLOGY AND ENGINEERING EDUCATION

Faculty

James DeLaura (Chair, Copernicus 2350900, delaura@ccsu.edu); Michele Dischino, Patrick Foster, David Sianez, Michael Vincenti (Dept. phone: 860-832-1850)

Department Overview

The graduate programs in Technology and Engineering Education are designed to meet the needs of teachers who have completed an undergraduate program in technology education. However, individuals with technical or engineering degrees who are interested in teaching in industry or at a community college or university would benefit by completing a graduate degree in technology and engineering education. In addition, elementary educators interested in integrating educational disciplines (especially the integration of math-

ematics, science, technology and social science) would find a graduate degree in technology and engineering education very suitable. The programs provide a maximum amount of flexibility. Students, in consultation with their advisors, may plan programs of study uniquely fitted to their needs.

Many of the graduate students pursuing a master's degree in Technology and Engineering Education are employed as technology education instructors in secondary schools; instructors/supervisors in industry education programs; instructors in community colleges and technical schools; instructors/supervisors in government agencies; and technology education instructors in overseas dependent schools.

The Department of Technology and Engineering Education offers graduate programs in the following areas.

Master of Science in Technology and Engineering Education

With the guidance of an advisor, students select from the following plans: Plan A (30 credits including a thesis); Plan B (30 credits and comprehensive examination), or Plan C (30 credits including a special project).

Post-Master's Study

The student must have an appropriate master's degree and consult with a TE graduate advisor to plan a program of advanced study.

Programs

MASTER OF SCIENCE IN TECHNOLOGY AND ENGINEERING EDUCATION

Program Rationale:

The Master of Science in Technology and Engineering Education is designed to develop the professional competencies of technology and engineering educators so that they may successfully progress in their professions.

The program is a balance of liberal arts, research, and professional and technology education courses leading to a Master of Science in Technology and Engineering Education degree. A minimum of 30 credits of study in approved graduate courses is required. The program is designed for flexibility in meeting the needs of the individual students. Programs of study are individualized through electives and independent study.

The primary purpose of the program is to develop the professional competencies of technology education instructors so that they may successfully progress in their chosen fields.

Program Learning Outcomes:

Technology and Engineering Education graduate students will be expected to:

- identify and document an area of technical expertise;
- develop technical research skills;
- demonstrate areas of professional competencies by taking two of three professional education courses from a recommended list;
- update their technical competencies and understandings in their major areas;
- analyze and evaluate recent issues in their fields, such as curriculum innovations and strategies for program improvement and/or implementation; and
- explain how the relationship between their fields and the academic disciplines impacts the development of their students.

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 electives as approved by the faculty advisor — students may focus on instruction, curriculum development, administration/supervision, special education, or research.

Technology and Engineering Education offerings approved by advisor (12–21 credits)

Research (3–6 credits):

TE 598	Research in Technology Education (required as part of first 12 credits of the graduate program)
ED 599	Thesis (for Plan A)
or	
TE 596	Special Projects in Technology Education (for Plan C)

or

Comprehensive Examination (for Plan B)

Note: No more than nine credits at the 400 level, as approved by the graduate advisor, may be counted toward the graduate planned program of study, for the M.S. degree.

TECHNOLOGY AND ENGINEERING EDUCATION CERTIFICATION PROGRAM FOR COLLEGE GRADUATES

This post-baccalaureate certification program provides courses for college graduates, regardless of previous major, to teach technology and engineering education. This program, comprised of technical and professional courses, is offered in the late afternoon and evenings. The number of courses required to complete the program is contingent upon each student's previous industrial experience and formal degree work.

This program provides a unique opportunity for individuals seeking a career change. A minimum undergraduate cumulative grade point average of 2.70 is required for admission to this program. All students must first apply to the Graduate Admission Office. Once the student is accepted into the certification program, an advisor will be assigned who will assist in planning a program of graduate and undergraduate courses which incorporate certification requirements of the state of Connecticut. For additional information please contact the Chair, Department of Technology and Engineering Education.

MASTER OF ARTS IN TEACHING (MAT): TEACHER EDUCATION WITH SPECIALIZATIONS IN MATHEMATICS (7–12), SCIENCES (7–12), SPANISH (7–12), ENGLISH (7–12), AND TECHNOLOGY AND ENGINEERING EDUCATION (PK–12)

The Department of Teacher Education offers a Master of Arts in Teaching (MAT): Teacher Education with specializations in Mathematics, Sciences, Spanish, English, and Technology and Engineering Education. Candidates with documented content knowledge will complete 13 months of full-time study, earning teacher certification and the MAT degree. The program is designed to cross disciplines wherever possible, encouraging candidates to build content teaching expertise in their specializations and relate each discipline to the larger school curriculum. See page 78 of this catalog for a description of the program.