



Fairfield University GRADUATE PROGRAMS

ELECTRICAL AND COMPUTER ENGINEERING

The Master of Science in Electrical and Computer Engineering (MSECE) program exposes students to system and product engineering, hardware and software design, embedded systems, communications, control systems, computer architecture, and visualization and multimedia systems. Among challenging learning tasks are writing embedded software for real-time microcontrollers, designing VLSI chips, working with analog sensors, designing mixed signal circuit boards, and designing microelectronics systems and computer-based systems. The program includes areas of power and power electronics and combines the study, design, and use of software and hardware systems.

The MSECE program takes advantage of elective courses offered by the School of Engineering master's degree programs in software engineering and management of technology. As a result, students could gain a sense of the economic and business values needed to employ technology to serve society's needs.

COURSE OF STUDY

Students in the MSECE program must complete either 33 credits, including a thesis, or a non-thesis option comprising 37 credits. Four required courses build a foundation for the discipline; students then choose a core area among nine domains of knowledge and skills. All courses are assigned 3 credits each. Laboratory courses are assigned 1 credit.

Required courses (15 to 18 credits with thesis)

- Java for Programmers I
- Java for Programmers II (for CE students only)
- Engineering Applications of Numerical Methods
- Readings in Electrical and Computer Engineering

Thesis Option (6 credits)

Students may choose the thesis option provided they earn an A- or better in the Readings class, ME 420, and secure the approval of the program director.

Nine domains of knowledge and skills, shown below, specify available tracks and electives in the MSECE program. Students must complete at most ten credit hours from the domain elected for specialization and choose electives from the other domains. The courses in the nine domains are as follows:

ELECTRONIC PRODUCT DESIGN

- Electronic Materials
- Thermal Management of Microdevices
- Embedded Microcontrollers Lab
- Embedded Microcontrollers
- Product Design Lab

THE ARCHITECTURE OF MICROELECTRONICS

- Microelectronics
- Digital Integrated Circuit Design
- Analog Integrated Circuit Design
- Microelectronics Lab

SYSTEMS DESIGN

- Sensor Design and Applications
- Advanced Linear Systems
- Nonlinear Control Systems
- System Design Lab

COMMUNICATIONS SYSTEMS

- Fiber Optic Transmission and Communication
- Fiber Optic Transmission and Communication Laboratory
- Microwave Structures I
- Microwave Structures II
- Wireless Systems
- Digital Communications
- Analog Communications Systems
- Communications Systems Lab



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POWER AND POWER ELECTRONICS

- Power Generation and Distribution
- Advanced Power Electronics
- Power Electronics Lab

SIGNAL PROCESSING

- Voice and Signal Processing
- Image Processing

SCIENTIFIC VISUALIZATION

- Computer Graphics
- Computer Animation
- Network Programming

EMBEDDED SYSTEMS

- Advanced Digital Design
- Network Programming
- Network Embedded Systems

ENTERPRISE COMPUTING

- Database Concepts
- Enterprise Java

PROGRAM DIRECTORS/ADVISORS

Dr. Jerry Sergent and Dr. Douglas Lyon

Dr. Sergent is the advisor for the M.S. Electrical Engineering and Dr. Lyon advises on the Computer Engineering program. They are available to answer any specific questions you have about our program, discuss/develop a program of study for you, or to schedule an advising appointment.

You can contact them directly at jsergent@mail.fairfield.edu or (203) 254-4000, ext. 3330, and dlyon@mail.fairfield.edu (203) 254-4000, ext. 3155.

ADMISSION

Applicants for a master's degree must hold a bachelor's degree from a regionally accredited college or university (or the international equivalent) in science or engineering or its equivalent. Those with work experience in a technology environment, whose academic and professional record suggest the likelihood of success in a demanding graduate program will also be considered. Applicants should demonstrate aptitude in

- electric circuits and
- electronic circuits and devices

or begin their studies by registering for one or more of these bridge courses as judged suitable by the program directors.

FORMAL ADMISSION PROCESS

Applications to the graduate program are accepted on a rolling basis. Applications are reviewed by the Graduate Admission Committee.

Students seeking admission must complete and submit the following to:

Fairfield University
Office of Graduate & Continuing Studies Admission,
Kelley Center
1073 North Benson Rd.
Fairfield, CT 06824

1. A completed application (you can apply online at www.fairfield.edu/soeapp)
2. A non-refundable \$60 application fee
3. A professional résumé
4. An admission essay
5. Official transcripts from all universities/colleges attended (All foreign transcripts must be evaluated by an approved evaluating service. A complete list of approved evaluators is available at www.fairfield.edu/eval)
6. Two recommendations
7. Proof of immunization or titre for measles and rubella in compliance with Connecticut regulations if born after Dec. 31, 1956
8. Students from non-English speaking countries are required to submit a Test of English as a Foreign Language (TOEFL) score report. A TOEFL composite score of 550 for the paper test, 213 for the computer-based, or 79-80 on the internet-based test (iBT) is strongly recommended for admission. Fairfield's ETS code is 3390. www.ets.org

NON-MATRICULATED STUDENT STATUS

Non-matriculated status may be granted to individuals who have not completed the admission process but wish to begin taking courses, or who are not seeking a degree or certification. Individuals wishing to enroll as non-matriculated students must submit:

1. A completed application (you can apply online at www.fairfield.edu/soeapp)
2. A non-refundable \$60 application fee
3. A written request to the Graduate Program Director, specifying the semester for which this status is requested
4. Official transcripts verifying that a baccalaureate (or higher) degree with a quality point average of 3.0 or higher has been earned

Non-matriculated student status is granted for nine credits only. Students seeking admission must complete the formal application process by the end of their nine credit limit. Individuals enrolled as non-matriculated students cannot enroll for more than six credits, cannot register on a full-time basis, and are not eligible for any tuition aid or financial support. Upon formal admission to the Graduate Program, credits earned while a non-matriculated student will be applied toward the master's degree, provided the courses were approved by the faculty advisor and the grade received in each course was a B or better. Successful completion of coursework does not automatically guarantee formal admission.

NON-DEGREE STUDENTS

Students who hold master's degrees and who are interested in taking courses for professional and/or personal continuing education may be admitted as non-degree students. Individuals wishing to enroll as non-degree students must submit:

1. A completed application (you can apply online at www.fairfield.edu/sonapp)
2. A non-refundable \$60 application fee
3. A written request to the Graduate Program Director, specifying the semester for which this status is requested
4. Official transcripts verifying that a master's degree has been earned

Courses taken under this status will not be considered toward fulfillment of degree requirements.

Questions about the application process or requirements should be directed to the **Office of Graduate & Continuing Studies Admission:**

Phone: (203) 254-4184
Toll-Free: (888) 488-6840
Fax: (203) 254-4073
E-mail: gradadmis@mail.fairfield.edu

Office Operations

Days: Monday-Friday
Hours: 8:30 a.m.-4:30 p.m.
Location: Aloysius P. Kelley, S.J. Center

TUITION/FINANCIAL AID

Academic Year 2008/2009
Tuition: \$525 per credit hour

Scholarships

The School of Engineering provides modest scholarships to select students on the basis of need and merit.

Federal Stafford Loans

Under this program, graduate students may apply for up to \$20,500 per academic year, depending on their educational costs.

Alternate Loans Program

These loans help graduate and professional students pay the cost of attending the University.

Tax Deductions

Treasury regulation (1.162.5) permits an income tax deduction for educational expenses (registration fees and the cost of travel, meals, and lodging) undertaken to: maintain or improve skills required in one's employment or other trade or business; or meet express requirements of an employer or a law imposed as a condition to retention of employment job status or rate of compensation.

Veterans

Veterans may apply educational benefits to degree studies pursued at Fairfield University.

OFFICE OF FINANCIAL AID

We encourage all Fairfield University graduate students to call or make an appointment to speak with our Associate Director of Financial Aid and Financial Aid Counselor for Graduate and Continuing Studies, Diana M. DeVellis, for any assistance on applying for financial aid to help with financing a graduate degree.

Contact Information

Phone: (203) 254-4125
Fax: (203) 254-4008
E-mail: finaid@mail.fairfield.edu

Office Operations

Days: Monday-Friday
Hours: 8:30 a.m.-4:30 p.m.
Location: Aloysius P. Kelley, S.J. Center

ONLINE CATALOG: For detailed course descriptions, schedules and other University information, please refer to our online catalog www.fairfield.edu/catalogs.

SCHOOL OF ENGINEERING WEBSITE:

www.fairfield.edu/engineering

