FAIRFIELD UNIVERSITY GRADUATE PROGRAMS

ELECTRICAL AND COMPUTER ENGINEERING

PROGRAM DESCRIPTION

The School of Engineering offers a Master of Science degree in Electrical and Computer Engineering (MSECE) as well as graduate-level certificate programs in select areas of electrical or computer engineering. The MSECE program cultivates the skills in leading-edge areas of Electrical and Computer Engineering such as computer hardware, power, VLSI, sensors, mixed signals, measurement, control, biomedical, and nanotechnology. Through our diverse selection of courses, students may decide to obtain depth in one specialized area, or breadth in either electrical or computer engineering or both.

The MSECE program is intended to serve the needs of electrical and computer engineering professionals alike. Students will acquire the skills and real-world knowledge directly applicable to the job through an in-depth exposure to electrical or computer engineering relevant topics.

The MSECE curriculum at Fairfield University is rigorous and is integrated with industry projects through our signature Capstone course-sequence, enabling students to obtain hands-on team-based experience on year-long real-world projects in controlled environments. Those who prefer to perform cutting-edge research may select the year-long Thesis course-sequence under the supervision of our faculty experts, leading to publications in specialized conferences or journals. By having both, a strong academic curriculum and hands-on industry projects or cutting-edge research, students have the chance of obtaining a comprehensive learning experience rather than bookish learning.

Fairfield's small class sizes allow for individualized learning under the supervision of our dedicated expert faculty, who know each student by their name and provide personalized mentoring to assure each student achieves the highest level of success possible.

Fairfield's MSECE program is designed to accommodate busy schedules, including for those students already in the workforce.

Graduate students benefit from immersion into cultural activities through specially organized, free of charge, museum visits and attendance to acclaimed shows at the Quick Center for the Arts. Exposure to the entrepreneurship mindset and participation to entrepreneurship community activities are also available either through University-wide business plan competitions or through external activities such as Startup Weekend and IEEE-CT Entrepreneurs Network, Inventors Association of Connecticut, or Technology Venture community meetings.

COURSE OF STUDY

The Electrical and Computer Engineering Master program consists of 30 credits (10 courses) as follows:

- Electrical and Computer Engineering Required Courses (9 credits – 3 courses)
- Capstone or Thesis (6 credits – 2 courses)
- Electives (15 credits – 5 courses)

REQUIRED COURSES (9 credits – 3 courses)

The electrical and computer engineering required courses cover essential electrical and computer engineering methodologies such as engineering programming, digital signal processing, and linear systems. The required courses are:

- Engineering Applications of Numerical Methods (includes programming with Matlab) or Advanced Java Programming
- Digital Signal Processing (covers modern signal processing tools including vector spaces, bases and frames, operators, signal expansions and approximation, as well as classical signal processing tools including Fourier and z transforms, filtering, and sampling, estimation, applications and implementation)
- Advanced Linear Systems (covers modeling and analysis of linear systems)

CAPSTONE OR THESIS (6 credits – 2 courses)

Two options for a two-semester required course sequence:

- Capstone: hands-on team-based experience on year-long real-world projects in controlled environments
- Thesis: cutting-edge research under the supervision of our faculty experts, leading to publications in specialized conferences or journals

ELECTIVE COURSES (15 credits – 5 courses)

Five electives may be chosen from leading edge courses in various specializations such as hardware, power, sensors, measurement, control, biomedical, and nanotechnology. Students may select from these courses to obtain breadth in various specializations or to obtain depth in one specialization leading to a Certificate of graduate study, which is awarded in addition to the Master degree.

Fairfield University

School of Engineering

GRADUATE PROGRAM DIRECTOR

Dr. Uma Balaji
Phone: 203-254-4000 x2424
ubalaji@fairfield.edu

Dr. Balaji serves as the faculty advisor for students in the Software Engineering program and is the appropriate person to contact with questions, or to learn more.

For a complete faculty listing, see **www.fairfield.edu/soefaculty**.

ADMISSION REQUIREMENTS

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 some programming and data structures and some 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 director.

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 online:

1. A completed application.
    (Apply online at **www.fairfield.edu/soeapp**.)

2. A non-refundable $60 application fee.

3. A professional résumé.

4. Personal statement describing intent for studying in the program.

5. Official transcripts from all universities/colleges attended. (All foreign transcripts must be evaluated by an approved evaluating service. A list of approved evaluators is available at **www.fairfield.edu/eval**.)

6. Two recommendation letters, one of which must be from a current supervisor or professor, completed online.

7. All international students whose native language is not English must demonstrate proficiency in the English language by taking either TOEFL or IELTS exams. For admission to the graduate school, a TOEFL composite score of 550 for the paper test, 213 for the computer-based, 80 on the internet based test or an IELTS score of 6.5 is strongly recommended. Scores must be sent directly from the Educational Testing Service (TOEFL) or IELTS.org. Fairfield's ETS code is 3390.

Submit transcripts and any other documents that cannot be uploaded to:

Fairfield University
Office of Graduate Admission
Kelley Center
1073 North Benson Road
Fairfield, CT 06824

Academically-gifted international applicants with English deficiency will have the opportunity to be conditionally admitted into our graduate program, pending their successful completion of English as Second Language (ESL) summer program at our partner institution. Students will be provided on-campus accommodations and enrollment into the summer ESL program. The TOEFL/IELTS requirement is waived upon written recommendation from the ESL Coordinator, based on successful performance of end-of-session internal assessments.

TRANSFER STUDENTS

Transfer credit will be considered for graduate coursework earned with a grade of B or better. No more than six credits may be transferred.

MANDATORY IMMUNIZATIONS

Connecticut State law requires each full-time or matriculated student to provide proof of immunity or screening against measles, mumps, rubella, varicella (chicken pox), meningitis and tuberculosis. Certain exemptions based on age and housing status apply. Matriculating students are defined as those enrolled in a degree seeking program. More detailed information and the required downloadable forms are available online at **www.fairfield.edu/immunization**. Completed forms should be submitted directly to the Student Health Center. Although this is not required to complete an application, you must provide proof of immunity/screening prior to course registration. Please consult your private health care provider to obtain the necessary immunizations. Questions may be directed to the Student Health Center: 203-254-4000 ext. 2241 or e-mail health@fairfield.edu.

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.
    (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 grade point average of 3.0 or higher has been earned.

Non-matriculated student status is granted for 9 credits only. Students seeking admission must complete the formal application process by the end of their 9 credit limit in order to continue with their studies. Individuals enrolled as non-matriculated students cannot enroll for more than six credits each term, 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.
    (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 master's degree has been earned.

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

TUITION/FINANCIAL AID

Academic Year 2018-19
Tuition: $825 per credit hour

A graduate education can provide countless professional and personal rewards in the future. However, the costs associated with earning a master's degree may be challenging. Many students need to look beyond their own financial resources or the resources of their employer for assistance. There are many ways to finance a graduate education, including graduate assistantships, federal direct loan programs and our Veterans Pride Program, which are all discussed at **www.fairfield.edu/gradfa**.

SCHOLARSHIPS
The School of Engineering provides merit-based, research, and practical experience scholarships for MSECE students, based on their academic performance at Fairfield University. Other types of employment, including technology-based, are available on-campus.

OFFICE OF FINANCIAL AID

Advisors from the Office of Financial Aid are committed to helping students find the options that best suit each of their needs. We encourage all Fairfield University graduate students to contact the Financial Aid office with any questions or to make an appointment to speak with a counselor.

FINANCIAL AID CONTACT INFORMATION
Phone: 203-254-4125
Fax: 203-254-4008
E-mail: finaid@fairfield.edu

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

MORE INFORMATION

ADMISSION QUESTIONS
Questions about the application process should be directed to the **Office of Graduate Admission**.
Phone: 203-254-4184
Fax: 203-254-4073
E-mail: gradadmis@fairfield.edu

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

SCHOOL OF ENGINEERING WEBSITE

www.fairfield.edu/engineering

ONLINE CATALOG

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