ELECTRICAL AND COMPUTER ENGINEERING

A. James Clark School of Engineering
2426 A.V. Williams Building
Phone: 301-405-3685
eceadvise@umd.edu
http://ece.umd.edu

The Department of Electrical and Computer Engineering (ECE) at the University of Maryland, College Park offers one of the strongest and most highly-ranked programs in the nation. Led by 94 full-time and affiliate faculty members, the research programs within the department cover a wide spectrum of activities in the areas of:

- Machine Learning
- Quantum Computing
- Wireless Communications
- Robotics
- Cybersecurity
- Microelectronics
- Neuroscience
- Computer Architecture
- Embedded Systems
- Optics and Photonics
- Bioelectronics
- Power Electronics

PROGRAMS

Majors

- Computer Engineering Major (https://academiccatalog.umd.edu/undergraduate/colleges-schools/engineering/electrical-and-computer/computer-engineering-major/)
- Cyber-Physical Systems Engineering Major (https://academiccatalog.umd.edu/undergraduate/colleges-schools/engineering/electrical-and-computer/cyber-physical-systems-engineering-major/)
- Electrical Engineering Major (https://academiccatalog.umd.edu/undergraduate/colleges-schools/engineering/electrical-and-computer/electrical-engineering-major/)

Minor

- Computer Engineering Minor (https://academiccatalog.umd.edu/undergraduate/colleges-schools/engineering/electrical-and-computer/computer-engineering-minor/)
- Quantum Science and Engineering Minor (https://academiccatalog.umd.edu/undergraduate/colleges-schools/engineering/electrical-and-computer/quantum-science-engineering-minor/)

ADVISING

All ECE students have mandatory advising every semester, provided by the professional advising staff of the ECE Undergraduate Studies Office. Departmental permission is required in order for students to register and for all courses in the major. The Department's Undergraduate Studies Office (2426 A.V. Williams Building, 301-405-3685) is the primary point of contact for undergraduates with advising questions. Detailed curriculum requirements, registration information, and advising and mentoring procedures can be found on the ECE Undergraduate Advising website: http://ece.umd.edu/undergrad/advising/.

OPPORTUNITIES

Undergraduate Research Experiences

The Department of Electrical and Computer Engineering is affiliated with more than 40 specialized laboratories, supporting activities including: speech and image processing, high performance systems, mobile computing and multimedia, communication networks, robotics, control systems, neural systems, systems integration, VLSI design and testing, experimental software engineering, semiconductor materials and devices, photonics, fiber optics, ion beam lithography, real-time systems, human- computer interaction, and virtual reality. Undergraduate students are encouraged to engage in research at some point during their education. Active participation in research not only allows students to apply what they have learned in class, it also gives them greater insight into a specific area within ECE and an appreciation for the subtleties and difficulties associated with the production of knowledge and fundamental new applications. Research experience also prepares students for the demands of graduate school and the work force. Information on participating in undergraduate research can be found at https://ece.umd.edu/undergraduate/research/488/499/499L (https://ece.umd.edu/undergraduate/research/488/499/499L/).

Internships

Information on internships can be found at http://eng.umd.edu/careers/. Other internships are advertised by the ECE Department's Office of External Relations and Office of Undergraduate Studies.

Co-op Programs

Participation in a Cooperative Education Program or internship with private industry or a government agency is strongly encouraged. See the A. James Clark School of Engineering catalog entry for details.

Job Opportunities

Electrical and computer engineers have been uniquely responsible for developing many of the innovations that have brought us modern life. Today, they are urgently needed to help solve a variety of global problems, including challenges related to energy, communications, health care, climate change, and national security. They remain at the forefront of cutting edge developments and innovations in nanotechnology, robotics, wireless communications, and more. Electrical and computer engineers also have wide ranging employment opportunities in fields including machine learning, quantum computing, cybersecurity, neuroscience, microelectronics, communications and signal processing, power systems, and computer architecture. Specific jobs include developing fiber optic technology, lasers for biomedical applications, software for robots, electronic weapons systems, advanced wireless networks, and neuron-like sensors for various applications.

Honors Program

The Electrical and Computer Engineering Honors Program (http://ece.umd.edu/undergrad/honors/) is intended to provide a more challenging and rewarding undergraduate experience for students pursuing the baccalaureate in Electrical or Computer Engineering. Please visit the ECE Honors website (https://ece.umd.edu/undergraduate/

current-students/honors-program/) for program course requirements. Students completing all program requirements with a "B" average (3.0 on a 4.0 scale) and a cumulative GPA of 3.5 for all undergraduate work will have their participation noted on their B.S. diploma. Students may opt into the program at any time, and will work with the ECE undergraduate office to ensure they have completed the appropriate requirements.

Student GROUPS and Professional Organizations

The ECE Department has an active student chapter of the Institute of Electrical and Electronics Engineers (IEEE). Information and instructions for joining can be found on their website: http://terplink.umd.edu/organization/ieee-umd/.

The ECE Department also offers the ECE Peer Mentoring Program. ECE peer mentors provide insider knowledge about the department and college as well as share helpful resources to ensure academic and social success. The ECE Peer Mentor Program offers various programming throughout the year including workshops, guest speakers, and social events to build community within ECE. More information about the ECE Peer Mentoring Program can be found at http://ece.umd.edu/undergraduate/peer-mentoring/.

Scholarships and Financial Assistance

Several scholarships are administered through the department and many others through the Clark School of Engineering. To be considered for these awards, students must submit an application by May 31st of each year for the following academic year. For more information visit: http://eng.umd.edu/scholarships/.

In addition, the Office of Student Financial Aid (OSFA) administers all types of federal, state and institutional financial assistance programs and, in cooperation with other university offices, participates in the awarding of scholarships to deserving students. For information, visit: http://financialaid.umd.edu.

Departmental Awards

Each spring, the ECE Department recognizes its talented and committed students with departmental awards. The ECE Chair's Award is presented to graduating seniors in Electrical and Computer Engineering for outstanding academic performance. The ECE Outstanding Academic Performance Award is presented to a junior for demonstrating outstanding academic excellence. The ECE Service Award is presented to a graduating senior(s) who has demonstrated exceptional leadership and service to both their fellow students and the department.