

Electrical and Computer Engineering

WHAT IS ELECTRICAL AND COMPUTER ENGINEERING?

Whether it is generating and distributing electrical power, designing advanced medical imaging and diagnostic equipment, creating communication systems to connect the world, or building next-generation robots, electrical engineering is the application and control of electricity. Computer engineering is the branch of electrical engineering that focuses on construction and control of computers and their interface with the outside world. Auburn University's Department of Electrical and Computer Engineering maintains its reputation for success by attracting talented students and providing them with a quality education via a faculty of international standing. As a result, graduates of the department are uniquely qualified to pursue careers in industries as diverse as power distribution and biomedical research.

NOTABLE

- 530 undergraduate and 135 graduate students enrolled in fall 2016
- 22 full-time faculty members
- 7 Fellows of IEEE

CURRICULUM

Bachelor of Electrical Engineering

Auburn's undergraduate electrical engineering curriculum emphasizes seven areas, including circuit analysis, communications, control systems, digital computer design, electronics, electromagnetics and power systems. The bachelor of electrical engineering major, offered by the department for more than a century, is a broad program designed to provide an education that offers graduates the flexibility to pursue a variety of careers.

Bachelor of Electrical Engineering – Computer Option

Computer engineering focuses on the design, production and testing of computer hardware, including components, networks and peripherals. This curriculum is a thoughtfully constructed plan for providing a firm footing in circuit analysis, digital systems and electronics in preparation for specialized study in computer system design, computer architecture and information networks. Additionally, computer engineers complete a series of software courses giving them the skills necessary to function at the highest level of computer engineering.

Bachelor of Wireless Engineering – Hardware Option

The newest of the three majors, wireless hardware engineering addresses the growing needs of the wireless technology industry by producing wireless engineers with the ability to understand all aspects of existing wireless hardware. This includes the study of integrated circuits, communication devices and network switching equipment, while providing the skills and understanding needed to innovate and create the next generation of wireless technology. The curriculum's foundation rests on a series of courses in circuit analyses, communications, digital computing, electronics and electromagnetics with a specialized component of wireless communication and networks classes.

For information about academic programs and minors, visit www.eng.auburn.edu/programs

Graduate curriculum

Master of Electrical and Computer Engineering (M.E.E) — requires the successful completion of a set of courses approved by the major professor. The courses may be taken on campus or online.

Master of Science (M.S.) — requires successfully completing a set of courses approved by the advisory committee, carrying out research on a chosen topic and passing the final examination on the thesis.

Doctor of Philosophy (Ph.D.) — requires successful passing of a qualifying examination covering undergraduate materials and a general examination covering the major and minor fields, the preparation of an acceptable dissertation reflecting high achievement in scholarship and independent investigation, and the passing of a final examination on the dissertation and related subjects.

RESEARCH, LABORATORIES AND CENTERS

- Auburn University Magnetic Resonance Imaging (MRI) Research Center
- Alabama Micro/Nano Science and Technology Center (AMNSTC)
- Wireless Engineering Research and Education Center (WEREC)
- Laboratory for Electronics Assembly and Packaging (LEAP)

TEAMS AND ORGANIZATIONS

Electrical and computer engineering students are encouraged to participate in various campus and departmental organizations, including:

- Eta Kappa Nu, electrical engineering international honor society
- Institute of Electrical and Electronic Engineers (IEEE)
- Tau Beta Pi, engineering honor society
- SPaRC Robotics Team
- Cupola Engineering Ambassadors
- Engineering Student Council
- National Society of Black Engineers
- Society of Hispanic Engineers
- Society of Women Engineers
- Baja SAE
- Formula SAE

For more information, visit
www.eng.auburn.edu/organizations

LIFE AFTER GRADUATION

With the rapid pace of technological development, the Department of Electrical and Computer Engineering strives to educate its graduates to lead the field in careers as design engineers, technical sales engineers, project managers and testing and research engineers. Graduates are prepared to face the future with the ability to address matters such as national security, renewable energy, disaster relief, communication and entertainment.

Recent employers include Mercedes-Benz, Intel, National Instruments, Proctor and Gamble, Southern Company, the Strategic Missile and Defense Command, ExxonMobil, NASA, Suzuki, BMW, NSA, AT&T, CIA, Briggs & Stratton, Hewlett-Packard, Northrop Grumman, Motorola, ChevronTexaco, Honda, ADTRAN, CharBroil, Neptune, PhaselV Engineering, Harris, International Paper, Michelin, Southwire, National Instruments and Dynetics.

SCHOLARSHIPS

The College of Engineering and the Department of Electrical and Computer Engineering provide scholarship opportunities to students at every stage of their academic career. To be eligible for scholarships at Auburn University, all students must apply through the AUSOM system. 9

For information about engineering scholarships, visit
www.eng.auburn.edu/scholarships

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