



NSF ENGINEERING RESEARCH CENTERS

The Department of Electrical and Computer Engineering at Engineering at NC State is the only program in the nation currently leading two active National Science Foundation Engineering Research Centers.

The FREEDM Systems Center proposes a smart-grid paradigm shift that will enable the U.S. to take advantage of advances in renewable energy for a secure and sustainable future. The Center promotes this vision through breakthroughs in fundamental research (system theory, advanced storage, and post-silicon power devices) and enabling technology development (secured communication, distributed grid intelligence, high-frequency and high-voltage power conversion, and distributed energy storage devices).

The ASSIST Center is pioneering a paradigm shift towards data driven health management to achieve revolutionary advances in the quality of global health care. The Center uses nanotechnology to realize wearable devices that include a multitude of sensors and electronics for monitoring of health and environment. ASSIST's goal is to create hassle-free systems that rely entirely on the energy harvested from the body in the form of heat (thermoelectric) or motion (piezoelectric). These self-powered ASSIST platforms will empower both individuals and healthcare providers to improve health outcomes and reduce healthcare costs.

RANKINGS

The American Society for Engineering Education recently ranked the NC State ECE Department as tenth in the country in total research expenditure. Best-Engineering-Colleges.com, a data-driven ranking service, recently ranked our core MS programs as 6th (Computer Engineering) and 23rd (Electrical Engineering), and PhD programs as 18th (Computer Engineering) and 22nd (Electrical Engineering) in the country.

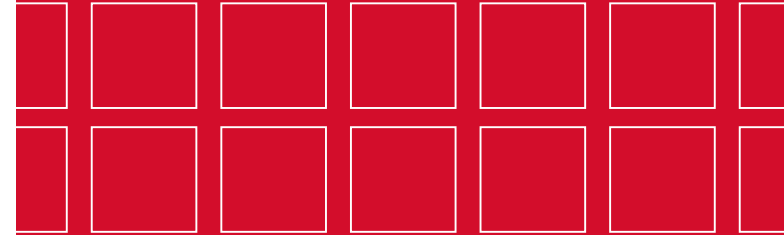
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WWW.ECE.NCSU.EDU/GRADUATE

NC STATE Engineering

ELECTRICAL AND COMPUTER ENGINEERING

Graduate Programs



DISTANCE EDUCATION

Engineering Online at NC State is designed for working professionals. The ECE Department offers M.S. distance education degree programs in electrical engineering, computer engineering, computer networking, and electric power systems engineering. Students enroll in online courses that are equivalent to on-campus lecture courses. These programs are limited to individuals who work or reside in the United States and to United States military personnel serving overseas. We accept international applications from applicants who are affiliated with a partnering corporation. For more information about Engineering Online, visit engineeringonline.ncsu.edu.

DEGREE REQUIREMENTS

M.S. students must complete 31 semester hours of of graduate course credit, including the option to complete an M.S. thesis.

Ph.D. students must complete a total of 72 semester hours that are comprised of graduate course credit (M.S. credits may be included), comprehensive preliminary examinations, in-depth research, a written research dissertation, and a final oral defense of the research.

GRADUATE RESEARCH

With more than 50 tenured and tenure-track faculty members, our graduate program embraces interdisciplinary collaboration within Electrical and Computer Engineering, as well as across the college and university.

ELECTRICAL ENGINEERING RESEARCH AREAS

Bioelectronics Engineering

- Bioinstrumentation
- Biomechatronics
- Biomimetic Systems

Communications and Signal Processing

- Digital Communications
- Digital Signal Processing
- Machine Learning, Data Sciences, and Computer Vision

Control, Robotics and Mechatronics

- Computational Intelligence
- Control Theory
- Mechatronics
- Robotics

Electronic Circuits and Systems

- ASIC Design and Verification
- Analog, Bio and RF Circuits and Systems
- Computer-Aided Design/Modeling
- Digital Circuits
- Electromagnetic Fields/Antenna Analysis
- Microwave Devices and Circuits
- VLSI

Nanoelectronics and Photonics

- III-V Materials and Devices
- Optical Materials and Photonic Devices
- Quantum Engineering
- Silicon Devices and Fabrication

Power Electronics and Power Systems

- Electronic Energy Systems Packaging
- Electric Machines and Drives
- Electric Vehicle Systems
- Power Electronics
- Power Management ICs
- Power Semiconductor Devices
- Power Systems
- Wide Bandgap Power Electronics

COMPUTER ENGINEERING RESEARCH AREAS

Computer Architecture and Systems

- ASIC Design and Verification
- Embedded Computer Systems

- Memory Systems/Memory Management
- Microprocessor Architecture
- Parallel and Distributed Computer Architecture
- Security and Reliable/Fault-Tolerant Computing
- Software and Optimizing Compilers
- VLSI and Computer Aided Design

Networking

- Internet of Things and Cyber-Physical Systems
- Network Modeling and Performance Analysis
- Networking Services and Management
- Online Social Networks
- Wireless Networking

DEGREE PROGRAMS

Ph.D. Degrees

- Electrical Engineering
- Computer Engineering

M.S. Degrees (thesis or non-thesis)

- Electrical Engineering
- Computer Engineering
- Computer Networking
- Electric Power Systems Engineering

NC State University undergraduates may participate in the Accelerated Bachelor's/Master's program.

ADMISSIONS

Applicants must have a bachelor's degree from an accredited college or university in electrical engineering, computer engineering or a closely related field, with an undergraduate GPA of 3.25 or higher. All applicants must submit GRE general test scores. International applicants must submit TOEFL or IELTS test scores. Doctorate-level applicants should have a record of independent research or project work.

COST OF STUDY

Master's program: Tuition and fees for full-time study in 2015–2016 are \$6,961.94 per semester for North Carolina residents and \$14,011.44 per semester for nonresidents.

FINANCIAL AID

Our graduate students are funded through fellowships, teaching assistant appointments and research assistant appointments. Tuition and health insurance are covered for students on a qualifying assistantship.

APPLICATION DEADLINES

FALL

- December 15

SPRING

- July 1

In some circumstances, we may make exceptions to these deadlines and accept late applications from U.S. citizens and permanent residents. Engineering Online applicants are not required to follow these deadlines.

TESTIMONIALS

“NC State is a great place to grow as an engineer. The course catalog is exceptional, and course projects are directly applicable to industry applications while also providing the requisite fundamentals.”

- Alexander Leonard, Analog Devices

“NC State ECE has the best curriculum along with top-notch course-projects which make a student totally ready to tackle complex real problems after moving to industry.”

- Anindya Dutta, Intel

“In addition to its great reputation in industry, this program really provides students with skills much sought-after in the job market and helped me a lot in job-hunting.”

- Weiyi Long, Oracle

“The Ph.D. program in the ECE department at North Carolina State University provided me with many professional development opportunities, from being a primary contributor to cutting-edge research, to taking highly-relevant coursework to provide strong support of my research activities. The Ph.D. program in the ECE department at NC State prepared me extremely well to pursue whatever path I choose to take in the future, whether it be in academia, in industry or as an entrepreneur.”

- Eric Wyers, University of Texas at Tarleton

How to Apply:

www.ece.ncsu.edu/graduate/howtoapply

WWW.ECE.NCSU.EDU/GRADUATE

Frequently Asked Questions:

www.ece.ncsu.edu/graduate/faq