CornellEngineering

School of Electrical and Computer Engineering

ELECTRICAL AND COMPUTER ENGINEERING UNDERGRADUATE DEGREE PROGRAM

Prepare for a wide range of potential career paths with an undergraduate degree in electrical and computer engineering (ECE) from Cornell University. Be at the forefront of exciting applications, including cell phones, self-driving cars, neural interfaces, the Internet of Things, and the smart grid. Be a part of new discoveries in areas like computer systems, nanosciences, machine learning, complex networks, clean energy, and robotics. With the broad preparation afforded by an ECE degree, you'll be ready to tackle any number of engineering challenges and meet your future professional goals, no matter which direction your career may lead.

Start with a strong base in circuits, signals, digital design, programming, and computer organization, including extensive hands-on laboratory experience. Create a foundation in embedded systems, microelectronics, mathematics of signal analysis, probabilistic modeling, and electromagnetics. Ready access to the most advanced equipment supports your coursework in everything from electronics to signal processing to microcontrollers.

BREAK THE RULES to PUSH THE LIMITS of IMAGINATION

With this foundation in hand, focus on your areas of interest with advanced coursework that culminates in major design experiences. ECE is flexible—arrange a program of study that accommodates your career goals and interdisciplinary interests such as bioengineering, microelectromechanical systems (MEMS), autonomous vehicles, nanotechnologies, photonics, machine learning, or power and energy systems.

At the same time, broaden your background by studying other fields with electives in diverse areas such as business, computer science, mathematics, music, or synthetic biology.

What can you do with an ECE degree? Here are just a few possibilities:

- Pursue medicine by applying electrical design and analysis to medical systems, including applications of MEMS and electronic imaging, and build a career as a physician, an engineer, or a research scientist in a field such as bioelectronics.
- Become a computer engineer through studies in digital design, computer architecture, parallel systems, and microcontrollers. You can also choose from among several courses in computer science to strengthen your background in software, algorithms, compilers, and operating systems.
- Study nanotechnology through coursework coupled with hands-on experience in the world-class Cornell NanoScale Science and Technology Facility.
- Find yourself in engineering management through courses in business management, engineering decision-making, entrepreneurship, human resources, investment strategies, marketing, and leadership. With a strong background in both engineering and management, many ECE graduates assume management responsibilities within just a few years of graduation.

ECE REQUIRED COURSES

ECE 2100	Introduction to Circuits
ECE 2200	Signals and Information
ECE 2300	Digital Logic and Computer Organization
ECE 3400	Intelligent Physical Systems

With the broad preparation and unlimited potential of an undergraduate degree in electrical and computer engineering at Cornell, you can meet your immediate career goals and be prepared for a lifetime of new opportunities.

ELECTRICAL AND COMPUTER ENGINEERING

SOME AREAS OF FACULTY RESEARCH

biosensors and biomedical devices

computer systems and architecture

electromagnetics, optics and plasma sciences

electronic and photonic devices

electronic design automation

energy and power systems

information theory and communications

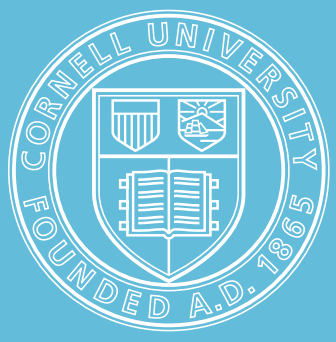
machine learning

microelectromechanical systems (MEMS)

nanotechnology

signals, systems and networks

VLSI circuits and systems



Produced by the Office of Engineering Admissions.

MASTER OF ENGINEERING DEGREE PROGRAM

Our Electrical and Computer Engineering Master of Engineering (M.Eng.) degree program gives you more flexibility than in most other fields, combining a personalized, but rigorous course load with the freedom to pursue your individual interests through interdisciplinary research.

Get a jump-start on your career and apply your knowledge and skills to make a real difference in your workplace—and in the world. At Cornell ECE, you can learn to tackle endless real-world problems, driving the leading edge of existing and emerging technologies, research that pushes the very edge of new, applying theories to immediate problems.

ECE SAMPLE ELECTIVE COURSES

ECE 4070	Physics of Semiconductors and Nanostructures
ECE 4250	Digital Signal Processing
ECE 4271	Evolutionary Processes, Algorithms & Games
ECE 4320	MicroElectro Mechanical Systems (MEMS)
ECE 4360	Nanofabrication for Integrated Circuits
ECE 4370	Fiber and Integrated Optics
ECE 4450	Computer Networks & Telecommunications
ECE 4520	Power Systems and Market Options
ECE 4530	Analog Integrated Circuit Design
ECE 4570	Electronic Device Fundamentals
ECE 4670	Digital Communication System Design
ECE 4740	Digital VLSI Design
ECE 4750	Computer Architecture
ECE 4760	Digital Systems Design Using Microcontrollers
ECE 4950	Machine Learning and Pattern Recognition

Develop leadership skills in an environment where challenges demand collaborative teamwork, critical thinking, and effective communication. Push the limits of imagination through your professional design project in an unparalleled variety of fields, a project that will help open doors to your future career.

Command a higher starting salary, about 48 percent more than the national average for an ECE bachelor's degree. Payback on investment is relatively short, and financial benefits will compound throughout your career.

An M.Eng. from Cornell ECE will prepare you for a rewarding career in a wide range of industries, from high-speed silicon hardware to high-power financial software; from undersea fibers to geosynchronous satellites; from national power grids to energy-saving LEDs; from computerized medical instruments that look into the human body to advanced radar systems that look out to the heavens.

ECE By the Numbers

ECE undergraduate students	258
ECE graduate students (M.Eng.)	118

Starting salaries of B.S. Electrical and Computer Engineering graduates (for 2018)

Low	$57,000
Median	$85,000
High	$135,000

ece.cornell.edu