Electrical and Computer Engineering

Website (http://www.ece.neu.edu)

Srinivas Tadigadapa, PhD
Professor and Chair

409 Dana Research Center
617.373.7529
617.373.4431 (fax)

The Department of Electrical and Computer Engineering's graduate program is a dynamic and thriving center of world-recognized research in a wide range of areas. The department has strong ties to local industry and the world-famous hospitals and medical centers of Boston and is involved in many joint research projects with them. With five NSF- and DHS-funded research centers and over 20 industrial partners, faculty and students are actively conducting cutting-edge research in areas such as computer vision; pattern recognition and machine learning; brain-computer interface; computer architecture; high-performance computing; embedded systems; hardware and software security; power systems and power electronics; underwater communication networks and signal processing; robotics; information theory; communications, control, and signal processing; Internet of Things; RF, electromagnetics, optics, and magnetic materials; micro/nanomechanical structures and advanced nanomaterials; power-first system/computer architecture; ultralow power biomedical and neural circuits and systems.

ECE's graduate program educates MS and PhD students with deep fundamental and practical knowledge in the various disciplines of electrical and computer engineering by offering a strong curriculum and providing opportunities for research in these disciplines. The department educates the next generation of highly skilled engineers and researchers with necessary skills to address the future needs of academia, industry, government, and humanity.

Overview of Programs Offered

ECE's graduate program offers a Master of Science in Electrical and Computer Engineering, a Master of Science in Electrical and Computer Engineering Leadership, a Master of Science in Applied Physics and Engineering, a Master of Science in Data Science, a Master of Science in Robotics, a Master of Science in Internet of Things, a Master of Science in Wireless and Network Engineering, a Doctor of Philosophy in Computer Engineering, a Doctor of Philosophy in Cybersecurity, a Doctor of Philosophy in Electrical Engineering, and a Doctor of Philosophy in Interdisciplinary Engineering (housed in the College of Engineering).

Mission of the Department

The primary educational missions of the electrical and computer engineering department are to educate undergraduate students so they have the opportunity to obtain successful careers in electrical and computer engineering and related disciplines and pursue advanced graduate study in engineering or related disciplines. The mission of the graduate program is to educate graduate students so they have the skills to solve complex engineering problems and can make meaningful contributions to research and industry.

Graduate Certificate Options

Students enrolled in a master's degree have the opportunity to also pursue one of the many engineering graduate certificate options in addition to or in combination with the MS degree. Students should consult their faculty advisor regarding these options (https://catalog.northeastern.edu/graduate/engineering/graduate-certificate-programs/).

GORDON INSTITUTE OF ENGINEERING LEADERSHIP OPTION

Students have the opportunity to pursue the Master of Science in Electrical and Computer Engineering Leadership (MSECEL) (https://catalog.northeastern.edu/graduate/engineering/electrical-computer/electrical-computer-engineering-leadership-msecel/) along with the Graduate Certificate in Engineering Leadership.

In addition, students have the opportunity to pursue the Gordon Engineering Leadership Program (https://catalog.northeastern.edu/graduate/gordon-institute/) in combination with the Master of Science in Electrical and Computer Engineering. This option results in an increase in total hours beyond that required for the master's degree only.

Programs

Doctor of Philosophy (PhD)

- Computer Engineering (https://catalog.northeastern.edu/graduate/engineering/electrical-computer/computer-engineering-phd/)
- Cybersecurity (https://catalog.northeastern.edu/graduate/computer-information-science/cybersecurity/cybersecurity-bachelors-degree-entrance-phd/)
- Electrical Engineering (https://catalog.northeastern.edu/graduate/engineering/electrical-computer/electrical-engineering-phd/)
- Interdisciplinary Engineering (https://catalog.northeastern.edu/graduate/engineering/interdisciplinary-phd/interdisciplinary-engineering-phd/)

Master of Science (MS)

- Applied Physics and Engineering (https://catalog.northeastern.edu/graduate/science/interdisciplinary/applied-physics-engineering-ms/)
- Data Science (https://catalog.northeastern.edu/graduate/computer-information-science/computer-science/data-science-ms/)
- Internet of Things (https://catalog.northeastern.edu/graduate/engineering/electrical-computer/internet-things-ms/)
- Robotics (https://catalog.northeastern.edu/graduate/engineering/electrical-computer/robotics-ms/)
- Wireless and Network Engineering (https://catalog.northeastern.edu/graduate/engineering/electrical-computer/wireless-network-engineering-ms/)

Master of Science in Electrical and Computer Engineering (MSECE)

- Concentration in Communications, Control, and Signal Processing (https://catalog.northeastern.edu/graduate/engineering/electrical-computer/electrical-computer-engineering-concentration-communications-control-signal-processing-msece/)
- Concentration in Computer Networks and Security (https://catalog.northeastern.edu/graduate/engineering/electrical-computer/computer-networks-security/)
- Concentration in Computer Systems and Software (https://catalog.northeastern.edu/graduate/engineering/electrical-computer/computer-systems-software/)
- Concentration in Computer Vision, Machine Learning, and Algorithms (https://catalog.northeastern.edu/graduate/engineering/electrical-computer/computer-vision-machine-learning-algorithms/)
- Concentration in Electromagnetics, Plasma, and Optics (https://catalog.northeastern.edu/graduate/engineering/electrical-computer/electrical-computer-engineering-concentration-electromagnetics-plasma-optics-msece/)
- Concentration in Hardware and Software for Machine Intelligence (https://catalog.northeastern.edu/graduate/engineering/electrical-computer/electrical-computer-engineering-concentration-hardware-software-marchine-intelligence-msece/)
- Concentration in Microsystems, Materials, and Devices (https://catalog.northeastern.edu/graduate/engineering/electrical-computer/electrical-computer-engineering-concentration-microsystems-materials-devices-msece/)
- Concentration in Power Systems (https://catalog.northeastern.edu/graduate/engineering/electrical-computer/electrical-computer-engineering-concentration-power-systems-msece/)

Master of Science in Electrical and Computer Engineering Leadership (MSECEL)

- Electrical and Computer Engineering Leadership (https://catalog.northeastern.edu/graduate/engineering/electrical-computer/electrical-computer-engineering-leadership-msecel/)