Degree Programs

Electrical and computer engineering graduate students at the University of Houston have the opportunity to work with and learn from faculty recognized as world leaders in their fields. These include Fellows of the IEEE and the National Academy of Inventors, multiple NSF CAREER Award winners, and investigators in major research projects supported by NASA, DARPA, NIH, ARPA-E and the NSF.

ECE graduate students can also take full advantage of the college’s location in Houston. Many department researchers work closely with firms in the energy industry, allowing them to address the sector’s most pressing needs. Faculty also have ongoing collaborations with physicians and researchers at Texas Medical Center institutions, enabling them to bring advances from the lab to the clinic as quickly as possible.

Regardless of their career objectives – whether obtaining an R&D post in academia or expanding their skillset for work as a practicing engineer – students can take advantage of these opportunities thanks to the different degree plans offered by the department.

Doctor of Philosophy in Electrical Engineering (Ph.D.)

The Ph.D. is a research-intensive degree that prepares students for a research and development career in industry or academia. Given the research focus of the Ph.D., applicants must have a deep affinity for their research topic and be fully committed to completing their degree and contributing to their discipline.

There are two paths to the Ph.D.:

1. Directly from B.S. to Ph.D., bypassing the M.S. degree, which is recommended for motivated, top-performing candidates with a clear idea of what they want to accomplish in their field of study.
2. Obtaining a M.S. degree (at UH or elsewhere) prior to Ph.D. studies. This is recommended for students
who are still forming a clear vision of their future career objectives.

**Master of Science in Electrical Engineering (MSEE, with thesis)**

The Master of Science (MSEE) degree is a research-oriented degree and requires the completion of a thesis that describes the results of research conducted under the guidance of a faculty advisor. This is a good option for students who haven’t yet decided if they want to pursue an R&D career and/or aren’t set on their exact area of study. As such, it is very important that students select an advisor as soon as possible, ideally prior to beginning the program.

**Master of Science in Electrical Engineering (MSEE, Non-thesis option)**

The Master of Science in Electrical Engineering (MSEE) non-thesis master’s program provides advanced instruction emphasizing engineering practice, making it well suited for practicing engineers who want to grow their knowledge and skillset but aren’t necessarily pursuing a career in R&D. In fact, the MEE program can be counted as one year’s experience towards registration as a Professional Engineer.

The program focuses on electrical engineering design, systems operation, manufacturing, and management. Students may specialize in one of four areas of strength in the Department of Electrical and Computer Engineering. These areas are: Control and Power Systems, Electromagnetics and Microelectronics, Electronics and Computers, and Signals and Communications. Under the guidance of a faculty member, students may complete the MSEE with a capstone project focusing on a practical engineering problem.

In addition, students can select electives outside the electrical and computer engineering department. Options include courses in other Cullen College departments, the College of Business Administration, and the College of Natural Sciences and Mathematics. This flexibility allows students to design a degree program that best matches their goals for the future.

Although the thesis and non-thesis programs are open to both part-time and full-time students, part-time students and working engineers typically find the non-thesis program is the better fit. Students who do not wish to pursue a degree can take individual classes as a Post Baccalaureate (PB) student.

**Certificate in Power and Energy Systems (PES)**

The Department of Electrical and Computer Engineering (ECE) of the University of Houston offers two Graduate Certificate programs in Power and Energy Systems.

1. **Power Electronics and Renewable Energy Technologies**: This program focuses on power electronics, electric machines, adjustable drive systems, and renewable energy technologies
2. **Power Systems and Smart Grid**: This program focuses on the advanced courses related to power systems, smart grid, and power system protection.

The courses offered are relevant to the industries such as oil and gas, power industries, utilities, and renewable energy. The program provides advanced instruction to give individuals the level of technical and business expertise needed to meet the increased industry demand for highly skilled professionals. The time to complete each certificate will be one year.
The courses will be taught by the ECE power faculty and industry experts located in Houston. To provide the most flexibility for working professionals, all courses of the certification programs will be offered in the evenings as well as online.

More details can be found here.

Download Electrical Engineering Program Information

Master of Computer and Systems Engineering (MSCSE)

The Computer and Systems Engineering (CSE) degree is a graduate level, interdisciplinary program administered by the Department of Electrical and Computer Engineering that provides specialization in Computer Engineering.

Applicants can have a B.S. in any one of the following fields: Electrical Engineering, Computer Engineering, Computer Science or a degree in any engineering field or Quantitative Science. Depending on previous background, a set of prerequisites might have to be satisfied before the student starts the graduate program in CSE. A student can complete the degree on a full or part time basis and has the option of doing a thesis or not. A full description of the CSE Program Requirements can be found here.

Detailed information on the application process can be found in the Application Procedures section of the website.

Prospective students can get academic advising from zhan2 [at] central [dot] uh [dot] edu (Dr. Zhu Han) by making an appointment or contact the Graduate Admissions Advisor at ece_grad_admit [at] uh [dot] edu.

Download Computer & Systems Engineering Program Information

© University of Houston Cullen College of Engineering, Department of Electrical and Computer Engineering