

ELECTRICAL ENGINEERING:

ENGINEERING THE TECHNOLOGY OF THE FUTURE



WHAT IS ELECTRICAL ENGINEERING?

Electrical engineering is a very broad field – it encompasses virtually anything you can think of that requires electric power to operate! As an electrical engineering student at UH, you will get a broad sampling of courses from several areas involving electrical and electronic systems, but in your last two years you will choose from among six specialty areas: electronics; nanotechnology; power and alternative energy; computers and embedded systems; electromagnetics; and signals, systems and communication. Working in these areas involves the analysis and design of systems including antennas, robotics, power distribution, digital signal processing, semiconductor devices and integrated circuits, analog and digital control systems, communication networks and more!

CAREERS IN ELECTRICAL ENGINEERING

Career opportunities for electrical engineers are everywhere, and in companies big and small. Virtually all of the major manufacturing and engineering companies hire electrical engineers. A 2017 salary survey produced by the National Association of Colleges and Employers found that new electrical engineering graduates earned an average starting salary of \$66,920, but starting salaries for UH electrical engineering graduates are above the per-year national average. Our alumni work locally and overseas for Halliburton, Schlumberger, Hewlett Packard, CenterPoint Energy and Burns & McDonnell, as well as other telecommunications, construction and petrochemical companies.

WHY EARN YOUR ELECTRICAL ENGINEERING DEGREE AT THE UNIVERSITY OF HOUSTON?

ACADEMICS

Faculty and staff in the electrical and computer engineering department at the UH Cullen College of Engineering takes pride in their commitment to undergraduate education. Students are treated as individuals and have access to faculty advisors throughout their undergraduate career. Small classes are the rule, especially at the junior and senior level. From the introductory level to the more advanced courses, teaching is done primarily by full-time faculty members, many of whom have received prestigious teaching awards. Students will receive real-world, hands-on training in the field to introduce them to electrical and computer engineering in an exciting and relevant way. In the senior design courses, students work on real-world problems with faculty and industry engineers guiding them. For those desiring additional learning opportunities, special workshops are available in some of the required freshman and sophomore courses.

Learn more at www.ece.uh.edu/undergraduate/general-information



RESEARCH

The electrical and computer engineering department provides numerous opportunities to undergraduate students interested in doing research. Many professors hire students to work in their labs, and the university offers stipends on a competitive basis for both summer and regular semester research projects. There is an amazing array of research going on inside of the department's labs, so students can get exposure to cutting-edge technologies and research tools.

Learn more at www.ece.uh.edu/research/undergraduate

SCHOLARSHIPS

Many scholarships are available to incoming and current undergraduate students in the electrical and computer engineering department. Some are administered by the Office of Scholarships and Financial Aid and are open to all University of Houston students. The Cullen College of Engineering also offers merit-based scholarships. Additionally, the university's co-op program allows students to receive career training while financing their education.

Learn more at www.ece.uh.edu/undergraduate/scholarships-careers

STUDENT ORGANIZATIONS

Electrical and computer engineering students at UH like to get involved! We encourage you to join academic and professional organizations like the student chapter of the Institute of Electrical and Electronics Engineers (IEEE), Society of Women Engineers (SWE), National Society of Black Engineers (NSBE) and many others. Student organizations help you build leadership, communication and networking skills. Members of student organizations receive career guidance from engineering professionals and participate in activities that promote engineering. IEEE events include the Region 5 Robotics Competition and the annual IEEE Chili Cook-Off.

Learn more at www.ece.uh.edu/people/students

FOR MORE INFORMATION

UH Department of Electrical and Computer Engineering: www.ece.uh.edu
Undergraduate Program:
www.ece.uh.edu/undergraduate/general-information
Email: ECEugrad@central.uh.edu

UH Department of Electrical and Computer Engineering
Engineering Building 1 | 4726 Calhoun Rd., Suite N308
Houston, Texas 77204-4005 | 713.743.4400

BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING

FOUR-YEAR ACADEMIC MAP 2018-2019

YEAR 1

SEMESTER 1			SEMESTER 2			Total
CHEM 1331	Fundamentals of Chemistry	3	ENGI 1331	Computing for Engineers	3	
CHEM 1111	Fundamentals of Chemistry Lab	1	ENGL 1304	First Year Writing II	3	
ENGI 1100	Introduction To Engineering	1	HIST 1378/79	The United States Since 1877	3	
ENGL 1303	First Year Writing I	3	MATH 1432	Calculus II	4	
HIST 1376/77	The United States to 1877	3	PHYS 1321	University Physics I	3	
MATH 1431	Calculus I	4	PHYS 1121	Physics Lab I	1	
Semester Hours 15			Semester Hours 17			32

After completing the ECE base, students in the BSEE program must choose one of six concentration areas: 1. Signals, Communications & Controls, 2. Electronics, 3. Nanosystems, 4. Applied Electromagnetics, 5. Power & Renewable Energy, 6. Computers & Embedded Systems.

YEAR 2

SEMESTER 1			SEMESTER 2			Total
ECE 2201	Circuit Analysis I	2	ECE 3436	Microprocessor Systems	4	
MATH 2433	Calculus III	4	ECE 2202	Circuit Analysis II	2	
MATH 3321	Engineering Mathematics	3	ECE 2100	Circuit Analysis Laboratory	1	
PHYS 1322	University Physics II	3	ECE 3331	Programming Applications in ECE	3	
PHYS 1122	Physics Lab II	1	ECE 3337	Signals and Systems Analysis	3	
POLS 1336	U.S. & Texas Constitution & Politics	3	ENGL 2304	Technical Communications	3	
Semester Hours 16			Semester Hours 16			32

They have to take 7 concentration electives in their chosen area as well as 2 more ECE electives and one Technical elective.

YEAR 3

SEMESTER 1			SEMESTER 2			Total
ECE 3355	Electronics	3	ECE Elect	Concentration Elective	3	
ECE 3155	Electronics Laboratory	1	ECE 3340	Numerical Methods	3	
ECE 3317	Applied Electromagnetic Waves	3	ECE Elect	ECE Elective	3	
ECE Elect	ECE Elective	3	ECE Elect Lab	ECE Elective Lab	1	
ECE Elect	Concentration Elective	3	POLS 1337	U.S. Government	3	
CORE	Language, Philosophy, & Culture	3	INDE 2333	Engineering Statistics I	3	
Semester Hours 16			Semester Hours 16			32



YEAR 4

SEMESTER 1			SEMESTER 2			Total
ECE 4335	Systems Design I	3	ECE 4336	Systems Design II	3	
ECE Elect	Concentration Elective	3	ECE Elect	Concentration Elective	3	
ECE Elect	Concentration Elective	3	ECE Elect	Concentration Elective	3	
ECE Elect Lab	Elective Lab	1	ECE Elect	Concentration Elective	3	
Tech Elective	Technical Elective	3	ECE Elect Lab	ECE Elective Lab	1	
ECON 2304	Microeconomic Principles	3	ECE Elect Lab	ECE Elective Lab	1	
Semester Hours 16			Semester Hours 17			33
TOTAL SEMESTER HOURS						129



*Students should meet with their academic advisor to formulate their own plan. Course offerings are subject to change.

FAST FACTS

590

TOTAL UNDERGRAD
STUDENTS IN ECE
DEPARTMENT

\$66,920

AVERAGE STARTING
SALARY WITH B.S. IN
ELECTRICAL ENGINEERING

36

TOTAL FACULTY
IN ECE
DEPARTMENT

138

TOTAL FACULTY
IN CULLEN
COLLEGE

22:1

STUDENT-TO-FACULTY
RATIO ACROSS THE
UNIVERSITY