BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING

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!

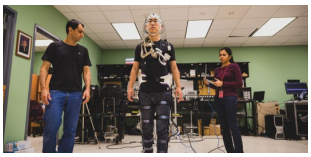
CAREERS IN ELECTRICAL ENGINEERING

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 2022 salary survey produced by Payscale. com found that electrical engineering graduates earned an average base salary of $78,570. 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 & COMPUTER 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 take 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

ECE FAST FACTS

720 Total Undergrad Students in Department
208 Total Faculty in Cullen College
$78,570 Average Salary
21:1 Student-to-Faculty Ratio Across the University

Cullen College of Engineering
UNIVERSITY OF HOUSTON

BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING

ILLUSTRATIVE FOUR-YEAR ACADEMIC PLAN

YEAR 1

SEMESTER 1			SEMESTER 2			Total
CHEM 1111	Fundamentals of Chemistry Lab	1	ENGI 1331	Computing for Engineers	3	
CHEM 1311	Fundamentals of Chemistry*	3	ENGL 1302	First Year Writing II*	3	
ENGI 1100	Introduction To Engineering	1	HIST 1302	The United States Since 1877*	3	
ENGL 1301	First Year Writing I*	3	MATH 2414	Calculus II*	4	
HIST 1301	The United States To 1877*	3	PHYS 2325	University Physics I*	3	
MATH 2413	Calculus I*	4	PHYS 2125	University Physics Laboratory I	1	
	Semester Hours	**15**		**Semester Hours**	**17**	**32**

YEAR 2

SEMESTER 1			SEMESTER 2			
ECE 2201	Circuit Analysis I	2	ENGI 2304	Technical Communications*	3	
MATH 2415	Calculus III	4	ECE 2202	Circuit Analysis II	2	
MATH 3321	Engineering Mathematics	3	ECE 2100	Circuit Analysis Laboratory	1	
PHYS 2326	University Physics II	3	ECE 3331	Programming Applications in ECE	3	
PHYS 2126	University Physics Laboratory II	1	ECE 3441	Digital Logic Design	4	
GOVT 2306	U.S. & TX Constitution/Politics*	3	CORE	Creative Arts*	3	
	Semester Hours	**16**		**Semester Hours**	**16**	**32**

YEAR 3

SEMESTER 1			SEMESTER 2			
ECE 3355	Electronics	3	CONC Elect	Concentration Elective	3	
ECE 3155	Electronics Laboratory	1	ECE 3340	Numerical Methods	3	
ECE 3436	Microprocessors	4	ECE ELEC	ECE Elective	3	
ECE 3337	Signals & Systems Analysis	3	ECE ELEC Lab	ECE Elective Lab	1	
INDE 2333	Engineering Statistics I	3	ECON 2302	Principles of Microeconomics*	3	
ECE 3317	Applied EM Waves	3	ECE ELEC	ECE Elective	3	
	Semester Hours	**17**		**Semester Hours**	**16**	**33**

YEAR 4

SEMESTER 1			SEMESTER 2			
ECE 4335	Systems Design I	3	ECE 4336	Systems Design II	3	
CONC ELEC	Concentration Elective	3	CONC ELEC	Concentration Elective	3	
CONC ELEC	Concentration Elective	3	CONC ELEC	Concentration Elective	3	
ECE ELEC Lab	Elective Lab	1	CONC ELEC	Concentration Elective	3	
Tech ELEC	Technical Elective	3	ECE ELEC Lab	ECE Elective Lab	1	
GOVT 2305	U.S. Government*	3	CORE	Language, Philosophy, & Culture*	3	
	Semester Hours	**16**		**Semester Hours**	**16**	**32**
				TOTAL SEMESTER HOURS		**129**

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.

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

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

FOR MORE INFORMATION

Get in touch with us and schedule a virtual or in person meeting: https://www.egr.uh.edu/academics/undergraduate-programs
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 | 4226 Martin Luther King Blvd., Suite N308 | Houston, Texas 77204-4005 | 713.743.4400

@uhengineering