WHAT IS COMPUTER ENGINEERING?

Computer engineering combines electrical engineering and computer science. It is about the interface between machines (hardware) and computers (software). Electrical engineers and computer engineers do both things, but computer engineers are more involved with software than electrical engineers. Computer engineers design and maintain hardware and software in computer-based systems, from PCs to supercomputers, as well as computer systems that are embedded in vehicles, appliances and communication networks. Specialized areas within computer engineering include system architecture, computer chip design, layout design, package/board design and system integration.

CAREERS IN COMPUTER ENGINEERING

Career opportunities for computer engineers are excellent across all specialties. A 2022 salary survey produced by Payscale.com found that computer engineering graduates earned an average base salary of $88,896. Computers are used increasingly to control electronic and mechanical hardware, so these students are held in high regard by local and international companies. Our students work for a diverse group of companies including Hewlett Packard, Schlumberger and CenterPoint Energy, as well as for petrochemical, construction and telecommunication 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.

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.

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.

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.

ECE FAST FACTS

- **651** Total Undergrad Students in Program
- **146** Total Faculty in Cullen College
- **$88,896** Average Salary
- **22:1** Student-to-Faculty Ratio Across the University
**BACHELOR OF SCIENCE IN COMPUTER ENGINEERING**

**FOUR-YEAR ACADEMIC MAP 2022-2023**

### YEAR 1

**SEMESTER 1**
- CHEM 2111 Fundamentals of Chemistry Lab 1
- CHEM 1311 Fundamentals of Chemistry* 3
- ENGI 1100 Introduction to Engineering 1
- ENGL 1301 First Year Writing I* 3
- HIST 1376/77 The United States to 1877* 3
- MATH 2413 Calculus I* 4

**SEMESTER 2**
- ENGI 1331 Computing for Engineers 3
- ENGL 1302 First Year Writing II* 3
- HIST 1378/79 The United States Since 1877* 3
- MATH 2414 Calculus II* 4
- PHYS 2325 University Physics I* 3
- PHYS 2125 University Physics Laboratory I 1

Semester Hours 15  
Total Semester Hours 17  
32

### YEAR 2

**SEMESTER 1**
- ECE 2201 Circuit Analysis I 2
- MATH 2415 Calculus III 4
- MATH 3321 Engineering Mathematics 3
- PHYS 2326 University Physics II 3
- PHYS 2126 University Physics Laboratory II 1
- GOVT 2306 U.S. & TX Constitution/Politics* 3

**SEMESTER 2**
- ENGI 2304 Technical Communications* 3
- ECE 2202 Circuit Analysis II 2
- ECE 2100 Circuit Analysis Laboratory 1
- ECE 3331 Programming Applications in ECE 3
- ECE 3441 Digital Logic Design 4
- CORE Creative Arts* 3

Semester Hours 16  
Total Semester Hours 16  
32

### YEAR 3

**SEMESTER 1**
- COSC 1437 Intro to Programming 4
- ECE 3155 Electronics Lab 1
- ECE 3355 Electronics 3
- ECE 3436 Microprocessors 4
- ECE 3337 Signal & System Analysis 3
- ECE 3317 Applied EM Waves 3

**SEMESTER 2**
- COSC 2436 Programming & Data Structures 4
- ECE 3457 Digital Electronics 4
- CpE Elect/Lab Approved CpE Elective and Lab 4
- INDE 2333 Engineering Statistics I 3

Semester Hours 18  
Total Semester Hours 15  
33

### YEAR 4

**SEMESTER 1**
- MATH 3336 Discrete Mathematics 3
- ECE 4335 ECE Design I 3
- ECE 5367 Intro to Comp Architecture Design 3
- CpE ELEC/Lab Approved CpE Elective and Lab 4
- ECON 2302 Principles of Microeconomics* 3

**SEMESTER 2**
- GOVT 2305 U.S. Government* 3
- ECE 4336 ECE Design II 3
- CpE Elect/Lab CpE Elective and Lab 4
- COSC 4351 Fundamentals of Software Engr 3
- CORE Language, Philosophy & Culture 3

Semester Hours 16  
Total Semester Hours 16  
32

TOTAL SEMESTER HOURS 129

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

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For more information:

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

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