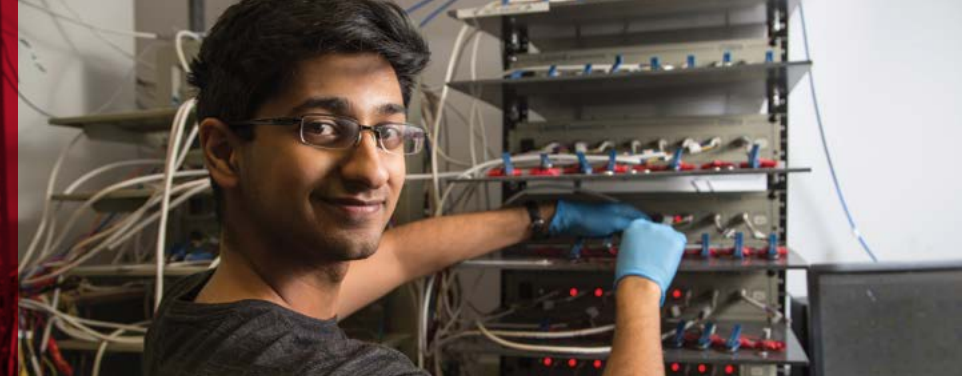


# COMPUTER ENGINEERING:

ENGINEERING THE TECHNOLOGY OF THE FUTURE



## 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

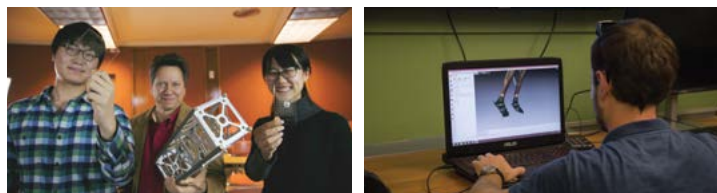
Career opportunities for computer engineers are excellent across all specialties. A 2017 salary survey produced by the National Association of Colleges and Employers found that new computer engineering graduates earned \$68,191. Computers are used increasingly to control electronic and mechanical hardware, 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 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 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](http://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](http://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](http://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](http://www.ece.uh.edu/people/students)

## 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](mailto: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 COMPUTER 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	
<b>Semester Hours 15</b>			<b>Semester Hours 17</b>			<b>32</b>

After completing the ECE base, students in the BScPE program must take courses in digital electronics, digital design and computer architecture. In the department of computer science, students have to take courses in advanced programming, data structures and software engineering. They also have to choose from an approved list of computer engineering electives courses in Advanced Microprocessors, Advanced Digital Design, and Embedded Systems, and they have to take one ECE elective and a second ECE or COSC elective.

### 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	3	
PHYS 1122	Physics Lab II	1	ECE 3337	Signals & Systems Analysis	3	
POLS 1336	U.S. & Texas Constitution & Politics	3	ENGI 2304	Technical Communications	3	
<b>Semester Hours 16</b>			<b>Semester Hours 16</b>			<b>32</b>

### YEAR 3

SEMESTER 1			SEMESTER 2			Total
COSC 1320	Intro to Computer Science II	3	COSC 2320	Data Structures	3	
ECE 3155	Electronics Lab	1	ECE 3457	Digital Electronics	4	
ECE 3355	Electronics	3	CpE Elect/Lab	Approved CpE Elective and Lab	4	
ECE 3441	Digital Logic Design	4	INDE 2333	Engineering Statistics I	3	
ECE 3317	Applied Electromagnetic Waves	3	MATH 3336	Discrete Mathematics	3	
CORE	Language, Philosophy & Culture	3				
<b>Semester Hours 17</b>			<b>Semester Hours 17</b>			<b>34</b>



### YEAR 4

SEMESTER 1			SEMESTER 2			Total
COSC 4351	Fundamentals of Software Engr	3	POLS 1337	U.S. Government	3	
ECE 4335	ECE Design I	3	ECE 4336	ECE Design II	3	
ECE 5367	Intro to Comp Architecture Design	3	ECE Elect	Approved ECE Elective	3	
CpE Elect/lab	Approved CpE Elective and Lab	4	ECE/COSC Elect	Approved ECE or COSC Elective	3	
ECON 2304	Microeconomic Principles	3	CORE	Creative Arts Core	3	
<b>Semester Hours 16</b>			<b>Semester Hours 15</b>			<b>31</b>
<b>TOTAL SEMESTER HOURS</b>						<b>129</b>



\*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

\$68,191

AVERAGE STARTING  
SALARY WITH B.S. IN  
COMPUTER ENGINEERING

36

TOTAL FACULTY  
IN ECE  
DEPARTMENT

138

TOTAL FACULTY  
IN CULLEN  
COLLEGE

22:1

STUDENT-TO-FACULTY  
RATIO ACROSS THE  
UNIVERSITY