UC 8822 05F

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Department of Electrical and Computer Engineering

Chair: Haluk Ogmen

Electrical & Computer Engineering Program

Engineering majors must earn a grade of C- or better in all engineering, mathematics, and science courses. No grade lower than C- will be accepted on any courses transferred to the University of Houston.

Transfer credit for electrical and computer engineering courses will be accepted only from electrical and computer engineering programs which are accredited by the Accreditation Board for Engineering and Technology (ABET).

Students must earn a 2.000 grade point average in all courses. Once a student has attempted 12 semester hours of ECE courses, a cumulative major gpa of 2.250 or better must be maintained to continue in good standing in the major. The major grade point average is calculated using all ECE courses except for ECE 1121 and ECE 3336. In addition, for computer engineering majors only, the major grade point average will also include all COSC courses that could be applied to the Bachelor of Science in Computer Engineering degree.

The number of attempts at an ECE course is limited to two. Attempt is defined as formal registration that results in a student's name being listed on an official grade report, which includes grades of W, Q, and I.

Students must complete ECE 1100 & 1331 before attempting any 2000 level ECE course; they must complete all 2000 level ECE courses before attempting any 3000 level ECE course except that ECE 2300 and 2317 may be taken concurrently with ECE 3331.

A minimum grade point average of 3.0 and consent of graduate director is required for an undergraduate or postbaccalaureate student to enroll in electrical and computer engineering graduate courses (6000 and above).

(1)Students with a bachelor's degree in electrical engineering who want to pursue a second bachelor's degree in computer engineering, (2) students with a bachelor's degree in computer engineering who want to pursue a second bachelor's degree in electrical engineering, and (3)students who want to pursue the two degrees simultaneously must meet all requirements for each degree including residency requirements. In addition, University policy requires that a student must earn a minimum of 30 semester hours in addition to the minimum hours needed for the first degree, regardless of whether the two degrees are awarded simultaneously or successively. A student falling into any one of the three categories above must file a petition with the ECE Department, indicating precisely which courses will comprise the additional 30 hours. Such petitions must be approved by the department at least one semester prior to completion of the second degree. It is not possible to earn both a BSCPE and a BSEE degree without following these regulations.

Bachelor of Science in Electrical Engineering

Electrical Engineering students may choose from two degree plan options, both leading to the BSEE degree: the Electrical Engineering Option and the Computer Engineering Option. The first and second years are the same for both options:

First Year

Fall Semester	Hours
CHEM 1117. Chemistry for Engineers Laboratory	1
CHEM 1372. Chemistry for Engineers	3
ECE 1100. Introduction to Electrical and Computer Engr.	1
ENGL 1303. Freshman Composition I or ENGL 1309. English Composition for Nonnative Speakers I	3
HIST 1376 or 1377. The United States to 1877[1]	3
MATH 1431. Calculus I[2]	4
POLS 1336. U.S. and Texas Politics and Constitutions[1]	3
Total	18

Spring Semester	
ECE 1331. Computers & Problem Solving	3
ENGL 1304. Freshman Composition II or ENGL 1310. English Composition for Nonnative Speakers II	3
HIST 1378 or 1379. The United States since 1877[1]	3
MATH 1432. Calculus II	4
PHYS 1321. University Physics I	3
Total	16

Second Year

Fall Semester	Hours
ECE 2331. Numerical Methods for ECE	3
Humanities Core Course	3
MATH 2433. Calculus III	4
PHYS 1322. University Physics II	3
POLS 1337. U. S. Government: Congress, President and Court[1]	3
Total	16

Spring Semester	
ECE 2100. Circuits Lab	1
ECE 2300. Circuit Analysis	3
ECE 2317. Applied Electricity & Magnetism	3
ENGL 2304: Technical Communications	3
MATH 3321. Engineering Mathematics	3
Visual & Performing Arts Core Course	3
Total	16

Third and Fourth Year, EE Option

Students choosing the EE option must select their ECE electives as follows: At least 21 hours consisting of at least six ECE electives (3- or 4-hour ECE courses with associated labs) satisfying:

- Breadth Requirement: At least one course must be taken in each of two of the following ECE concentration areas: (1)Electromagnetics and Solid State Devices, (2)Power & Controls, (3)Signals & Communications, (4)Electronics. Courses available in each area are posted in the department.
- Depth Requirement: At least two additional courses must be taken at the 5000 level.

Two remaining courses may be any ECE elective at the 3000 level or above except ECE 3336.

Third Year-EE Option

Fall Semester	Hours
ECE 3317. Applied EM Waves	3
ECE 3331. Programming Applications in Electrical and Computer Engineering	3
ECE 3337. Electrical Engineering Analysis I	3
ECE 3364. Circuits & Systems	3
ECE 3455. Electronics	4
Total	16

Spring Semester

ECE 3441. Digital Logic Design	4
ECE Elective	3
ECE Elective/lab	4
ENGI 2334. Introduction to Thermodynamics	3
INDE 2333.Engineering Statistics I	3
Total	17

Fourth Year – EE Option

Fall Semester	Hours
ECE 4119. Solid State Devices Laboratory	1
ECE 4339. Physical Principles of Solid State Devices	3
ECE 4436. Microprocessor Systems	4
ECE Elective	3
ECON 2304. Microeconomic Principles	3
MECE 3400. Introduction to Mechanics	4
Total	18

Spring Semester	
ECE 4334. Electrical & Computer Engineering Systems Design	3
ECE Elective/lab	4
ECE Elective/lab	4
ECE Elective	3
Total	14

Degree Total	**131**

Third and Fourth Year, Computer Option

Students choosing the computer option must select their ECE electives as follows: At least 7 hours consisting of at least two ECE electives. The electives may consist of any non-required 3 hour lecture or 4 hour lecture/lab ECE courses at the 3000 level or higher except ECE 3336.

Third Year – Computer Option

Fall Semester	Hours
ECE 3317. Applied EM Waves	3
ECE 3331. Programming Applications in Electrical and Computer Engineering	3
ECE 3337. Electrical Engineering Analysis I	3
ECE 3441. Digital Logic Design	4
ECE 3455. Electronics	4
Total	17

Spring Semester	
COSC 1320. Introduction to Computer Science II	3
ECE 3457. Digital Electronics	4
ECE 4436. Microprocessor Systems	4
ECE Elective	3
INDE 2333. Engineering Statistics I	3
Total	17

Fourth Year – Computer Option

Fall Semester	Hours
COSC 2320. Data Structures	3
ECE 4119. Solid State Devices Laboratory	1
ECE 4339. Physical Principles of Solid State Devices	3
ECE 5367. Intro. to Comp. Arch. & Design	3
Approved CPE Elective[11]	4
ECON 2304. Microeconomic Principles	3
Total	17

Spring Semester	
COSC 4330. Fundamentals of Operating Systems	3
ECE 4334. Electrical & Computer Engineering Systems Design	3
Approved CPE Elective[11]	4
ECE Elective/lab	4
Total	14

Degree Total	**131**

Computer Engineering Program

First Year

Fall Semester	Hours
CHEM 1117. Chemistry for Engineers Laboratory	1
CHEM 1372. Chemistry for Engineers	3
ECE 1100. Introduction to Electrical and Computer Engr.	1
ENGL 1303. Freshman Composition I or ENGL 1309. English Composition for Nonnative Speakers I	3
HIST 1376 or 1377. The United States to 1877[1]	3
MATH 1431. Calculus I[2]	4
POLS 1336. U.S. and Texas Politics and Constitutions[1]	3
Total	18

Spring Semester	
ECE 1331. Computers & Problem Solving	3
ENGL 1304. Freshman Composition II or ENGL 1310. English Composition for Nonnative Speakers II	3
HIST 1378 or 1379. The United States since 1877[1]	3
MATH 1432. Calculus II	4
PHYS 1321. University Physics I	3
Total	16

Second Year

Fall Semester	Hours
ECE 2331. Numerical Methods for ECE	3
Humanities Core Course	3
MATH 2433. Calculus III	4
PHYS 1322. University Physics II	3
POLS 1337. U. S. Government: Congress, President and Court[1]	3
Total	16

Spring Semester	
ECE 2100. Circuits Lab	1
ECE 2300. Circuit Analysis	3
ECE 2317. Applied Electricity & Magnetism	3
ECE 3331. Programming Applications in Electrical and Computer Engineering	3
ENGI 2304. Technical Communications	3
MATH 3321. Engineering Mathematics	3
Total	16

Third Year

Fall Semester	Hours
COSC 1320. Introduction to Computer Science II	3

ECE 3337. Electrical Engineering Analysis I	3
ECE 3441. Digital Logic Design	4
ECE 3455. Electronics	4
Visual & Performing Arts Core Course	3
Total	17

Spring Semester

COSC 2320. Data Structures	3
ECE 3457. Digital Electronics	4
ECE 4436. Microprocessor Systems	4
INDE 2333.Engineering Statistics I	3
MATH 3336. Discrete Mathematics	3
Total	17

Fourth Year

Fall Semester	**Hours**
COSC 4351. Fundamentals of Software Engineering	3
ECE 5367. Intro. to Comp. Arch. & Design	3
Approved CPE Elective[11]	4
Approved ECE or COSC elective[9]	3
ECON 2304. Microeconomic Principles	3
Total	16

Spring Semester

COSC 4330. Fundamentals of Operating Systems	3
ECE 4334. Electrical & Computer Engineering Systems Design	3
Approved CPE Elective[11]	4
ECE Elective/lab [10]	4
Total	14

Degree Total	**130**

[1]Refer to the Academic Regulations and Degree Requirements section for information on equivalents and substitutions and to the Admission, Advising, Orientation, and Registration section for information on advanced placement examinations.

[2]Students not qualified to enroll in MATH 1431, must complete MATH 1300, 1310, and/or 1330, as indicated by the results of the Mathematics placement examination, prior to enrolling in MATH 1431.

[9]Approved ECE or COSC elective: Any ECE course at the 3000 level or above, except ECE 3336, or choice of COSC 3480, COSC 3340, or any 4000 level COSC course.

[10]ECE elective/lab: Any ECE course with associated lab at the 3000 level or above except ECE 3336.

[11]Approved CPE elective: The current list of approved CPE electives is available in the department and posted on the web: www.egr.uh.edu/ece/academics/undergrad/