

BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING

The undergraduate programs in electrical and computer engineering educate students in the fundamentals of engineering, which are built upon a foundation of mathematics, science, communications, and the liberal arts. Graduates are equipped to continue to grow in their knowledge while contributing professionally in a rapidly advancing technology. Areas in which electrical and computer engineers contribute significantly are computer and communication systems; control, robotic and manufacturing systems; power and energy systems; biomedical instrumentation systems; electronic materials; and device design and manufacturing. Typical career paths of graduates include design, development, management, consulting, teaching and research. Many graduates seek graduate education in law, medicine, business, and engineering.

The goal of the electrical and computer engineering programs is to produce graduates who: contribute to global economic development through the ethical practice of electrical and computer engineering in industry, academia, and public service; exhibit leadership in technical or business activity through engineering ability, communication skills, and knowledge of contemporary and global issues; continue to educate themselves through graduate and professional study as well as personal research; design systems and evaluate system performance, either individually or in teams; and use their engineering ability and inventive potential to create technology that will improve the quality of life in society.

Students seeking the Bachelor of Science in Electrical Engineering pursue one of two curricula—electrical engineering or computer engineering. The electrical engineering program is accredited in electrical engineering by the Engineering Commission of the Accreditation Board for Engineering and Technology (ABET). The computer engineering curriculum is accredited by ABET in both electrical engineering and computer engineering. Both curricula contain the fundamentals of electrical engineering and computer engineering but differ in their core and technical area requirements, which reflect differing career objectives.

The core requirements provide a foundation of engineering fundamentals. Students build on the core requirements when specializing through their choice of technical areas, a technical elective, and an advanced laboratory course (electrical engineering students only). All students choose two technical areas. These technical areas are identified with either electrical engineering (ten areas) or computer engineering (five areas). Electrical engineering students must choose one technical area from electrical engineering but may choose their second area from either electrical engineering or computer engineering. Computer engineering students must choose one technical area from computer engineering but may choose their second area from either computer or electrical engineering. Once a technical area is chosen, the student, with the assistance of a faculty advisor, chooses three courses from the list of approved courses for that area. The programs thus ensure breadth through the core courses and the choice of a technical elective and of two technical areas. The student's two technical areas give depth in these two areas.

CURRICULA

Course requirements are divided into three categories: basic sequence courses, major sequence courses, and other required courses. Enrollment in major sequence courses is restricted to students who have passed the basic sequence courses with acceptable performance. Enrollment in other required courses is not restricted by completion of the basic sequence.

Courses used to fulfill technical area, technical elective, and other elective requirements must be approved by the electrical and computer engineering faculty before the student enrolls in them. Courses that fulfill the social science and fine arts/humanities requirements are listed on pages XXX-XXX.

ELECTRICAL ENGINEERING CURRICULUM

Courses	Semester Hours
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Basic Sequence Courses	
Electrical Engineering 302, 306, 411, 312, 313, 316, 319K, 322, English 316K, Mathematics 408C, 408D, 427K, 340L, Physics 303K, 303L, 103M, 103N, Rhetoric and Composition 306	54
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Major Sequence Courses	
Electrical Engineering 325, 333T, 438, 339, 351K, 155, 362K, 464K/H/I, 366, Approved technical area courses(18 or 19 hours, depending on the choice of advanced laboratory, which may be counted as a technical area course) and technical elective (3 hours)	48(49)
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Other Required Courses	
<u>American government, including Texas government</u>	6
<u>American history</u>	6
<u>Approved fine arts or humanities elective</u>	3
<u>Approved social science elective</u>	3
<u>Approved elective</u>	3
	Minimum required 123

COMPUTER ENGINEERING CURRICULUM

Courses	Semester hours
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Basic Sequence Courses	
Electrical Engineering 302, 306, 411, 312, 313, 316, 319K, 322, English 316K, Mathematics 408C, 408D, 427K, 325K, Physics 303K, 303L, 103M, 103N, Rhetoric and Composition 306	54
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Major Sequence Courses

Electrical Engineering 325, 333T, 438, 339, 345L, 351K, 155,
464K/H/I, 366, Approved technical area courses (18 hours) and
technical elective (3 hours) 48

Other Courses

American government, including Texas government 6

American history 6

Approved fine arts or humanities elective 3

Approved social science elective 3

Approved elective 3

Minimum required 123