

**The Undergraduate Curriculum in the  
Electrical and Computer Engineering Department at  
The University of Texas at Austin**

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The undergraduate program in electrical engineering at The University of Texas provides background in engineering fundamentals, with an emphasis on the development of analytical and creative ability that affords the graduate the opportunity to achieve success in an advancing technological community. Students seeking the Bachelor of Science in Electrical Engineering pursue one of two curricula: electrical engineering or computer engineering, both of which are accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (ABET). Each curriculum includes a required core of courses in mathematics, basic science, English composition, fine arts or humanities, social science, and electrical engineering. The computer engineering curriculum supplements the electrical engineering core with several additional computer engineering courses. The electrical engineering curriculum allows the student to choose an optional area from ten selective areas including Integrated Electronics, Electronic Materials and Devices, Communication and Control Engineering, Telecommunications and Signal Processing, Biomedical Engineering, Power Systems and Software Engineering.

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 received credit for all of the basic sequence courses and have been admitted to the major sequence by the College of Engineering Admissions Committee. The major sequence is a set of courses in which the student learns to put to engineering use the concepts learned in the basic sequence. Major sequence courses are normally taken in the last two years of undergraduate study.

The basic sequence courses for students in Electrical Engineering are listed below. The electives for EE majors can be chosen to concentrate in one of 10 areas of specialization provided by the department. The electives for the computer engineering majors include a variety of classes including Digital Systems II, Microprocessor Interfacing Lab, IC Design, Computer Aided IC Design, Computer Graphics, Software Engineering, Distributed Information Systems Security, Real Time DSP Lab, VLSI, etc. The details of the two curricula are shown below. Students learn VHDL and use Field Programmable Gate Arrays for rapid prototyping in the Digital Systems II course. Computer Architecture is a required course for computer engineering majors while it is an elective for EE majors.

## ELECTRICAL ENGINEERING CURRICULUM

COURSES	SEMESTER HOURS
Basic Sequence Courses	
301- Chemistry I, 302- Intro to Electrical Engineering, 411- Circuit Theory, 312- Electrical Engineering Computation, 316-Digital Systems Engineering I, 319K-Microprocessor Programming, 313 - Linear Systems and (323), 306 - English Rhetoric and Composition, 316K-Masterworks of Literature,	
4 Mathematics courses, 4 Physics courses	51
Major Sequence Courses	
321 - Electrical Engineering Lab I, EE Lab-II or Microcomputer Applications Lab, 325 - Electromagnetic Engineering I, 333T - Technical Communication, 338 - Electronic Circuits I, 338K - Electronic Circuits II, 339 - Solid State Electronic Devices, 351K-Probability, Statistics and Random Processes, 155-ECE Seminar, 362K-Controls, 464K-Senior Project, 355-Modern Physics for Engineers, approved technical electives (15 hours) from one of ten approved areas.	50
Other Required Courses	
American government, including Texas government	6
American history	6
Approved fine arts or humanities elective	3
Approved social science elective	3
Engineering science elective [Engineering Mechanics or Mechanical Engineering]	3
Approved electives	6
MINIMUM REQUIRED	128

## COMPUTER ENGINEERING CURRICULUM

COURSES	SEMESTER HOURS
Basic Sequence Courses	
301- Chemistry I, 302- Intro to Electrical Engineering, 411- Circuit Theory, 312- Electrical Engineering Computation, 316-Digital Systems Engineering I, 319K-Microprocessor Programming, 313 - Linear Systems and (323), 306 - English Rhetoric and Composition, 316K-Masterworks of Literature,	
3 Mathematics courses, Philosophy, 4 Physics courses	51
Major Sequence Courses	
321 - Electrical Engineering Lab I, EE Lab-II or Microcomputer Applications Lab, 325 - Electromagnetic Engineering I, 333T - Technical Communication, 338 - Electronic Circuits I, 338K - Electronic Circuits II, 339 - Solid State Electronic Devices, 351K-Probability, Statistics and Random Processes, 155-ECE Seminar,	
[360C-Data Structures or 360E-Computing Fundamentals], 360N-Computer Architecture, 464K=Senior Design Project, [EE 360P or Computer Sciences 372 Operating Systems], 355-Modern Physics for Engineers, approved	
technical electives (12 hours) from approved computer engineering courses	53
Other Required Courses	
American government, including Texas government	6
American history	6
Approved fine arts or humanities elective	3
Approved social science elective	3
Engineering science elective [Engineering Mechanics or Mechanical Engineering]	3
Approved elective	3
MINIMUM REQUIRED	128

Courses in social sciences, humanities, and related nontechnical areas are an integral part of all engineering degree programs, so that engineering graduates will be aware of their social responsibilities and the effects of technology on society. All degree programs must include the following nontechnical courses.

1. Three semester hours of English composition and at least two courses, one of which must be upper-division, certified as having a substantial writing component.
2. Six semester hours of American government
3. Six semester hours of American history
4. Three semester hours of technical communication (written and oral)
5. Three semester hours of humanities.
6. Three semester hours of social science (anthropology, economics, geography, linguistics, psychology, or sociology).
7. Three semester hours of fine arts or humanities (archaeology, architecture, art [excluding design and studio art], classics [including classical civilization, Greek, Latin], drama, fine arts, humanities, music [excluding instruments and ensemble], or philosophy [excluding courses in logic]).

Courses used to satisfy requirements 6 and 7 must fulfill the ABET accreditation criteria as well as the University's basic education requirements. Students preparing for the professional practice of engineering are encouraged to elect coursework in economics to fulfill requirement 6 and coursework in professional ethics to fulfill requirement 7.

Students are also required to demonstrate proficiency in a foreign language equivalent to that shown by the completion of two semesters of college. They should also take a minimum of five courses with an emphasis on writing. The college of engineering and the department are committed to excellence in technical writing and communication skills as demonstrated by this requirement. In summary we have an excellent program fully committed to the creation of engineers with excellent technical knowledge and skills, good communication ability, and good social and ethical values.

More information on our curriculum can be obtained from <http://www.ece.utexas.edu>.