

ELECTRICAL ENGINEERING - BS

Program Requirements

The freshman year is identical for degrees in electrical engineering, mechanical engineering, petroleum engineering. The freshman year is slightly different for chemical engineering in that students take CHEM 119 or CHEM 107/CHEM 117 and CHEM 120. It is recognized that many students will change the sequence and number of courses taken in any semester. Deviations from the prescribed course sequence, however, should be made with care to ensure that prerequisites for all courses are met.

First Year

Fall		Semester Credit Hours
CHEM 107 & CHEM 117	General Chemistry for Engineering Students and General Chemistry for Engineering Students Laboratory ^{1,4}	4
ENGL 104	Composition and Rhetoric ¹	3
ENGR 102	Engineering Lab I - Computation ¹	2
MATH 151	Engineering Mathematics I ^{1,2}	4
University Core Curriculum (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/) ³		3
Semester Credit Hours		16
Spring		Semester Credit Hours
ENGR 216/ PHYS 216	Experimental Physics and Engineering Lab II - Mechanics ¹	2
MATH 152	Engineering Mathematics II ^{1,2}	4
PHYS 206	Newtonian Mechanics for Engineering and Science ¹	3
University Core Curriculum (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/) ³		6
Semester Credit Hours		15
Total Semester Credit Hours		31

¹ A grade of C or better is required.

² Entering students will be given a math placement exam. Test results will be used in selecting the appropriate starting course which may be at a higher or lower level.

³ Of the 21 hours shown as University Core Curriculum electives, 3 must be from language, philosophy and culture, 3 must be from creative arts, 3 from social and behavioral sciences, 6 from American history, and 6 from government/political science. The required 3 hours from international and cultural diversity and 3 hours from cultural discourse may be met by courses satisfying the language, philosophy and culture, creative arts, social and behavioral sciences, and American history requirements if they are also on the approved list of international and cultural diversity or cultural discourse courses.

⁴ CHEN requires 8 hours of freshman chemistry, which may be satisfied by CHEM 119 or CHEM 107/CHEM 117 and CHEM 120; Credit by

Examination (CBE) for CHEM 119 or CHEM 107/CHEM 117 plus CHEM 120.

Second Year

Fall		Semester Credit Hours
ECEN 210	Computer Programming and Algorithms ¹	4
ECEN 248	Introduction to Digital Systems Design ¹	4
ENGR 217/ PHYS 217	Experimental Physics and Engineering Lab III - Electricity and Magnetism ¹	2
MATH 251	Engineering Mathematics III ¹	3
PHYS 207	Electricity and Magnetism for Engineering and Science ¹	3
Semester Credit Hours		16

Spring		Semester Credit Hours
ECEN 214	Electrical Circuit Theory ¹	4
MATH 308	Differential Equations ¹	3
MATH 311	Topics in Applied Mathematics I ¹	3
University Core Curriculum (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/) ³		6
Semester Credit Hours		16

Third Year

Fall		Semester Credit Hours
ECEN 314	Signals and Systems ¹	3
ECEN 322	Electric and Magnetic Fields ¹	3
ECEN 325	Electronics ¹	4
ENGL 210	Technical and Professional Writing ¹	3
PHYS 222	Modern Physics for Engineers ¹	3
Semester Credit Hours		16

Spring		Semester Credit Hours
ECEN 303	Random Signals and Systems ¹	3
ECEN 340	Electric Energy Conversion ¹	3
ECEN 350/ CSCE 350	Computer Architecture and Design ¹	4
ECEN 370	Electronic Properties of Materials ¹	3
Technical electives ⁶		3
Semester Credit Hours		16

Fourth Year

Fall		Semester Credit Hours
ECEN 403	Electrical Design Laboratory I ¹	3
ECEN elective (http://catalog.tamu.edu/undergraduate/course-descriptions/ecen/) ⁶		12
University Core Curriculum (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/) ³		3
High Impact Experience ⁵		
ECEN 399	High Impact Professional Development	
Semester Credit Hours		18

Spring		Semester Credit Hours
ECEN 404	Electrical Design Laboratory II ¹	3
ECEN elective (http://catalog.tamu.edu/undergraduate/course-descriptions/ecen/) ⁶		9

University Core Curriculum (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/) ³	3
Semester Credit Hours	15
Total Semester Credit Hours	97

⁵ All students are required to complete a high-impact experience in order to graduate. The list of possible high-impact experiences is available in the advising office.

⁶ See an academic advisor for a list of approved courses.

Total Program Hours 128