ELECTRICAL ENGINEERING - BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING

Overview

The Bachelor of Science in Electrical Engineering (B.S. EE) program of the Klipsch School is accredited by the Engineering Accreditation Commission of ABET, Inc. This particular option of the B.S. EE program has "no concentration," giving students the greatest flexibility in course selection.

Electrical Engineering Program Educational Objectives

Below are the program educational objectives (PEOs) that describe the expected accomplishments of graduate during their first few years after graduation.

1. Our graduates will obtain relevant, productive employment in the private sector, government and/or pursue an advanced degree.
2. Our graduates will be using their engineering foundation to innovate solutions to the problems of the real world.

Requirements (123-125 credits)

Students must complete all University degree requirements, which include: General Education requirements, Viewing a Wider World requirements, and elective credits to total at least 123 credits with 48 credits in courses numbered 300 or above. Developmental coursework will not count towards the degree requirements and/or elective credits, but may be needed in order to take the necessary English and Mathematics coursework.

BSEE students must earn a grade of C- or better in all engineering, technology, math and science courses (including associated prerequisite courses) required for the degree and also courses taken to satisfy the general education requirements for Area I-Communications, Area II-Mathematics, and Area III-Laboratory Sciences. If a grade lower than C- is earned in any of these courses, the student is required to retake the course immediately the next semester it is offered. Students who earn a grade less than a C- the first time will be contacted by the department and/or academic advising center and advised about this policy and resources to help in their academic success. If the student fails to achieve a C- or better in any of these courses a second time, then the student must submit a written request to the Associate Dean of Academics in the College of Engineering to enroll in the course a third time. The student should explain the circumstances impacting their grade and the actions planned to improve their performance.

Prefix	Title	Credits
General Education		
Area I: Communications		
English Composition - Level 1		
ENGL 1110G	Composition I	4
English Composition - Level 2 [1]		*3*
Oral Communication [1]		*3*
Area II: Mathematics		
MATH 1511G	Calculus and Analytic Geometry I [2]	4
Area III/IV: Laboratory Sciences and Social/Behavioral Sciences		*11*
CHEM 1215G	General Chemistry I Lecture and Laboratory for STEM Majors	
PHYS 1310G & PHYS 1310L	Calculus -Based Physics I and Calculus -Based Physics I Lab	
Area IV: Social/Behavioral Sciences (3 credits) [1]		
Area V: Humanities [1]		*3*
Area VI: Creative and Fine Arts [1]		*3*
General Education Elective		
MATH 1521G	Calculus and Analytic Geometry II	4
Viewing A Wider World		
Viewing a Wider World Electives [3]		6
Departmental/College Requirements		
Program Specific Requirements		
Mathematics and Natural Science		
MATH 3160	Introduction to Ordinary Differential Equations	3
PHYS 1320G & PHYS 1320L	Calculus -Based Physics II and Calculus -Based Physics II Lab	4
ENGR 190	Introduction to Engineering Mathematics	4
E E 200	Linear Algebra, Probability and Statistics Applications	4
E E 240	Multivariate and Vector Calculus Applications	3
STEM		
Choose three STEM Electives [4]		9
Electrical and Computer Engineering		
ENGR 120	DC Circuit Analysis	4
ENGR 130	Digital Logic	4
ENGR 140	Introduction to Programming and Embedded Systems	4
ENGR 230	AC Circuit Analysis	4
E E 300	Cornerstone Design	2
E E 317	Semiconductor Devices and Electronics I	4
E E 320	Signals and Systems I	3
E E 325	Signals and Systems II	4
E E 340	Fields and Waves	4
E E 362	Introduction to Computer Organization	4
ENGR 401	Engineering Capstone I [5]	3
ENGR 402	Engineering Capstone II	3
E E Concentration Courses		
Choose three courses, from three concentrations, from the following: [6]		*9-10*
Communications & Signal Processing:		
E E 395	Introduction to Digital Signal Processing	
or E E 496	Introduction to Communication Systems	
Computers & Microelectronics:		
E E 462	Computer Systems Architecture	
or E E 562	Computer Systems Architecture	
or E E 480	Introduction to Analog and Digital VLSI	
or E E 510	Introduction to Analog and Digital VLSI	
Power:		
E E 333	AC Circuit Analysis and Introduction to Power Systems	
or E E 431	Power Systems II	
or E E 542	Power Systems II	
or E E 475	Control Systems Synthesis	
or E E 551	Control Systems Synthesis	
Electromagnetics & Photonics:		
E E 473	Introduction to Optics	
or E E 454	Antennas and Radiation	
or E E 541	Antennas and Radiation	
Space Systems:		

E E 460	Space System Mission Design and Analysis	
Controls & Robotics		
E E 407	Introduction to Control Systems	
or E E 475	Control Systems Synthesis	
or E E 551	Control Systems Synthesis	
Artificial Intelligence, Machine Learning, & Data Science		
E E 395	Introduction to Digital Signal Processing	
or E E 465	Machine Learning I	
or E E 565	Machine Learning I	
Non-Departmental Requirements (in addition to Gen.Ed/VWW)		
Programming Elective		
Select one course from the following (3 or 4 cr):		3-4
C S 151	C++ Programming [7]	
or C S 451	C++ Programming	
C S 152	Java Programming [7]	
or C S 452	Java Programming	
C S 153	Python Programming I [7]	
or C S 453	Python Programming I	
C S 154	Python Programming II [7]	
or C S 454	Python Programming II	
C S 172	Computer Science I	
C S 271	Object Oriented Programming	
Second Language: (not required)		
Electives, to bring the total credits to 123		**0**
Total Credits		**123-125**

1. See the General Education (https://catalogs.nmsu.edu/nmsu/general-education-viewing-wider-world/) section of the catalog for a full list of courses.
2. MATH 1511G Calculus and Analytic Geometry I is required for the degree but students may need to take any prerequisites needed to enter MATH 1511G Calculus and Analytic Geometry I first.
3. See the Viewing a Wider World (https://catalogs.nmsu.edu/nmsu/general-education-viewing-wider-world/#viewingawiderworldtext) section of the catalog for a full list of courses.
4. STEM Elective: Course at the 300 level or above from E E that is not used to satisfy any other E E program requirement or courses at the 300 level or above from A E, C E, CHME, I E, M E, ASTR, BIOL, CHEM, C S, MATH, PHYS and STAT. Excluded courses include VWW courses and those which are substantially equivalent to an E E course. Click to view a list of excluded STEM Electives (https://ece.nmsu.edu/undergrad-study/BSEE-STEM-electives.html).
5. The prerequisite for ENGR 401 Engineering Capstone I for BSEE students is E E 300 Cornerstone Design.
6. A single course may count as satisfying one and only one concentration area.
7. Only one of the 100-level xor the 400-level course may be taken to satisfy degree requirements. Students may not take the 100-level of a course to satisfy the programming elective requirement and the 400-level of the same course to satisfy other degree requirements.