ELECTRICAL ENGINEERING (ARTIFICIAL INTELLIGENCE, MACHINE LEARNING, & DATA SCIENCE) - BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING

A Suggested Plan of Study for Students

This roadmap assumes student placement in MATH 1511G Calculus and Analytic Geometry I and ENGL 1110G . The contents and order of this roadmap may vary depending on initial student placement in mathematics and English. It is only a suggested plan of study for students and is not intended as a contract. Course availability may vary from fall to spring semester and may be subject to modification or change.

First Year		
Fall		**Credits**
ENGR 190	Introduction to Engineering Mathematics	4
ENGL 1110G	Composition I	4
CHEM 1215G	General Chemistry I Lecture and Laboratory for STEM Majors	4
ENGR 120	DC Circuit Analysis	4
	Credits	**16**
Spring		
MATH 1511G	Calculus and Analytic Geometry I [1]	4
General Education Requirement (Area I, IV, V, VI or VWW) [2]		3
ENGR 130	Digital Logic	4
ENGR 140	Introduction to Programming and Embedded Systems	4
	Credits	**15**
Second Year		
Fall		
MATH 1521G	Calculus and Analytic Geometry II	4
PHYS 1310G & PHYS 1310L	Calculus -Based Physics I and Calculus -Based Physics I Lab	4
E E 200	Linear Algebra, Probability and Statistics Applications	4
ENGR 230	AC Circuit Analysis	4
	Credits	**16**
Spring		
MATH 3160	Introduction to Ordinary Differential Equations	3
PHYS 1320G & PHYS 1320L	Calculus -Based Physics II and Calculus -Based Physics II Lab	4
E E 240	Multivariate and Vector Calculus Applications	3
Choose one Programming course from the following:		3
C S 153 or C S 453	Python Programming I or Python Programming I	
C S 154 or C S 454	Python Programming II or Python Programming II	
General Education Requirement (Area I, IV, V, VI or VWW) [2]		3
	Credits	**16**
Third Year		
Fall		
E E 300	Cornerstone Design	2
E E 320	Signals and Systems I	3
E E 340	Fields and Waves	4
General Education Requirement (Area I, IV, V, VI or VWW) [2]		3
General Education Requirement (Area I, IV, V, VI or VWW) [2]		3
	Credits	**15**
Spring		
E E 317	Semiconductor Devices and Electronics I	4
E E 325	Signals and Systems II	4
E E 362	Introduction to Computer Organization	4
General Education Requirement (Area I, IV, V, VI or VWW) [2]		3
	Credits	**15**
Fourth Year		
Fall		
ENGR 401	Engineering Capstone I	3
E E 395	Introduction to Digital Signal Processing [3]	3
E E 465	Machine Learning I [3]	3
STEM Elective [4,5]		3
General Education Requirement (Area I, IV, V or VWW) [2,5]		3
	Credits	**15**
Spring		
ENGR 402	Engineering Capstone II	3
EE Concentration Elective [5,6]		3-4
EE Concentration Elective [5,6]		3
STEM Elective [4,5]		3
General Education Requirement (Area I, IV, V or VWW) [2,5]		3
	Credits	**15-16**
	Total Credits	**123-124**

1. 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.
2. See the General Education and Viewing a Wider World (https://catalogs.nmsu.edu/nmsu/general-education-viewing-wider-world/) section of the catalog for a full list of courses.
3. Students must take both E E 395 Introduction to Digital Signal Processing and E E 465 Machine Learning I, both of which are offered in the Fall semester.
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. Depending on availability of specific courses in the fall or spring semester, students may need to reorganize the ECE Electives, STEM electives, and/or Gen Ed/VWW electives in their final year. Students are strongly advised to consult with their ECE Faculty Mentor for assistance in planning their final year.
6. At least one EE Concentration Elective must be from the E E Prefix. See E E Concentration Electives in the Degree Requirements section above.