

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 or ENGL 1110H or ENGL 1110M	Composition I or Composition I Honors or Composition I	4
CHEM 1215G	General Chemistry I Lecture and Laboratory for STEM Majors	4
ENGR 120	DC Circuit Analysis	4
Credits		16
Spring		Credits
MATH 1511G or MATH 1511H	Calculus and Analytic Geometry I ¹ or Calculus and Analytic Geometry I Honors	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		Credits
MATH 1521G or MATH 1521H	Calculus and Analytic Geometry II or Calculus and Analytic Geometry II Honors	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		Credits
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
CSCI 1220 or CSCI 4520	Computer Programming Fundamentals: Python or Python Programming I	

CSCI 1225 or CSCI 4525	Python Programming II or Python Programming I	
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 495	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, VI or VWW) ²		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, VI or VWW) ²		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 495 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 300/3000 level or above from E E that is not used to satisfy any other E E program requirement or courses at the 300/3000 level or above from A E, C E, CHME, I E, M E, ASTR, BIOL, CHEM, CSCI, 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 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 Course must be from the E E Prefix. See E E Concentration Electives in the Degree Requirements section above.