

ELECTRICAL ENGINEERING (CONTROL & POWER) - BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING

A Suggested Plan of Study for Students

This roadmap assumes student placement in MATH 1511G Intermediate Algebra and ENGL 1110G Rhetoric and Composition. 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	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	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 392	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:		3-4
C S 151	C++ Programming	
C S 152	Java Programming	
C S 153	Python Programming I	
C S 154	Python Programming II	
C S 172	Computer Science I	
C S 271	Object Oriented Programming	
General Education Requirement (Area I, IV, V, VI or VWW) ²		3
Credits		16-17

Third Year

Fall		Credits
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		Credits
ENGR 401	Engineering Capstone I	3
E E 431	Power Systems II ³	3
E E 475	Control Systems Synthesis ³	3
STEM Elective ^{4,5}		3
General Education Requirement (Area I, IV, V, VI or VWW) ^{2,5}		3
Credits		15

Spring

ENGR 402	Engineering Capstone II	3
Control & Power Elective ^{5,6}		3
Control & Power Elective ^{5,6}		3
STEM Elective ^{4,5}		3
General Education Requirement (Area I, IV, V, VI or VWW) ^{2,5}		3
Credits		15
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 (<http://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 431 Power Systems II and E E 475 Control Systems Synthesis, 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 One Control & Power Elective Courses must be from the E E Prefix. Control & Power Elective Courses:

- E E 432 Power Electronics, E E 440 Photovoltaic Devices and Systems, E E 476 Computer Control Systems, E E 493 Power Systems III
- C S 343 Algorithm Design & Implementation, C S 483
- CHME 361 Engineering Materials

2 Electrical Engineering (Control & Power) - Bachelor of Science in Electrical Engineering

- M E 481 Alternative and Renewable Energy, M E 487 Mechatronics
- MATH 480 Applied Linear Algebra