

ELECTRICAL ENGINEERING (COMPUTERS AND MICROELECTRONICS) - BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING

A Suggested Plan of Study for Students

This roadmap assumes student placement in MATH 1511G 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 Course 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 |
| General Education Course ² | | 3 |
| E E 240 | Multivariate and Vector Calculus Applications | 3 |
| Choose one Programming course from the following: | | 3-4 |
| CSCI 1240 or CSCI 4510 | C++ Programming I or C++ Programming | |
| CSCI 1210 or CSCI 4505 | Java Programming or Java Programming | |
| CSCI 1720 | Computer Science I | |

| CSCI 2210 | Object-Oriented Programming | Credits |
|--|--|----------------|
| | | 16-17 |
| 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 Course ² | | 3 |
| General Education Course 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 Course ² | | 3 |
| Credits | | 15 |
| Fourth Year | | |
| Fall | | |
| ENGR 401 | Engineering Capstone I | 3 |
| E E 462 or E E 562 | Computer Systems Architecture ³ or Computer Systems Architecture | 3 |
| E E 480 or E E 510 | Introduction to Analog and Digital VLSI ³ or Introduction to Analog and Digital VLSI | 3 |
| STEM Elective ^{4,5} | | 3 |
| General Education Course ² | | 3 |
| Credits | | 15 |
| Spring | | |
| ENGR 402 | Engineering Capstone II | 3 |
| Computers & Microelectronics Elective ^{5,6} | | 3-4 |
| Computers & Microelectronics Elective ^{5,6} | | 3 |
| STEM Elective ^{4,5} | | 3 |
| General Education Course ² | | 3 |
| Credits | | 15-16 |
| Total Credits | | 123-125 |

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 (<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 462 Computer Systems Architecture or E E 562 Computer Systems Architecture) and (E E 480 Introduction to Analog and Digital VLSI or E E 510 Introduction to Analog and Digital VLSI), both of which are currently 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.

2 Electrical Engineering (Computers and Microelectronics) - Bachelor of Science in Electrical Engineering

⁶ One Computers & Microelectronics Elective Course must be from the E E Prefix. See E E Concentration Electives in the Degree Requirements section above.