# ELECTRICAL ENGINEERING (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** | | |
| 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: | | 3-4 |
| C S 151 or C S 451 | C++ Programming or C++ Programming | |
| C S 152 or C S 452 | Java Programming or Java Programming | |
| 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 | |
| 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** | | |
| 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 333 | AC Circuit Analysis and Introduction to Power Systems | 3 |
| 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** |
| **Spring** | | |
| ENGR 402 | Engineering Capstone II | 3 |
| Choose one of the following: | | 3 |
| E E 431 or E E 542 or E E 475 or E E 551 | Power Systems II or Power Systems II or Control Systems Synthesis or Control Systems Synthesis | |
| 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 (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 333 AC Circuit Analysis and Introduction to Power Systems which is currently offered in the Fall semester and (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 ) which are currently offered in the Spring 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. See E E Concentration Electives in the Degree Requirements section above.