

ENGINEERING PHYSICS (ELECTRICAL ENGINEERING) - BACHELOR OF SCIENCE IN ENGINEERING PHYSICS

A Suggested Plan of Study for Students

This roadmap assumes student placement in MATH 1511G Calculus and Analytic Geometry I and ENGL 1110G Composition I. 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. Full-time students are usually required to take at least 15 credits per semester. This requirement could be satisfied for example by taking a one-credit supplemental instruction course.

| First Year | | Credits |
|--------------------------|--|-----------|
| Semester 1 | | |
| ENGL 1110G | Composition I ¹ | 4 |
| ENGR 120 | DC Circuit Analysis | 4 |
| MATH 1511G | Calculus and Analytic Geometry I ¹ | 4 |
| PHYS 2110 & 2110L | Mechanics and Experimental Mechanics ^{1,2} | 4 |
| Credits | | 16 |
| Semester 2 | | |
| ENGR 130 | Digital Logic | 4 |
| ENGR 140 | Introduction to Programming and Embedded Systems | 4 |
| MATH 1521G or MATH 1521H | Calculus and Analytic Geometry II ¹ or Calculus and Analytic Geometry II Honors | 4 |
| PHYS 2140 & 2140L | Electricity and Magnetism and Electricity & Magnetism Laboratory ^{1,2} | 4 |
| Credits | | 16 |
| Second Year | | |
| Semester 1 | | |
| CHEM 1215G | General Chemistry I Lecture and Laboratory for STEM Majors | 4 |
| ENGR 230 | AC Circuit Analysis | 4 |
| MATH 2530G | Calculus III ¹ | 3 |
| PHYS 2120 & 2120L | Heat, Light, and Sound and Heat, Light, and Sound Laboratory ¹ | 4 |
| Credits | | 15 |
| Semester 2 | | |
| E E 200 | Linear Algebra, Probability and Statistics Applications ¹ | 4 |
| ENGL 2210G | Professional and Technical Communication Honors | 3 |
| MATH 3160 | Introduction to Ordinary Differential Equations ¹ | 3 |
| PHYS 315 | Modern Physics ¹ | 3 |
| PHYS 325 | Intermediate Experimental Physics | 3 |
| Credits | | 16 |
| Third Year | | |
| Semester 1 | | |
| COMM 1115G | Introduction to Communication | 3 |

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| PHYS 395 | Intermediate Mathematical Methods of Physics ¹ | 3 |
| PHYS 451 | Intermediate Mechanics I ¹ | 3 |
| PHYS 461 | Intermediate Electricity and Magnetism I ¹ | 3 |
| Area V: Humanities Course ³ | | 3 |
| Credits | | 15 |
| Semester 2 | | |
| E E 317 | Semiconductor Devices and Electronics I ¹ | 4 |
| Choose from one of the following: | | 3-4 |
| PHYS 462 | Intermediate Electricity and Magnetism II ¹ | |
| E E 340 | Fields and Waves ¹ | |
| Choose from one of the following: | | 3 |
| PHYS 475 | Advanced Laboratory Practices for Materials ¹ | |
| PHYS 493 | Experimental Nuclear Physics ¹ | |
| PHYS 471 | Modern Experimental Optics ¹ | |
| Area IV: Social and Behavioral Science Course ³ | | 3 |
| Credits | | 13-14 |
| Fourth Year | | |
| Semester 1 | | |
| PHYS 454 | Intermediate Modern Physics I ¹ | 3 |
| E E 320 | Signals and Systems I | 3 |
| ENGR 401 | Engineering Capstone I | 3 |
| VWW: Viewing a Wider World Course ⁴ | | 3 |
| Technical Elective Course ⁵ | | 3 |
| Credits | | 15 |
| Semester 2 | | |
| PHYS 455 | Intermediate Modern Physics II ¹ | 3 |
| PHYS 480 | Thermodynamics | 3 |
| ENGR 402 | Engineering Capstone II ¹ | 3 |
| Area VI: Creative and Fine Arts Course ³ | | 3 |
| VWW: Viewing a Wider World Course ⁴ | | 3 |
| Credits | | 15 |
| Total Credits | | 121-122 |

¹ These courses may have prerequisites and/or co-requisites, and it is the students responsibility for checking and fulfilling all those requirements.

² PHYS 2110 Mechanics/PHYS 2110L Experimental Mechanics and PHYS 2140 Electricity and Magnetism/PHYS 2140L Electricity & Magnetism Laboratory will not automatically count towards the Area III: Laboratory Science requirement, an exception will be made if students elect to take these courses.

³ See the General Education (<https://catalogs.nmsu.edu/nmsu/general-education-viewing-wider-world/>) section of the catalog for a full list of courses.

⁴ See the Viewing a Wider World (<https://catalogs.nmsu.edu/nmsu/general-education-viewing-wider-world/#viewingawiderworldtext>) section of the catalog for a full list of courses.

⁵ Technical electives are approved by the Engineering Physics advisors