

# ELECTRICAL ENGINEERING (COMMUNICATIONS AND SIGNAL PROCESSING) - 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
<b>Credits</b>		<b>16</b>

### Spring

MATH 1511G or MATH 1511H	Calculus and Analytic Geometry I <sup>1</sup> or Calculus and Analytic Geometry I Honors	4
General Education Course <sup>2</sup>		3
ENGR 130	Digital Logic	4
ENGR 140	Introduction to Programming and Embedded Systems	4
<b>Credits</b>		<b>15</b>

### 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
<b>Credits</b>		<b>16</b>

### 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
CSCI 1240 or CSCI 4510	C++ Programming I or C++ Programming	
CSCI 1210 or CSCI 4505	Java Programming or Java Programming	

CSCI 1220 or CSCI 4520	Computer Programming Fundamentals: Python or Python Programming I	
CSCI 1225 or CSCI 4525	Python Programming II or Python Programming II	
CSCI 1720	Computer Science I	
CSCI 2210	Object-Oriented Programming	
General Education Course <sup>2</sup>		3
<b>Credits</b>		<b>16-17</b>

### 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 Course <sup>2</sup>		3
General Education Course <sup>2</sup>		3
<b>Credits</b>		<b>15</b>

### 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 <sup>2</sup>		3
<b>Credits</b>		<b>15</b>

### Fourth Year

Fall		Credits
ENGR 401	Engineering Capstone I	3
E E 495	Introduction to Digital Signal Processing <sup>3</sup>	3
E E 496	Introduction to Communication Systems <sup>3</sup>	3
STEM Elective <sup>4,5</sup>		3
General Education Course <sup>2</sup>		3
<b>Credits</b>		<b>15</b>

### Spring

ENGR 402	Engineering Capstone II	3
Communications & Signal Processing Elective <sup>5,6</sup>		3-4
Communications & Signal Processing Elective <sup>5,6</sup>		3
STEM Elective <sup>4,5</sup>		3
General Education Course <sup>2</sup>		3
<b>Credits</b>		<b>15-16</b>
<b>Total Credits</b>		<b>123-125</b>

- <sup>1</sup> 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.
- <sup>2</sup> See the General Education (<https://catalogs.nmsu.edu/nmsu/general-education-viewing-wider-world/>) section of the catalog for a full list of courses.
- <sup>3</sup> Students must take both E E 495 Introduction to Digital Signal Processing and E E 496 Introduction to Communication Systems, both of which are currently offered in the Fall semester.
- <sup>4</sup> 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>).
- <sup>5</sup> 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.

<sup>6</sup> At least one Communications & Signal Processing Elective Course must be from the E E Prefix. See E E Concentration Electives in the Degree Requirements section above.