

UNIVERSITY OF

Major Map: Electrical Engineering Bachelor of Science in Engineering (B.S.E.) College of Engineering and Computing Department of Electrical Engineering Catalog Year: 2017-2018

This course plan is a recommended sequence for this major. Courses designated as critical (!) may have a deadline for completion and/or affect time to graduation. Please see the Program Notes section for details regarding "critical courses" for this particular Program of Study.

1 Course Subject and Title Hours Grade! GPA2 Code Prerequisites Semester One (17 Credit Hours) 1 ENGL 101 Critical Reading and Composition 3 C CC-CMW C 1 ENGL 101 Critical Reading and Composition 3 C CC-CMW C Math placement test score CHEM 111 & CHEM 111L – General Chem. I 4 C CC-SCI C or better in MATH 111/15/122/141 or I ELCT 101 Electrical & Electronics Engineering 3 * PR Carolina Core ATU4 3 CC-ATU Semester Two (18 Credit Hours) F 1 ELCT 101 Electrical A Composition 3 C CC-ARP C or better in ENGL 101 Semester Two (18 Credit Hours) F F PR Prereg or Coreq: MATH 141 F 1 MATH 142 Calculus II 4 C CC-SCI C or better in MATH 141 ELCT 102 Electrical Science 3 * PR Prereg or Coreq: MATH 141 1 ELCT 102 Electrical Science 3 C * PR Prereg or Coreq: MATH 141 ELCT 102 Electrical Science S * PR MATH 141	Notes
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ELCT 222 Signals & Systems 3 C * PR C or better in ELCT 221 & MATH 242 MATH 241 Vector Calculus 3 C PR C or better in MATH 142 STAT 509 Statistics for Engineers 3 C PR MATH 142 or equivalent Semester Five (18 Credit Hours) * MR ELCT 201; Prereq or Coreq: ELCT 371 ELCT 301 Electronics Laboratory 3 * MR C or better in ELCT 222 WR C or better in Coreq: ELCT 371 * MR C or better in ELCT 222	
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! MATH 241 Vector Calculus 3 C PR C or better in MATH 142 STAT 509 Statistics for Engineers 3 PR MATH 142 or equivalent Semester Five (18 Credit Hours) * MR ELCT 201; Prereq or Coreq: ELCT 371 ELCT 321 Digital Signal Processing 3 * MR C or better in ELCT 222	
STAT 509 Statistics for Engineers 3 PR MATH 142 or equivalent Semester Five (18 Credit Hours) * MR ELCT 201; Prereq or Coreq: ELCT 371 ELCT 301 Electronics Laboratory 3 * MR ELCT 201; Prereq or Coreq: ELCT 371 ELCT 321 Digital Signal Processing 3 * MR C or better in ELCT 222	
Semester Five (18 Credit Hours) ! ELCT 301 Electronics Laboratory 3 * MR ELCT 201; Prereq or Coreq: ELCT 371 ELCT 321 Digital Signal Processing 3 * MR C or better in ELCT 222	
! ELCT 301 Electronics Laboratory 3 * MR ELCT 201; Prereq or Coreq: ELCT 371 ELCT 321 Digital Signal Processing 3 * MR C or better in ELCT 222	
ELCT 321 Digital Signal Processing 3 * MR C or better in ELCT 222	
ELCT 363 Intro. to Microelectronics 3 * MR C or better in CHEM 111. PHYS 212 &	<u> </u>
MATH 241 ! ELCT 371 Electronics 3 * MR C or better in ELCT 222	
! ELCT 3/1 Electronics 5 * MR C or better in ELCT 222 ECON 421 Engineering Economics 3 PR	
Carolina Core VSR ⁴ 3 CC-VSR	
Semester Six (15 Credit Hours)	
! ELCT 302 Real-Time Systems Laboratory 3 * MR ELCT 301; Prereq or Coreq: ELCT 331	
! ELCT 302 Real-Time Systems 3 * MR ELCT 501, Freied of Cored. ELCT 501 ! ELCT 331 Control Systems 3 * MR C or better in ELCT 222	
ELCT 350 Computer Modeling of Elect. Systems 3 * MR C or better in ELCT 222 & CSCE 145	
ELCT 361 Electromagnetics 3 * MR PHYS 212 & MATH 241	
Carolina Core GSS ⁴ 3 CC-GSS	
Semester Seven (12 Credit Hours)	
! ELCT 403 Capstone Design Project I 3 * MR/CC- ELCT 302	
Inter too capstone besign rojeet i	
Career Plan Elective ⁵ 3 * PR	
Career Plan Elective ⁵ 3 * PR	
Carolina Core GHS ⁴ 3 CC-GHS	

Semester Eight (12 Credit Hours)						
! ELCT 404 Capstone Design Project II	3		*	MR	ELCT 403	
Career Plan Elective ⁵	3		*	PR		
Career Plan Elective ⁵	3		*	PR		
Career Plan Elective ⁵	3		*	PR		
Take during any semester (0-9 Credit Hours)						
Carolina Core CMS ⁴	0-3			CC-CMS		
Carolina Core GFL ⁴	0-6			CC-GFL		

Graduation Requirements Summary

Minimum Total	Major Requirements Hours	Minimum College & Program	Minimum	Minimum
Hours		Requirements Hours	Carolina Core Hours	Overall GPA
126	30	62	34	2.00

- 1. Regardless of individual course grades, students must maintain a minimum 2.00 cumulative GPA.
- 2. Some colleges require a minimum GPA for major courses. Courses indicated in this column are included in the major GPA of 2.00 for this program.
- 3. Students who place into MATH 115 will be required to successfully complete it before taking MATH 141.
- 4. The <u>Carolina Core</u> provides the common core of knowledge, skill and academic experience for all Carolina undergraduate students. Students in the College of Engineering and Computing are required to demonstrate proficiency in one foreign language equivalent to the 121 course by 1) a score of two or better on the foreign language placement test; or 2) completion of the 109 and 110 courses in FREN, GERM, LATN, or SPAN or completion of the 121 course in another foreign language. Students who do not place out of the GFL requirement may need to take additional hours to meet this requirement.
- 5. Career Plan Electives: The student, in consultation with his or her advisor, will select 15 hours of electives that support the student's defined career plan. Not more than 6 hours of these electives may be from another discipline, and all must be at or above the 300-level. As career plan electives have 300-level prerequisites, there may be career plans for which one or more of the 300-level courses are critical, even though not listed as critical in this document.

Program Notes:

- Courses identified as "critical" must be completed in the semester in which they are listed in order to ensure a timely graduation due to prerequisite requirements for subsequent required courses.
- As career plan electives have 300-level prerequisites, there may be career plans for which one or more of the 300-level classes are critical, even though they are not listed as critical in this document.
- A student cannot repeat courses from the College of Engineering and Computing in which they earned a grade of C or better. In addition, a student cannot repeat any course from the College a second time. No more than four courses from the College of Engineering and Computing may be repeated in order to satisfy the requirements for any degree from the College, regardless of satisfactory work. For this purpose, withdrawal from a course with a grade of **W** is not regarded as enrollment in that course. A student that does not satisfactorily complete a degree-required College course within two attempts must change major or transfer out of the College of Engineering and Computing.
- The last 30 credit hours toward your degree and at least half of the major must be earned in residence at the University of South Carolina-Columbia.
- Disclaimer: Prerequisites on courses are subject to change. Please refer to <u>Bulletin</u>.

University Requirements: Bachelor's degree-seeking students must meet Carolina Core (general education) requirements. For more information regarding these requirements, please visit the <u>Carolina Core</u> page on the University website.

Codes:	
CC Carolina Core	CC-INF Carolina Core – Information Literacy
CC-AIU Carolina Core-Aesthetic and Interpretive Understanding	CC-INT Carolina Core – Integrative Course
CC-ARP Carolina Core-Analytical Reasoning and Problem-Solving	CC-SCI Carolina Core – Scientific Literacy
CC-CMS Carolina Core-Effective, Engaged, and Persuasive Communication: Spoken Component	CC-VSR Carolina Core – Values, Ethics, and Social Responsibility
CC-CMW Effective, Engaged, and Persuasive Communication: Written Component	CR College Requirement
CC-GFL Carolina Core-Global Citizenship and Multicultural Understanding: Foreign Language	MR Major Requirement
CC-GHS Carolina Core – Historical Thinking	PR Program Requirement
CC-GSS Carolina Core – Social Sciences	

Disclaimer: Major maps are only a suggested or recommended sequence of courses required in a program of study. Please contact your academic advisor for assistance in the application of specific coursework to a program of study and course selection and planning for upcoming semesters.