UNIVERSITY OF SOUTH CAROLINA

Major Map: Electrical Engineering
Bachelor of Science in Engineering (B.S.E.)
College of Engineering and Computing
Department of Electrical Engineering
Catalog Year: 2018-2019

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.

!	Course Subject and Title	Credit Hours	Min. Grade[1]	Program GPA[2]	Code	Prerequisites	Notes
Semester One (17 Credit Hours)							
!	ENGL 101 Critical Reading and Composition	3	C		CC-CMW		
!	MATH 141 Calculus 1[3]	4	C		CC-ARP	C or better in MATH 112/115/116 *or* Math placement test score	
	CHEM 111 & CHEM 111L – Gen. Chem. I	4	C		CC-SCI	C or better in MATH 111/115/122/141 *or* higher math *or* Math placement test score	
!	ELCT 101 Electrical & Electronics Engr.	3		*	PR		
	Carolina Core AIU[4]	3			CC-AIU		
Semester Two (18 Credit Hours)							
!	ENGL 102 Rhetoric and Composition	3	C		CC-CMW CC-INF	C or better in ENGL 101	
!	MATH 142 Calculus II	4	C		CC-ARP	C or better in MATH 141	
!	PHYS 211 & PHYS 211L – Essentials of Phys. I	4	C		CC-SCI	C or better in MATH 141	
!	ELCT 102 Electrical Science	3		*	PR	Prereq or Coreq: MATH 141	
!	CSCE 145 Algorithmic Design I	4	C	*	PR	Prereq or Coreq: MATH 111 *or* 115	
Semester Three (16-17 Credit Hours)							
!	CSCE 211 Digital Logic Design	3	C	*	PR	MATH 141	
	CSCE 146 Algorithmic Design II *or* EMCH 201 Intro. to Applied Num. Methods *(cross-listed: ENCP 201, PHYS 311)* *or* PHYS 306 Principles of Physics III	3-4			PR	C or better in CSCE 145, Prereq or Coreq: MATH 122 *or* 141 *(CSCE 146 only)*; MATH 141, Prereq or Coreq: MATH 142 *(EMCH 201 only)*; C or better in PHYS 207 *or* 212 & MATH 142, Coreq: MATH 241 *(PHYS 306 only)*	
!	ELCT 221 Circuits	3	C	*	PR	C or better in MATH 142. C or better in ELCT 102 *or* AESP 265, *or* D or better in ELCT 220	
	PHYS 212 & PHYS 212L – Essentials of Phys. II	4	C		PR	C or better PHYS 211 *and* MATH 142 *(PHYS 212)*; Prereq or Coreq: PHYS 207 *or* 212 *(PHYS 212L)*	
!	MATH 242 Elem. Differential Equations	3	C		PR	C or better in MATH 142	
Semester Four (18 Credit Hours)							
!	CSCE 212 Intro. to Computer Architecture	3		*	PR	CSCE 211 & either CSCE 145 *or* 206	
	EMCH 220 Mech. Engr. Fund. for Non-Majors	3			PR	MATH 142 & PHYS 211	
!	ELCT 201 Introductory Elect. Engr. Lab.	3		*	PR	C or better in ENGL 102, CSCE 211, ELCT 102; Prereq or Coreq: ELCT 222	
!	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			PR	MATH 142 *or* equivalent	
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 363 Intro. to Microelectronics	3		*	MR	C or better in CHEM 111, PHYS 212 & MATH 241	
!	ELCT 371 Electronics	3		*	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 331 Control Systems	3		*	MR	C or better in ELCT 222	
	ELCT 350 Computer Modeling of Elect. Sys.	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-INT	ELCT 302	
	Career Plan Elective[5]	3		*	PR		
	Career Plan Elective[5]	3		*	PR		
	Carolina Core GHS[4]	3			CC-GHS		

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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 Hours	Minimum Major Requirements Hours	Minimum College & Program Requirements Hours	Minimum Carolina Core Hours	Minimum Institutional 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 Electrical Engineering program GPA of 2.00.
3. Students who place into MATH 115 will be required to successfully complete it before taking MATH 141.
4. The Carolina Core 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. Career Plan Electives include all ELCT courses numbered 499 and higher. Up to 6 hours of non-ELCT courses may be used to satisfy Career Plan Electives with department approval; all must be at or above the 300-level.

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 Bulletin.

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