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
Bulletin Year: 2023-2024

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 (15 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 General Chemistry I	3	C		CC-SCI	C or better in MATH 111/115/122/141 or higher math *or* Math placement test; Coreq: CHEM 111L	
	CHEM 111L General Chemistry I Lab	1	C		CC-SCI	MATH 111 or 115; Prereq or Coreq: CHEM 111	
!	ELCT 101 Electrical & Electronics Engr. (or ENCP 101) *fall only*	1		*	PR		
	UNIV 101 The Student in the University	3			PR		
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 Essentials of Physics I	3	C		CC-SCI	C or better in MATH 141; Coreq: PHYS 211L	
!	PHYS 211L Essentials of Physics I Lab	1	C		CC-SCI	Prereq or Coreq: PHYS 211	
!	ELCT 102 Electrical Science	3	C	*	PR	Prereq or Coreq: MATH 141	
!	CSCE 145 Algorithmic Design I	4	C	*	PR	Prereq or Coreq: MATH 111 *or* 115	
Semester Three (16 Credit Hours)							
!	CSCE 211 Digital Logic Design	3	C	*	PR	MATH 141	
!	ELCT 221 Circuits	3	C	*	PR	C or better in MATH 142. C or better in either ELCT 102 *or* AESP 265, *or* D or better in ELCT 220	
	PHYS 212 Essentials of Physics II	3	C		PR	C or better PHYS 211 *and* MATH 142; Coreq: PHYS 211L	
	PHYS 212L Essentials of Physics II Lab.	1	C		PR	Prereq or Coreq: PHYS 212	
!	MATH 242 Elem. Differential Equations	3	C		PR	C or better in MATH 142	
	STAT 509 Statistics for Engineers	3			PR	MATH 142 *or* equivalent	
Semester Four (18 Credit Hours)							
!	CSCE 212 Intro. to Computer Architecture	3		*	PR	D or better in 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; Prereq or Coreq: ELCT 222	
!	ELCT 222 Signals & Systems	3	C	*	PR	C or better in ELCT 221 & MATH 242	
	ELCT 363 Intro. to Microelectronics	3		*	MR	C or better in CHEM 111, PHYS 212; Prereq or Coreq: C or better in MATH 241	
!	MATH 241 Vector Calculus	3	C		PR	C or better in MATH 142	
Semester Five (18 Credit Hours)							
!	ELCT 301 Electronics Laboratory	3		*	MR	D or better in ELCT 201; Prereq or Coreq: D or better in ELCT 371	
	ELCT 321 Digital Signal Processing	3		*	MR	C or better in ELCT 222	
!	ELCT 331 Control Systems	3		*	MR	C or better in ELCT 222	
!	ELCT 371 Electronics	3		*	MR	C or better in ELCT 222	
	CSCE 313 Embedded Systems	3		*	PR	CSCE 211 & 212	
	Carolina Core VSR[4]	3			CC-VSR		
Semester Six (15 Credit Hours)							
!	ELCT 302 Real-Time Systems Laboratory	3		*	MR	D or better in ELCT 301; Prereq or Coreq: D or better in ELCT 331	
	ELCT 361 Electromagnetics	3		*	MR	PHYS 212 & MATH 241	
	Career Plan Elective[5]	3		*	PR		
	General Elective[6]	3			PR		
	Carolina Core GSS[4]	3			CC-GSS		
Semester Seven (15 Credit Hours)							
!	ELCT 403 Capstone Design Project I	3		*	MR/CC-INT	D or better in ELCT 302	
	Career Plan Elective[5]	3		*	PR		
	Career Plan Elective[5]	3		*	PR		
	Carolina Core GHS[4]	3			CC-GHS		
	Carolina Core AIU[4]	3			CC-AIU		

M. Ali

Semester Eight (12 Credit Hours)						
! ELCT 404 Capstone Design Project II	3		*	MR	D or better in 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
127	27	66	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 (18 hours):** The student will select 18 hours of Career Plan Electives. These include ELCT courses numbered 430 and higher. These may include up to 6 hours of non-ELCT courses at the 300-level or higher with department approval. Other courses may be approved by the department. Courses can not duplicate a course otherwise applied to the degree.
6. The student will select an additional 3 credit hours to satisfy the General Elective. These include any university course that does not essentially duplicate a course otherwise applied to the degree.

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.
- All undergraduate students must take a 3-credit course or its equivalent with a passing grade that covers the founding documents. This course may fulfill any requirement in the program of study. Courses that meet this requirement are listed in the academic bulletin.
- 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 25% of a student's degree must be completed in residence at the University, and at least half of the hours in the student's major courses and in the student's minor courses (if applicable) must be taken at the University.
- Disclaimer: Prerequisites on courses are subject to change. Please refer to Bulletin.

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.