South Carolina
Major Map: Computer Engineering
Bachelor of Science in Engineering (B.S.E.)
College of Engineering and Computing
Department of Computer Science & Engineering
Bulletin Year: 2022-2023

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 (16 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	
!	CSCE 145 Algorithmic Design I	4	C	*	PR	Prereq or Coreq: MATH 111 *or* 115	
	CSCE 190 Computing in the Modern World	1	C	*	PR	Prereq or Coreq: CSCE 145, 204, 205, *or* 206	
	CHEM 111 General Chemistry I	3			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			CC-SCI	MATH 111 or 115; Prereq or Coreq: CHEM 111	
Semester Two (15 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	
!	CSCE 146 Algorithmic Design II	4	C	*	PR	C or better in CSCE 145, Prereq or Coreq: MATH 122 *or* 141	
!	CSCE 215 UNIX/Linux Fundamentals	1	C	*	PR	CSCE 145	
	Carolina Core AIU[4]	3			CC-AIU		
Semester Three (16 Credit Hours)							
!	CSCE 211 Digital Logic Design	3	C	*	PR	MATH 141	
	CSCE 274 Robotic Applications & Design *fall only*	3	C	*	PR	CSCE 146	
	MATH 241 Vector Calculus	3			PR	C or better in MATH 142	
	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: C or better in PHYS 211	
	ELCT 102 Electrical Science	3	C	*	PR	Prereq or Coreq: MATH 141	
Semester Four (16 Credit Hours)							
!	CSCE 212 Intro. to Computer Architecture	3	C	*	PR	D or better in CSCE 211 & either CSCE 145 *or* 206	
!	CSCE 240 Advanced Programming Techniques	3	C	*	PR	D or better in CSCE 215 & C or better in CSCE 146	
	PHYS 212 Essentials of Physics II	3			PR	C or better PHYS 211 *and* MATH 142; Coreq: PHYS 212L	
	PHYS 212L Essentials of Physics II Laboratory	1			PR	Prereq or Coreq: C or better in PHYS 212	
	MATH 242 Elementary Differential Equations	3	C		PR	C or better in MATH 142	
	ELCT 221 Circuits	3	C	*	PR	C or better in MATH 142 & ELCT 102 *or* C or better in AESP 265 *or* D or better in ELCT 220	
Semester Five (15 Credit Hours)							
	CSCE 311 Operating Systems	3	C	*	MR	CSCE 240 & CSCE 210 *or* 212	
!	CSCE 611 Advanced Digital Design *fall only*	3	C	*	MR	CSCE 212	
!	MATH 374 Discrete Structures	3	C		PR	C or better in MATH 142 & CSCE 146	
	ELCT 222 Signals & Systems	3	C	*	PR	C or better in ELCT 221 & MATH 242	
	STAT 509 Statistics for Engineers	3			PR	MATH 142	
Semester Six (16 Credit Hours)							
!	CSCE 313 Embedded Systems *spring only*	3	C	*	MR	CSCE 211 & 212	
!	CSCE 350 Data Structures & Algorithms	3	C	*	MR	CSCE 240; MATH 174 *or* 374 *or* 574	
	CSCE 390 Prof. Issues in Computer Science Engr.	1	C	*	CC-VSR		
	ELCT 201 Introductory Electrical Engr. Lab.	3		*	PR	C or better in ENGL 102 & CSCE 211; Prereq or Coreq: ELCT 222	
	SPCH 140 Public Communication *or* SPCH 145 Online Public Communication *or* SPCH 230 Business & Professional Speaking	3			CC-CMS		
	ENGL 462 Technical Writing *or* ENGL 463 Business Writing	3			PR	ENGL 101 & 102	
Semester Seven (15 Credit Hours)							
!	CSCE 490 Capstone Computing Project I *fall only*	3	C	*	MR CC-INT	D or better in CSCE 240; Prereq or Coreq: D or better in CSCE 350	
	CSCE 416 Introduction to Computer Networks	3	C	*	MR	CSCE 146	
	Computer Engineering Major Elective[5]	3	C	*	MR	See Bulletin listing.	
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	Carolina Core GSS[4]	3			CC-GSS		

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Semester Eight (16 Credit Hours)						
CSCE 492 Capstone Computing Project II *spring only*	3	C	*	MR	D or better in CSCE 490, 350, & 240	
CSCE 491 Capstone Computer Engr. Project	3	C	*	MR	D or better in CSCE 240, 313, 611	
Computer Engineering Major Elective[5]	3	C	*	MR	See Bulletin listing.	
MATH 344 Applied Linear Algebra	3			PR	C or better in MATH 142	
MATH 344L Applied Linear Algebra Lab	1			PR	Prereq or Coreq: C or better or concurrent enrollment in MATH 344	
Carolina Core GHS[4]	3			CC-GHS		
Take during any semester (0-6 Credit Hours)						
Carolina Core GFL[4]	0-6			CC-GFL		

Graduation Requirements Summary

Minimum Total Hours	Minimum Major Requirements Hours	College & Program Requirements Hours	Minimum Carolina Core Hours	Minimum Institutional GPA
125	33	57	35	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 Computer 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. **Computer Engineering Major Electives** (9 hours): **CSCE** 330, 355, **ELCT** 321, 331, and other approved **CSCE** courses numbered 510 or higher.

Program Notes:
- Courses identified as "critical" may affect time to 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.
- No Carolina Core, Lower Division Computing, Computer Science Major, or Computer Science Elective course may be counted toward a minor or application area. All other degree-required courses and electives may be used for a minor as appropriate.
- 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.

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.