UNIVERSITY OF SOUTH CAROLINA

Major Map: Computer Engineering
Bachelor of Science in Engineering (B.S.E.)
College of Engineering and Computing
Department of Computer Science & 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.

Critical	Course Subject and Title	Credit Hours	Min. Grade[1]	Major 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 & CHEM 111L – General Chem. I	4			CC-SCI	C or better in MATH 111/115/122/141 *or* higher math *or* Math placement test score	
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 Requirement[4]	3			CC		
Semester Three (16 Credit Hours)							
!	CSCE 211 Digital Logic Design	3	C	*	PR	MATH 141	
	CSCE 274 Robotic Applications & Design	3	C	*	PR	CSCE 146	
	MATH 241 Vector Calculus	3			PR	C or better in MATH 142	
	PHYS 211 & PHYS 211L – Essentials of Phys. I	4	C		CC-SCI	C or better in MATH 141	
	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	CSCE 211 & either CSCE 145 *or* 206	
!	CSCE 240 Introduction to Software Engineering	3	C	*	PR	CSCE 215 & C or better in CSCE 146	
	PHYS 212 & PHYS 212L – Essentials of Phys. II	4			PR	C or better PHYS 211 *and* MATH 142	
	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* D or better in ELCT 220	
Semester Five (15 Credit Hours)							
!	CSCE 311 Operating Systems	3	C	*	MR	CSCE 240 & CSCE 210 *or* 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	
	SPCH 140 Public Communication	3			CC-CMS		
Semester Six (16 Credit Hours)							
	CSCE 313 Embedded Systems	3	C	*	MR	CSCE 211 & 212	
	CSCE 317 Computer Systems Engineering	3	C	*	MR	CSCE 212, MATH 242, & STAT 509	
	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 371 Electronics	3		*	PR	C or better in ELCT 222	
	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	3	C	*	MR CC-INT	CSCE 240, 311, & ENGL 462 *or* 463	
	CSCE 416 Introduction to Computer Networks	3	C	*	MR	CSCE 146	
	CSCE 611 Advanced Digital Design	3	C	*	MR	CSCE 212	
	Computer Engineering Major Elective[5]	3	C	*	MR	See course listing in Bulletin	
	Carolina Core Requirement[4]	3			CC		
Semester Eight (16 Credit Hours)							
	CSCE 492 Capstone Computing Project II	3	C	*	MR	CSCE 490	
	Computer Engineering Major Elective[5]	3	C	*	MR	See course listing in Bulletin	
	Computer Engineering Major Elective[5]	3	C	*	MR	See course listing in Bulletin	
	MATH 344 & MATH 344L – Applied Linear Alg.	4			PR	C or better in MATH 142 *(MATH 344)*; Prereq or Coreq or concurrent: C or better in MATH 344 *(MATH 344L)*	
	Carolina Core Requirement[4]	3			CC		

Draft: 5/23/2017

Graduation Requirements Summary

Minimum Total Hours	Major Requirements Hours	College & Program Requirements Hours	Minimum Carolina Core Hours	Minimum Overall 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 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 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. This major map also assumes that students complete one Carolina Core overlay course. Additional hours may be required to meet all Carolina Core requirements if no overlay course is taken.
5. **Computer Engineering Major Electives** (9 hours): CSCE 330, 355, ELCT 321, ELCT 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.
- 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 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.