Bachelor of Science in Computer Engineering and Computer Science

Students attaining the Bachelor of Science degree in computer engineering and computer science would possess the scientific and engineering skills and knowledge that would enable them to design and implement computer systems that effectively and efficiently integrate developing hardware and software technologies. This degree is administered jointly by the Departments of Computer Science and Electrical Engineering.

In order to earn the Bachelor of Science degree in computer engineering and computer science, the student must: (1) earn 128 class units as described below; (2) achieve a minimum grade point average of 2.0 on all course work undertaken at USC; (3) attain a minimum grade point average of 2.0 on all course work completed in electrical engineering and computer science at USC.

In addition, CECS majors must complete a minimum of 30 units of course work in humanities and social sciences.

composition/writing requirements		**Units**
WRIT 140*	Writing and Critical Reasoning	4
WRIT 340	Advanced Writing	3

General Education (see here)	**Units**
General education*	20

Pre-major requirements		**Units**
Math		
MATH 125	Calculus I	4
MATH 126	Calculus II	4
MATH 225	Linear Algebra and Differential Equations	4
MATH 226	Calculus III	4
EE 364	Introduction to Probability and Statistics for Electrical Engineering and Computer Science, or	3
Physics		
PHYS 151L***	Fundamentals of Physics I: Mechanics and Thermodynamics	4
PHYS 152L	Fundamentals of Physics II: Electricity and Magnetism	4
Science elective****		4

major requirements		**Units**
Computer Science		
CSCI 101L	Fundamentals of Computer Programming	3
CSCI 102L	Data Structures	3
CSCI 200	Object-Oriented Programming	3
CSCI 201L	Principles of Software Development	3
CSCI 271	Discrete Methods in Computer Science	3
CSCI 303	Design and Analysis of Algorithms	3
CSCI 377	Introduction to Software Engineering	3
CSCI 402	Operating Systems	3
Electrical Engineering		

EE 101	Introduction to Digital Logic	3
EE 106L	Introduction to Computer Engineering/Computer Science	2
EE 201L	Introduction to Digital Circuits	4
EE 328Lx	Circuits and Electronics for Computer Engineers	4
EE 357	Basic Organization of Computer Systems	3
EE 454L	Introduction to Systems Using Microprocessors	4
EE 457x	Computer Systems Organization	3
	Engineering Economy&Business Elective	3
Senior Design Project		
CSCI 477ab	Design and Construction of Large Software Systems, or	2-2
EE 459L	Embedded Systems Design Laboratory	3
Electives		
Technical elective ++	12	
Free elective	4-5	
Total Units:	128	

*GE Category VI is taken concurrently with WRIT 140.

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***Satisfies GE Category III requirement.

****Any course in physics, biology or chemistry beyond the basic science requirement or in another scientific discipline. See department for approval.

******Science Elective (1 course)**

Applicable courses include: BISC 230lxg, Chem 201lg, Chem 202 lg, Ling 275 lg, Ling 285, Phil 285 lg, Geol 265 lg, Geol 281 lg. All courses also satisfy the Category IV GE

Engineering Economy/ Business Elective (1 course)

Applicable courses include: BUAD 301, BAEP 450x, ISE 460

++ *Technical Electives (5 courses)*

Applicable courses include: CSCI 300, CSCI 351, CSCI 445, CSCI 459, CSCI 460, CSCI 464, CSCI 480, CSCI 485, CSCI 477ab,CSCI 486,CSCI 490x, CSCI 491ab, CSCI 499; EE 450, EE 459L, EE 465, EE 477L, EE 490x, EE 499; MATH 458. Students may also choose one advisor-approved course from the 300 and 400 level ITP offerings. Other courses may be applicable; please see an advisor for approval.