Bachelor of Science in Software Engineering

KENNESAW STATE
UNIVERSITY

This is a GATED PROGRAM
Catalog Year: 2017-2018

Total Degree Credit Hours: 125

General Education Requirements (See Degreeworks for Prerequisites)

A-1	**ENGL 1101** Composition I	3	
	ENGL 1102 Composition II	3	
A-2	**MATH 1190** Calculus I	4	

Area A: Essential Skills (10 credit hours)
All Area A courses must be completed within the first 30 credit hours with a grade of C or higher.

| B-1 | **ECON 1000** Contemporary Economic Issues | 2 | |
| B-2 | **COM 1100** Human Communication | 3 | |

Area B: Institutional Options (5 credit hours)
COM 1100 is essential for Software Engineering majors.

| C-1 | **ENGL 2110, 2111, 2112, 2120, 2121, 2122, 2130, 2131, 2132,** *or* **2300** | 3 | |
| C-2 | **ART 1107, MUSI 1107, DANC 1107,** *or* **TPS 1107** | 3 | |

Area C: Humanities, Fine Arts, and Ethics (6 cr hrs)
Choose one course from each area.

| D-1 | **MATH 2202** Calculus II | 4 | |
| D-2 | **Group 1: BIOL 1107/L, CHEM 1211/L,** *or* **PHYS 2211/L** **Group 2: BIOL 1108/L, CHEM 1212/L,** *or* **PHYS 2212/L** | 8 | |

Area D: Science, Math, and Technology (12 cr hrs)
Software Engineering majors must complete a Science sequence. "L" denotes the corresponding Lab course.

E-1	**POLS 1101** American Government	3	
E-2	**HIST 2111** *or* **2112** US History	3	
E-3	**HIST 1100, 1111,** *or* **1112** World History	3	
E-4	**CRJU 1101, GEOG 1101, PSYC 1101, SOCI 1101, STS 1101, ANTH 1102,** *or* **ECON 2100**	3	

Area E: Social Sciences (12 credit hours)
Choose one course from each area for E-2, E-3, & E-4.

Area F Lower Division Major Requirements

	Prerequisites		
CSE 1321/L Programming & Problem Solving I	Co-req w/ MATH 1112, 1113, 1190 or CSE 1300	4	
CSE 1322/L Programming & Problem Solving II	Minimum grade of 'B' in CSE 1321/L	4	
MATH 2345 Discrete Mathematics *or*	MATH 1112, 1113, or 1190	3	
CSE 2300 Discrete Structures for Computing	MATH 1113 & CSE 1321/L		
TCOM 2010 Technical Writing	ENGL 1102	3	
MATH 2332 Probability and Data Analysis	MATH 1190	3	
Carryover credit hour from Area D Math	See Area D Math requirement	*1*	

CSE 1321/L and CSE 1322/L must have a minimum grade of 'B.'

Upon completing CSE 1322/L with a minimum grade of 'B,' students should request to have their major changed to the fully admitted Software Engineering major.

Free Electives (5 credit hours)

CSE 1321/L = CS 1301   **STATS 1107 = STATS 1401**
CSE 1322/L = CS 1302 ccse.kennesaw.edu/advising/courseupdates.php

CSE 1300 is <u>highly recommended</u> for students who are new to programming.   MATH 1111, PHYS 111K and PHYS 1112K cannot be used as a free elective.

Upper Division Major Requirements

	Prerequisites			
Math/Science Electives Make an appointment with a CCSE Academic Advisor to discuss the course options for this requirement	Varies	6		All major courses must have a minimum grade of 'C,' except for CSE 1321/L and CSE 1322/L, which must have a minimum grade of 'B.'
Science Elective*** ***IF PHYS 2211/L WAS NOT COMPLETED IN AREA D, IT MUST BE COMPLETED HERE. IF PHYS 2211/L WAS COMPLETED IN AREA D, STUDENTS MAY TAKE EITHER BIOL 1107/L OR CHEM 1211/L TO MEET THIS REQUIREMENT.***	Varies	4		
CSE 3153 Database Systems	CSE 1322/L	3		
CSE 3801 Professional Practices and Ethics	CSE 1322/L	2		
CS 3305/L Data Structures	CSE 1322/L & (MATH 2345/CSE 2300)	4		
CS 3503/L Computer Organization & Architecture	CSE 1322/L	4		
CS 3502 Operating Systems	CS 3503/L & CS 3305/L	3		
SWE 3313 Intro to Software Engineering	CSE 1322/L	3		
SWE 3623 Software Systems Requirements	SWE 3313 & (MATH 2345/CSE 2300)	3		
SWE 3633 Software Architecture and Design	SWE 3313	3		
SWE 3643 Software Testing & Quality Assurance	SWE 3313	3		
SWE 4324 User-Centered Design	SWE 3313	4		
SWE 4663 Software Project Management	SWE 3313 & MATH 2332	3		
SWE 4713 SWE Application Domain	Two of the following: SWE 3623, SWE 3643, SWE 4663	3		
SWE 4724 Software Engineering Project	TCOM 2010 & COM 1100 & Three of the following: SWE 3623, SWE 3633, SWE 3643, SWE 4324, SWE 4663	4		

Upper Level Electives (Choose 2 courses; at least one must be an SWE course)
CSE 4983 may be used as your one non-SWE elective, even if it is a Software Engineering Internship.

	Prerequisites		
SWE 3683 Embedded Systems Analysis & Design	CS 3305/L	3	
SWE 3843 Embedded Systems Construction and Testing	CS 3502	3	
SWE 4633 Component-Based Software Development	CS 3305/L	3	
SWE 4743 Object-Oriented Development	CS 3305/L	3	
SWE 4783 User Interaction Engineering	SWE 3313 or SWE 4324	3	
CGDD 4003 Digital Media and Interaction	CGDD 3103	3	
CGDD 4203 Mobile and Casual Game Development	CGDD 4003	3	
CS 4504 Distributed Computing	CS 3502	3	
CS 4512 Systems Programming	CS 3502	3	
CS 4514 Real-Time Systems	CS 3502	3	
CS 4523 Programming Massively Parallel Processors	CS 3502	3	
CS 4622 Computer Networks	CS 3503/L	3	
CS 4722 Computer Graphics and Multimedia	CS 3305/L	3	
CS 4732 Machine Vision	CS 3305/L	3	
CSE 4983 Computer Science Internship	Varies	3	
IT 4123 Electronic Commerce	IT 3203 and CSE 3153	3	
IT 4823 Information Security Administration & Privacy	CSE 3153 & (MATH 2345/CSE 2300) & IT 3123 or CS 3503/L	3	
IT 4833 Wireless Security	CS 3502 or IT 4823	3	
IT 4843 Ethical Hacking for Effective Defense	IT 4323 or ECET 3400 or CS 4622	3	