Bachelor of Science in Computer Science

KENNESAW STATE UNIVERSITY

Catalog Year: 2015

Total Degree Credit Hours: 120

General Education Requirements (See Degreeworks for Prerequisites)

A-1	**ENGL 1101** Composition I	3	
	ENGL 1102 Composition II	3	
A-2	**MATH 1112** College Trigonometry *or* **MATH 1113** Precalculus	3	

Area A: Essential Skills (9 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 Computer Science 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 1190** Calculus I	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)
Computer Science 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 2202 Calculus II	MATH 1190	4	
Science Major Course*** ***STUDENTS MUST COMPLETE AN ADDITIONAL LECTURE/LAB SCIENCE COURSE FROM THE OPTIONS LISTED IN AREA D, BUT IT MUST BE DIFFERENT FROM THE SCIENCES COURSES USED TO MEET THE AREA D SCIENCE SEQUENCE REQUIREMENTS.***	Varies	4	
Carryover credit hour from Area D Math	See Area D Math requirement	*1*	
Carryover credit hour from Area D Group 2 Science Lab	See Area D Science 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 Computer Science major.

Free Electives (5 credit hours)

CSE 1300 is highly recommended for students new to programming.

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

Upper Division Major Courses

	Prerequisites		
CS 3305/L Data Structures	CSE 1322/L & MATH 2345	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	
CS 3410 Introduction to Database Systems OR **CSE 3153**	CSE 1322/L	3	
CS 4306 Algorithm Analysis	CS 3305/L	3	
CS 4504 Distributed Computing* *or* **CS 4720** Internet Programming*	CS 3502 CS 3305/L & (CS 3410/CSE 3153)	3	
CS 4308 Programming Languages	CS 3503/L & CS 3305/L	3	
CSE 3801 Professional Practices and Ethics	CSE 1322/L	2	
CS 4850 Senior Project	CS 3502 &SWE 3313	3	
TCOM 2010 Technical Writing	ENGL 1102	3	
MATH 2345 Discrete Mathematics	MATH 1112, 1113, or 1190	3	
MATH 3332 Probability and Inference	MATH 2202	3	
Upper Division Math Elective			
Choose 1 — **MATH 3260** Linear Algebra I	MATH 1190	3	
Choose 1 — **MATH 3261** Numerical Methods I	MATH 3260 & CSE 1321/L	3	
Choose 1 — **MATH 3272** Intro to Linear Programming	MATH 3260	3	
Choose 1 — **MATH 3322** Graph Theory	MATH 2345/MATH 2390	3	
Choose 1 — **Potentially other math courses at the 3000 or 4000 level**		3	

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.'

*Alternative can be used as a Major Elective

Potential other Upper-Level Math courses with coordinator approval.

Major Electives (Choose any 4 classes)

	Prerequisites		
CS 4242 Artificial Intelligence	CS 3305/L	3	
CS 4265 Big Data Analytics	CS 3305/L & CS 3410	3	
CS 4267 Machine Learning	CS 3305/L & CS 3410	3	
CS 4270 Intelligent Systems in Bioinformatics	CS 3305/L & CS 3410	3	
CS 4322 Mobile Software Development	CS 3305/L & SWE 3313 & CS 3410/CSE 3153	3	
CS 4400 Directed Studies	Varies	1-3	
CS 4412 Data Mining	CS 3305/L & CS 3410	3	
CS 4491 Special Topics	Varies	3	
CS 4512 Systems Programming	CS 3502	3	
CS 4514 Real-Time Systems	CS 3502	3	
CS 4522 HPC & Parallel Programming	CS 3502	3	
CS 4523 Programming Massively Parallel Processors	CS 3502	3	
CS 4524 Cloud Computing	CS 3502	3	
CS 4612 Secure Software Development	CS 3503/L	3	
CS 4622 Computer Networks	CS 3503/L	3	
CS 4632 Modeling & Simulation	CS 3305/L	3	
CS 4712 User Interface Engineering	CSE 1322/L	3	
CS 4720 Internet Programming (only counts once)	CS 3305/L & CS 3410/CSE 3153	3	
CS 4722 Computer Graphics and Multimedia	CS 3305/L	3	
CS 4732 Machine Vision	CS 3305/L	3	
CGDD 4203 Mobile & Casual Game Development	CGDD 4003	3	
SWE 3633 Software Architecture and Design	SWE 3313	3	
SWE 3643 Software Testing & Quality Assurance	SWE 3313	3	
SWE 3683 Embedded Systems Analysis & Design	CS 3305/L	3	
SWE 4633 Component-Based Software Development	CS 3305/L	3	

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.'