Bachelor of Science in Computer Science

Kennesaw State University
College of Computing and Software Engineering
Department of Computer Science

Catalog Year: 2015-2016

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 1113** Pre-Calculus I	3	

Area A: Essential Skills (9 credit hours)
Must complete this area within first 30 credit hours. Students must have C or better on all classes in this area.

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

Area B: Institutional Options (5 credit hours)
Choose one course from area B-1. COMM 1100 is essential for computer science majors.

C-1	**ENGL 2000-level** Literature	3	
C-2	**ART/DANC/MUSI/TPS 1107** Arts and Culture of the World	3	

Area C: Humanities/Arts (6 credit hours)
Choose one course from both groups.

D-1	**MATH 1190** Calculus I	4	
D-2	**BIOL 1107/L, CHEM 1211/L or PHYS 2211/L**	8	
	BIOL 1108/L, CHEM 1212/L or PHYS 2212/L		

Area D: Science, Math & Technology (12 credit hours)
Must complete a science sequence. Either General Chemistry or Principles of Physics. "L" denotes accompanying lab course.

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

Area E: Social Sciences (12 credit hours)
Choose one course from groups E-1 to E-4.

KSU 1101/1111/1121/1200 First Year Seminar	3	
Free Electives (KSU First Year Seminar counts as a free elective)	Total = 6	

Area F Lower Division Major Requirements

		Prerequisites		
F-1	**CS 1301** Programming Principles I	Co-req w/ MATH 1112 or 1113	4	
F-2	**CS 1302** Programming Principles II	CS 1301 & MATH 1112 or 1113	4	
F-3	**MATH 2202** Calculus II	MATH 1190	4	
F-4	**BIOL 1107/L, CHEM 1211/L, or PHYS 2211/L**	Varies	4	

Students must have a C or better in all courses included in Area F.

Students should begin CS 1301 within their first or second semester in the major.

Students should complete a third lab science course that is not part of their Area D sequence.

If MATH 1190 is the first math class at KSU, MATH 2202 is used in Area D, then MATH 2203 Calculus III will need to be taken for Area F.

BIOL 2107 has prerequisites of CHEM 1211/L minimum grade of C.

Notes:

Updated 4/15/16

Upper Division Major Courses

	Prerequisites		
CSE 3801 Professional Practices and Ethics	CS 1302	2	
CS 3304 Data Structures	MATH 1190 & MATH 2345 & CS 1302	4	
CS 3410 Database	CS 1302	3	
CS 3501 Computer Organization & Architecture	CS 1302 & MATH 1190	4	
CS 3502 Operating Systems	CS 3501	3	
CS 4305 Software Engineering	CS 3410 & CSE 3801 & COM 1100	3	
CS 4306 Algorithm Analysis	CS 3304	3	
CS 4504 Distributed Computing *	CS 3502	3	
CS 4308 Programming Languages	CS 3304 & CS 3501	3	
CS 4850 Senior Project	CS 3502 & CS 4305	3	
MATH 2345 Discrete Math	MATH 1112/1113/1190	3	
MATH 3332 Probability and Statistics	MATH 2202	3	
TCOM 2010 Technical Writing	ENGL 1102	3	
Upper Division Math Elective			
Choose 1 — **MATH 3322** Graph Theory	MATH 2345 or MATH 2390	3	
Choose 1 — **MATH 3260** Linear Algebra I	MATH 1190	3	
Choose 1 — **MATH 3161** Numerical Methods I	MATH 3260 & CS 1301	3	
Choose 1 — **MATH 3272** Intro to Linear Programming	MATH 3260	3	

Students must have a C or better in all Upper Division Major Courses.

* Students may alternately take CS 4720 Internet Programming (Prerequisites: CS 3304 & (CSE 3153 or CS 3410))

Students must have a C or higher in all Major Electives.

Major Electives

Choose any 12 credit hours

	Prerequisites		
CS 4242 Artificial Intelligence	CS 3304	3	
CS 4322 Mobile Software Development	CS 1302 & CS 4305	3	
CS 4412 Data Mining	CS 3410 & CS 3304	3	
CS 4490 Special Topics in Computer Science		1-3	
CS 4512 Systems Programming	CS 3304 & CS 3502	3	
CS 4514 Real-Time Systems	CS 3502	3	
CS 4522 HPC/Parallel Programming	CS 3304 & CS 3502	3	
CS 4524 Cloud Computing	CS 3304 & CS 3502	3	
CS 4612 Secure Software Development	CS 3501	3	
CS 4622 Computer Networks	CS 3501	3	
CS 4632 Modeling & Simulation	CS 3304	3	
CS 4712 HCI, User Interface Engineering	CS 1302	3	
CS 4722 Computer Graphics & Multimedia	CS 3304	3	
CS 4732 Digital Image Processing	CS 3304	3	
CGDD 4203 Mobile & Casual Game Development	CGDD 4003 or CSE 3203	3	
SWE 3633 Software Architecture & Design	SWE 3313	3	
SWE 3643 Software Testing & Quality Assurance	SWE 3313	3	
SWE 3683 Embedded Systems Analysis & Design	CS 3304	3	
SWE 3843 Embedded Systems Construction & Testing	CS 3502	3	
SWE 4633 Component-Based Software Development	CS 3304	3	