Bachelor of Science in Computer Science

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

Catalog Year: 2017

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)
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**	3	

Area E: Social Sciences (12 credit hours)
Choose one course from each group for each requirement in E-2 to E-4.

KSU 1101 First Year Seminar	3	

Free Electives (KSU first year seminar counts as a free elective)	Total = 5 hrs

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.

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

+1 hr from D1 & 1 hr from D2G2 lab

Notes:

Upper Division Major Courses

	Prerequisites		
CSE 3801 Professional Practices and Ethics	CS 1302	2	
CS 3304 Data Structures	MATH 2345 & CS 1302	4	
CS 3410 Database or **CSE 3153**	CS 1302	3	
CS 3501 Computer Organization & Architecture	CS 1302	4	
CS 3502 Operating Systems	CS 3501 & CS 3304	3	
CS 4305 Software Engineering or **SWE 3313****	CS 3410 & CSE 3801 & COM 1100	3	
CS 4306 Algorithm Analysis	CS 3304	3	
CS 4504 Distributed Computing or **CS 4720 ***	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		3	
Choose 1 — **MATH 3260** Linear Algebra I	MATH 1190		
Choose 1 — **MATH 3161** Numerical Methods I	MATH 3260 & CS 1301		
Choose 1 — **MATH 3272** Intro to Linear Programming	MATH 3260		

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

** CS 4720 Internet Programming has CS 3304 and (CS 3410 or CSE 3153) as prereqs*

*** SWE 3313 has CS 1302 as the prereq*

Potential other mathematics course at 3000 or 4000 level. Requires coordinator approval.

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 4400 Directed Studies	Varies	1-3	
CS 4412 Data Mining	CS 3410 & CS 3304	3	
CS 4490/4491 Special Topics in Computer Science	Varies	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	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	