Bachelor of Science in Software Engineering

Catalog Year: 2016-2017 Total Degree Credit hours: 125

General Education Requirements (See KSU Catalog 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)
Must complete this area within first 30 credit hours. All courses in this area must have a 'C' or better.

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

Area B: Institutional Options (5 credit hours)

C-1	**ENGL 2000-level** Approved 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 2202** Calculus II	4	
D-2	**CHEM 1211/L, PHYS 2211/L or BIOL 1107/L**	8	
	CHEM 1212/L, PHYS 2212/L or BIOL 1108/L		

Area D: Science, Math & Technology (12 credit hours)
Must complete a science sequence (this sequence can come from a course in D and the science elective from Major Courses Section – see back of this sheet)
"L" denotes accompanying lab course.
Chem 1211/L is a pre/corequisite of BIOL 1107/L.

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	**STS 1101** Science, Technology and Society	3	

Area E: Social Sciences (12 credit hours)
Choose one course from each group for requirements E-2 and E-3.

KSU 1101/1111/1121/1200 First Year Seminar	3	

Students who transfer in with 30+ credit hours do not need to complete a First Year Seminar course.

Area F Lower Division Major Requirements

		Prerequisites		
F-1	**CS / CSE 1301** Programming and Problem Solving I	No Prerequisite	4	
F-2	**CS / CSE 1302** Programming and Problem Solving II	CS/CSE 1301	4	
F-3	**CSE 2300** Discrete Structures OR **MATH 2345** Discrete Math **	CS/CSE 1301 & MATH 1113	3	
F-4	**TCOM 2010** Technical Writing	ENGL 1102	3	
F-5	**MATH 2332** Intro to Probability and Data Analysis	MATH 1190	3	
+1 Carry over from extra from Area D				

Note: Students must have a C or better in all Area F courses

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

CSE 2300 as prerequisite of CS/CSE 1301 & MATH 1113. MATH 2345 has prerequisite of just MATH 1113.

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Upper Division Major Courses

	Prerequisites		
Math/Science Electives (Math at the level of Calculus 1 or higher; Science at the level of Area D or above	Varies	6	
PHYS 2211K OR Additional Lab Science to form sequence with Area D Lab Science ***	Varies	4	
CSE 3153 Database Systems	CS/CSE 1302	3	
CSE 3801 Professional Practices and Ethics	CS/CSE 1302	2	
CS 3501 Computer Organization & Architecture	CS/CSE 1302	4	
CS 3304 Data Structures	CS/CSE 1302, (MATH 2345 or CSE 2300)	4	
CS 3502 Operating Systems	CS 3501 & CS 3304	3	
SWE 3313 Introduction to Software Engineering	CS/CSE 1302	3	
SWE 3623 Software Systems Requirements	SWE 3313 & CSE 2300/MATH 2345	3	
SWE 3633 Software Architecture & Design	SWE 3313	3	
SWE 3643 Software Testing and Quality Assurance	SWE 3313	3	
SWE 4324 User-Centered Design	CS/CSE 1302	4	
SWE 4663 Software Project Management	SWE 3313 & MATH 2332	3	
SWE 4713 SWE Application Domain	[1]	3	
SWE 4724 Software Engineering Project	[2]	4	
SWE Upper Level Electives (See Below)	Varies	6	
Free Electives (Excludes: Math 1111, PHYS 111K and PHYS 1112K)	Varies	5	

[1] Three of these four: SWE 3623, SWE 3633, SWE 3643, SWE 4663

[2] TCOM 2010 & COM 1100 & three of these four: SWE 3623, SWE 3633, SWE 3643, SWE 4663

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

SWE Upper Level Electives

Choose 2 courses from the following; **at least one must be an SWE course**

Software Engineering (Pick 1 or 2)

	Prerequisites		
SWE 3683 Embedded Systems Analysis & Design	CS 3502	3	
SWE 3843 Embedded Systems Construction and Testing	CS 3502	3	
SWE 4633 Component-Based Software Development	CS 3304	3	
SWE 4743 Object-Oriented Development	CS 3304	3	
SWE 4783 User Interaction Engineering	SWE 3313 or SWE 4324	3	

Computer Science (Pick 0 or 1)

	Prerequisites		
CS 4243 Systems Programming	CS 3502	3	
CS 4504 Distributed Computing	CS 3502	3	
CS 4622 Computer Networks	CS 3501	3	
CS 4514 Real-Time Systems	CS 3502	3	
CS 4722 Computer Graphics and Multimedia	CS 3304	3	
CS 4242 Artificial Intelligence	CS 3304	3	
CS 4732 Digital Image Processing	CS 3304	3	

Computer Game Development and Design (Pick 0 or 1)

	Prerequisites		
CGDD 4003 Digital Media and Interaction	CGDD 2002 or CS 3304	3	
CGDD 4203 Mobile and Casual Game Development	CGDD 4003 or CSE 3203	3	

Information Technology (Pick 0 or 1)

	Prerequisites		
IT 4123 Electronic Commerce	CSE 3153 and IT 3203	3	
IT 4823 Information Security Administration & Privacy	CSE 3153, MATH 2345 or CSE 2300, & CS 3501	3	
IT 4833 Wireless Security	IT 4823 or CS 3502	3	
IT 4843 Ethical Hacking for Effective Defense	IT 4323 or ECET 3400 or CS 4622	3	

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