BS in Computer Science: Software Engineering (693225) MAP Sheet

Physical and Mathematical Sciences, Computer Science
For students entering the degree program during the 2021-2022 curricular year.

University Core and Graduation Requirements				Suggested Sequence of Courses

University Core Requirements:

Requirements	#Classes	Hours	Classes
Religion Cornerstones			
Teachings and Doctrine of The Book of Mormon	1	2.0	REL A 275
Jesus Christ and the Everlasting Gospel	1	2.0	REL A 250
Foundations of the Restoration	1	2.0	REL C 225
The Eternal Family	1	2.0	REL C 200
The Individual and Society			
American Heritage	1-2	3-6.0	from approved list
Global and Cultural Awareness	1	3.0	from approved list
Skills			
First Year Writing	1	3.0	from approved list
Advanced Written and Oral Communications	1	3.0	WRTG 316
Quantitative Reasoning	1	4.0	MATH 112* or 113*
Languages of Learning (Math or Language)	1	4.0	MATH 112* or 113*
Arts, Letters, and Sciences			
Civilization 1	1	3.0	from approved list
Civilization 2	1	3.0	from approved list
Arts	1	3.0	from approved list
Letters	1	3.0	from approved list
Biological Science	1	3.0	from approved list
Physical Science	1	3.0	from approved list
Social Science	1	3.0	from approved list
Core Enrichment: Electives			
Religion Electives	3-4	6.0	from approved list
Open Electives	Variable	Variable	personal choice

Graduation Requirements:

Minimum residence hours required	30.0
Minimum hours needed to graduate	120.0

Suggested Sequence of Courses

FRESHMAN YEAR

1st Semester

C S 142	3.0
First-year Writing or American Heritage	3.0
MATH 112	4.0
Religion Cornerstone course	2.0
General education, university requirements, and/or general electives	3.0
Total Hours	**15.0**

2nd Semester

C S 202	1.0
C S 235	3.0
PHSCS 121	3.0
First-year Writing or American Heritage	3.0
MATH 113	4.0
Religion Cornerstone course	2.0
Total Hours	**16.0**

SOPHOMORE YEAR

3rd Semester

C S 203	1.0
C S 224	3.0
C S 236	3.0
Biological Science	3.0
Civilization 1	3.0
Religion Cornerstone course	2.0
Total Hours	**15.0**

4th Semester

C S 240	4.0
C S 260 or other C S elective	3.0
MATH 213	2.0
MATH 215	1.0
Civilization 2	3.0
Religion Cornerstone course	2.0
Total Hours	**15.0**

JUNIOR YEAR

5th Semester

C S 204	1.0
C S 312	3.0
C S 324	3.0
Social Science	3.0
STAT 121, STAT 201, or MATH 431	3.0
Religion Elective	2.0
Total Hours	**15.0**

6th Semester

C S 329	3.0
C S 340	3.0
C S 452	3.0
Letters	3.0
Religion Elective	2.0
Total Hours	**14.0**

SENIOR YEAR

7th Semester

C S 480	3.0
C S Elective	3.0
WRTG 316	3.0
Arts	3.0
Religion Elective	2.0
General education, university requirements, and/or general electives	2.0
Total Hours	**16.0**

8th Semester

C S 481	3.0
C S Elective	3.0
C S Elective	3.0
C S 404	2.0
Global and Cultural Awareness	3.0
Total Hours	**14.0**

BS in Computer Science: Software Engineering (693225)
2021-2022 Program Requirements (74 - 76 Credit Hours)

Grades below C- are not allowed in major courses.

REQUIREMENT 1 Complete 16 courses
CORE COURSES:

C S 142 - Introduction to Computer Programming	3.0
C S 202 - Software Engineering Lab 1	1.0
C S 203 - Software Engineering Lab 2	1.0
C S 204 - Software Engineering Lab 3	1.0
C S 224 - Introduction to Computer Systems	3.0
C S 235 - Data Structures and Algorithms	3.0
C S 236 - Discrete Structures	3.0
C S 240 - Advanced Programming Concepts	4.0
C S 312 - Algorithm Design and Analysis	3.0
C S 324 - Systems Programming	3.0
C S 329 - Testing, Analysis, and Verification	3.0
C S 340 - Software Design	3.0
C S 404 - Ethics and Computers in Society	2.0
C S 452 - Database Modeling Concepts	3.0
C S 480 - Software Engineering Capstone 1	3.0
C S 481 - Software Engineering Capstone 2	3.0

REQUIREMENT 2 Complete 4 courses
SUPPORTING COURSES:

MATH 112 - Calculus 1	4.0
MATH 113 - Calculus 2	4.0
PHSCS 121 - Introduction to Newtonian Mechanics	3.0
*WRTG 316 - Technical Communication	3.0

REQUIREMENT 3 Complete 1 option

OPTION 3.1 Complete 1 course

MATH 313 - (Not currently offered)	

OPTION 3.2 Complete 2 courses

MATH 213 - Elementary Linear Algebra	2.0
MATH 215 - Computational Linear Algebra	1.0

REQUIREMENT 4 Complete 1 course

STAT 121 - Principles of Statistics	3.0
STAT 201 - Statistics for Engineers and Scientists	3.0

REQUIREMENT 5 Complete 2 courses

C S 260 - Web Programming	3.0
C S 330 - Concepts of Programming Languages	3.0
C S 345 - Operating Systems Design	3.0
C S 356 - Designing the User Experience	3.0
C S 453 - Fundamentals of Information Retrieval	3.0
C S 456 - Introduction to User Interface Software	3.0
C S 460 - Computer Communications and Networking	3.0
C S 462 - Large-Scale Distributed System Design	3.0
C S 465 - Computer Security	3.0
C S 486 - Verification and Validation	3.0

REQUIREMENT 6 Complete 2 courses
COURSES WILL NOT DOUBLE COUNT BETWEEN REQUIREMENT 5 AND REQUIREMENT 6.

C S 252 - Introduction to Computational Theory	3.0
C S 260 - Web Programming	3.0
C S 330 - Concepts of Programming Languages	3.0
C S 345 - Operating Systems Design	3.0
C S 355 - Interactive Graphics and Image Processing	3.0
C S 356 - Designing the User Experience	3.0
C S 393 - Advanced Algorithms and Problem Solving	3.0
C S 401R - Topics in Computer Science	3.0v
You may take up to 3 credit hours.	
C S 405 - Creating and Managing a Software Business	3.0
C S 412 - Linear Programming and Convex Optimization	3.0
C S 450 - Computer Vision	3.0
C S 453 - Fundamentals of Information Retrieval	3.0
C S 455 - Computer Graphics	3.0
C S 456 - Introduction to User Interface Software	3.0
C S 460 - Computer Communications and Networking	3.0
C S 462 - Large-Scale Distributed System Design	3.0
C S 465 - Computer Security	3.0
C S 470 - Introduction to Artificial Intelligence	3.0
C S 471 - Voice User Interfaces	3.0
C S 472 - Introduction to Machine Learning	3.0
C S 474 - Introduction to Deep Learning	3.0
C S 486 - Verification and Validation	3.0
C S 493R - Computing Competitions	3.0
You may take up to 3 credit hours.	
C S 497R - Undergraduate Research	3.0
You may take up to 6 credit hours.	
C S 498R - Undergraduate Special Projects	3.0v
You may take up to 3 credit hours.	
C S 501R - Advanced Topics in Computer Science	3.0v
You may take up to 3 credit hours.	
C S 513 - Robust Control	3.0

EC EN 424 - Computer Systems	4.0
EC EN 425 - Real-Time Operating Systems	4.0
IT&C 567 - Cybersecurity and Penetration Testing	3.0
MATH 411 - Numerical Methods	3.0
MATH 431 - Probability Theory	3.0
MATH 485 - Mathematical Cryptography	3.0

Note: If C S 493R, C S 498R, or C S 501R is chosen, it must be taken for 3 credit hours.

REQUIREMENT 7
Complete Senior Exit interview with the C S department during last semester or term.

Note: Math 112, Math 113, Phscs 121, WRTG 316, and C S 312 can be used to fill both General Education and program requirements. Advanced Writing and Oral Communication: WRTG 316. Quantitative Reasoning: Math 112 or 113. Languages of Learning: Math 112 or 113. Physical Science: C S 312 or Phscs 121.

MAP DISCLAIMER

While every reasonable effort is made to ensure accuracy, there are some student populations that could have exceptions to listed requirements. Please refer to the university catalog and your college advisement center/department for complete guidelines.

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