BS in Computer Science (693220) MAP Sheet
Physical and Mathematical Sciences, Computer Science
For students entering the degree program during the 2022-2023 curricular year.

University Core and Graduation Requirements
University Core Requirements:
Requirements#ClassesHoursClasses
Religion Cornerstones
Teachings and Doctrine of The Book of Mormon12.0REL A 275
Jesus Christ and the Everlasting Gospel12.0REL A 250
Foundations of the Restoration12.0REL C 225
The Eternal Family12.0REL C 200
The Individual and Society
American Heritage1-23-6.0from approved list
Global and Cultural Awareness13.0from approved list
Skills
First Year Writing13.0from approved list
Advanced Written and Oral Communications13.0WRTG 316*
Quantitative Reasoning14.0MATH 112* or 113*
Languages of Learning (Math or Language)14.0MATH 112* or 113*
Arts, Letters, and Sciences
Civilization 113.0from approved list
Civilization 213.0from approved list
Arts13.0from approved list
Letters13.0from approved list
Biological Science13-4.0from approved list
Physical Science13.0CS 312*
Social Science13.0from approved list
Core Enrichment: Electives
Religion Electives3-46.0from approved list
Open Electives3-VariableVariableVariable personal choice
*THESE CLASSES FILL BOTH UNIVERSITY CORE AND PROGRAM REQUIREMENTS (13 hours overlap)
Graduation Requirements:
Minimum residence hours required30.0
Minimum hours needed to graduate120.0
Suggested Sequence of Courses
Freshman Year
1st Semester
C S 1113.0
First-year Writing or American Heritage3.0
MATH 1124.0
General Education courses, university requirements, and/or general electives3.0
Religion Cornerstone course2.0
Total Hours15.0
2nd Semester
PHSCS 1213.0
C S 2353.0
American Heritage or First-year Writing 3.0
MATH 1134.0
Religion Cornerstone course2.0
Total Hours15.0
Sophomore Year
3rd Semester
C S 2363.0
C S 2243.0
STAT 121 or STAT 201 or MATH 4313.0
Civilization 1 3.0
Religion Cornerstone course2.0
Total Hours14.0
4th Semester
C S 2404.0
C S 2523.0
Biological Science3.0
MATH 2132.0
MATH 2151.0
Religion Cornerstone Course2.0
Total Hours15.0
Junior Year
5th Semester
C S 3123.0
C S 3403.0
C S 3243.0
WRTG 3163.0
Religion elective2.0
General electives2.0
Total Hours16.0
6th Semester
Computer Science Elective3.0
Computer Science Elective3.0
Computer Science Elective3.0
C S 4042.0
Letters3.0
Religion Elective2.0
Total Hours16.0
Senior Year
7th Semester
Computer Science Elective 3.0
Computer Science Elective3.0
Computer Science Elective3.0
Arts3.0
Religion Elective2.0
Total Hours14.0
8th Semester
CS/MATH/Science Elective3.0
Computer Science Elective3.0
Civilization 23.0
Global and Cultural Awareness3.0
Social Science3.0
Total Hours 15.0
Note: The sequence of courses suggested may not fit the circumstances of every student. Students should contact their college advisement center for help in outlining an efficient schedule.

Note 2: Students are encouraged to complete an average of 15 credit hours each semester or 30 credit hours each year, which could include spring and/or summer terms. Taking fewer credits substantially increases the cost and the number of semesters to graduate.

BS in Computer Science (693220) 2022-2023 Program Requirements (74 Credit Hours)

Computer science majors, especially those planning graduate work, are advised to acquire a strong background in mathematics, possibly a minor. Personnel in the College of Physical and Mathematical Sciences Advisement Center will advise regarding core courses and suggested general education. Questions regarding curriculum and career decisions should be directed to the undergraduate advisor in the Computer Science Department.

Note: All hours of credit applied toward a major in computer science must be of C- or better and must be taken within eight years of declaring the computer science major. Any exceptions must be approved by the department. Students may choose to graduate under later requirements by updating their date of entry into the major at the college advisement center.

Note: No double counting is allowed within the major.

requirement 1 Complete 10 courses
Core courses:
- C S 111 - Introduction to Computer Science 3.0
- 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 252 - Introduction to Computational Theory 3.0
- C S 312 - Algorithm Design and Analysis 3.0
- C S 324 - Systems Programming 3.0
- C S 340 - Software Design 3.0
- C S 404 - Ethics and Computers in Society 2.0

requirement 2 Complete 3 options
Supporting courses:
option 2.1 Complete 4 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
option 2.2 Complete 1 group
- group 2.2.1 Complete 1 course
  - MATH 313 - (Not currently offered)
- group 2.2.2 Complete 2 courses
  - MATH 213 - Elementary Linear Algebra 2.0
  - MATH 215 - Computational Linear Algebra 1.0
option 2.3 Complete 1 course
- MATH 431 - Probability Theory 3.0
- STAT 121 - Principles of Statistics 3.0
- STAT 201 - Statistics for Engineers and Scientists 3.0

requirement 3 Complete 24.0 hours from the following option(s)
Complete a total of 8 courses (24 hours) from the following three groups:
option 3.1 Complete up to 24.0 hours from the following course(s)
Complete 12-24 credit hours from the following courses. A MINIMUM OF 4 of the eight elective courses MUST BE from this group.
- C S 260 - Web Programming 3.0
- C S 329 - Testing, Analysis, and Verification 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 412 - Linear Programming and Convex Optimization 3.0
C S 428 - Software Engineering 3.0
C S 431 - Algorithmic Languages and Compilers 3.0
C S 450 - Computer Vision 3.0
C S 452 - Database Modeling Concepts 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 479 - (Not currently offered)
C S 486 - Verification and Validation 3.0
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
C S 557 - (Not currently offered)
C S 580 - Theory of Predictive Modeling 3.0
Note: If C S 401R or C S 501R is chosen, it must be taken for three hours.
option 3.2 Complete up to 9.0 hours from the following course(s)
Complete up to 9.0 credit hours from the following courses. Up to 3 of the eight elective courses could be from this group.
C S 180 - Introduction to Data Science 3.0
C S 405 - Creating and Managing a Software Business 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 485 - Mathematical Cryptography 3.0
option 3.3 Complete up to 9.0 hours from the following course(s)
Complete up to 9.0 credit hours from the following courses. Up to 3 of the eight elective courses could be from this group.
C S 480 - Software Engineering Capstone 1 3.0
C S 481 - Software Engineering Capstone 2 3.0
C S 482 - Data Science Capstone 1 3.0
C S 483 - Data Science Capstone 2 3.0
C S 493R - Computing Competitions 3.0
You may take up to 3 credit hours.
C S 494 - Capstone 1 3.0
C S 495 - Capstone 2 3.0
C S 497R - Undergraduate Research 3.0
You may take up to 6 credit hours.
C S 498R - Undergraduate Special Projects 3.0
You may take up to 3 credit hours.
Note: If C S 493R, C S 497R, C S 498R, or C S 501R is chosen, it must be taken for three credit hours.
requirement 4
Complete Senior Exit Interview with the CS department during your last semester or term.
BS in Computer Science (693220)2022-2023
THE DISCIPLINE
Computer science touches virtually every area of human endeavor. Software is responsible for everything from the control of kitchen appliances to sophisticated climate models used in predicting future environmental change. Students in computer science learn to approach complex problems in business, science, and entertainment using their strong background in mathematics, algorithms, and data structures.

The degree programs in the Computer Science Department prepare students to be confident software developers and technical problem solvers. The curriculum also trains students for research into new avenues where computers will have a significant impact. The BS curriculum is accredited by the Computing Accreditation Commission of ABET.

CAREER OPPORTUNITIES
Graduates pursue exciting opportunities in graphics, artificial intelligence, software engineering, database design, scientific programming, systems administration, and research at universities and national laboratories.

Students completing the animation emphasis will be prepared for technical positions at animation and game programming studios. Students will learn both the technical and artistic side of creating and implementing digital animations and games.

The bioinformatics emphasis is designed for students who are interested in building software to assist in analyzing biological systems. Students will graduate with a significant background in biology coupled with the software development and analysis skills necessary to implement large bioinformatics applications.

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.

DEPARTMENT INFORMATION

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