BS in Computer Science: Data Science (693224) 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 Mormon 1.0REL A 275  
Jesus Christ and the Everlasting Gospel 1.0REL A 250  
Foundations of the Restoration 1.0REL C 225  
The Eternal Family 1.0REL C 200  
The Individual and Society  
American Heritage 1-2 3-6.0from approved list  
Global and Cultural Awareness 1.0from approved list  
Skills  
First Year Writing 13.0from approved list  
Advanced Written and Oral Communications 13.0WRTG 316  
Quantitative Reasoning 14.0MATH 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  
Arts 13.0from approved list  
Letters 13.0from approved list  
Biological Science 13.0from approved list  
Physical Science 13.0from approved list  
Social Science 13.0from approved list  
Core Enrichment: Electives  
Religion Electives 3-4 6.0from 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 1113.0  
First Year Writing or American Heritage 3.0  
MATH 1124.0  
General education courses, university requirements, and/or general electives 3.0  
Religion Cornerstone course 2.0  
Total Hours 15.0  
2nd Semester  
C S 2353.0  
PHSCS 1213.0  
First Year Writing or American Heritage 3.0  
MATH 1134.0  
Religion Cornerstone course 2.0
Total Hours 15.0
Sophomore Year
3rd Semester
C S 2243.0
C S 2363.0
Biological Science 3.0
STAT 121 or STAT 201 or MATH 4313.0
Religion Cornerstone course 2.0
Total Hours 14.0
4th Semester
C S 2404.0
Letters 3.0
Civilization 13.0
MATH 2132.0
MATH 2131.0
Religion Cornerstone course 2.0
Total Hours 15.0
Junior Year
5th Semester
C S 3123.0
C S 3243.0
STAT 330 or ECON 3883.0
Social Science 3.0
Civilization 23.0
Total Hours 15.0
6th Semester
C S 4723.0
C S 4523.0
DS Elective 3.0
C S Elective 3.0
Religion Elective 2.0
Total Hours 15.0
Senior Year
7th Semester
C S 4743.0
C S 494 - DS Capstone 1 or CS elective 3.0
WRTG 3163.0
Arts 3.0
General education courses, university requirements, and/or general electives 2.0
Religion Elective 2.0
Total Hours 16.0
8th Semester
C S 495 - DS Capstone 2 or C S elective 3.0
C S Elective or DS elective 3.0
C S Elective 3.0
C S 4042.0
Global and Cultural Awareness 3.0
Religion Elective 2.0
Total Hours 16.0
BS in Computer Science: Data Science (693224) 2022-2023 Program Requirements (74 Credit Hours)

Grades below C- are not allowed in major courses.

**requirement 1**
Complete 12 courses

- C S 111 - Introduction to Computer Science 3.0
- C S 180 - Introduction to Data 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 312 - Algorithm Design and Analysis 3.0
- C S 324 - Systems Programming 3.0
- C S 404 - Ethics and Computers in Society 2.0
- C S 452 - Database Modeling Concepts 3.0
- C S 472 - Introduction to Machine Learning 3.0
- C S 474 - Introduction to Deep Learning 3.0

**requirement 2**
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

**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
- ECON 388 - Introduction to Econometrics 3.0
- STAT 220 - Statistical Modeling for Data Science 3.0
- STAT 330 - Statistical Modeling 2 3.0

**requirement 5**
Complete 1 course

- ECON 388 - Introduction to Econometrics 3.0
- STAT 220 - Statistical Modeling for Data Science 3.0
- STAT 330 - Statistical Modeling 2 3.0

**requirement 6**
Complete 3.0 hours from the following course(s)
Note: Courses taken to fulfill Requirement 5 cannot double count here.

- C S 412 - Linear Programming and Convex Optimization 3.0
- ECON 378 - Statistics for Economists 3.0
- ECON 388 - Introduction to Econometrics 3.0
- ECON 398 - Applied Econometrics 3.0
- ECON 588 - Advanced Econometrics 3.0
- LING 581 - Natural Language Processing 3.0
- MATH 314 - Calculus of Several Variables 3.0
- MATH 413 - Advanced Linear Algebra 3.0
- STAT 240 - Probability and Inference 1 3.0
- STAT 251 - Introduction to Bayesian Statistics 3.0
- STAT 340 - Probability and Inference 2 3.0

**requirement 7**
Complete 9.0 hours from the following course(s)

Note: C S 482/483, the data science capstone courses, are strongly recommended.

- C S 252 - Introduction to Computational Theory 3.0
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 340 - Software Design 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 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 482 - Data Science Capstone 1 3.0
C S 483 - Data Science Capstone 2 3.0
C S 486 - Verification and Validation 3.0
C S 497R - Undergraduate Research 3.0
You may take this course up to 1 time.
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 580 - Theory of Predictive Modeling 3.0
Note: Students can take C S 401R or C S 501R more than once.
Note: Total hours for C S 497R across all requirements cannot exceed 6.0.
requirement 8 Complete 3.0 hours from the following course(s)
Note: Courses taken to fulfill Requirements 5, 6, and 7 cannot double count here.
C S 252 - Introduction to Computational Theory 3.0
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 340 - Software Design 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 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 482 - Data Science Capstone 1 3.0
C S 483 - Data Science Capstone 2 3.0
C S 486 - Verification and Validation 3.0
C S 497R - Undergraduate Research 3.0
You may take this course up to 1 time.
C S 501R - Advanced Topics in Computer Science 3.0
You may take up to 3 credit hours.
C S 513 - Robust Control 3.0
C S 580 - Theory of Predictive Modeling 3.0
ECON 378 - Statistics for Economists 3.0
ECON 388 - Introduction to Econometrics 3.0
ECON 398 - Applied Econometrics 3.0
ECON 588 - Advanced Econometrics 3.0
LING 581 - Natural Language Processing 3.0
MATH 314 - Calculus of Several Variables 3.0
MATH 413 - Advanced Linear Algebra 3.0
STAT 240 - Probability and Inference 1 3.0
STAT 251 - Introduction to Bayesian Statistics 3.0
STAT 340 - Probability and Inference 2 3.0

requirement 9
Complete Senior Exit Interview with the Computer Science department during last semester or term.
Note: Math 112, Math 113, Phscs 121, Engl 316, and C S 312 can be used to fill both General Education and program requirements. Advanced Writing and Oral Communication: Engl 316. Quantitative Reasoning: Math 112 or 113. Languages of Learning: Math 112 or 113. Physical Science: C S 312 or Phscs 121.

BS in Computer Science: Data Science (693224)2022-2023 Program Requirements Cont...

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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ADVICEMENT CENTER INFORMATION

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