## University Core and Graduation Requirements

### University Core Requirements:

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

### Graduation Requirements:

- Minimum residence hours required: 30.0
- Minimum hours needed to graduate: 120.0

### Suggested Sequence of Courses

#### FRESHMAN YEAR

<table>
<thead>
<tr>
<th>1st Semester</th>
<th>2nd Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>C S 142</td>
<td>C S 235</td>
</tr>
<tr>
<td>First Year Writing or American Heritage</td>
<td>MATH 1112</td>
</tr>
<tr>
<td>MATH 112</td>
<td>STAT 121 or STAT 201 or MATH 431</td>
</tr>
<tr>
<td>General education courses, university requirements, and/or general electives</td>
<td>Religion Cornerstone course</td>
</tr>
<tr>
<td>3.0</td>
<td>2.0</td>
</tr>
<tr>
<td><strong>Total Hours</strong></td>
<td><strong>Total Hours</strong></td>
</tr>
</tbody>
</table>

#### SOPHOMORE YEAR

<table>
<thead>
<tr>
<th>3rd Semester</th>
<th>4th Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>C S 224</td>
<td>C S 240</td>
</tr>
<tr>
<td>C S 236</td>
<td>Letters</td>
</tr>
<tr>
<td>Biological Science</td>
<td>Civilization 1</td>
</tr>
<tr>
<td>MATH 213</td>
<td>MATH 213</td>
</tr>
<tr>
<td>Religion Cornerstone course</td>
<td>Religion Cornerstone course</td>
</tr>
<tr>
<td>3.0</td>
<td>4.0</td>
</tr>
<tr>
<td><strong>Total Hours</strong></td>
<td><strong>Total Hours</strong></td>
</tr>
</tbody>
</table>

#### JUNIOR YEAR

<table>
<thead>
<tr>
<th>5th Semester</th>
<th>6th Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>C S 324</td>
<td>C S 472</td>
</tr>
<tr>
<td>STAT 330 or ECON 388</td>
<td>MATH 113</td>
</tr>
<tr>
<td>Social Science</td>
<td>MATH 111</td>
</tr>
<tr>
<td>Civilization 2</td>
<td>Religion Elective</td>
</tr>
<tr>
<td>3.0</td>
<td>2.0</td>
</tr>
<tr>
<td><strong>Total Hours</strong></td>
<td><strong>Total Hours</strong></td>
</tr>
</tbody>
</table>

#### SENIOR YEAR

<table>
<thead>
<tr>
<th>7th Semester</th>
<th>8th Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>C S 474</td>
<td>C S 495 - DS Capstone 2 or C S elective</td>
</tr>
<tr>
<td>MATH 316</td>
<td>DS Elective</td>
</tr>
<tr>
<td>Arts</td>
<td>Religion Elective</td>
</tr>
<tr>
<td>3.0</td>
<td>2.0</td>
</tr>
<tr>
<td><strong>Total Hours</strong></td>
<td><strong>Total Hours</strong></td>
</tr>
</tbody>
</table>

### BS in Computer Science: Data Science (693224) MAP Sheet

Physical and Mathematical Sciences, Computer Science
For students entering the degree program during the 2021-2022 curricular year.
Grades below C- are not allowed in major courses.

REQUIREMENT 1: Complete 11 courses
- CS 142 - Introduction to Computer Programming 3.0
- CS 224 - Introduction to Computer Systems 3.0
- CS 235 - Data Structures and Algorithms 3.0
- CS 236 - Discrete Structures 3.0
- CS 240 - Advanced Programming Concepts 4.0
- CS 312 - Algorithm Design and Analysis 3.0
- CS 324 - Systems Programming 3.0
- CS 404 - Ethics and Computers in Society 2.0
- CS 452 - Database Modeling Concepts 3.0
- CS 472 - Introduction to Machine Learning 3.0
- CS 474 - Introduction to Deep Learning 3.0

REQUIREMENT 2: Complete 4 courses
- MATH 112 - Calculus 1 4.0
- MATH 113 - Calculus 2 4.0
- PHYSCS 121 - Introduction to Newtonian Mechanics 3.0
- "WRTG 216 - 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 1 course
- ECON 388 - Introduction to Econometrics 3.0
- STAT 330 - Introduction to Regression 3.0

REQUIREMENT 6: Complete 3.0 hours from the following course(s)
- CS 412 - Linear Programming and Convex Optimization 3.0
- ECON 378 - Statistics for Economists 3.0
- ECON 388 - Introduction to Econometrics 3.0
- ECON 488 - 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 12.0 hours from the following course(s)
- CS 416 - Advanced Topics in Computer Science
- C S 340 - Software Design
- C S 345 - Operating Systems Design
- C S 355 - Interactive Graphics and Image Processing
- C S 356 - Designing the User Experience
- C S 393 - Advanced Algorithms and Problem Solving
- C S 401R - Topics in Computer Science 3.0
- C S 412 - Linear Programming and Convex Optimization 3.0
- C S 450 - Computer Vision
- C S 453 - Fundamentals of Information Retrieval
- C S 455 - Computer Graphics
- 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
- 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

Note: You may take up to 12 credit hours.

REQUIREMENT 8: Complete 1 course
- 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 3.0
- 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 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

Note: You may take this course up to 1 time.

REQUIREMENT 9: Complete 3.0 hours from the following course(s)
- 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 3.0
- 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 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

Note: You may take up to 3 credit hours.

Note: Math 112, Math 113, Physcs 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 Physcs 121.
BS in Computer Science: Data Science (693224)
2021-2022 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
Computer Science Department
Brigham Young University
3361 Talmage Building
Provo, UT 84602
Telephone: (801) 422-3027

ADVISEMENT CENTER INFORMATION
Physical and Mathematical Sciences College Advisement Center
Brigham Young University
N-181 ESC
Provo, UT 84602
Telephone: (801) 422-2674