### 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 350</td>
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<tr>
<td>Foundations of the Restoration</td>
<td>1</td>
<td>2.0</td>
<td>REL C 225</td>
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<tr>
<td>The Eternal Family</td>
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<td>2.0</td>
<td>REL C 200</td>
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<tr>
<td>The Individual and Society</td>
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</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>
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</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>from approved list</td>
</tr>
<tr>
<td>Quantitative Reasoning</td>
<td>1</td>
<td>4.0</td>
<td>MATH 112*</td>
</tr>
<tr>
<td>Languages of Learning (Math or Language)</td>
<td>1</td>
<td>4.0</td>
<td>MATH 112*</td>
</tr>
<tr>
<td>Arts, Letters, and Sciences</td>
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</tr>
<tr>
<td>Civilization 1</td>
<td>1</td>
<td>3.0</td>
<td>from approved list</td>
</tr>
<tr>
<td>Civilization 2</td>
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<td>3.0</td>
<td>from approved list</td>
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<tr>
<td>Arts</td>
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<tr>
<td>Letters</td>
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<tr>
<td>Biological Science</td>
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<tr>
<td>Physical Science</td>
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<tr>
<td>Social Science</td>
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<td>3.0</td>
<td>from approved list</td>
</tr>
<tr>
<td>Core Enrichment: Electives</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>

*THESE CLASSES FILL BOTH UNIVERSITY CORE AND PROGRAM REQUIREMENTS

#### Graduation Requirements:

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Hours</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum residence hours required</td>
<td>30.0</td>
<td></td>
</tr>
<tr>
<td>Minimum hours needed to graduate</td>
<td>120.0</td>
<td></td>
</tr>
</tbody>
</table>

### Suggested Sequence of Courses

#### FRESHMAN YEAR

<table>
<thead>
<tr>
<th>Semester</th>
<th>Total Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>15.5</td>
</tr>
<tr>
<td>2nd</td>
<td>15.0</td>
</tr>
</tbody>
</table>

- **1st Semester**
  - First-year Writing: 3.0
  - MATH 112: 4.0
  - STAT 121: 3.0
  - STAT 130: 0.5
  - Arts: 3.0
  - Religion Cornerstone course: 2.0
  - **Total Hours**: 15.5

- **2nd Semester**
  - American Heritage: 3.0
  - MATH 113: 4.0
  - STAT 230: 3.0
  - General Electives: 1.5
  - Adv. Written and Oral Communication: 6.0
  - Civilization 1: 3.0
  - Religion Elective: 2.0
  - **Total Hours**: 15.0

#### SOPHOMORE YEAR

<table>
<thead>
<tr>
<th>Semester</th>
<th>Total Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>3rd</td>
<td>16.0</td>
</tr>
<tr>
<td>4th</td>
<td>15.0</td>
</tr>
</tbody>
</table>

- **3rd Semester**
  - C S 142: 3.0
  - STAT 240: 3.0
  - Global and Cultural Awareness: 3.0
  - Biological Science: 3.0
  - General Electives: 2.0
  - Religion Cornerstone course: 2.0
  - **Total Hours**: 16.0

- **4th Semester**
  - C S 235: 3.0
  - STAT 125: 1.5
  - STAT 223: 1.5
  - STAT 330: 3.0
  - Letters: 3.0
  - General Elective: 1.0
  - Religion Cornerstone course: 2.0
  - **Total Hours**: 15.0

#### JUNIOR YEAR

<table>
<thead>
<tr>
<th>Semester</th>
<th>Total Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>5th</td>
<td>15.0</td>
</tr>
<tr>
<td>6th</td>
<td>15.0</td>
</tr>
</tbody>
</table>

- **5th Semester**
  - Statistics Elective 1: 3.0
  - Statistics Elective 2: 3.0
  - General Electives: 7.0
  - Religion Elective: 2.0
  - **Total Hours**: 15.0

- **6th Semester**
  - Statistics Elective 3: 3.0
  - General Electives: 12.0
  - **Total Hours**: 15.0

#### SENIOR YEAR

- **7th Semester**
  - Statistics Elective 1: 3.0
  - Statistics Elective 2: 3.0
  - General Electives: 7.0
  - Religion Elective: 2.0
  - **Total Hours**: 15.0

- **8th Semester**
  - Statistics Elective 3: 3.0
  - General Electives: 12.0
  - **Total Hours**: 15.0

Note 1: Students should take STAT 130 the semester he/she declares himself/herself as a Statistics Major

Note 2: 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 3: 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.

Note 4: Students must have the statistics core completed before their senior year in order to graduate within four years.
BS in Statistics: Data Science (695236)  
2019-2020 Program Requirements (52 Credit Hours)

No more than three hours of credit below C- is allowed in major courses.

**REQUIREMENT 1** Complete 2 courses
- STAT 121 - Principles of Statistics 3.0
- STAT 130 - Introduction to the Department of Statistics 0.5

**REQUIREMENT 2** Complete 2 courses

**PREPARATION CORE COURSES:**
- *MATH 112 - Calculus 1 4.0
- MATH 113 - Calculus 2 4.0

**REQUIREMENT 3** Complete 6 courses

**STATISTICS CORE COURSES:**
- STAT 123 - Introduction to R Programming 1.5
- STAT 223 - Applied R Programming 1.5
- STAT 230 - Analysis of Variance 3.0
- STAT 240 - Probability and Inference 1 3.0
- STAT 330 - Introduction to Regression 3.0
- STAT 340 - Probability and Inference 2 3.0

**REQUIREMENT 4** Complete 7 courses
- C S 235 - Data Structures and Algorithms 3.0
- STAT 124 - SAS Base Programming Skills 3.0
- STAT 125 - Introduction to Operating Systems, Linux/Unix, and Shell Proj 1.5
- STAT 126 - Introduction to Python Programming 1.5
- STAT 226 - SQL 1.5
- STAT 420 - Big Data Science 1 3.0
- STAT 422 - Big Data Science 2 3.0

**REQUIREMENT 5** Complete 6.0 hours from the following course(s)
- STAT 124 - SAS Base Programming Skills 1.5
- STAT 224 - Applied SAS Programming 1.5
- STAT 234 - Methods of Survey Sampling 3.0
- STAT 251 - Introduction to Bayesian Statistics 3.0
- STAT 274 - Theory of Interest 3.0
- STAT 377 - Statistical Models for Financial Economics 3.0
- STAT 381 - Statistical Computing 3.0

**REQUIREMENT 6** Complete 3.0 hours from the following course(s)

**REQUIREMENTS TAKEN IN THE REQUIREMENT ABOVE WILL NOT DOUBLE COUNT HERE. NO MORE THAN 3.0 CREDIT HOURS OF STAT 495R, STAT 496R, OR STAT 497R MAY BE COUNTED TOWARD THIS REQUIREMENT.**
- STAT 495R - Special Topics in Statistics 3.0
- STAT 496R - Academic Internship: Statistics 9.0v
- STAT 497R - Introduction to Statistical Research 3.0
- STAT 521 - Experimental Design 3.0
- STAT 538 - Survival Analysis 3.0

THE DISCIPLINE:

Statisticians apply sophisticated methods to increasingly massive data sets to discover insights into important business, government, environmental, and health policy questions. The curriculum and degrees offered through the Department of Statistics are designed to equip students with decision-making skills for careers as professional statisticians in industrial organizations, government agencies, insurance companies, pharmaceutical companies, universities, and research institutes.

The Data Science emphasis is designed to help students develop skills that are needed to work on a data science team. These skills include programming, facility with data structures and algorithms, statistical methods, and experience working with real world big data problems. Students with a Data Science emphasis leave BYU with a multi-faceted, disciplined, and flexible approach to data, a rich vocabulary for working with others in data-focused disciplines, and a well-developed capacity for understanding and communicating statistical results.

**CAREER OPPORTUNITIES:**

The increase of data science and analytics across disciplines is creating new opportunities for statisticians. The Data Science emphasis prepares students to get entry-level jobs on data science teams in the private and public sectors. A feature of this emphasis is the development of skills and vocabulary in computer science and programming needed to work with massive datasets and to communicate with others on data science teams.

**CERTIFICATION:**

**SAS/BYU Applied Statistics and Advanced SAS Programming Certificate.** Students who earn a B or higher in the applied and computing core classes (Stat 124, 224, 230, 330, 381) are eligible to receive a certificate jointly issued by SAS and BYU which can be listed on a resume. More information is available at https://statistics.byu.edu/content/sas-certificate-opportunities.

**INTERNSHIPS:**

**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**
Department of Statistics  
223 TMCB  
Brigham Young University, Provo, UT 84602  
Telephone: (801) 422-4505

**ADVICEMENT CENTER INFORMATION**
FOR UNIVERSITY CORE OR PROGRAM QUESTIONS, CONTACT THE ADVISEMENT CENTER.

Physical and Mathematical Sciences College Advisement Center