### 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>
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</tr>
<tr>
<td>Teachings and Doctrine of The Book of Mormon</td>
<td>1</td>
<td>2.0</td>
<td>REL A 275</td>
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<tr>
<td>Jesus Christ and the Everlasting Gospel</td>
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<td>2.0</td>
<td>REL A 250</td>
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<tr>
<td>Foundations of the Restoration</td>
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<td>2.0</td>
<td>REL C 225</td>
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<tr>
<td>The Eternal Family</td>
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<tr>
<td>The Individual and Society</td>
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<tr>
<td>American Heritage</td>
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<td>3-6.0</td>
<td>from approved list</td>
</tr>
<tr>
<td>Global and Cultural Awareness</td>
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<td>3.0</td>
<td>from approved list</td>
</tr>
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<tr>
<td>Skills</td>
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</tr>
<tr>
<td>Advanced Written and Oral Communications</td>
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<tr>
<td>Quantitative Reasoning</td>
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<td>MATH 112*</td>
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<td>Arts, Letters, and Sciences</td>
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<tr>
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<tr>
<td>Civilization 2</td>
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<tr>
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<tr>
<td>Letters</td>
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<td>Physical Science</td>
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<tr>
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<td><strong>Total Hours</strong></td>
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<tr>
<td>Core Enrichment: Electives</td>
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<td>Religion Electives</td>
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<td>Open Electives</td>
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<tr>
<td><strong>Total Hours</strong></td>
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</tbody>
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*THESE CLASSES FILL BOTH UNIVERSITY CORE AND PROGRAM REQUIREMENTS (7 hours overlap)

#### Graduation Requirements:

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

### Suggested Sequence of Courses

#### Freshman Year

- **1st Semester**
  - 1st Year Writing or American Heritage: 3.0
  - Social Science: 3.0
  - MATH 112 (FWSpSu): 4.0
  - STAT 121: 3.0
  - Religion Cornerstone course: 2.0
  - **Total Hours**: 15.0

- **2nd Semester**
  - American Heritage or 1st Year Writing: 3.0
  - MATH 113 (FWSpSu): 4.0
  - PHY S 100: 3.0
  - STAT 230: 3.0
  - Religion Cornerstone course: 2.0
  - **Total Hours**: 15.0

#### Sophomore Year

- **3rd Semester**
  - STAT 240: 3.0
  - Biological Science: 3.0
  - Global and Cultural Awareness: 3.0
  - Religion Cornerstone course: 2.0
  - General electives: 1.0
  - **Total Hours**: 15.0

- **4th Semester**
  - STAT 123 or STAT 124: 1.5
  - STAT 223 or STAT 224: 1.5
  - STAT 330: 3.0
  - Civilization 2: 3.0
  - Religion Cornerstone course: 2.0
  - General electives: 3.0
  - **Total Hours**: 15.0

- **5th Semester**
  - General Electives: 4.0
  - **Total Hours**: 15.0

- **6th Semester**
  - General Electives: 4.0
  - **Total Hours**: 15.0

#### Junior Year

- **7th Semester**
  - Advanced Written and Oral Communication: 3.0
  - Religion electives: 2.0
  - General electives: 4.0
  - **Total Hours**: 15.0

- **8th Semester**
  - Statistics elective: 3.0
  - Arts: 3.0
  - Religion electives: 2.0
  - **Total Hours**: 15.0

- **9th Semester**
  - Statistics elective: 3.0
  - Letters: 3.0
  - Religion electives: 2.0
  - **Total Hours**: 15.0

- **10th Semester**
  - Letters: 3.0
  - **Total Hours**: 15.0

#### Senior Year

- **11th Semester**
  - Total Hours: 15.0

- **12th Semester**
  - Total Hours: 15.0

**Note 1:** 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.

**Note 3:** Students must have the statistics core completed before their senior year in order to graduate within four years.
### REQUIREMENT 1
Complete 1 course
- STAT 121 - Principles of Statistics 3.0

### PREPARATION 2
Complete 2 courses

#### PREPARATION CORE COURSES:
- STAT 497R - Introduction to Statistical Research
- STAT 496R - Academic Internship: Statistics
- STAT 495R - Special Topics in Statistics
- STAT 477
- STAT 475
- STAT 466
- STAT 462
- STAT 451
- STAT 437
- STAT 421
- STAT 420
- STAT 381
- STAT 377
- STAT 274
- STAT 234
- IS 520
- IS 515
- STAT 240
- STAT 230
- STAT 224
- STAT 223
- STAT 124
- STAT 123
- MATH 113
- MATH 112
- MATH 111
- MATH 110
- MATH 109

You may take up to 3 credit hours.

#### STATISTICS CORE COURSES:
- STAT 123 - Introduction to R Programming 1.5
- STAT 124 - SAS Base Programming Skills 1.5
- STAT 223 - Applied R Programming 1.5
- STAT 224 - Applied SAS Programming 1.5
- STAT 230 - Analysis of Variance 3.0
- STAT 240 - Discrete Probability 3.0
- STAT 330 - Introduction to Regression 3.0
- STAT 340 - Inference 3.0

### REQUIREMENT 4
Complete 18.0 hours from the following course(s)
- C S 142 - Introduction to Computer Programming 3.0
- IS 515 - Spreadsheets for Business Analysis 3.0
- IS 520 - Business Programming and Spreadsheet Automation 3.0
- MATH 313 - Elementary Linear Algebra 3.0
- MATH 314 - Calculus of Several Variables 3.0
- 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
- STAT 420 - Big Data Science 1 3.0
- STAT 421 - Big Data Science 2 3.0
- STAT 435 - Nonparametric Statistical Methods 3.0
- STAT 437 - Applications in Biostatistics 3.0
- STAT 451 - Applied Bayesian Statistics 3.0
- STAT 462 - Quality Control and Industrial Statistics 3.0
- STAT 466 - Introduction to Reliability 3.0
- STAT 469 - Applied Time Series and Forecasting 3.0
- STAT 475 - Life Contingencies 3.0
- STAT 477 - Statistical Distributions for Actuarial Modeling and Data Analysis 3.0
- STAT 495R - Special Topics in Statistics 3.0
  - You may take up to 3 credit hours.
- STAT 496R - Academic Internship: Statistics 9.0
  - You may take up to 3 credit hours.
- STAT 497R - Introduction to Statistical Research 3.0
  - You may take up to 3 credit hours.

### THE DISCIPLINE:
Statisticians apply sophisticated methods to increasingly massive data sets to discover insights into important business, government, 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.

Statisticians in business find information in big data and design experiments to model, predict, and optimize business outcomes. Students who are quantitatively oriented and interested in business, government, and health are well prepared by this emphasis. The Applied Statistics and Analytics emphasis includes a greater number of statistical analysis and data management courses and fewer of the mathematics courses required for graduate study in statistics.

### CAREER OPPORTUNITIES:
Typical employment upon graduation would include statisticians in government agencies (for example, the U.S. Census Bureau), database administrators focusing on SAS programming, and entry-level analysts involved in collecting, analyzing, and reporting results (for example, in market research). A feature of this emphasis is the large number of electives that allow students to customize their preparation toward the professional area of their interest or the emerging fields of analytics and data science. Students can deepen their expertise in experimental design, regression modeling, Bayesian inference, computing and big data, survey sampling, quality control, reliability and survival analysis.

### ADVISING:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
</tr>
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<tbody>
<tr>
<td>STAT 531</td>
<td>Experimental Design 3.0</td>
</tr>
<tr>
<td>STAT 538</td>
<td>Survival Analysis 3.0</td>
</tr>
</tbody>
</table>

### ASQ Certified Quality Process Analyst (CQPA)
Students interested in employment as quality analysts should take Stat 462 to prepare for certification by the ASQ as described in asq.org/higher-education/whyy-quality/capacertification-competitive-edge.html. Highly motivated students may also prepare on their own with the materials and practice exams through ce.byu.edu/cw/prodev/.

### SAS Certified Base Programmer and SAS Certified Advanced Programmer
Students can take the SAS Certification exams after completing Stat 124 and 224. Information and exam registration is available at http://support.sas.com/certify/creds/index.html.

### 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, 424) are eligible to receive a certificate jointly issued by SAS and BYU which can be listed on a resume. More information is available at statistics.byu.edu/content/sas-certificateopportunities.

### 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**
Brigham Young University
223 TMCB
Provo, UT 84602
BS in Statistics: Applied Statistics & Analytics (695234)
2017-2018

Telephone: (801) 422-4505

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