### 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><strong>Religion Cornerstones</strong></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>
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<tr>
<td>Jesus Christ and the Everlasting Gospel</td>
<td>1</td>
<td>2.0</td>
<td>REL A 250</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>
<td>1</td>
<td>2.0</td>
<td>REL C 200</td>
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<tr>
<td><strong>The Individual and Society</strong></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><strong>Skills</strong></td>
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<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>
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<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>
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<td>4.0</td>
<td>MATH 112*</td>
</tr>
<tr>
<td><strong>Arts, Letters, and Sciences</strong></td>
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<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>
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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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<td>3-7.0</td>
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<tr>
<td>Social Science</td>
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<tr>
<td><strong>Core Enrichment: Electives</strong></td>
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<tr>
<td>Religion Electives</td>
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<td>from approved list</td>
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<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 (4 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)
- First Year Writing: 3.0
- MATH 112 (FWSpSu): 4.0
- STAT 121
- STAT 130: 3.0
- Arts: 3.0
- Religion Cornerstone course: 2.0

**Total Hours:** 15.0

#### 2nd Semester
- American Heritage: 3.0
- MATH 113 (FWSpSu): 4.0
- STAT 230
- Religion Cornerstone course: 2.0
- PHY S 100: 3.0

**Total Hours:** 15.0

#### SOPHOMORE YEAR (3rd Semester)
- MATH 213: 2.0
- MATH 215: 1.0
- STAT 240: 3.0
- Global and Cultural Awareness: 3.0
- Biological Science: 3.0
- Religion Cornerstone course: 2.0
- General electives: 2.0

**Total Hours:** 16.0

#### 4th Semester
- MATH 314 (FWSpSu): 3.0
- STAT 123: 1.5
- STAT 223: 1.5
- STAT 330: 3.0
- Letters: 3.0
- Religion Cornerstone course: 2.0
- General Elective: 1.0

**Total Hours:** 15.0

#### JUNIOR YEAR

**5th Semester**
- Requirement 4 Elective #1: 1.5
- Requirement 4 Elective #2: 1.5
- Adv. Written and Oral Communication: 3.0

**Total Hours:** 15.0

**6th Semester**
- Statistics elective 1: 3.0
- Statistics elective 2: 3.0
- Civilization 2: 3.0
- Religion elective: 2.0
- General electives: 4.0

**Total Hours:** 15.0

#### SENIOR YEAR

**7th Semester**
- Statistics elective 3: 3.0
- Statistics elective 4: 3.0
- Religion elective: 2.0
- General electives: 7.0

**Total Hours:** 15.0

**8th Semester**
- Statistics elective 5: 3.0
- Social Science: 3.0
- General electives: 12.0

**Total Hours:** 18.0

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**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: Statistical Science (695220)
#### 2019-2020 Program Requirements (50.5 Credit Hours)

#### REQUIREMENT 1 Complete 2 courses
- STAT 212 - 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 3.0 hours from the following course(s)

- STAT 124 - SAS Base Programming Skills 1.5
- STAT 125 - Introduction to Operating Systems, Linux/Unix, and Shell Prog 1.5
- STAT 126 - Introduction to Python Programming 1.5
- STAT 224 - Applied SAS Programming 1.5
- STAT 226 - SQL 1.5

#### REQUIREMENT 5 Complete 1 option

##### OPTION 5.1 Complete 2 courses

* MATH 313 - (Not currently offered) 3.0
  
MATH 314 - Calculus of Several Variables 3.0

##### OPTION 5.2 Complete 3 courses

- MATH 213 - Elementary Linear Algebra 2.0
- MATH 215 - Computational Linear Algebra 1.0
- MATH 314 - Calculus of Several Variables 3.0

#### REQUIREMENT 6 Complete 9.0 hours from the following course(s)

##### NOTE: COURSES USED IN REQUIREMENT 4 AND 6 WILL NOT DOUBLE COUNT HERE.

- STAT 240 - Big Data Science 1 3.0
- STAT 246 - Data Science Methods and Applications in Statistics 3.0
- STAT 234 - Methods of Survey Sampling 3.0
- STAT 224 - Applied SAS Programming 1.5
- STAT 226 - SQL 1.5
- STAT 251 - Introduction to Bayesian Statistics 3.0
- STAT 252 - Theory of Interest 3.0
- STAT 377 - Statistical Models for Financial Economics 3.0
- STAT 375 - Applied SAS Programming 3.0
- STAT 374 - Introduction to Operating Systems, Linux/Unix, and Shell Programming 3.0
- STAT 373 - Statistical Models for Financial Economics 3.0
- STAT 372 - Applied SAS Programming 3.0
- STAT 371 - Statistical Models for Financial Economics 3.0
- STAT 370 - Analysis of Correlated Data 3.0
- STAT 475 - Life Contingencies 3.0
- STAT 477 - Statistical Distributions for Actuarial Modeling and Data Analy 3.0
- STAT 495R - Special Topics in Statistics 3.0
- STAT 496R - Academic Internship: Statistics 9.0v
- STAT 497R - Introduction to Statistical Research 3.0
- STAT 541 - Applied Bayesian Statistics 3.0
- STAT 542 - Quality Control and Industrial Statistics 3.0
- STAT 543 - Applied R Programming 3.0
- STAT 544 - Introduction to R Programming 3.0
- STAT 545 - Principles of Statistics 4.0
- STAT 546 - Analysis of Variance 3.0
- STAT 547 - Life Contingencies 3.0
- STAT 548 - Survival Analysis 3.0
- STAT 549 - Introduction to Reliability and Risk Analysis 3.0
- STAT 550 - Case Studies in Statistics 3.0

#### REQUIREMENT 7 Complete 6.0 hours from the following course(s)

##### NOTE: COURSES USED IN REQUIREMENTS 4 AND 6 WILL NOT DOUBLE COUNT HERE.

- C S 142 - Introduction to Computer Programming 3.0
- CS 515 - Spreadsheets for Business Analysis 3.0
- IS 520 - Business Programming and Spreadsheet Automation 3.0
- MATH 334 - Ordinary Differential Equations 3.0
- MATH 341 - Theory of Analysis 1 3.0
- MATH 342 - Theory of Analysis 2 3.0
- STAT 124 - SAS Base Programming Skills 1.5
- STAT 125 - Introduction to Operating Systems, Linux/Unix, and Shell Prog 1.5
- STAT 126 - Introduction to Python Programming 1.5
- STAT 224 - Applied SAS Programming 1.5
- STAT 226 - SQL 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
- STAT 420 - Big Data Science 2 3.0
- STAT 421 - Big Data Science 2 3.0
- STAT 426 - Data Science Methods and Applications in Statistics 3.0
- STAT 435 - Nonparametric Statistical Methods 3.0
- STAT 437 - Applications in Biostatistics 3.0
- STAT 451 - Applied Bayesian Statistics 3.0
- STAT 469 - Analysis of Correlated Data 3.0
- STAT 475 - Life Contingencies 3.0
- STAT 477 - Statistical Distributions for Actuarial Modeling and Data Analy 3.0
- STAT 495R - Special Topics in Statistics 3.0
- STAT 496R - Academic Internship: Statistics 9.0v
- STAT 497R - Introduction to Statistical Research 3.0
- STAT 531 - Experimental Design 3.0
- STAT 538 - Survival Analysis 3.0

It is strongly recommended that students interested in graduate study in statistics choose electives to prepare for the BYU BS/MS statistics integrated program by meeting with the statistics graduate coordinator.

#### 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.

While the Statistical Science emphasis is designed to prepare students for graduate programs, all students in the Statistical Science emphasis leave BYU with a resourceful, disciplined, and flexible approach to statistics, an enhanced capacity to analyze and interpret data, a broadened perspective on the impact of data in decisionmaking, and a well-developed capacity for understanding and communicating statistical results.
### CAREER OPPORTUNITIES:
The increase of big data and analytics across disciplines is creating new challenges and opportunities for statisticians. The Statistical Science emphasis prepares students to enter competitive graduate programs in statistics. The technical tools statisticians acquire are useful in many areas and for this reason a statistics degree is also excellent preparation for public administration. Recent alumni who did not go to graduate school are working at Adobe, Saks Fifth Avenue, Qualtrics, Milliman, Pariveda Solutions, and the Utah Governor’s Office of Planning and Budget.

### 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](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

**FACULTY ADVISOR:**  
Del T. Scott  
223C TMCB  
Brigham Young University, Provo, UT 84602  
Telephone: (801) 422-7054

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

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Brigham Young University  
N-181 ESC  
Provo, UT 84602  
Telephone: (801) 422-2674