# 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>
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<tr>
<td>Teachings and Doctrine of The Book of Mormon</td>
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<td>REL A 275</td>
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<tr>
<td>Jesus Christ and the Everlasting Gospel</td>
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<td>Foundations of the Restoration</td>
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<td><strong>The Individual and Society</strong></td>
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<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>
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<tr>
<td><strong>Skills</strong></td>
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<tr>
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<tr>
<td><strong>Arts, Letters, and Sciences</strong></td>
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<tr>
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<td>1</td>
<td>3.0</td>
<td>from approved list</td>
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<tr>
<td>Civilization 2</td>
<td>1</td>
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<td>from approved list</td>
</tr>
<tr>
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<td>PDBIO 120* recommended</td>
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<tr>
<td>Open Electives</td>
<td>Variable</td>
<td>Variable</td>
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*These Classes Fill Both University Core and Program Requirements (9 hours overlap)*

## 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>
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<tbody>
<tr>
<td>First Year Writing</td>
<td>3.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH 112* (FWSpSu)</td>
<td>4.0</td>
<td></td>
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</tr>
<tr>
<td>STAT 121</td>
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<tr>
<td>STAT 130</td>
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<tr>
<td>Religion Cornerstone course</td>
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<tr>
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<tbody>
<tr>
<td>American Heritage</td>
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<tr>
<td>MATH 113 (FWSpSu)</td>
<td>4.0</td>
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<tr>
<td>STAT 230</td>
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### SOPHOMORE YEAR

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<td>STAT 240</td>
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<tr>
<td>Global and Cultural Awareness</td>
<td>3.0</td>
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<tr>
<td>Civilization 1</td>
<td>3.0</td>
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<tr>
<td>Religion Cornerstone course</td>
<td>2.0</td>
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<tr>
<td>General electives</td>
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<td>STAT 223</td>
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<td>STAT 330</td>
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### JUNIOR YEAR

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<td>Requirement 4 Elective #1</td>
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<td>STAT 340</td>
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<tr>
<td>Advanced Written and Oral Communication</td>
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<tr>
<td>Religion elective</td>
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<td>General Elective</td>
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### 6th Semester

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<td>Requirement 8 Elective</td>
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<td>Letters</td>
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<td>Religion elective</td>
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<td>General electives</td>
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### SENIOR YEAR

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<tr>
<td>Arts</td>
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<tr>
<td>Religion Elective</td>
<td>3.0</td>
<td></td>
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</tr>
<tr>
<td>General Electives</td>
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### 8th Semester

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<td>Social Science</td>
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<td><strong>Total Hours</strong></td>
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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: Biostatistics (695233)
#### 2019-2020 Program Requirements (50.5 Credit Hours)

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Course</th>
<th>Credit</th>
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<tbody>
<tr>
<td>Requirement 1</td>
<td>Complete 2 courses</td>
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</tr>
<tr>
<td>STAT 121</td>
<td>Principles of Statistics</td>
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</tr>
<tr>
<td>STAT 130</td>
<td>Introduction to the Department of Statistics</td>
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<tr>
<td>Requirement 2</td>
<td>Complete 2 courses</td>
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<tr>
<td>PREPARATION CORE COURSES:</td>
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<tr>
<td>MATH 112</td>
<td>Calculus 1</td>
<td>4.0</td>
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<tr>
<td>MATH 113</td>
<td>Calculus 2</td>
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<tr>
<td>Requirement 3</td>
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<td>STATISTICS CORE COURSES:</td>
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<tr>
<td>STAT 123</td>
<td>Introduction to R Programming</td>
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<tr>
<td>STAT 223</td>
<td>Applied R Programming</td>
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</tr>
<tr>
<td>STAT 230</td>
<td>Analysis of Variance</td>
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<tr>
<td>STAT 240</td>
<td>Probability and Inference 1</td>
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<tr>
<td>STAT 330</td>
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<td>Requirement 4</td>
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<td>STAT 124</td>
<td>SAS Base Programming Skills</td>
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<tr>
<td>STAT 125</td>
<td>Introduction to Operating Systems, Linux/Unix, and Shell Prog</td>
<td>1.5</td>
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<tr>
<td>STAT 224</td>
<td>Applied SAS Programming</td>
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<tr>
<td>STAT 226</td>
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<td>MATH 313</td>
<td>- (Not currently offered)</td>
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<td>Complete 3 courses</td>
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<td>MATH 213</td>
<td>Elementary Linear Algebra</td>
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<td>MATH 215</td>
<td>Computational Linear Algebra</td>
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</tr>
<tr>
<td>MATH 314</td>
<td>Calculus of Several Variables</td>
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<td>Requirement 6</td>
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<td>Applications in Biostatistics</td>
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<tr>
<td>STAT 538</td>
<td>Survival Analysis</td>
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<td>Principles of Chemistry 1</td>
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<td>Principles of Epidemiology</td>
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<td>IS 515</td>
<td>- Spreadsheets for Business Analysis</td>
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<td>IS 520</td>
<td>- Business Programming and Spreadsheet Automation</td>
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<td>- Theory of Analysis</td>
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<td>MATH 342</td>
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<td>STAT 125</td>
<td>Introduction to Operating Systems, Linux/Unix, and Shell Prog</td>
<td>1.5</td>
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<td>STAT 126</td>
<td>Introduction to Python Programming</td>
<td>1.5</td>
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<tr>
<td>STAT 224</td>
<td>- Applied SAS Programming</td>
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<td>STAT 226</td>
<td>- SQL</td>
<td>1.5</td>
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<td>STAT 234</td>
<td>- Methods of Survey Sampling</td>
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<td>STAT 251</td>
<td>- Introduction to Bayesian Statistics</td>
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<td>STAT 274</td>
<td>- Theory of Interest</td>
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<tr>
<td>STAT 377</td>
<td>- Statistical Models for Financial Economics</td>
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<td>STAT 381</td>
<td>- Statistical Computing</td>
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<tr>
<td>STAT 420</td>
<td>- Big Data Science 1</td>
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<td>- Big Data Science 2</td>
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<td>- Data Science Methods and Applications in Statistics</td>
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<td>STAT 435</td>
<td>- Nonparametric Statistical Methods</td>
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<td>STAT 437</td>
<td>- Applications in Biostatistics</td>
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<td>STAT 451</td>
<td>- Applied Bayesian Statistics</td>
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<td>STAT 466</td>
<td>- Introduction to Reliability</td>
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<td>STAT 467</td>
<td>- Analysis of Correlated Data</td>
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<td>- Experimental Design</td>
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</table>

**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.

The Biostatistics emphasis prepares students to engage in work to advance public health, biology, and medicine. It prepares students...
for graduate programs in statistics, biostatistics, epidemiology, public health, bioinformatics, and for health sciences professional programs. The Biostatistics emphasis includes the mathematics courses required for graduate study in statistics and biostatistics together with a selection of biology and chemistry courses.

CAREER OPPORTUNITIES:
The increase of big data and analytics in personalized medicine, genomics, and bioinformatics is creating new challenges and opportunities for biostatisticians. Students with undergraduate degrees in biostatistics are well-prepared to apply for graduate programs in statistics and biostatistics but they also stand out as applicants to medical and dental schools and residencies. Statistical training prepares these students to take part in basic and clinical research during medical or dental school and residency.

CERTIFICATION:
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 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, 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:
Internships. The National Institutes of Health support a Summer Institute for Training in Biostatistics at nine university biostatistics programs. Program/application information is found at https://www.nihbi.nih.gov/node-general/summer-institute-biostatistics.

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.