### University Core and Graduation Requirements

#### University Core Requirements:

<table>
<thead>
<tr>
<th>Requirement</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>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>
<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>
<td>1</td>
<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>PDBIO 120* recommended</td>
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<tr>
<td>Physical Science</td>
<td>1-2</td>
<td>3-7.0</td>
<td>from approved list</td>
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<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>
</tr>
<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></td>
<td>Variable</td>
<td>Variable</td>
</tr>
</tbody>
</table>

*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

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### Suggested Sequence of Courses

#### Freshman Year

<table>
<thead>
<tr>
<th>Semester</th>
<th>Total Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Semester</td>
<td>16.0</td>
</tr>
<tr>
<td>2nd Semester</td>
<td>15.0</td>
</tr>
</tbody>
</table>

**Requirement 5 elective** 3.0

**Requirement 6 elective** 3.0

**Letters** 3.0

**Global and Cultural Awareness** 3.0

**General electives** 1.0

**Physics** 3.0

**Advanced Written and Oral Communication** 3.0

**General Elective** 2.0

#### Sophomore Year

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

**Requirement 5 elective** 3.0

**Requirement 6 elective** 3.0

**Letters** 3.0

**Arts** 3.0

**Religion Elective** 3.0

**General Electives** 4.0

#### Junior Year

<table>
<thead>
<tr>
<th>Semester</th>
<th>Total Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>5th Semester</td>
<td>16.0</td>
</tr>
<tr>
<td>6th Semester</td>
<td>15.0</td>
</tr>
</tbody>
</table>

**Requirement 5 elective** 3.0

**Requirement 6 elective** 3.0

**Letters** 3.0

**Arts** 3.0

**Religion Elective** 3.0

**General Electives** 4.0

#### Senior Year

<table>
<thead>
<tr>
<th>Semester</th>
<th>Total Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>7th Semester</td>
<td>15.0</td>
</tr>
<tr>
<td>8th Semester</td>
<td>15.0</td>
</tr>
</tbody>
</table>

**Requirement 5 elective** 3.0

**Requirement 6 elective** 3.0

**Letters** 3.0

**Arts** 3.0

**Religion Elective** 3.0

**General Electives** 12.0

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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.
## BS in Statistics: Biostatistics (695233)
### 2018-2019 Program Requirements (50 Credit Hours)

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Course Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Requirement 1</strong></td>
<td>Complete 1 course</td>
<td>3.0</td>
</tr>
<tr>
<td>STAT 121 - Principles of Statistics</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Requirement 2</strong></td>
<td>Complete 2 courses</td>
<td>3.0</td>
</tr>
<tr>
<td>Preparatory Core Courses:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*MATH 112 - Calculus 1</td>
<td>4.0</td>
<td></td>
</tr>
<tr>
<td>MATH 113 - Calculus 2</td>
<td>4.0</td>
<td></td>
</tr>
</tbody>
</table>

**Statistics Core Courses:**

- STAT 123 - Introduction to 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 - Probability and Inference 1 (3.0)
- STAT 330 - Introduction to Regression (3.0)
- STAT 340 - Probability and Inference 2 (3.0)

**Requirement 4**

- Complete 2 courses
- MATH 313 - Elementary Linear Algebra (3.0)
- MATH 314 - Calculus of Several Variables (3.0)

**Requirement 5**

- Complete 3.0 hours from the following course(s)
- STAT 437 - Applications in Biostatistics (3.0)
- STAT 538 - Survival Analysis (3.0)

**Requirement 6**

- Complete 6.0 hours from the following course(s)
- BIO 250 - Ecology (3.0)
- CHEM 105 - General College Chemistry 1 with Lab (Integrated) (4.0)
- CHEM 111 - Principles of Chemistry 1 (4.0)
- HLTH 345 - Principles of Epidemiology (3.0)
- MMBIO 240 - Molecular Biology (3.0)
- PBIO 120 - Science of Biology (3.0)
- PBIO 305 - Human Physiology (4.0)
- PWS 340 - Genetics (3.0)
- STAT 437 - Applications in Biostatistics (3.0)
- STAT 538 - Survival Analysis (3.0)

**Requirement 7**

- Complete 3.0 hours from the following course(s)
- CS 142 - Introduction to Programming (3.0)
- HLTH 345 - Principles of Epidemiology (3.0)
- IS 515 - Spreadsheets for Business Analysis (3.0)
- IS 520 - Business Programming and Spreadsheet Automation (3.0)
- MATH 341 - Theory of Analysis 1 (3.0)
- MATH 342 - Theory of Analysis 2 (3.0)
- STAT 125 - Introduction to Operating Systems, UNIX, and Shell Programming (1.5)
- STAT 226 - SQL (1.5)
- STAT 234 - Methods of Survey Sampling (3.0)
- STAT 251 - Introduction to Bayesian Statistics (3.0)

**Requirement 8**

- Complete 3.0 hours from the following course(s)
- NOTE: COURSES USED ABOVE WILL NOT DOUBLE COUNT HERE. NOTE: NO MORE THAN 3.0 CREDIT HOURS OF STAT 496R MAY BE COUNTED TOWARD THIS REQUIREMENT.
- STAT 496R - Introduction to Statistical Research (3.0)
- STAT 497R - Introduction to Statistical Research (3.0)
- STAT 498R - Introduction to Statistical Research (3.0)

**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 apply for graduate programs in statistics, biostatistics, and related fields.
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.nhlbi.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.

DEPARTMENT INFORMATION

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Provo, UT 84602
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Telephone: (801) 422-7054

ADVISEMENT CENTER INFORMATION

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

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