### 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></td>
<td></td>
<td>from approved list</td>
</tr>
<tr>
<td>Jesus Christ and the Everlasting Gospel</td>
<td></td>
<td></td>
<td>from approved list</td>
</tr>
<tr>
<td>Foundations of the Restoration</td>
<td></td>
<td></td>
<td>REL C 225</td>
</tr>
<tr>
<td>The Eternal Family</td>
<td></td>
<td></td>
<td>from approved list</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>ECON 110* and one course 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>from approved list</td>
</tr>
<tr>
<td>Physical Science</td>
<td>1</td>
<td>3.0</td>
<td>from approved list</td>
</tr>
<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>Variable</td>
<td>Variable</td>
<td>personal choice</td>
</tr>
</tbody>
</table>

*THERESE CLASSES FILL BOTH UNIVERSITY CORE AND PROGRAM REQUIREMENTS (7 hours overlap)

#### Graduation Requirements:

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

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### Suggested Sequence of Courses

#### FRESHMAN YEAR

<table>
<thead>
<tr>
<th>Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Semester</td>
<td></td>
</tr>
<tr>
<td>2nd Semester</td>
<td></td>
</tr>
<tr>
<td>3rd Semester</td>
<td></td>
</tr>
<tr>
<td>4th Semester</td>
<td></td>
</tr>
</tbody>
</table>

#### SECOND YEAR

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

#### JUNIOR YEAR

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

#### SENIOR YEAR

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

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**Note 1:** Students should take STAT 130 the semester they declare themselves 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, including spring and/or summer terms, to meet the 120 credit minimum needed to graduate. Taking fewer credits substantially increases the number of semesters to graduate.

**Note 4:** Open elective credits can be classes of your choosing, classes for a minor, or credits that have already been earned through AP classes, transfer credits, etc.
Students must pass one exam of the Society of Actuaries (SOA), usually Exam FM, before declaring an actuarial science major. Students should declare another statistics emphasis until they pass an exam (Applied Statistics and Analytics offers an unofficial pre-actuarial path with early courses).

REQUIREMENT 1: Complete 3 courses
- STAT 121 - Principles of Statistics 3.0
- STAT 130 - Introduction to the Department of Statistics 0.5
- STAT 274 - Theory of Interest 3.0

REQUIREMENT 2: Complete 5 courses
- STAT 230 - Statistical Modeling 1 3.0
- STAT 240 - Probability and Inference 1 3.0
- STAT 250 - Applied R Programming 3.0
- STAT 330 - Statistical Modeling 2 3.0
- STAT 340 - Probability and Inference 2 3.0

REQUIREMENT 3: Complete 4 courses
- MATHEMATICAL FOUNDATION COURSES:
  - MATH 112 - Calculus 1 4.0
  - MATH 113 - Calculus 2 4.0
  - MATH 213 - Elementary Linear Algebra 2.0
  - MATH 215 - Computational Linear Algebra 1.0

REQUIREMENT 4: Complete 3.0 hours from the following course(s)
- STAT 346 - Foundations of Short-term Actuarial Mathematics 3.0
- STAT 344 - Foundations of Long-term Actuarial Mathematics 3.0
- STAT 435 - Nonparametric Statistical Methods 3.0
- STAT 437 - Applications in Biostatistics 3.0
- STAT 444 - Advanced Long-term Actuarial Mathematics 3.0
- STAT 446 - Advanced Short-term Actuarial Mathematics 3.0
- STAT 451 - Applied Bayesian Statistics 3.0
- STAT 466 - Introduction to Reliability 3.0
- STAT 469 - Analysis of Correlated Data 3.0
- STAT 482 - Data Science Capstone 1 3.0
- STAT 483 - Data Science Capstone 2 3.0
- STAT 486 - Machine Learning 3.0
- STAT 497R - Introduction to Statistical Research 3.0

REQUIREMENT 5: Complete 3 courses
- STAT 344 - Foundations of Long-term Actuarial Mathematics 3.0
- STAT 346 - Foundations of Short-term Actuarial Mathematics 3.0
- STAT 348 - Statistics for Risk Modeling 3.0

REQUIREMENT 6: Complete 3.0 hours from the following course(s)
- STAT 444 - Advanced Long-term Actuarial Mathematics 3.0
- STAT 446 - Advanced Short-term Actuarial Mathematics 3.0

NOTE: IF BOTH COURSES ARE TAKEN IN REQUIREMENT 6, ONE CAN BE USED AS AN ELECTIVE IN REQUIREMENT 7. STUDENTS INTERESTED IN LIFE, FINANCE, OR PENSIONS SHOULD TAKE 444 AND THOSE INTERESTED IN HEALTH OR PROPERTY/CASUALTY SHOULD TAKE 446.

REQUIREMENT 7: Complete 9.0 hours from the following course(s)
- ACC 290 - Principles of Accounting 3.0
- ECON 110 - Economic Principles and Problems 3.0
- FIN 201 - Principles of Finance 3.0
- IS 515 - Adv Spreadsheets Bus Analysis 3.0
- IS 520 - Business Programming and Spreadsheet Automation 3.0
- STAT 234 - Methods of Survey Sampling 3.0
- STAT 251 - Introduction to Bayesian Statistics 3.0
- STAT 286 - Data Science Ecosystems 3.0
- STAT 381 - Statistical Computing 3.0
- STAT 386 - Data Science Process 3.0
- STAT 390R - Special Topics in Applied Statistics 3.0

You may take up to 3 credit hours.

- STAT 435 - Nonparametric Statistical Methods 3.0
- STAT 437 - Applications in Biostatistics 3.0
- STAT 444 - Advanced Long-term Actuarial Mathematics 3.0
- STAT 446 - Advanced Short-term Actuarial Mathematics 3.0
- STAT 451 - Applied Bayesian Statistics 3.0
- STAT 466 - Introduction to Reliability 3.0
- STAT 469 - Analysis of Correlated Data 3.0
- STAT 482 - Data Science Capstone 1 3.0
- STAT 483 - Data Science Capstone 2 3.0
- STAT 486 - Machine Learning 3.0
- STAT 497R - Introduction to Statistical Research 3.0

Recommended Courses: Students should take Econ 210, Acc 200, and Fin 201 to complete the Society of Actuaries VEEs. Additionally, IS 515 and IS 520 are valuable in the daily work of an actuary.

THE DISCIPLINE:
An actuary is a statistician who analyzes the financial consequences of risk. Actuaries use statistics, mathematics, and financial theory to study uncertain future events, especially those of concern to insurance and pension programs. They evaluate the likelihood of those events and design creative ways to reduce the likelihood and decrease the impact of adverse events that do occur. Their work designing and managing programs that control risk requires a combination of strong analytical skills, business knowledge, and understanding of human behavior.

CAREER OPPORTUNITIES:
Actuaries enjoy excellent job security, high incomes, and a low-stress work environment. Careers in actuarial science are consistently ranked among the top professions. Competent actuaries are highly recruited and can have many professional opportunities. Actuaries are employed across a wide variety of industries and typically become established in one of the following career tracks: health, property/casualty, or life insurance, consulting to one of those industries, enterprise risk management, quantitative finance and investment management, or retirement benefits. By focusing on the development of data analysis skills, actuaries can also easily transition to business analytics settings.

ACTUARIAL EXAMS:
Actuaries are required to demonstrate their proficiency by passing a series of competency exams offered by one or more of the principal actuarial societies. It typically takes 6-10 years to pass all of the exams; most actuarial interns are required to have passed at least one of these exams as a condition for employment. The BYU Actuarial Science degree provides students with the opportunity to study significant portions of the material covered in the first eight exams accepted by the Society of Actuaries and six accepted by the Casualty Actuarial Society (the two major actuarial societies in the United States).

The correspondence between the actuarial exams and available BYU course work is roughly as follows:
### Joint SOA/CAS Exams:
- **Exam P:** Stat 240, 340 (full coverage)
- **Exam FM:** Stat 274 (full coverage)

### SOA Exams:
- **Exam FAM:** Stat 344, 346 (full coverage)
- **Exam SRM/PA:** Stat 330, 348 (full coverage)
- **Exam ALTAM:** Stat 444 (full coverage)
- **Exam ASTAM:** Stat 446 (full coverage)
- **Exam ATPA:** Stat 251, 330, 348, 451 (some coverage)

### CAS Exams:
- **Online Course 3:** Stat 330, 348 (full coverage)
- **MAS-I:** Stat 348 (full coverage)
- **MAS-II:** Stat 251, 348 (full coverage)
- **Exam 5:** Stat 346, 446 (some coverage)

In addition to the exams the societies accept the following sets of courses for the Validation by Educational Experience (VEE) credit:

- **Mathematical Statistics VEE:** Stat 121, 346
- **Finance and Accounting VEE:** Fin 201, Acc 200
- **Economics VEE:** Econ 110

### 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
- 2152 WVB
- Provo, UT 84602
- Telephone: (801) 422-4505

**FACULTY ADVISOR:**
- Del T. Scott
- 2152B WVB
- Brigham Young University, Provo, UT 84602
- Telephone: (801) 422-7054

### ADVISEMENT CENTER INFORMATION

**Physical and Mathematical Sciences College Advisement Center**
- Brigham Young University
- N-181 ESC
- Provo, UT 84602
- Telephone: (801) 422-2674