BS in Statistics: Applied Statistics & Analytics (695234) MAP Sheet
Physical and Mathematical Sciences, Statistics
For students entering the degree program during the 2017-2018 curricular year.

<table>
<thead>
<tr>
<th>University Core and Graduation Requirements</th>
<th>Suggested Sequence of Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>University Core Requirements:</strong></td>
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<tr>
<td>Requirements</td>
<td><strong>FRESHMAN YEAR</strong></td>
</tr>
<tr>
<td>#Classes</td>
<td>Hours</td>
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<tr>
<td>Religio Cornerstones</td>
<td></td>
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<tr>
<td>Teachings and Doctrine of The Book of Mormon</td>
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<tr>
<td>Jesus Christ and the Everlasting Gospel</td>
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<tr>
<td>Foundations of the Restoration</td>
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<td>The Eternal Family</td>
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<td>The Individual and Society</td>
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<tr>
<td>American Heritage</td>
<td>1-2</td>
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<tr>
<td>Global and Cultural Awareness</td>
<td>1</td>
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<tr>
<td>Skills</td>
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<td>First Year Writing</td>
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<td>Advanced Written and Oral Communications</td>
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<td>Quantitative Reasoning</td>
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<tr>
<td>Languages of Learning (Math or Language)</td>
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<tr>
<td>Arts, Letters, and Sciences</td>
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<tr>
<td>Civilization 1</td>
<td>1</td>
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<tr>
<td>Civilization 2</td>
<td>1</td>
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<tr>
<td>Arts</td>
<td>1</td>
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<td>Letters</td>
<td>1</td>
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<tr>
<td>Biological Science</td>
<td>1</td>
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<tr>
<td>Physical Science</td>
<td>1-2</td>
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<tr>
<td>Social Science</td>
<td>1</td>
</tr>
<tr>
<td>Core Enrichment: Electives</td>
<td></td>
</tr>
<tr>
<td>Religion Electives</td>
<td>3-4</td>
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<tr>
<td>Open Electives</td>
<td>Variable</td>
</tr>
<tr>
<td>*THESE CLASSES FILL BOTH UNIVERSITY CORE AND PROGRAM REQUIREMENTS (7 hours overlap)</td>
<td>5.0</td>
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<tr>
<td>Graduation Requirements:</td>
<td></td>
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<tr>
<td>Minimum residence hours required</td>
<td>30.0</td>
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<tr>
<td>Minimum hours needed to graduate</td>
<td>120.0</td>
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</tbody>
</table>

**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.
**2017-2018 Program Requirements (47 Credit Hours)**

<table>
<thead>
<tr>
<th>No more than three hours of credit below C- is allowed in major courses.</th>
<th>You may take up to 3 credit hours.</th>
</tr>
</thead>
</table>
| **REQUIREMENT 1** Complete 1 course  
STAT 121 - Principles of Statistics  
3.0 | STAT 496R - Academic Internship: Statistics  
You may take up to 3 credit hours.  
9.0v |
| **REQUIREMENT 2** Complete 2 courses  
PREPARATION CORE COURSES:  
*MATH 112 - Calculus 1  
4.0  
MATH 113 - Calculus 2  
4.0 | STAT 497R - Introduction to Statistical Research  
You may take up to 3 credit hours.  
3.0v |
| **REQUIREMENT 3** Complete 8 courses  
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 | STAT 531 - Experimental Design  
3.0  
STAT 538 - Survival Analysis  
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 Analy  
3.0  
STAT 495R - Special Topics in Statistics  
3.0v |

**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.

**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.
ADVISING:

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/why-quality/cqpcertification-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/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.


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
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

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