BS in STATISTICS: Statistical Science Emphasis (695220) MAP Sheet
Department of Statistics
For students entering the degree program during the 2015–2016 curricular year.

UNIVERSITY CORE AND GRADUATION REQUIREMENTS

<table>
<thead>
<tr>
<th>UNIVERSITY CORE REQUIREMENTS</th>
<th>PROGRAM REQUIREMENTS (54 total hours)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Requirements</td>
<td>Classes</td>
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<td>#Classes</td>
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<tr>
<td>Religion Cornerstones</td>
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<tr>
<td>Teachings and Doctrine, Book of Mormon</td>
<td>1</td>
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<tr>
<td>Jesus Christ &amp; the Everlasting Gospel</td>
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<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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<td>Citizenship</td>
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<tr>
<td>American Heritage</td>
<td>1–2</td>
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<tr>
<td>Global &amp; Cultural Awareness</td>
<td>1</td>
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<tr>
<td>Skills</td>
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<td>Effective Communication</td>
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<td>First-Year Writing</td>
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<td>Adv Written &amp; Oral Communication</td>
<td>1</td>
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<tr>
<td>Quantitative Reasoning</td>
<td>1</td>
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<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 and 2</td>
<td>2</td>
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<tr>
<td>Arts</td>
<td>1</td>
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<td>Letters</td>
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<tr>
<td>Scientific Principles &amp; Reasoning</td>
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<tr>
<td>Biological Science</td>
<td>1–2</td>
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<td>Physical Science</td>
<td>1–2</td>
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<tr>
<td>Social Science</td>
<td>1</td>
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<tr>
<td>Core Enrichment: Electives</td>
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<tr>
<td>Religion Electives</td>
<td>3–4</td>
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<tr>
<td>Open Electives</td>
<td>Variable</td>
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<td>GRADUATION REQUIREMENTS:</td>
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<tr>
<td>Minimum residence hours required</td>
<td>30.0</td>
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<td>Minimum hours needed to graduate</td>
<td>120.0</td>
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No more than 3 hours of credit below C- is allowed in major courses.

Complete the following preparation core courses:
- Math 112* Calculus 1: 4.0
- Math 113 Calculus 2: 4.0

Complete one course from the following:
- Stat 121 Principles of Statistics: 3.0
- Stat 151 Introduction to Bayesian Statistics: 3.0
- Stat 201 Statistics for Engineers & Scientists: 3.0

Note: Students who have passed the AP statistics exam or an introductory statistics course should not take Stat 121.

Complete the following 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 290 Communication of Statistical Results: 1.0
- Stat 330 Introduction to Regression: 3.0
- Stat 340 Inference: 3.0

Complete the following:
- Math 313 Elementary Linear Algebra: 3.0
- Math 314 Calculus of Several Variables: 3.0

Complete 18 credit hours from the following two lists, with a minimum of 12 hours from list A:

A. Complete at least 12 hours from the following:
- Stat 151 Introduction to Bayesian Statistics: 3.0
- Stat 234 Methods of Survey Sampling: 3.0
- Stat 274 Theory of Interest: 3.0
- Stat 370 Statistical Theory for Actuaries: 3.0
- Stat 377 Statistical Models for Financial Econ: 3.0
- Stat 424 Statistical Computing: 3.0
- Stat 431 Experimental Design: 3.0
- Stat 435 Nonparametric Statistical Methods: 3.0
- Stat 451 Applied Bayesian Statistics: 3.0
- Stat 453 Applied Nonparametric Statistics: 3.0
- Stat 462 Quality Control & Industrial Statistics: 3.0
- Stat 463 Quality Control & Industrial Statistics: 3.0
- Stat 464 Quality Control & Industrial Statistics: 3.0
- Stat 465 Quality Control & Industrial Statistics: 3.0
- Stat 466 Introduction to Reliability: 3.0
- Stat 469 Applied Time Series & Forecasting: 3.0
- Stat 475 Life Contingencies: 3.0
- Stat 477 Statistical Distributions for Modeling: 3.0
- Stat 495R Special Topics in Statistics: 3.0V
- Stat 496R Academic Internship: Statistics: 9.0V

B. Complete up to 6 hours from the following:
- Stat 142 Introduction to Computer Programming: 3.0
- Stat 151 Introduction to Bayesian Statistics: 3.0
- Stat 156 Introduction to Computer Programming: 3.0
- Stat 234 Methods of Survey Sampling: 3.0
- Stat 274 Theory of Interest: 3.0
- Stat 377 Statistical Models for Financial Econ: 3.0
- Stat 424 Statistical Computing: 3.0
- Stat 431 Experimental Design: 3.0
- Stat 435 Nonparametric Statistical Methods: 3.0
- Stat 451 Applied Bayesian Statistics: 3.0
- Stat 453 Applied Nonparametric Statistics: 3.0
- Stat 462 Quality Control & Industrial Statistics: 3.0
- Stat 463 Quality Control & Industrial Statistics: 3.0
- Stat 464 Quality Control & Industrial Statistics: 3.0
- Stat 465 Quality Control & Industrial Statistics: 3.0
- Stat 466 Introduction to Reliability: 3.0
- Stat 469 Applied Time Series & Forecasting: 3.0
- Stat 475 Life Contingencies: 3.0
- Stat 477 Statistical Distributions for Modeling: 3.0
- Stat 495R Special Topics in Statistics: 3.0V
- Stat 496R Academic Internship: Statistics: 9.0V
- Stat 497R Introduction to Statistical Research: 3.0V
- Stat 538 Survival Analysis: 3.0

Note: Courses used in List A will not double count in List B.

Recommended Courses:
- 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.

*THESE CLASSES FILL BOTH UNIVERSITY CORE AND PROGRAM REQUIREMENTS (4 hours overlap)

FOR UNIVERSITY CORE OR PROGRAM QUESTIONS CONTACT THE ADVISEMENT CENTER
Physical and Mathematical Sciences College Advisement Center
N-181 ESC
Brigham Young University, Provo, UT 84602
Telephone: (801) 422-2674

 FACULTY ADVISOR:
Del T. Scott
206 TMCB
Brigham Young University, Provo, UT 84602
Telephone: (801) 422-7054
BS in STATISTICS: Statistical Science Emphasis (695220)  
2015–2016

Suggested Sequence of Courses:

FRESHMAN YEAR

1st Semester
1st Year Writing or American Heritage 3.0  
Math 112 (FWSpSu) 4.0  
Stat 121 3.0  
Arts 3.0  
Religion Cornerstone course 2.0  
Total Hours 15.0

2nd Semester
American Heritage or 1st Year Writing 3.0  
Math 113 (FWSpSu) 4.0  
Stat 230 3.0  
Religion Cornerstone course 2.0  
Phy S 100 3.0  
Total Hours 15.0

SOPHOMORE YEAR

3rd Semester
Math 313 (FWSpSu) 3.0  
Global and Cultural Awareness 3.0  
Biological Science 3.0  
Religion Cornerstone course 2.0  
General electives 1.0  
Total Hours 15.0

4th Semester
Math 314 (FWSpSu) 3.0  
Stat 123 or Stat 124 1.5  
Stat 223 or Stat 224 1.5  
Stat 340 3.0  
Adv. Written and Oral Communication 3.0  
Civilization 1 3.0  
Religion elective 2.0  
General elective 1.0  
Total Hours 15.0

JUNIOR YEAR

5th Semester
Statistics elective 3.0  
Social Science 3.0  
Civilization 2 3.0  
Religion elective 2.0  
General electives 3.0  
Total Hours 14.0

6th Semester
Statistics elective 3.0  
Statistics elective 3.0  
Religion elective 2.0  
General electives 4.0  
Total Hours 15.0

SENIOR YEAR

7th Semester
Statistics elective 3.0  
Statistics elective 3.0  
Religion elective 2.0  
General electives 4.0  
Total Hours 15.0

8th Semester
Statistics elective 3.0  
Statistics elective 3.0  
General electives 9.0  
Total Hours 15.0

Department recommendation: Internship during Spring/Summer

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 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.

ADVISING:

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-certificate-opportunities.


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.