BS in Statistics: Statistical Science (695220) MAP Sheet

Physical and Mathematical Sciences, Statistics

For students entering the degree program during the 2023-2024 curricular year.

University Core and Graduation Requirements

University Core Requirements:

Requirements	#Classes	Hours	Classes
Religion Cornerstones			
Teachings and Doctrine of The Book of Mormon	1	2.0	from approved list
Jesus Christ and the Everlasting Gospel	1	2.0	from approved list
Foundations of the Restoration	1	2.0	REL C 225
The Eternal Family	1	2.0	from approved list
The Individual and Society			
American Heritage	1-2	3-6.0	from approved list
Global and Cultural Awareness	1	3.0	from approved list
Skills			
First Year Writing	1	3.0	from approved list
Advanced Written and Oral Communications	1	3.0	from approved list
Quantitative Reasoning	1	4.0	MATH 112*
Languages of Learning (Math or Language)	1	4.0	MATH 112*
Arts, Letters, and Sciences			
Civilization 1	1	3.0	from approved list
Civilization 2	1	3.0	from approved list
Arts	1	3.0	from approved list
Letters	1	3.0	from approved list
Biological Science	1	3–4.0	from approved list
Physical Science	1–2	3–7.0	from approved list
Social Science	1	3.0	from approved list
Core Enrichment: Electives			
Religion Electives	3-4	6.0	from approved list
Open Electives	Variable	Variable	personal choice

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

Graduation Requirements:

Minimum residence hours required	30.0
Minimum hours needed to graduate	120.0

Suggested Sequence of Courses

FRESHMAN YEAR

1st Semester

First Year Writing	3.0
MATH 112 (FWSpSu)	4.0
STAT 121	3.0
STAT 130	0.5
Arts	3.0
Religion Cornerstone course	2.0
Total Hours	**15.5**

2nd Semester

American Heritage	3.0
MATH 113 (FWSpSu)	4.0
STAT 230	3.0
Religion Cornerstone course	2.0
Physical Science	3.0
Total Hours	**15.0**

SOPHOMORE YEAR

3rd Semester

MATH 213	2.0
MATH 215	1.0
STAT 240	3.0
STAT 250	3.0
Biological Science	3.0
Religion Cornerstone course	2.0
Total Hours	**14.0**

4th Semester

MATH 314 (FWSpSu)	3.0
STAT 330	3.0
Global and Cultural Awareness	3.0
Letters	3.0
Religion Cornerstone course	2.0
Open Electives	2.0
Total Hours	**16.0**

JUNIOR YEAR

5th Semester

Requirement 4	3.0
STAT 340	3.0
Adv. Written and Oral Communication	3.0
Civilization 1	3.0
Religion elective	2.0
Total Hours	**14.0**

6th Semester

Requirement 6 Elective #1	3.0
Requirement 7 Elective #1	3.0
Civilization 2	3.0
Religion elective	2.0
Open Electives	4.0
Total Hours	**15.0**

SENIOR YEAR

7th Semester

Requirement 6 Elective #2	3.0
Requirement 7 Elective #2	3.0
Religion elective	2.0
Open Electives	8.0
Total Hours	**16.0**

8th Semester

Requirement 7 Elective #3	3.0
Requirement 7 Elective #4	3.0
Social Science	3.0
Open Electives	6.0
Total Hours	**15.0**

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 reach the 120 credit minimum needed to graduate. Taking fewer credits substantially increases 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.

Note 5: 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.

Program Requirements
Requirement 1 — Complete 2 Courses
STAT 121 - Principles of Statistics 3.0
STAT 130 - Intro to Statistics Department 0.5
Requirement 2 —Complete 5 Courses
Statistics core courses:
STAT 230 - Analysis of Variance 3.0
STAT 240 - Probability and Inference 1 3.0
STAT 250 - Applied R Programming 3.0
STAT 330 - Introduction to Regression 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 hours
C S 110 - How to Program 3.0
C S 111 - Intro to Computer Science 3.0
HLTH 440 - Statistical Computing in Epi 3.0
IS 520 - Spreadsheet Automation 3.0
STAT 286 - Data Science Ecosystems 3.0
Requirement 5 —Complete 1 Course
MATH 314 - Calculus of Several Variables 3.0
Requirement 6 —Complete 6 hours
STAT 435 - Nonparametric Stat Methods 3.0
STAT 437 - Applications in Biostatistics 3.0
STAT 451 - Applied Bayesian Statistics 3.0
STAT 466 - Intro 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 495R - Special Topics in Statistics - *You may take once* 1.0v
STAT 531 - Experimental Design 3.0
STAT 538 - Survival Analysis 3.0
Requirement 7 —Complete 12 hours
Note: Courses used in Requirements 4 and 6 will not double count here.
Note: No more than 3.0 hours of any combination of STAT 496R and STAT 497R can be used for this requirement.
MATH 334 - Ordinary Differential Equation 3.0
MATH 341 - Theory of Analysis 1 3.0
MATH 342 - Theory of Analysis 2 3.0
STAT 234 - Methods of Survey Sampling 3.0
STAT 251 - Intro to Bayesian Statistics 3.0
STAT 274 - Theory of Interest 3.0
STAT 281 - Data Visualization 3.0
STAT 286 - Data Science Ecosystems 3.0
STAT 348 - Predictive Analytics 3.0
STAT 381 - Statistical Computing 3.0
STAT 386 - Data Science Process 3.0
STAT 395R - Special Topics in Applied Stat - *You may take once* 1.0v
STAT 435 - Nonparametric Stat Methods 3.0
STAT 437 - Applications in Biostatistics 3.0
STAT 451 - Applied Bayesian Statistics 3.0
STAT 466 - Intro 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 495R - Special Topics in Statistics - *You may take up to 3.0 credit hours* 1.0v
STAT 496R - Academic Internship - *You may take once* 0.5v
STAT 497R - Intro to Research - *You may take once* 0.5v
STAT 531 - Experimental Design 3.0
STAT 538 - Survival Analysis 3.0
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 Department graduate coordinator.

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 resourceful, disciplined, and flexible approach to statistics, an enhanced capacity to analyze and interpret data, a broadened perspective on the impact of data in decisionmaking, and 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.

INTERNSHIPS:

Undergraduates can seek paid positions in various areas such as (but not limited to) Environment, Business, Health & Medicine, Physical Sciences, and Government. STAT 250, 286, and 330 provide excellent preparation for many internship opportunities. Students are encouraged to meet with their Career Services Director or reach out to the department for the most up-to-date internship opportunities.

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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FACULTY ADVISOR:

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

Physical and Mathematical Sciences College Advisement Center

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