

BS in Statistics: Applied Statistics & Analytics (695234) MAP Sheet

Physical and Mathematical Sciences, Statistics

For students entering the degree program during the 2024-2025 curricular year

University Core and Graduation Requirements				Suggested Sequence of Courses			
University Core Requirements:				FRESHMAN YEAR		JUNIOR YEAR	
Requirements	# Classes	Hours	Classes	<u>1st Semester</u>		<u>5th Semester</u>	
Religion Cornerstones				First Year Writing	3.00	GE Arts, Letters, Sciences	3.00
Teachings and Doctrines of the Book of Mormon	1	2.00	REL A 275	MATH 112	4.00	STAT 340	3.00
Jesus Christ and the Everlasting Gospel	1	2.00	REL A 250	STAT 121	3.00	Requirement 4 Elective	3.00
Foundations of the Restoration	1	2.00	REL C 225	STAT 130	0.50	WRTG 316	3.00
The Eternal Family	1	2.00	REL C 200	UNIV 101	2.00	GE Religion	2.00
BYU Foundations for Student Success				Religion Cornerstone Class	2.00	Total Hours:	14.00
Foundations for Student Success	1	2.00	UNIV 101	Total Hours:	14.50	<u>6th Semester</u>	
The Individual and Society				<u>2nd Semester</u>		Requirement 5 Elective 1	3.00
American Heritage	1 to 2	3.00-6.00	from approved list	American Heritage	3.00	Requirement 6 Elective 1	3.00
Global and Cultural Awareness	1	3.00	from approved list	MATH 113	4.00	GE Arts, Letters, Sciences	3.00
Skills				STAT 230	3.00	GE Religion	2.00
First Year Writing	1	3.00	from approved list	GE Arts, Letters, Sciences	3.00	Open Electives	4.50
Advanced Written and Oral Communications	1	3.00	from approved list	Religion Cornerstone Class	2.00	Total Hours:	15.50
Quantitative Reasoning	1	4.00	MATH 112*	Total Hours:	15.00	SENIOR YEAR	
Languages of Learning (Math of Language)	1	4.00	MATH 112*	<u>3rd Semester</u>		<u>7th Semester</u>	
Arts, Letters and Sciences (Complete 6 of 7)				GE Arts, Letters, Sciences	3.00	Requirement 5 Elective 2	3.00
Civilization 1	1	3.00	from approved list	MATH 213	2.00	Requirement 6 Elective 2	3.00
Civilization 2	1	3.00	from approved list	MATH 215	1.00	GE Religion	2.00
Arts	1	3.00	from approved list	STAT 250	3.00	GE Global and Cultural Awareness	3.00
Letters	1	3.00	from approved list	Open Electives	1.00	Open Electives	5.00
Biological Science	1	3.00	from approved list	Religion Cornerstone Class	2.00	Total Hours:	16.00
Physical Science	2	3.00-7.00	from approved list	GE Arts, Letters, Sciences	3.00	<u>8th Semester</u>	
Social Science	1	3.00	from approved list	Total Hours:	15.00	Requirement 6 Elective 3	3.00
Core Enrichment: Electives				<u>4th Semester</u>		Requirement 6 Elective 4	3.00
Religion Electives	3 to 4	6.00	from approved list	Open Electives	4.00	Requirement 6 Elective 5	3.00
Open Electives	Variable	Variable	personal choice	STAT 240	3.00	Open Electives	6.00
Graduation Requirements:				STAT 330	3.00	Total Hours	15.00
Minimum residence hours required		30.00		GE Arts, Letters, Sciences	3.00		
Minimum hours needed to graduate		120.00		Religion Cornerstone Class	2.00		
*These classes fill both university core and program requirements				Total Hours:	15.00		

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 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 6 —Complete 15 hours

Note: Courses used in Requirements 4 and 5 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.

IS 515 - Spreadsheets for Bus Analysis 3.0
 IS 520 - Spreadsheet Automation 3.0
 MATH 314 - Calculus of Several Variables 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 344 - Long-term Actuarial Math 3.0
 STAT 346 - Short-term Actuarial Math 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 up to 3.0 credit hours 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 up to 3.0 credit hours 0.5v*
 STAT 497R - Intro to Research - *You may take up to 3.0 credit hours 0.5v*
 STAT 531 - Experimental Design 3.0
 STAT 538 - Survival Analysis 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.

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.

CAREER OPPORTUNITIES:

Typical employment upon graduation would include statisticians in government agencies (for example, the U.S. Census Bureau), database administrators focusing on statistical 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, reliability and survival analysis.

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

Department of Statistics Brigham Young University 2152 WVB Provo, UT 84602 Telephone: (801) 422-4505 BS in Statistics: Applied Statistics & Analytics (695234)2023-2024

FACULTY ADVISOR:

Del T. Scott 2152B WVB Brigham Young University, Provo, UT 84602
 Telephone: (801) 422-7054 ADVISEMENT CENTER INFORMATION FOR UNIVERSITY CORE OR PROGRAM QUESTIONS, CONTACT THE ADVISEMENT CENTER.

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