BS IN STATISTICS

Units required for Major: 49-50, includes units of study in chosen emphasis (see below).
Total units required for BS: 120

Program Description

Statistics is the science and art of creating meaning from data. The statistics bachelor's degree provides students with a solid foundation in the theory, methods, and applications of statistical analysis. Students will analyze real world data sets, model complex phenomena, use professional software, and produce a portfolio of meaningful projects. Graduates will have the skills and knowledge needed to excel in a data-driven world.

All statistics majors will study a rigorous core curriculum and choose an emphasis for more specialized coursework. The core curriculum includes probability, mathematical statistics, computing, linear models, machine learning, and culminates in a semester-long capstone project. The emphasis in **mathematical statistics** prepares students for graduate study in statistics. The emphasis in **applied statistics** is versatile, allowing students to tailor the degree to their interests. The emphasis in **data science** includes additional instruction in computing to prepare graduates for careers in technology.

Program Requirements

Code	Title	Units
Lower Division Core Courses (21-22 Units)		
MATH 30	Calculus I	4
MATH 31	Calculus II	4
MATH 32	Calculus III	4
MATH 35	Introduction to Linear Algebra	3
STAT 50	Introduction to Probability and Statistics	3 - 4
or STAT 1	Introduction to Statistics	
Select one of the following:		3
MATH 64	Mathematical Programming	
CSC 10	Introduction to Programming Logic	
CSC 15	Programming Concepts and Methodology I	
CSC 22	Visual Programming in BASIC	
CSC 25	Introduction to C Programming	
Upper Division Core Courses (19 Units)		
STAT 115A	Introduction to Probability Theory	3
STAT 115B	Introduction to Mathematical Statistics	3
STAT 128	Statistical Computing	3
STAT 140A	Linear Models	3
STAT 140B	Statistical Learning	3
STAT 191	Community Service Learning in Statistics	1
STAT 192	Statistics Capstone Project	3
Additional Requirements for Specialized Study (9 Units)		
Select an emphasis from the following three:		9
Emphasis in Applied Statistics		
Emphasis in Data Science		
Emphasis in Mathematical Statistics		
Total Units		**49-50**

Emphasis in Applied Statistics

Code	Title	Units
Select three of the following:		9
MATH 101	Combinatorics	
MATH 108	Introduction to Formal Mathematics	
MATH 117	Linear Algebra	
MATH 150	Introduction to Numerical Analysis	
MATH 170	Linear Programming	
STAT 129	Analyzing and Processing Big Data	
STAT 155	Introduction to Techniques of Operations Research	
Course approved by statistics major advisor		
Total Units		**9**

Emphasis in Data Science

Code	Title	Units
STAT 129	Analyzing and Processing Big Data	3
Select two of the following:		6
STAT 155	Introduction to Techniques of Operations Research	
MATH 108	Introduction to Formal Mathematics	
MATH 150	Introduction to Numerical Analysis	
MATH 170	Linear Programming	
Course approved by statistics major advisor		
Total Units		**9**

Emphasis in Mathematical Statistics

Code	Title	Units
MATH 108	Introduction to Formal Mathematics	3
MATH 130A	Functions of a Real Variable	3
Select one of the following:		3
MATH 110A	Modern Algebra	
MATH 117	Linear Algebra	
MATH 130B	Functions of a Real Variable	
Total Units		**9**

General Education

Code	Title	Units
Area A: Basic Subjects (9 Units)		
A1 - Oral Communication		3
A2 - Written Communication		3
A3 - Critical Thinking		3
Area B: Physical Universe and Its Life Forms (13 Units)		
B1 - Physical Science		3
B2 - Life Forms		3
B3 - Lab (Note: Lab experience to be taken with one of the following: B1, B2 or B5)		1
B4 - Math Concepts		3
B5 - Additional Course (Any B to reach 12 units) - Take upper-division course to complete Area & upper division requirements.		3
Area C: Arts and Humanities (12 Units)		
C1 - Arts		3

C2 - Humanities	3
C1/C2 - Area C Course	3
C1/C2 - Area C Course - Take upper-division course to complete Area & upper division requirements.	3
Area D: The Individual and Society (6 Units)	
Area D Course	3
Area D Course	3
Area D Course - Take upper-division course to complete Area & upper division requirements.	0
Area E: Understanding Personal Development (3 Units)	
Area E Course	3
Area F: Ethnic Studies	
Area F Course	
Total Units	**43**