STATISTICS, BACHELOR OF ARTS

College of Letters & Science

Statistics enables us to make inferences about entire populations, based on samples extracted from those populations. Statistical methods can be applied to problems from almost every discipline and they are vitally important to researchers in agricultural, biological, environmental, social, engineering, and medical sciences.

The Program

Statistics majors may receive either a Bachelor of Arts (A.B.) or a Bachelor of Science (B.S.) degree. Both the A.B. and the B.S. programs require theoretical and applied course work and underscore the strong interdependence of statistical theory and the applications and computational aspects of statistics. The B.S. degree program has five tracks: Applied Statistics Track, Computational Statistics Track, General Track, Machine Learning Track, and the Statistical Data Science Track. The A.B. degree program has one track.

A.B. in Statistics-Applied Statistics Track emphasizes statistical applications. This track is recommended for students who are interested in applications of statistical techniques to various disciplines, especially the social sciences.

Major Advisors

For a current list of faculty and staff advisors, see Undergraduate Advising (https://statistics.ucdavis.edu/undergrad/advising/).

Students are encouraged to meet with an advisor to plan a program as early as possible.

Career Alternatives

Probability models, statistical methods, and computational techniques are used in a great many fields, including the biological, physical, social, and health sciences, business, and engineering. The wide applicability of statistics is reflected in the strong demand for graduates with statistical training in both the public and private sectors. Employment opportunities include careers in data & policy analysis in government & industry, financial management, quality control, insurance & healthcare industry, actuarial science, engineering, public health, biological and pharmaceutical research, law, and education. Students with an undergraduate degree in statistics have entered advanced studies in statistics, economics, finance, psychology, medicine, business management & analytics, and other professional school programs.

The major requirements below are in addition to meeting University Degree Requirements (https://catalog.ucdavis.edu/undergraduate-education/university-degree-requirements/) & College Degree Requirements (https://catalog.ucdavis.edu/undergraduate-education/college-degree-requirements/); unless otherwise noted. The minimum number of units required for the Statistics Bachelor of Arts is 65.

Code	Title	Units
Preparatory Subject Matter		
Mathematics		
Choose a series:		9-12
MAT 016A	Short Calculus	
& MAT 016B	and Short Calculus	
& MAT 016C	and Short Calculus	
MAT 017A	Calculus for Biology & Medicine	
& MAT 017B	and Calculus for Biology & Medicine	
& MAT 017C	and Calculus for Biology & Medicine	
MAT 019A	Calculus for Data-Driven Applications	
& MAT 019B	and Calculus for Data-Driven Applications	
& MAT 019C	and Calculus for Data-Driven Applications	
MAT 021A	Calculus	
& MAT 021B	and Calculus	
& MAT 021C	and Calculus	
MAT 021 series preferred.		
MAT 022A	Linear Algebra	3
Computer Science Engineering		
ECS 032A	Introduction to Programming	4
or ECS 036A	Programming & Problem Solving	
Statistics		
Choose one:		4
STA 013	Elementary Statistics	
or STA 013Y	Elementary Statistics	
STA 032	Gateway to Statistical Data Science	
STA 100	Applied Statistics for Biological Sciences	
STA 032 or STA 100 preferred		
Preparatory Subject Matter Subtotal		20-23
Depth Subject Matter		
Core Coursework		
Statistics		24
STA 106	Applied Statistical Methods: Analysis of Variance	
STA 108	Applied Statistical Methods: Regression Analysis	
STA 130A	Mathematical Statistics: Brief Course	
STA 130B	Mathematical Statistics: Brief Course	
STA 138	Analysis of Categorical Data	
STA 137	Applied Time Series Analysis	
or STA 141A	Fundamentals of Statistical Data Science	
Restricted Electives		
Choose three:		12
STA 104	Applied Statistical Methods: Nonparametric Statistics	
STA 135	Multivariate Data Analysis	
STA 137	Applied Time Series Analysis	
STA 141A	Fundamentals of Statistical Data Science	
STA 141B	Data & Web Technologies for Data Analysis	
Only one of STA 141B or STA 141C can be used as an elective.		
STA 141C	Big Data & High Performance Statistical Computing	
Only one of STA 141B or STA 141C can be used as an elective.		
STA 144	Sampling Theory of Surveys	
STA 145	Bayesian Statistical Inference	
STA 160	Practice in Statistical Data Science	
MAT 168	Optimization	

With advisor approval, one of STA 194HA or STA 194HB or STA 199 may be used as an elective. The course must be taken for four units.		
STA 194HA	Special Studies for Honors Students	
STA 194HB	Special Studies for Honors Students	
STA 199	Special Study for Advanced Undergraduates	
Note: A course used to fulfill a core requirement cannot be used as a restricted elective.		
Cluster Electives		
Choose three upper division elective courses outside of Statistics.		9-12
Cluster electives are chosen with and must be approved by the major advisor. Electives must follow a coherent sequence in one single disciple/cluster where statistical methods and models are applied and must cover the quantitative aspects of the discipline. **A list of pre-approved electives can be found on the Statistics Department website.**		
Pre-Approved Electives List (https://statistics.ucdavis.edu/undergrad/ab-applied-track/electives/)		
Depth Subject Matter Subtotal		45-48
Total Units		**65-71**