

STATISTICS, BACHELOR OF ARTS

College of Letters & Science

The Major Program

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.

Code	Title	Units
Preparatory Subject Matter		
<i>Mathematics</i>		
Choose a series:		9-12
MAT 016A & MAT 016B & MAT 016C	Short Calculus and Short Calculus and Short Calculus	
MAT 017A & MAT 017B & MAT 017C	Calculus for Biology & Medicine and Calculus for Biology & Medicine and Calculus for Biology & Medicine	

MAT 021A & MAT 021B & MAT 021C	Calculus and Calculus and Calculus	
MAT 021 series preferred.		
MAT 022A	Linear Algebra	3
<i>Computer Science Engineering</i>		
ECS 032A or ECS 036A	Introduction to Programming Programming & Problem Solving	4
<i>Statistics</i>		
Choose one:		4
STA 013 or STA 013Y	Elementary Statistics 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		
STA 106	Applied Statistical Methods: Analysis of Variance	4
STA 108	Applied Statistical Methods: Regression Analysis	4
STA 130A	Mathematical Statistics: Brief Course	4
STA 130B	Mathematical Statistics: Brief Course	4
STA 138	Analysis of Categorical Data	4
STA 137 or STA 141A	Applied Time Series Analysis Fundamentals of Statistical Data Science	4
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	
<i>Three upper division elective courses outside of Statistics.</i>		9-12

Electives are chosen with and must be approved by the major advisor. Electives should follow a coherent sequence in one single discipline where statistical methods and models are applied and should cover the quantitative aspects of the discipline. A list of pre-approved electives can be found on the Statistics Department website.

Depth Subject Matter Subtotal	45-48
Total Units	65-71