DATA SCIENCE, BACHELOR OF SCIENCE

College of Letters & Science

The Data Science program has a capped admission process. Information about the requirements for continuing students to change majors into Data Science can be found at Department of Statistics **(**https://statistics.ucdavis.edu/undergrad/advising/change-of-major/data-science/**).**

The Major Program

Data Science combines computational, mathematical and statistical reasoning to draw conclusions based on data. Data science techniques and methods can be applied to problems from virtually any discipline; for example, in agricultural and environmental sciences, biological sciences, engineering, medical sciences and social sciences.

The Program

Data Science majors receive a Bachelor of Science degree. The program requires both theoretical and applied course work to underscore the strong interdependence of technical foundations in computer science, engineering, mathematics and statistics, and their applications to any field of inquiry relying on quantitative data analysis. The B.S. degree program has one track, the Foundations track.

B.S. in Data Science-Foundations Track emphasizes the underlying computer science, engineering, mathematics and statistics methodology and theory, and is especially recommended as preparation for graduate study in data science or related fields.

Career Opportunities

Inferential and computational techniques are used in many fields, including the agricultural and environmental sciences, biological sciences, social sciences, and health sciences, business, and engineering. The wide applicability of data science is reflected in the strong demand for graduates with data science training in both the public and private sectors. Employment opportunities include careers in data & policy analysis in government & industry, tech industry, insurance & healthcare industry, engineering, public health, biological & pharmaceutical research, law, and education. Students with an undergraduate degree in data science may enter advanced studies in data science, computer science, applied mathematics, statistics, economics, finance, psychology, medicine, business management & analytics, and other professional school programs.

Major Advisor

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

Foundations Track

Code	Title	Units
Preparatory Subject Matter		
Computer Science Engineering		
ECS 017	Data, Logic, & Computing	4
ECS 032A	Introduction to Programming	4
ECS 032B	Introduction to Data Structures	4
Mathematics		
MAT 021A	Calculus	4
MAT 021B	Calculus	4
MAT 021C	Calculus	4
MAT 022A	Linear Algebra	3
Statistics		
STA 035A	Statistical Data Science I	4
STA 035B	Statistical Data Science II	4
STA 035C	Statistical Data Science III	4
Preparatory Subject Matter Subtotal		39
Depth Subject Matter		
Computer Science Engineering		*12*
ECS 116	Databases for Non-Majors	
ECS 117	Algorithms for Data Science	
ECS 119	Data Processing Pipelines	
Probability & Statistics		*12*
STA 108	Applied Statistical Methods: Regression Analysis	
STA 141A	Fundamentals of Statistical Data Science	
MAT 135A	Probability	
or STA 131A	Introduction to Probability Theory	
Machine Learning		
Choose one:		4
ECS 111	Applied Machine Learning for Non-Majors (Pending Approval)	
MAT 170	Mathematics for Data Analytics & Decision Making	
STA 142A	Statistical Learning I	
Mathematics		*8*
MAT 168	Optimization	
MAT 167	Applied Linear Algebra	
or ECS 130	Scientific Computation	
Science & Technology Studies		*4*
STS 101	Data & Society	
Upper Division Electives		
Three elective courses in a related discipline. **A list of pre-approved electives can be found on the Department of Statistics website.**		12
Depth Subject Matter Subtotal		52
Total Units		**91**