DATA SCIENCE, BACHELOR OF SCIENCE

College of Letters & Science

The Data Science program will not accept majors until Fall 2022.

Department Office
4118B Mathematical Sciences; 530- 752-1053; Statistics (https://statistics.ucdavis.edu/)

The B.S. Major
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
The Data Science major will not accept majors until Fall 2022. To learn more about other majors in the Department of Statistics that are currently accepting students, please consult Statistics Undergraduate Advising (https://statistics.ucdavis.edu/undergrad/advising/).

Foundations Track

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECS 017</td>
<td>Data, Logic, &amp; Computing</td>
<td>4</td>
</tr>
<tr>
<td>ECS 032A</td>
<td>Introduction to Programming</td>
<td>4</td>
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<tr>
<td>Math 021A</td>
<td>Calculus</td>
<td>4</td>
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<tr>
<td>Math 021B</td>
<td>Calculus</td>
<td>4</td>
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<tr>
<td>Math 021C</td>
<td>Calculus</td>
<td>4</td>
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<td>Math 022A</td>
<td>Linear Algebra</td>
<td>3</td>
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<td>Stat 035A</td>
<td>Statistical Data Science I</td>
<td>4</td>
</tr>
<tr>
<td>Stat 035B</td>
<td>Statistical Data Science II</td>
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<tr>
<td>Stat 035C</td>
<td>Statistical Data Science III</td>
<td>4</td>
</tr>
</tbody>
</table>

All prerequisites for preparatory material are themselves part of the preparatory material.

Preparatory Subject Matter Subtotal 39

Depth Subject Matter

**Computer Science Engineering**
- ECS 116 Databases for Non-Majors 4
- ECS 117 Algorithms for Data Science (Pending Approval) 4
- ECS 119 Scientific Computation (Pending Approval) 4
- ECS 130 or MAT 167 Applied Linear Algebra 4
- MAT 167 Mathematics for Data Analytics & Decision Making 4
- STA 142A Statistical Learning I 4

**Mathematics**
- MAT 168 Optimization 4
- MAT 135A Probability 4
- STA 131A Introduction to Probability Theory 4

**Statistics**
- STA 108 Applied Statistical Methods: Regression Analysis 4
- STA 141A Fundamentals of Statistical Data Science 4

**Science & Technology Studies**
- STS 101 Data & Society 4

Three elective courses in a related discipline. 12

Depth Subject Matter Subtotal 52

Total Units 91