Data Science, B.S.

The Data Science Major prepares students for a career in data analysis, combining foundational statistical concepts with computational principles from computer science. In the first two years of the program students will take core courses in both the Statistics and Computer Science Departments, providing a strong foundation in the principles of each field. In the 3rd and 4th years of the program, students will take more specialized courses, on topics such as design of algorithms, machine learning, information visualization, and Bayesian statistics. A major component of this degree is the final year capstone project course, a 2-quarter course that teaches students how to apply statistical and computational principles to solve large-scale real-world data analysis problems.

Freshman Applicants: See the Undergraduate Admissions section (http://catalogue.uci.edu/informationforprospectivestudents/undergraduateadmissions/#admissionasafreshmanapplicanttext).

Transfer Applicants: See the Undergraduate Admissions section (http://catalogue.uci.edu/informationforprospectivestudents/undergraduateadmissions/#admissionasatransferapplicanttext).

Bren School of ICS majors (including shared majors, BIM and CSE) pursuing minors within the Bren School of ICS may not count more than five courses toward both the major and minor. Some ICS majors and minors outside of the School are not permitted due to significant overlap. Visit the ICS Student Affairs Office website for Majors and Minors restrictions (http://www.ics.uci.edu/ugrad/degrees/MajorMinor_Restrictions_Chart.pdf) All students should check the Double Major Restrictions Chart (https://www.ics.uci.edu/ugrad/degrees/Dbi_Major_Restrictions_Chart.pdf) and view our information page (http://www.ics.uci.edu/ugrad/degrees/Double_Majors.php) on double majoring to see what degree programs are eligible for double majoring.

All students must meet the University Requirements. (http://catalogue.uci.edu/informationforadmittedstudents/requirementsforabachelorsdegree/)

Data Science Major Requirements

<table>
<thead>
<tr>
<th>Lower-division:</th>
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<tbody>
<tr>
<td>A. Select one of the following series:</td>
</tr>
<tr>
<td>I&amp;C SCI 31-32-33</td>
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<td>or</td>
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<tr>
<td>I&amp;C SCI 32A-33</td>
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<td>B. Complete:</td>
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<tr>
<td>I&amp;C SCI 45C</td>
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<tr>
<td>I&amp;C SCI 46</td>
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<tr>
<td>I&amp;C SCI 51</td>
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<td>IN4MATX 43</td>
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<td>C. Complete:</td>
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<td>MATH 2A</td>
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<tr>
<td>MATH 2B</td>
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<td>MATH 2D</td>
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<tr>
<td>MATH 3A</td>
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<tr>
<td>or I&amp;C SCI 6N</td>
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<tr>
<td>I&amp;C SCI 6B</td>
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<tr>
<td>I&amp;C SCI 6D</td>
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<td>STATS 5</td>
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<tr>
<td>STATS 7</td>
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<td>STATS 68</td>
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<tr>
<td>Upper-division:</td>
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<td>A. Data Science core requirements:</td>
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<tr>
<td>STATS 110</td>
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<tr>
<td>STATS 111</td>
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<tr>
<td>STATS 112</td>
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<tr>
<td>STATS 115</td>
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<td>STATS 120A</td>
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### STATISTICS PROGRAMS

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>STATS 120B</td>
<td>Introduction to Probability and Statistics II</td>
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<tr>
<td>STATS 120C</td>
<td>Introduction to Probability and Statistics III</td>
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<tr>
<td>I&amp;C SCI 139W</td>
<td>Critical Writing on Information Technology</td>
</tr>
<tr>
<td>COMPSCI 122A</td>
<td>Introduction to Data Management</td>
</tr>
<tr>
<td>COMPSCI 161</td>
<td>Design and Analysis of Algorithms</td>
</tr>
<tr>
<td>COMPSCI 178</td>
<td>Machine Learning and Data-Mining</td>
</tr>
<tr>
<td>IN4MATX 143</td>
<td>Information Visualization</td>
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</table>

### Elective Courses

B. Three elective courses from the list below:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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<tbody>
<tr>
<td>MATH 130B</td>
<td>Probability II</td>
</tr>
<tr>
<td>MATH 130C</td>
<td>Stochastic Processes</td>
</tr>
<tr>
<td>STATS 140</td>
<td>Multivariate Statistical Methods</td>
</tr>
<tr>
<td>I&amp;C SCI 53</td>
<td>Principles in System Design</td>
</tr>
<tr>
<td>COMPSCI 111</td>
<td>Digital Image Processing</td>
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<tr>
<td>COMPSCI 115</td>
<td>Computer Simulation</td>
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<td>COMPSCI 121</td>
<td>Information Retrieval</td>
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<tr>
<td>COMPSCI 122B</td>
<td>Project in Databases and Web Applications</td>
</tr>
<tr>
<td>COMPSCI 122C</td>
<td>Principles of Data Management</td>
</tr>
<tr>
<td>COMPSCI 125</td>
<td>Next Generation Search Systems</td>
</tr>
<tr>
<td>COMPSCI 131</td>
<td>Parallel and Distributed Computing</td>
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<tr>
<td>COMPSCI 134</td>
<td>Computer and Network Security</td>
</tr>
<tr>
<td>COMPSCI 163</td>
<td>Graph Algorithms</td>
</tr>
<tr>
<td>COMPSCI 165</td>
<td>Project In Algorithms And Data Structures</td>
</tr>
<tr>
<td>COMPSCI 169</td>
<td>Introduction to Optimization</td>
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<tr>
<td>COMPSCI 171</td>
<td>Introduction to Artificial Intelligence</td>
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<tr>
<td>COMPSCI 172B</td>
<td>Neural Networks and Deep Learning</td>
</tr>
<tr>
<td>IN4MATX 131</td>
<td>Human Computer Interaction</td>
</tr>
<tr>
<td>IN4MATX 141</td>
<td>Information Retrieval</td>
</tr>
<tr>
<td>IN4MATX 161</td>
<td>Social Analysis of Computing</td>
</tr>
</tbody>
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### Data Science Capstone Team-Based Project Courses: STATS 170A and STATS 170B

A wide variety of careers and graduate programs are open to graduates of the Data Science major. Demand for graduates with skills in both statistics and computer science currently outpaces supply - thus, students with these skills typically find employment quickly, across a wide variety of sectors.
Data Science, B.S.

including internet companies, finance, engineering, business, medicine, and more. Data Science graduates are well-qualified for job titles such as “data scientist,” “data analyst,” or “statistician,” both in the public and private sectors. Graduate school in area such as Computer Science or Statistics is also a possible career path.

- Statistics, M.S.
- Statistics, Minor
- Statistics, Ph.D.