Guidelines by Major Effective during the 18-19 Academic Year

To: UC Berkeley | From: City College of San Francisco
18-19 General Catalog Semester | 18-19 General Catalog Semester

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====Data Science, Lower Division B.A.====

College Admission Requirements for Transfer Students
This major is offered by the College of Letters and Science (L&S).

By the end of the spring term preceding fall enrollment at Berkeley, you must complete:

1) The L&S Requirements in Reading & Composition, Quantitative Reasoning, and Foreign Language; OR
2) IGETC

Major Requirements:
Complete as many lower division major requirements as possible. This major may require you to complete minimum coursework for admission. See details on preparation for this major below.

Primary selection criteria for admission, in general:
- completion of L&S Requirements (or IGETC), plus
- strength of academic preparation, and
- grade point average.

For more information on admission to UC Berkeley:
http://admissions.berkeley.edu

For more information on majors at UC Berkeley:
Berkeley Academic Guide: http://guide.berkeley.edu

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PROGRAM

DATA SCIENCE is a new field of study that combines computational and inferential reasoning to draw conclusions based on data about some aspect of the real world.

Data scientists come from all walks of life, all areas of study, and all backgrounds. They share an appreciation for the practical use of mathematical and scientific thinking and the power of computing to understand and solve problems for business, research, and societal impact.

The Data Science Major will equip students to draw sound conclusions from data in context, using knowledge of statistical inference, computational processes, data management strategies, domain knowledge, and theory. Students will learn to carry out analyses of data through the full cycle of the investigative process in scientific and practical contexts. Students will gain understanding of the human and ethical implications of data analysis and integrate that knowledge in designing and carrying out their work.

Lower Division Prerequisites

STAT/COMPSCI/INFO C8  Foundations of Data Science
MATH 1A & MATH 1B  Calculus
MATH 54  Linear Algebra and Differential Equations

OR
EL ENG 16A + EL ENG 16B  Designing Information Devices and Systems I and II

CS 61A  The Structure and Interpretation of Computer Programs

OR
ENGIN 7  Introduction to Computer Programming for Scientists and Engineers

CS 61B  Data Structures

For more information on this major:

ds-advising@berkeley.edu

https://data.berkeley.edu/degrees/data-science-ba

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LOWER DIVISION PREREQUISITES
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>STAT C8</td>
<td>Foundations of Data Science (4)</td>
<td></td>
<td>MATH 1A</td>
<td>Calculus (4)</td>
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<tr>
<td></td>
<td>Same as: COMPSCI C8/INFO C8</td>
<td></td>
<td>MATH 110A</td>
<td>Calculus I (5)</td>
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<tr>
<td>MATH 1B</td>
<td>Calculus</td>
<td></td>
<td>MATH 110B</td>
<td>Calculus II (5)</td>
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<tr>
<td>MATH 54</td>
<td>Linear Algebra and Differential Equations (4)</td>
<td></td>
<td>MATH 130</td>
<td>Linear Algebra and Differential Equations (5)</td>
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<td></td>
<td>OR MATH 120 &amp; Linear Algebra (3)</td>
<td></td>
<td>MATH 135</td>
<td>Differential Equations (5)</td>
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<tr>
<td>EL ENG 16A</td>
<td>Designing Information Devices and Systems I (4)</td>
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<td>ENGIN 7</td>
<td>Introduction to Computer Programming for Scientists and Engineers (MATLAB) (4)</td>
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<tr>
<td>EL ENG 16B</td>
<td>Designing Information Devices and Systems II (4)</td>
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<td>ENGN 38</td>
<td>Introduction to Programming Concepts and Methodologies for Engineers (3)</td>
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<td></td>
<td>OR ENGN 10B Introduction to Engineering: Software Tools and Design (2)</td>
<td></td>
<td>ENGN 10B</td>
<td>Introduction to Engineering: Software Tools and Design (2)</td>
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<tr>
<td>COMPSCI 61A</td>
<td>The Structure and Interpretation of Computer Programs (4)</td>
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<td>CS 110C</td>
<td>Data Structures and Algorithms: C++ (4)</td>
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<td></td>
<td>OR CS 111C Data Structures and Algorithms: Java (4)</td>
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<td>NOTE: Students must also complete UCB COMPSCI 47B at Berkeley to satisfy this requirement.</td>
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[CCSF CS 110C + UCB COMPSCI 47B taken at Berkeley; OR CCSF CS 111C + UCB COMPSCI 47B taken at Berkeley.]

END OF MAJOR