The technological revolution has led to an explosion of data in domains of knowledge ranging from medicine to social science and from commerce to high energy physics. Data science is the study of extracting value from data. It combines insights, techniques, and tools from computer science, statistics, social science, and elsewhere. The minor program in data science is intended to equip students with computational and analytical comprehension and tools that will allow them to work on a variety of data-driven problems in any discipline. The program also emphasizes important issues in data privacy, ethics, and communication.

**MINOR IN DATA SCIENCE**

The minor in data science targets students from all disciplines and consists of four required courses and two electives drawn from an approved list. Students may petition to take electives other than those listed below, if they can demonstrate substantial data science content in those courses. A successful petition requires students to obtain approval from the program director, who will contact College Advising on the student’s behalf.

1. **Introductory Sequence** (four courses required):

   - CMSC 11800 Introduction to Data Science I
   - CMSC 11900 Introduction to Data Science II
   - CMSC 25300 Mathematical Foundations of Machine Learning
   - One of the following:
     - CMSC 25900 Ethics, Fairness, Responsibility, and Privacy in Data Science
     - DATA 25900 Ethics, Fairness, Responsibility, and Privacy in Data Science

   **Total Units**: 100

2. **Elective Sequence** (two courses required):

   - Two of the following:
     - CMSC 13600 Introduction to Data Engineering
     - CMSC 23900 Data Visualization
     - CMSC 25025 Machine Learning and Large-Scale Data Analysis
     - STAT 22200 Linear Models and Experimental Design

   **Total Units**: 200

**GRADING AND ADVISING**

Courses in the minor may not be double counted with the student’s major(s) or with other minors. Courses in the minor must be taken for quality grades, and more than half of the requirements for the minor must be met by registering for courses bearing University of Chicago course numbers.

Prospective minors must meet with the data science program director to discuss their course plans and to obtain advice and approval. Together the student and the program director will fill out a Consent to Complete a Minor Form (https://humanities-web.s3.us-east-2.amazonaws.com/college-prod/s3fs-public/documents/Consent_Minor_Program.pdf). Students should submit completed, signed forms to their College advisor by the end of Spring Quarter of their third year.

**SUMMARY OF REQUIREMENTS FOR THE MINOR IN DATA SCIENCE**

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Total Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introductory Sequence: Four courses</td>
<td>400</td>
</tr>
<tr>
<td>Electives: Two courses</td>
<td>200</td>
</tr>
<tr>
<td>Total Units</td>
<td>600</td>
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</tbody>
</table>