DATA SCIENCE - MINOR

Data science is a multidisciplinary field that uses scientific methods, processes, algorithms and systems to extract knowledge and insights from structured and unstructured data.

This minor provides students with an introduction to the core concepts and skills of data science in computing, statistics and information science to complement existing majors in CMCI fields, in the social sciences and in the arts and humanities.

The program is specifically designed as an add-on to existing quantitative methods courses and sequences in the social sciences. Students in such degree programs who wish to add data science experience and credentials to their course of study can complete the minor without additional course prerequisites. For this reason, some aspects of the curriculum (particularly the quantitative methods area) are quite flexible, allowing students to acquire this background through subject-specific study in a variety of disciplines.

Required Courses and Credits

The minor is divided into three areas: computing, quantitative methods, and electives. Computing courses cover basic programming and data structures with an emphasis on the Python programming language. Because of the variation in credit hours associated with quantitative methods courses, the total hours for the minor vary between 19–22. Students may apply no more than six credit hours of transfer work, including three hours of upper-division credit.

Information Science majors may not receive an Information Science minor nor a Data Science minor. Students may not receive both the Information Science minor and the Data Science minor.

All coursework applied to the minor must be completed with a grade of C- or better (no pass/fail work may be applied). The GPA for all coursework attempted in the minor department must be equal to 2.00 (C) or higher.

Aside from course prerequisites for the courses listed below, there are no other prerequisites for the minor.

### Code | Title | Credit Hours
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#### Computing

**Computing 1:**

- ATLS 1300: Computational Foundations 1
- CSCI 1200: Introduction to Computational Thinking
- CSCI 1300: Computer Science 1: Starting Computing
- GEOG 4033: Geographic Information Science: Spatial Programming
- INFO 1701: Programming for Information Science 1
- LING 1200: Programming for Linguistics

Choose one from the following list:

- ANTH 4000 & INFO 2301: Quantitative Methods in Anthropology and Quantitative Reasoning for Information Science
- GEOG 3023 & GEOG 4023: Statistics and Geographic Data and Advanced Quantitative Data for Spatial Data
- PSCI 2075 & PSCI 3075: Quantitative Research Methods and Applied Political Science Research
- SOCY 2061 & SOCY 3201: Introduction to Social Statistics and Sociological Research Methods
- AHUM 1825 & INFO 2301: Inclusive Interdisciplinary Data Science for All and Quantitative Reasoning for Information Science

**Computing 2:**

- INFO 2201: Programming for Information Science 2

**Quantitative Reasoning**

Choose a two-course sequence from the following options:

- INFO 1301 & INFO 2301: Statistics for Information Science and Quantitative Reasoning for Information Science
- INFO 3401: Information Exploration
- INFO 3402: Information Exposition
- INFO 3507: Data and the Humanities
- INFO 3510: Music as Information
- INFO 4601: Ethical and Policy Dimensions of Information and Technology
- INFO 4602: Information Visualization
- INFO 4603: Survey Research Design
- INFO 4604: Applied Machine Learning
- INFO 4607: Software Engineering for Data-Centered Systems
- INFO 4614: Information and Data Retrieval Systems
- INFO 4747: Defamiliarizing Data: The Ethnography and Design of Making Data Strange
- AHUM 3106: Introduction to Literary Study with Data Sr
- ANTH 4745: Science, Technology and Society
- APRD 4300: Strategic Communication Analytics and Metrics
- ENGL 3106: Introduction to Literary Study with Data Science
- ENGL 4106: Literary Study with Data Science
- GEOG 4403: Geographic Information Science: Space Time Analytics
- JRNL 4521: Data Journalism
- LING 4632: Machine Learning and Linguistics

**Total Credit Hours**

19-22