

SCHOOL OF ARTS AND SCIENCES

DATA SCIENCE

Faculty

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- Spencer Bagley
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[VIEW Data Science Courses](#)

Data Science Goals

- **Critical thinking**
 - Apply data analysis to solve real problems and make predictions in real-world contexts.
 - Scrape, clean, process, and evaluate the validity of data from publicly available sources.
 - Explore and contrast different methods of data visualization.
- **Creativity**
 - Employ novel and flexible strategies for attacking real-world issues.
- **Collaboration**
 - Effectively work in teams to use data science.
 - Leverage unique talents and skills in a group setting to make the whole better than the sum of its parts.
- **Communication**
 - Discuss data and conclusions using effective verbal presentation and written explanation.
- **Global responsibility**
 - Apply data analysis to better understand real problems around the globe.
 - Consider the ethical ramifications of gathering, storing, and analyzing data.

Program Objectives

The program offers an academic minor.

The Data Science minor is designed to help students develop the ability to use data to answer research questions and make predictions and decisions. The minor offers core classes that provide a foundation in mathematics, computer science, and statistics. The program culminates in a capstone project that requires students to apply their data knowledge to a project related to their major or another area of interest.

Data Science Minor

Requirement Description	CH	PREQ
I. Required Core Courses	22	
CMPT 190 Learning to Code (Python) 2 DATA 110 Explorations in Data Science* 4 DATA 220 Introduction to Statistics 4 DATA 350 Statistical Modeling 4 DATA 220 DATA 360 Data Science with Python 4 (CMPT 190 or CMPT 202) AND DATA 220 WCSAM 203 Linear Algebra 4		
II. Electives	4	
BUSI 400 Business Analytics 4 BUSI 300 CMPT 307 Databases Note: Students with credit for DATA 307 should not register for CMPT 307. Contact CMPT faculty for directed studies options. 4 CMPT 202 CMPT 311 Machine Learning 4 CMPT 202		

Requirement Description	CH	PREQ
DATA 307 Databases for Data Science Note: DATA 307 cannot be taken by students who already have credit for CMPT 307. 2 CMPT 190 DATA 370 Statistical Learning 4 DATA 350 300-level DATA courses in May Term (2 each) (varies by course)		
III. Capstone Project	1	
DATA 470 Capstone Project 1 Complete all core courses except DATA 360, which may be taken as a co-requisite.		
Total Hours for the Data Science Minor	27	

*Honors students may use HON 232 Data/Society/Decision-Making as a substitute for DATA 110 Explorations in Data Science.

Note: The courses listed in Section II (Electives) cannot be "double-dipped" with courses in other majors. In practice, what this means is that Computer Science and Business Computer Information Systems majors may not use CMPT 307 Databases as an elective for Data Science, and CMPT 311 Machine Learning may only be used once, either to satisfy upper-division elective credit in CMPT or to satisfy elective credit for the Data Science minor, but not both. Math majors who are also Data Science minors may not count DATA 350 or DATA 360 as upper-division elective credit toward the Math major, and DATA 370 may only be used once, either to satisfy upper-division elective credit in MATH or to satisfy elective credit for the Data Science minor, but not both. The same is true for 300-level DATA courses in May Term.