

DATA SCIENCE - BS

Our data science major curriculum intentionally provides a foundation and pathway for engaging broad discipline interests in the arts, humanities, social sciences, physical sciences, health sciences, and business. Data - in any domain - is at our disposal almost instantaneously. We need the knowledge and skills to manage, analyze, summarize and interpret the data, and then be able to effectively communicate, both visually and verbally, the results in context within an ethical and respectful frame.

Students majoring in data science at St. Catherine University will learn to navigate, model, visualize, summarize, and communicate with data within a vibrantly interdisciplinary, collaborative environment. Students will engage in creating appropriate models to analyze and interpret data, learn to ask pertinent questions, study ethical considerations, and develop communication skills involved in data science and data analytics within contextual variety among the liberal arts spectrum.

Data Science majors are required to complete a domain minor or a double major and secure at least one internship as part of the major. They must also choose an interdisciplinary emphasis track based on their personal or professional interests or goals.

This major is offered in the College for Women only.

Code	Title	Credits
Required Major Courses		
DSCI 1000	Telling Stories with Data - Introduction to Data Visualization	4
DSCI 3000W	Data Ethics, Governance & Social Impact	4
DSCI 2100	Introduction to Programming: Applied Computing I	4
DSCI 3100	Database Management	4
DSCI 3300	Introduction to Machine Learning for Data Science	4
DSCI 3200W	Analyzing Social Issues with Data	4
DSCI 4100	Introduction to Cloud Computing (AWS)	4
DSCI 4200	Introduction to Large Language Models (Machine Learning II)	4
16 credits in an interdisciplinary track: ¹		16
DSCI 4952	Independent Study	2-4
or DSCI 4604	Internship	
Total Credits		50-52

¹ Suggested interdisciplinary tracks include Business Administration, Economics, Sociology, Psychology, and Arts and Humanities. Students are encouraged to consult with their academic advisor to explore different pathways that best suit their individual goals.

Code	Title	Credits
Prerequisite Courses		
CSCI 1110	Introduction to Computer Science	4
MATH 1130	Calculus I	4
STAT 1090	Statistical Analysis	4
Total Credits		12

Code	Title	Credits
Required Supporting Courses		
CSCI 1120	Algorithms and Computer Programming II with Lab	4
DSCI 2994	Topics	4
OR DSCI 3994	Topics	
STAT 2090	Statistical Modeling	4
MATH 1140	Calculus II	4
STAT 3090	Predictive Analysis	4
Total Credits		20

Data science majors satisfy the Writing Requirement for Majors by completing DSCI 3000W Data Ethics, Governance & Social Impact and DSCI 3200W Analyzing Social Issues with Data. They complete the liberal arts core Writing Requirement with two other writing-intensive courses (CORE 1000W The Reflective Woman and CORE 3990W Global Search for Justice).

Code	Title	Credits
Fall Term		
CORE 1000W	The Reflective Woman	4
DSCI 1000	Telling Stories with Data - Introduction to Data Visualization	4
COMM 1030	Speaking to Lead and Influence (can be taken any semester)	4
Spring Term		
STAT 1090	Statistical Analysis	4
DSCI 2000	Seminar for Data Science (Offered J-term only; can be taken in 2nd year)	2
Fall Term		
CSCI 1110	Introduction to Computer Science (can be taken 1st yr)	4
MATH 1130	Calculus I (can be taken 1st yr)	4
STAT 2090	Statistical Modeling (Offered in even years; can be taken 3rd year if not offered in 2nd)	4
Select one from:		4
BIOL 1710	Foundations of Biology: Diversity and Evolution with Lab	
CHEM 1110	General Chemistry I with Lab	
PHYS 1110	Introductory Physics I with Lab	
Spring Term		
CSCI 1120	Algorithms and Computer Programming II with Lab (can be taken 1st yr)	4
MATH 1140	Calculus II (can be taken 1st yr)	4
STAT 3090	Predictive Analysis (offered in odd years; can be taken in 3rd year if not offered in 2nd)	4
Select one from:		4
BIOL 1720	Foundations of Biology: Cell and Molecular Biology with Lab	
CHEM 1120	General Chemistry II with Lab	
PHYS 1120	Introductory Physics II with Lab	
Fall Term		
DSCI 3100	Database Management (Offered in odd years; can be taken in 4th year, if not offered in 3rd)	4

MATH 2050	Linear Algebra	4
3000- or 4000-level CRST or WOST course		4
Spring Term		
DSCI 3200W	Analyzing Social Issues with Data (Offered in even years; can be taken 4th year if not offered in 3rd)	4
Select one from:		4
PHIL 2200W	Ethics	
PHIL 3400	Biomedical Ethics	
Fall Term		
CORE 3990W	Global Search for Justice	4
Spring Term		
DSCI Internship (can be completed any semester)		0-4
Total Credits		74-78