Data Science, MS (Portland)

Khoury College of Computer Sciences ~~and~~ the College of Arts, Media and Design ~~jointly offer~~ an interdisciplinary Master of Science in Data Science. This program is designed to give students a comprehensive framework for reasoning about data. Students engage in extensive coursework intended to develop depth in data collection, storage, retrieval, manipulation, visualization, modeling, and interpretation. Students are also able to choose elective courses from a variety of offerings in Khoury; the College of Arts, Media and Design; and throughout the campus to explore areas that generate data or specialized data science applications. Graduates are well positioned to attain data scientist and data engineer positions in a fast-growing field or to progress into doctoral degrees in related disciplines.

In this degree program, students will be admitted to the college associated with their concentration, and their degree is awarded by that college. The concentrations are associated with the colleges as follows:

- Data Design and Visualization—College of Arts, Media and Design
- Computer Science—Khoury College of Computer Sciences

Students will follow all policies associated with their home college.

Program Requirements

Beginning with students admitted in the fall of 2026, all students pursuing on-ground master's degree programs must complete a university-level experiential learning requirement. This requirement may be fulfilled through the curriculum, co-op, or other work- or industry-integrated learning experiences.

Complete all courses and requirements listed below unless otherwise indicated.

Students should refer to the course numbering table for graduate course leveling (https://catalog.northeastern.edu/graduate/academic-policies-procedures/course-numbering/).

Data Science Core

A cumulative GPA of 3.000 or higher is required in the following core courses.

Code	Title	Hours
Programming with Data		
DS 5110	Essentials of Data Science	4
Algorithms		
CS 5800	Algorithms	4
or EECE 7205	Fundamentals of Computer Engineering	
Machine Learning		
CS 6140	Machine Learning	4
or EECE 5644	Introduction to Machine Learning and Pattern Recognition	
Interdisciplinary Capstone		
DS 5500	Data Science Capstone	4

Data Science Concentration Options

Complete one of the following concentrations:

- Computer Science (p. 1)—Khoury College of Computer Sciences
- Data Design and Visualization—College of Arts, Media and Design

Program Credit/GPA Requirements

32 total semester hours required
Minimum 3.000 GPA required

COMPUTER SCIENCE CONCENTRATION—KHOURY COLLEGE OF COMPUTER SCIENCES

Code	Title	Hours
Complete 16 semester hours from the following:		16
CS 5100	Foundations of Artificial Intelligence	
CS 5180	Reinforcement Learning and Sequential Decision Making	
CS 5200	Database Management Systems	

CS 5330	Pattern Recognition and Computer Vision	
CS 5340	Computer/Human Interaction	
CS 5610	Web Development	
CS 6120	Natural Language Processing	
CS 6200	Information Retrieval	
CS 6220	Data Mining Techniques	
CS 6240	Large-Scale Parallel Data Processing	
CS 6350	Empirical Research Methods	
CS 6620	Fundamentals of Cloud Computing	
CS 6650	Building Scalable Distributed Systems	
CS 7140	Advanced Machine Learning	
CS 7150	Deep Learning	
CS 7180	Special Topics in Artificial Intelligence	
CS 7200	Statistical Methods for Computer Science	
CS 7250	Information Visualization: Theory and Applications	
CS 7280	Special Topics in Database Management	
CS 7290	Special Topics in Data Science	
CS 7990	Thesis	
CS 8674	Master's Project	
DS 7995	Project	
Optional Co-op		
CS 6964	Co-op Work Experience	0
or CS 6954	Co-op Work Experience - Half-Time	
or CS 6955	Co-op Work Experience Abroad - Half-Time	
or CS 6965	Co-op Work Experience Abroad	

DATA DESIGN AND VISUALIZATION–COLLEGE OF ARTS, MEDIA AND DESIGN

Code	Title	Hours
Complete 8 semester hours from the following:		8
ARTG 5150	Information Visualization Principles and Practices	
ARTG 5151	Information Design Critique Seminar	
ARTG 5330	Visualization Technologies 1: Fundamentals	
Complete 8 semester hours from the following:		8
ARTG 5310	Visual Cognition	
ARTG 6110	Information Design Theory and Critical Thinking	
ARTG 6330	Information Design Mapping Strategies	
CS 5340	Computer/Human Interaction	
CS 5610	Web Development	
CS 7250	Information Visualization: Theory and Applications	
Optional Co-op		
EEAM 6964	Co-op Work Experience	0
or EEAM 6954	Co-op Work Experience - Half-Time	
or EEAM 6955	Co-op Work Experience Abroad - Half-Time	
or EEAM 6965	Co-op Work Experience Abroad	