

DATA SCIENCE MASTER OF SCIENCE

Leading to a Master of Science Degree in Data Science

Our global society produces an unprecedented amount of data. The tools to analyze and learn from these data are also developing at an accelerated rate. Companies and researchers in a diverse range of fields, including biomedical sciences, financial services and marketing, are seeking experts who can make the most of this data revolution. Our MS in Data Science will prepare you for a career in data science. Enter a high-paying job and advance your career in one of the fastest growing fields in today's competitive job market.

Program Educational Objectives

The program educational outcomes for the Master of Science in Data Science that align with the listed graduate student learning outcomes developed by the Office of Institutional Effectiveness are as follows:

- Develop computational programming abilities to represent and explore data
- Apply statistical data analysis techniques and quantitative modelling to solve data science tasks
- Apply data munging/management principles to extract, load, process, and transform real-world data
- Be aware of ethical consequences of data-informed decision making
- Communicate data findings effectively to an audience, in oral, visual, and/or in written formats

Student Outcomes

Wentworth published the following graduate student learning outcomes developed by the Office of Institutional Effectiveness in The Wentworth Model. Our graduate students will be able to demonstrate their mastery of these skills through the coursework required in the programs. The mapping of the Learning Outcomes to coursework will be as follows:

- Core Knowledge: advanced knowledge in a specialized area consistent with the focus of their graduate program, including critical thinking and problem-solving.
- Scholarly Communication: advanced proficiency in written and oral communication, appropriate to purpose and audience.
- Professionalism: advanced intellectual and organizational skills of professional practice, including ethical conduct.
- Research Methods and Analysis: quantitative and qualitative skills in the use of data gathering methods and analytical techniques used in typical research that is consistent with the focus of their graduate program.

Total: 30 credits. The program consists of 3 Core courses and 7 Electives.

Core Courses

Course	Title	Credits
DATA6150	DATA SCIENCE FOUNDATIONS	3
DATA6000	APPLIED STATISTICS FOR RESEARCH	3
COMP6999	TECHNICAL PROJECTS DEVELOPMENT	3
Total Credits		9

Electives

Course	Title	Credits
DATA6100	DATA VISUALIZATION	3
DATA6200	DATA MANAGEMENT	3
DATA6250	MACHINE LEARNING FOR DATA SCIENCE	3
DATA6300	ADVANCED TOPICS IN LARGE LANGUAGE MODELS	3
DATA6710	APPLIED DEEP LEARNING	3
DATA6999	CAPSTONE	3
COMP5100	NATURAL LANGUAGE PROCESSING	3
COMP5705	DATA MINING	3
COMP6710	PRINCIPLES OF MACHINE LEARNING	3
COMP7010	ADVANCED ALGORITHMS	3
COMP7025	Sports Analytics	4
COMP7350	BIG DATA SYSTEMS	3
COMP7431	ADVANCED SOFTWARE ENGINEERING	3
COMP7600	THESIS	3
COMP7800	GRADUATE SPECIAL TOPICS IN APPLIED COMPUTER SCIENCE	4
AIN5720	TRUSTWORTHY GENERATIVE AI	3
AIN7001	FOUNDATIONS OF ARTIFICIAL INTELLIGENCE	3
AIN7420	DATA ENGINEERING FOR AI	3
AIN7430	PROMPT ENGINEERING	3