

Data Science

BA, BSc | www.yorku.ca/science/mathstats/data-science

Admission Requirements

BA

- ENG4U, MCV4U, MHF4U with 75% min. grade
- **Recommended:** MCV4U
- **Minimum admission average:** high 70s – mid 80s

BSc

- ENG4U, MCV4U, SBI4U or SCH4U or SPH4U, MHF4U with 75% min. grade
- **Minimum admission average:** high 70s – mid 80s

Program Overview

Students in the Data Science program will master the statistical methods, computational skills and machine learning methods that enable data scientists to extract knowledge from data. This new program is designed to address the emerging need for expertise in data science across nearly all industries.

In their studies, students will become familiar with the nature and needs of analyzing large and complex data through case studies in specific domains such as business, health, and digital media, and through a capstone experience that engages students in research with data in an industrial setting.

Each student chooses a stream, which is a field of study outside data science in which they take courses. Their capstone course will use data from that stream. The streams are:

- **Business** (Schulich School of Business)
- **Health** (School of Health Policy & Management)
- **Computational Arts** (School of the Arts, Media, Performance & Design)

The Data Science program is designed to prepare students for meaningful employment in data science related positions, whether in private, public, or non-profit organizations. Students will not only master the hands-on skills necessary for initial employment, but also become able, creative, curious, and entrepreneurial thinkers who can thoughtfully contribute to a world of rapid technological change.

First Year Courses

- Introduction to Data Science
- Python Programming
- Applied Calculus
- Discrete Math for Computer Science
- Applied Linear Algebra
- Introduction to Statistics

Students in the BSc degree will also take courses in the other science fields, such as Biology, Chemistry, or Physics.

Second Year Courses

- Principles and Techniques of Data Science
- Communication in Data Science
- Data Structures
- Probability and Statistics

Upper Year Options

- Database Management
- Data Analytics
- Data Visualization
- Ethics of Data Science
- Simulation and the Monte Carlo Method
- Regression Analysis
- Statistical Machine Learning
- Data Science Capstone Course

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Experiential Education

Full-time Data Science students at York are eligible to join the Science Co-op Program. This program allows you to gain professional, paid work experience related to your program of study.

During work terms, you will have the opportunity to apply your classroom learning in a real work environment. The program provides flexibility, allowing you to choose how much work experience you would like to gain (minimum 8 months, maximum 20 months) throughout your degree.

Visit yorku.ca/science/students/experiential-education/ for more information.

Possible Career Pathways

The Data Science program provides students with the knowledge, skills, and credentials they desire to successfully transition into rewarding and impactful careers. They will have career opportunities in the whole data science pipeline, from data acquisition and transformation to visualization, model selection, and deployment into fully functional production systems.

- Data Scientist
- Data Analyst
- Machine Learning Engineer
- Data Architect
- Business Analyst
- Market Analyst
- Data Engineer

All York University students also have access to **The Career Centre**. Our Career Centre team provides resources and supports including, but not limited to, career fairs, employer networking events, skills development workshops, career counselling, and interview practice sessions.

Visit careers.yorku.ca to learn more.

Get In Touch

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