

Actuarial Science

BA | www.yorku.ca/science/mathstats/actuarial-science



Admission Requirements

- ENG4U, MHF4U
- **Recommended:** MCV4U
- **Minimum admission average:** high 70s – mid 80s

Program Overview

Actuaries are quantitative risk professionals that apply methods from mathematics, statistics, economics, finance, accounting and behavioural sciences to measure and manage risk in such areas as insurance (e.g., loss of life, natural catastrophe, business continuity), banking (investments and product management), hedge funds (mergers and acquisitions), government, consulting and more. Irrespective of the source, be it the US News and World Report, the Jobs Rated Almanac, CNN Money or others, all agree that the Actuarial profession offers salary, career growth, job security, and work environment that almost no other profession offers.

We offer a Specialized Honours BA in Actuarial Science, an Honours BA in Actuarial Science, and a Professional Certificate in Actuarial Science. The two Honours degrees (four years of full-time studies plus optional internship terms) are a great option for students who want comprehensive undergraduate training in Actuarial Science and Risk Management. The Certificate in Actuarial Science (two years of part-time studies plus optional internship terms) is a great option for career changers.

Our curriculum prepares you for attaining the designation of Associate from the Society of Actuaries or the Casualty Actuarial Society, and provides solid and rigorous training in both quantitative and qualitative aspects of the Actuarial profession to jump-start your career in industry, government or graduate studies.

Two distinctive features of our Actuarial Science program are a dynamic Student Club (ASAYU) and the sponsoring Risk and Insurance Studies Centre (RISC). ASAYU and RISC will make your undergraduate experience - from your first class till your first job – into an exceptional educational, professional, and personal journey.

First Year Courses:

- Principles of Risk Management
- Micro and Macro Economics
- Calculus and Linear Algebra
- Problems, Conjectures and Proofs
- Writing: Methods and Models

Second Year Courses:

- Mathematical Theory of Interest
- Models in Financial Economics
- Accounting
- Computing for Math and Statistics
- Real Analysis
- Probability and Statistics

Upper Year Options:

- Mathematics of Life Contingencies
- Loss Models and Risk Measures
- Ruin Theory and Credibility
- Data Science
- Stochastic Processes
- Corporate Finance



Emmanuella Sowah, 2022 Actuarial Science Graduate, Actuarial Analyst with Mercer

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Experiential Education

RISC provides a rich diversity of opportunities for Actuarial Science undergraduate students to engage in Experiential Education.

- Students have the opportunity to get hands-on, paid, actuarial work experience through our **Internship Program**. Interning students begin their work term(s) after the 2nd year of classroom study and can take part in 4, 8, 12, or 16 months of work before returning to school. Examples of employers are: Canada Life, Sun Life Financial, Manulife, Aviva Canada, Wawanesa Insurance, Mercer, Aon, PwC, Milliman, E&Y, RBC, TD, Cooperators, and many others.
- We offer a unique paid **Hybrid Academia-Industry Internship via Virtual Engagement (HAIiVE) program** that aims to bridge between the in-class course-based learning and full-fledged internships with a company. In 2022, HAIiVE internships revolved around cyber risk, climate risk, credit risk, longevity risk and demographic projection, retention risk, automation with AI risk, etc. 2022 HAIiVE Industry partners include, e.g., Clearsum, Canada Life, PwC, Desjardins, CIBC, RBC, WSIB, York Risk Management Unit, RBC Insurance.
- There are ample opportunities for students to engage in **applied research projects**. In 2022, we had students working on such fascinating research topics as cryptocurrency-related financial portfolio risk, mortgage insurance pricing, annuity puzzle and pricing of retirement products, among many others.
- In the Principles of Risk Management and Insurance course, students engage in an in-class **business simulation** component. In this simulation, student teams gain important hands-on experience running insurance companies in a competitive market environment.
- We provide unique **networking/learning opportunities** with/ from C-suite executives in today's risk management and insurance landscape. Some of the guests in 2022 were, e.g., Saad Mered, CEO of Zurich Insurance; Alister Campbell, President and CEO of PACICC; Carol Jardine, President Wawanesa Insurance Canada, etc.
- Students can attend **hiring and info sessions** with various Employers throughout the year as well as special professional development and career coaching with exceptional and experienced career coaches.

Visit www.riscyu.org for more information.

Possible Career Pathways

Graduates from the Actuarial Science program work in the following positions, among other ones:

- Actuary
- Quantitative Risk Analyst
- Financial Business Analyst
- Data Analyst Business-Risk
- Financial Consultant
- Insurance Consultant
- Risk Manager
- Post Graduate Studies and Academic Career

Get In Touch

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Leonard Buglak, 2022 Actuarial Science Graduate, Actuarial Analyst with Sun Life Financial



Oscar Catsro, 2022 Actuarial Science Graduate, Actuarial Analyst with Manulife