

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 Insurance Risk Management. The Certificate in Actuarial Science (two years of part-time studies plus optional internship terms) is ideal for career changers and students from other majors who are exploring careers in insurance and risk management.

Our curriculum prepares you for attaining the designation of Associate from the **Society of Actuaries**, the **Casualty Actuarial Society**, or the **Canadian Institute of Actuaries** 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.

Our program stands out due to three features: **ASAYU**, York's dynamic student club, connects you with peers, faculty, and industry professionals from day one. A unique **Principles of Risk Management course**, taught by industry leaders, brings biweekly executive guest speakers and a business simulator where you will experience running an insurance company in a competitive environment. Finally, the **HAIiVVE program**, a paid inter-university internship platform through the RISC Foundation, gives you hands-on industry experience while you study and earn. Together, these opportunities set you apart academically, professionally, and personally.

First Year Courses

- Principles of Risk Management
- Micro and Macro Economics
- Calculus and Linear Algebra
- Problems, Conjectures and Proofs
- Accounting

Second Year Courses

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

Upper Year Options

- Life Contingencies
- Loss Models and Risk Measures
- Ruin Theory and Credibility
- Pricing and Reserving in P&C Insurance
- Data Science
- Stochastic Processes
- Corporate Finance



Yash Patel
Actuarial Science - 2025
Actuarial Analyst with
Empire Life

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Experiential Education

Our students benefit from a wide range of internship opportunities in actuarial science and insurance risk management, gaining valuable paid work experience before graduation. After completing their second year of study, students begin their work terms of varying length - 4, 8, 12, or even 16 months of professional experience - before returning to complete their degree. Employers include leading organizations such as Sun Life, Canada Life, EY, RBC, TD, and many others, giving students an excellent career start.

In partnership with RISC Foundation, we offer a unique paid interdisciplinary and interuniversity **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 2025, HAIiVE internships focused on cyber-, climate-, AI- risks, and natural assets management. 2025 HAIiVE Industry partners were, e.g., CIBC, Munich Re, HSB Canada, Aviva Canada, and UN's ILO.

There are ample opportunities for students to engage in **applied research projects**. In 2025, we had students working on such fascinating research topics as cryptocurrency-related financial portfolio risk, carbon emission assessment in large commercial portfolios, cyber-insurance pricing, annuity puzzle, and pricing of retirement products.

We provide unique **networking/learning opportunities** with/from C-suite executives in today's risk management and insurance landscape. Some of the guests have been, 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 career coaching with exceptional and experienced career coaches.

Possible Career Pathways

Graduates from the Actuarial Science program can continue their education in their post graduate studies, or move directly into their career. Positions that our graduates have entered include:

- Actuary
- Insurance Consultant
- Quantitative Risk Analyst
- Risk Manager
- Financial Business Analyst
- Data and Business-Risk Analyst
- Financial Consultant

Get In Touch

Domestic Students:

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International Students:

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RISC:

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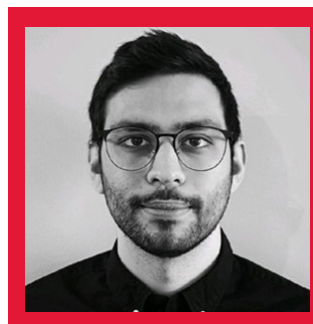
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