

ACTUARIAL SCIENCE – HOW TO BECOME AN ACTUARY

PRESENTERS: ADAM SZOCS AND MIRANDA RAMNARAINÉ



WHO ARE WE

- Adam Szocs
 - 4th year – Mathematics for Commerce (Actuarial Science Stream)
 - Former Class Representative, Current Peer Mentor & Student Ambassador
 - VP of Internal Marketing within ASA
- Miranda Ramnaraine
 - 3rd year – Chemistry
 - Former Class Representative, Current Peer Mentor

PURPOSE OF THIS SEMINAR

- Targeted to;
 - Anyone in the program who wants to learn more or needs guidance
 - People who are interested in Actuarial Science and York's program
 - People who are not familiar with York's program and the Actuarial career
- Opportunity to meet people from the program and speak with our qualified guest speaker
- Ask Questions!

AGENDA

- What is an Actuary?
- Actuarial Science at York U
- Actuarial Exams
- Internships
- Career options/paths
- Guest speaker(s)/Q&A

WHAT IS AN ACTUARY AND WHAT DO THEY DO?

- Google definition; a person who **compiles and analyzes statistics** and uses them to calculate insurance **risks and premiums**.
- Actuaries **manage risk**. With the best analytical skills, they help organizations plan for the future and protect themselves from loss.
- Actuaries play a key role in the psychological, physical, and financial stability of society.
- With the help of an Actuary, businesses can grow and retirees can invest with confidence.

ACTUARIES ARE EXPERTS IN

- Mathematics, Economics, Risk, and Insurance
- Evaluating the likelihood of future events with statistics and numbers.
- Designing creative ways to reduce the outcome of undesirable events.
- Decreasing the impact of the undesirable events that do occur



ACTUARIAL SCIENCE A YORK UNIVERSITY

THE ACTUARIAL STUDENTS ASSOCIATION (ASA)

- **Presidents:** Yael Sulkin and Ariela Rubanovski
- The ASA is the official student club that represents all Actuarial students at York University. The Actuarial Student Association is envisioned to aid students to succeed in the Actuarial world by devising activities that will help them academically and professionally. Some of the things we offer:
 - Tutorials for P and FM exams
 - Info and Networking sessions + possibly recruitment
 - Case Competitions
 - Socials and much more!
- Follow us on **Facebook:** [**Actuarial Science Student Association at York University**](#)

YORK UNIVERSITY ACTUARIAL SCIENCE PROGRAM

- Actuarial Science, B.A. (formerly Mathematics for Commerce)
 - There are 3 possible routes within the program;
 1. Specialized Honours B.A. (120 credits)
 2. Honours B.A. (120 credits)
 3. B.A. (90 credits)
- Visit the program website to get more info:
http://mathstats.info.yorku.ca/files/2014/09/SupplementalCalender2017_2018.pdf
- Or contact the Program Director, Professor Edward Furman: efurman@mathstat.yorku.c

Specialized Honours (120 Credits)

	Fall Term	Winter Term
Year 1	MATH 1300 3.00 (core) MATH 1021 3.00 (core) MATH 1131 3.00 (core, Exam P of the SoA)	MATH 1310 3.00 (core) MATH 2022 3.00 (core)
	MATH 1200 3.0 (Year) (core) AP/WRIT 1702 6.00 (GENED) ECON 1000 3.00 (suggested elective — VEE of the SoA) ECON 1010 3.00 (elective — VEE of the SoA)	
Year 2	MATH 2030 3.00 (core, Exam P of the SoA) MATH 2280 3.00 (Exam FM of the SoA) MATH 2310 3.00 (core) ECON 2310 3.00 (elective, prerequisite)	MATH 2131 3.00 (Exam P of the SoA) MATH 2281 3.00 (Exam MFE of the SoA) LE/EECS 1560 3.00 ECON 2350 3.00 (elective, prerequisite)
	Six additional credits in general education	
Year 3	MATH 3131 3.00 (Exam C of the SoA) MATH 3280 3.00 (Exam MLC of the SoA) MATH 3330 3.00 (VEE of the SoA) MATH 4430 3.00 or MATH 4431 3.00 (Exam MLC of the SoA) ECON 4400 3.00 (elective, VEE of the SoA)	MATH 3281 3.00 (Exam MLC of the SoA) ECON 4410 3.00 (elective, VEE of the SoA)
	Six additional credits in general education, 3 additional elective credits at the 3000 level	
Year 4	MATH 4280 3.00 (Exam C of the SoA) MATH 4130B 3.00 (VEE of the SoA) MATH 3 § YZ 3.00 MATH 4 § YZ 3.00	MATH 4281 3.00 (Exam C of the SoA) MATH 3 § YZ 3.00 MATH 4 § YZ 3.00
	Six additional credits in general education, 15 additional elective credits of which at least 3 are at the 3000 level	

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ACTUARIAL COURSES AT YORK U

- The courses in the following bullets are offered at York University and are designed to help take the following 5 Actuarial Exams;
 1. Exam P – *Probability*
 2. Exam FM – *Financial Mathematics*
 3. Exam MLC – *Life Contingencies*
 4. Exam MFE – *Financial Economics*
 5. Exam C – *Construction & Evaluation of Actuarial Models*
- MATH 2280 – *Mathematics of Investments*
- MATH 2281 – *Financial Economics*
- MATH 3280 – *Life Contingencies 1*
- MATH 3281 – *Life Contingencies 2*
- MATH 4280 – *Risk Theory (Loss Models and Risk Measures)*
- MATH 4281 – *Risk Theory (Ruin and Credibility)*

■ **Note:** There are prerequisites for each of these courses and are not sufficient in achieving your degree.



ACTUARIAL EXAMS



PROCESS

- Actuarial Exams are demanding and are designed to be the most challenging part of a prospective Actuary's journey to becoming successful.
- The first five exams, which are preliminary, consist mainly of core mathematics related to actuarial science and cover topics such as; probability, statistics, interest theory, life contingencies, and risk models.
- The preliminary exams are usually not changing much at all, however recently there was a shift in material from one exam to the other.

PROCESS

- Upper-level exam topics for the FSA (Fellow of Society of Actuary) designation include;
 - Plan Design
 - Risk Classification
 - Enterprise Risk Management
 - Ratemaking
 - Valuation

PROCESS

- There is more info on the different types of designations, however the path to becoming a Fellow or another designation of Actuary may slightly change every few years depending on what the association sees to fit best.
- A candidate will choose a specialized track and take three fellowship exams, the options for the specialized track are;
 - Finance & Enterprise Risk Management
 - Investments
 - Individual Life Insurance & Annuities
 - Retirement Benefits
 - Group & Health Insurance
 - General Insurance
- For more info → <https://www.soa.org/education/exam-req/edu-asa-req.aspx>

REGISTRATION

- Registration is quite simple, depending on what country you live in the process will differ. In Canada, the P and FM exams are every other month, so one of them is offered every month.
- About 1-2 months before you want to write your exam, visit <https://www.soa.org/member/>, and there you can register for the exam. You will have the option of selecting a certain day and time within the interval that they offer for that month.
- It is between \$200-\$300 to register per exam.
- The website has all the information you need to know regarding the exams.

TIPS

- Start studying 3-4 months before you expect to write your exam, and sign up as soon as you see the window open, in order to get a preferred date and time!
- When you are signing up for the exam, you should have already covered at least 90% of the material from the manual, and you should dedicate the last 1-2 months before your exam to practicing exam questions. Practice exam questions can be found in the manual, you can sign up for ADAPT (next slide), or use any questions you can find online.
- For your first preliminary exam, pick an exam that you feel more comfortable with doing, or a topic you have studied before.
- **Remember** that these tips may work for many, but that does not mean they are the only way to study and it is important to find the path you are most comfortable with!

ADAPT: COACHING ACTUARIES

- Online program dedicated to practicing for Actuarial Exams.
- Unlimited quizzes and practice exams, there are different packages you can choose for yourself and different intervals that you can purchase it for.
- Written + Video Solutions → <https://www.coachingactuaries.com/>
- **Note:** There are other places to study such as the manuals, The Infinite Actuary and others, they are mostly similar.



INTERNSHIPS / ASNA



INTERNSHIPS

- Like many careers, there is no “set” path that you must take to become an Actuary.
- Many people come from all different types of mathematical and statistical backgrounds to explore the exams and give the demanding career a shot. However, many people start off with finding internships through school, self pursuit, connections, career fairs or conventions.
- Internships are a great way to gain experience by actually getting training on the job, being around successful people and being involved in an environment that you most likely have not experienced in the past. Depending on the company, these may be paid or unpaid, but they are usually offered for the summer or one of the Fall/Winter terms.

ACTUARIAL STUDENTS NATIONAL ASSOCIATION (ASNA)

- ASNA was founded in 1989, and it is an annual convention designed specifically for Actuarial Science students, and people who are interested in the career as a whole.
- It is held on the 1st or 2nd weekend of the year and it is held in many large cities throughout Canada, some cities it has been held in are; Toronto, Niagara Falls, Montreal, Quebec City, Calgary, Winnipeg and others!
- Hosts over a dozen universities annually and offers numerous professional opportunities. They have established a respected brand within the actuarial community and there are many different events during the weekend.
- <https://www.anea-asna.ca/>

ACTUARIAL STUDENTS NATIONAL ASSOCIATION (ASNA)

- Events;
 - Mingling events, networking sessions, meet and greet...
 - Career Fairs (internship, part time and full time opportunities)
 - Lunches and Dinners
 - Panels and Seminars
 - Club Night and Social Night (held by Manulife in the last 3 years)
 - If you're qualified and lucky as well, you could get coffee connections or interviews on the weekend so bring your resume and look sharp!
- There are volunteering opportunities on the weekend, it is a great way to get closer to your peers from school, get an experience in facing large companies, talking to important people and developing your interview/public speaking skills!



CAREER OPTIONS



OPTIONS WITHIN THE ACTUARIAL SCIENCE CAREER

- Possible Positions;
 - Actuarial Analyst, Actuarial Associate, Actuarial Technician...etc.
- Departments;
 - Health Insurance, Life Insurance, Property and Casualty Insurance, Pension and Retirement Insurance, Enterprise Risk Insurance...etc.
- Companies;
 - Blue Cross Blue Shield, Milliman, Towers Watson, Wellcare, Sun Life, Manulife, Mercer, Aviva...etc.

SKILL SETS AND IMPORTANT QUALITIES

- Other than degrees, exams and experience, these are some things that employers look for in candidates. It is important to show these in previous employments in case your former employers are contacted and also to show in your first face to face experience..., first impressions are important!
 - Leadership
 - Critical thinking
 - Problem solving
 - Oral and written communication
 - Organizational skills
 - Computer literacy
 - Team player
 - Ability to analyze and interpret data

OPTIONS OUTSIDE THE ACTUARIAL SCIENCE CAREER (RELATED)

- As an actuary position has many aspects related to finance, economics, statistics, probability and mathematics, any position that is somewhat related to any of these subjects could fit well into a job that wouldn't be similar, but somewhat related to the job. Some examples are:
 - Insurance Underwriters (review insurance applications to determine risk involved)
 - Budget Analysts
 - Accountants
 - Auditors
 - Math/Business Teachers
 - Economists
 - Financial Analysts
 - Credit Analysts and much more!

GUEST SPEAKER

Divya Chaturvedi

- Completed co-op at Sun Life Financial, in the Group Retirement Services Department for Actuarial financial reporting
- Studying in the Mathematics for Commerce Program (Actuarial Stream)

QUESTION?

- EMAIL: aszocs@my.yorku.ca