MacEwan UNIVERSITY | CAREERS AND EXPERIENCE

What can I do with a major in MATHEMATICS?

SKILLS AND KNOWLEGE THAT MATHEMATICS GRADUATES POSSESS:

- strong critical thinking that enables the assimilation of new information and the ability to adapt quickly to a new work environment
- ability to analyze and solve a problem through alternative perspectives
- skills to gather data for analysis and to draw conclusions based on evidence
- ability to apply mathematical reasoning to identify and solve everyday problems
- ability to select and apply appropriate mathematical models to describe and understand real world phenomena
- awareness of questions to which mathematics can provide answers

It is important to enhance and diversify your skills and knowledge with work, volunteer, research and field study experiences while in university.

EXAMPLES OF CAREER PATHS MATHEMATICS GRADUATES HAVE PURSUED:

Mathematics graduates can pursue a variety of career paths, including those that might not seem to have a direct connection to mathematics at first glance. The following is a non-exhaustive list of some examples:

DIRECT career paths: The skills and knowledge acquired in a mathematics education are often required or considered an asset in the following positions.	**RELATED career paths**: The skills and knowledge obtained in a mathematics education are considered applicable in the following positions.	The following paths may require **FURTHER STUDY or SPECIALIZED TRAINING*** in addition to a Bachelor of Science in mathematics.
Data Analysts–Logisticians gather, interpret and draw conclusions from data to improve efficiencies within an organization. Usually reporting to a management team, they work in a wide range of industries and companies including insurance, higher education, government, and consulting and information technology firms.	**Financial Planners** develop personal financial plans for individuals and families by analyzing clients' net worth, financial resources, lifestyle preferences and goals, and making recommendations regarding how clients can achieve their financial goals. They work independently or within financial institutions and companies.	**Lawyers** use analytical and logical thinking to research and interpret points of law. They use problem solving skills to advise and represent clients on legal matters and draw up legal documents. They plead cases and conduct prosecutions in courts of law. They work for law firms and governments.
Cryptographers/Cryptanalysts use mathematical techniques to evaluate cryptographic algorithms and provide guidance on the design and development of cryptographic systems. They typically work for CSEC (Communications Security Establishment Canada) or IT security companies.	**Operations Research Analysts** use advanced mathematical and statistical techniques to investigate, identify and come up with solutions for problems in companies to help them make decisions to improve operational efficiency and cost-effectiveness. They work in every industry including manufacturing, finance and government.	**Optometrists** use mathematical skills to identify sightlines and vision angles in eye exams and to measure abnormalities to determine prescriptions for corrective lenses. They diagnose and treat disorders and diseases of the human eye. They work in private practices, clinics, and shops.
Market Research Analysts gather and analyze data about customers and their responses to products and services. This information is used to improve market success. Advertising agencies, consulting firms, and corporations are some of the common employers.	**Data Scientists—Mathematics** apply mathematical reasoning and design data modeling processes to extract, analyze and convert data into information to help companies meet their business goals. They work in universities, research institutions, specialized government departments and businesses.	**Dentists** use analytical and mathematical skills in tooth classification, calculation of medications and anesthetics, and measurement of teeth. They diagnose, treat, prevent and control diseases of the teeth, mouth, gums and jaw. They work in private practices, clinics and government agencies.
Computer Science Analysts improve the computer systems of organizations in collaboration with stakeholders, taking into consideration both IT and business priorities. They work in information technology departments in companies, firms, government and education. (Courses in information science are preferred.)	**Investment Analysts** research, analyze and provide information on market trends and predictions to determine and make recommendations on investment potential. Usually reporting to the management team, they work for banks, investment management firms, insurance companies and stockbrokers.	**NOTE: Qualifications for similar jobs might vary depending on the employer. Try checking with the employer(s) you're interested in working for to see what they require and recommend in terms of education and/or experience.*

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WANT MORE INFORMATION? CHECK OUT THE FOLLOWING RESOURCES:

Available In MacEwan University Libraries:

- Great Careers for People Interested in Math & Computers – *Margaret Zinz Jantzen*
- Math at Work: Using Numbers on the Job – *Elka Torpey*
- 101 Careers in Mathematics – *Deanna Haunsperger*
- Dream Jobs in Math – *Julia Smith*
- Great Jobs for Math Majors – *Stephen E. Lambert & Ruth DeCotis*

Additional Resources (Available Online):

- CMS-SMC: Canadian Mathematical Society
- The Canadian Applied and Industrial Mathematics Society
- Canadian Institute of Actuaries (CIA)
- Appraisal Institute of Canada (AIC)

WANT TO DISCUSS YOUR OPTIONS WITH SOMEONE?

- Book an appointment on **MacEwanLife** under "Career Advice and Support."
- Talk to a **mathematics discipline advisor**

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