MATHEMATICAL SCIENCES (HBSc)
Department of Mathematical & Computational Sciences

 mathematical sciences teaches one to think analytically and creatively. It is a foundation for advanced careers in a knowledge-based economy. The past century has been a remarkable one for discovery in mathematics. Problems in computer science, physics, biology, and economics have opened new fields of mathematical inquiry, and discoveries at the most abstract level, for example in number theory, have led to breakthroughs in applied areas. Our award winning faculty bring knowledge and experience from a variety of backgrounds. Your time in this program will be enriched with independent study courses and Research Opportunity Program (ROP) courses, as well as small group projects and thesis courses with the faculty.

MAKE THE MOST OF YOUR TIME AT UTM!

We want to help you maximize your university experience, so we’ve pulled together information and interesting suggestions to get you started, although there are many more! As you review the chart on the inside pages, note that many of the suggestions need not be restricted to the year they are mentioned. In fact, activities such as joining an academic society, engaging with faculty and seeking opportunities to gain experience should occur in each year of your study at UTM. Read through the chart and create your own plan using My Program Plan found at www.utm.utoronto.ca/program-plans

Programs of Study (POSs)
• Specialist Program ERSPE2511 Mathematical Sciences (Science)
• Major Program ERMAJ2511 Mathematical Sciences (Science)
• Minor Program ERMIN2511 Mathematical Sciences (Science)

Check out...
What’s a strange attractor? Take MAT332H5 to learn about bifurcation theory, chaos and fractals. Discover the beauty of proofs in MAT309H5, the elegance of the prime numbers in MAT315H5 or the intricate relationships within groups and fields in MAT401H5.

What can I do with my degree?
The career you choose will depend on your experience and interests. Visit the Career Centre to explore your career options.

Careers for graduates: Market research analyst; Mathematical technician; Purchaser; Actuary; Secondary school teacher; Numerical analyst; Operations research analyst; Budget analyst; Insurance underwriter; Logistics specialist; Risk analyst; Supply chain system analyst.

Workplaces: Government; Banks; Investment firms; Insurance; Retail; Research and development firms.
# HOW TO USE THIS PROGRAM PLAN
Read through each year. Investigate what appeals to you here and in any other Program Plans that apply to you. Visit [www.utm.utoronto.ca/program-plans](http://www.utm.utoronto.ca/program-plans) to create your own plan using My Program Plan. Update your plan yearly.

**MATHMATICAL SCIENCES**

## MAJOR Program Plan

### HOW TO USE THIS PROGRAM PLAN
- [www.utm.utoronto.ca/program-plans](http://www.utm.utoronto.ca/program-plans) for the online version and links.

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### 1ST YEAR
- Choose a program of study (Subject POS) once you complete 4.0 credits. Use the Degree Explorer and the Academic Calendar to plan your degree.
- Develop foundational academic skills and strategies by enrolling in a uLearn course. Build community and gain academic support through LAUNCH. Join a RGASC Peer Facilitated Study Group.

### 2ND YEAR
- Enrol in courses MAT202H5, 232HS/233HS/257YS, 224HS/247HS and 244HS.
- Consider applying for the Research Opportunity Program (ROP) course MAT299Y. Visit the EEU website for ROP Course Prerequisites. Attend the RGASC’s Program for Accessing Research Training (P.A.R.T.) to enhance your research skills.
- Use the Career Learning Network (CLIN) to find postings for on- and off-campus work and volunteer opportunities. Work on-campus through the Work-Study program. View position descriptions on the CLIN.

### 3RD YEAR
- Enrol in STA256H5 or attain 0.5 MAT credits at the 300+ level.
- Throughout your undergraduate degree:
  - use the Degree Explorer to ensure you complete your degree and program requirements.
  - see the Office of the Registrar and the MCS Undergraduate Counsellor.
- Consider a practical work-based experience through UofT’s Professional Experience Year — Canada’s largest undergraduate paid internship program that offers 12- to 16-month work placements. Speak to the MCS Undergraduate Counsellor.
- Establish a professional presence on social media (e.g., LinkedIn).
- Earn credits overseas! Apply to study for a summer, term or year at one of 140+ universities. The MCS department has identified partners which are most relevant to our students. Speak to the IEC for details about Course Based Exchange, funding and travel safety.
- Learn about working abroad. Read up on worldwide employment trends and industry outlooks through GoinGlobal. Attend the Go Global Expo. See if you are eligible for International Experience Canada.
- Market your skills to employers. Get your resume critiqued at the CC. Attend the CC workshop Now That I’m Graduating What’s Next?
- Write a strong application for further education. Attend the CC’s Mastering the Personal Statement workshop.

### 4TH OR FINAL YEAR
- Enroll in an Independent Study Course to expand your knowledge beyond the regular courses and work closely with a faculty member.
- Skills are transferrable to any job regardless of where you develop them. Need to strengthen your collaboration skills? Inspire young minds to enjoy and pursue math; ask to volunteer for Math Circles or the Canadian Math Kangaroo Contest (both offered through the MCS department). Speak to the MCS Undergraduate Counsellor.
- What’s your next step after undergrad?
- Considering further education? Research application requirements, prepare for admission tests (LSAT, GMAT) and research funding options (OGS, SSHRC).

### BUILD SKILLS
- Networking simply means talking to people and developing relationships with them. Start by joining the Mathematical and Computational Sciences Society (MCSS). Follow us on LinkedIn.
- Engage in programs like the Global and Intercultural Fluency Training Series (GIFTS) or learn about and prepare for a future UTM Abroad Experience through the IEC to strengthen and enhance your intercultural skill set, and learn about other cultures while sharing your own!
- Attend events held by the International Education Centre (IEC), whether you are an international or domestic student. Explore your culture and other cultures through programs like the UTM Library Reference Desk, Study Abroad Planning, and the Actuarial Students National Association Convention.
- Attend the Job Shadowing Program. Associate with alumni and peers. Participate in student led programs like the MAT Course Based Exchange (MCSS)
- Attend the Mastering the Personal Statement workshop.
- Establish a professional presence on social media (e.g., LinkedIn).
- Join a professional association. Check out the Canadian Mathematical Society.
- Go to the Canadian Undergraduate Mathematics Conference or the Actuarial Students National Association Convention.
- Earn credits overseas! Apply to study for a summer, term or year at one of 140+ universities. The MCS department has identified partners which are most relevant to our students. Speak to the IEC for details about Course Based Exchange, funding and travel safety.
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### BUILD A NETWORK
- Get to know your TA. View the Math Learning Centre Schedule on the MCS departmental website. Visit the UTM Library Reference Desk.
- Attend the Seminar Series and other events held by the Mathematical and Computational Sciences Society (MCSS). Follow us on LinkedIn.
- Networking simply means talking to people and developing relationships with them. Start by joining the Mathematical and Computational Sciences Society (MCSS). Follow us on LinkedIn.
- Engage in programs like the Global and Intercultural Fluency Training Series (GIFTS) or learn about and prepare for a future UTM Abroad Experience through the IEC to strengthen and enhance your intercultural skill set, and learn about other cultures while sharing your own!
- Attend events held by the International Education Centre (IEC), whether you are an international or domestic student. Explore your culture and other cultures through Language Conversation Circles, debates, and activities to enhance your global and intercultural mindset.

### BUILD A GLOBAL MINDSET
- Attend events held by the International Education Centre (IEC), whether you are an international or domestic student. Explore your culture and other cultures through weekly/regular conversations. Language Conversation Circles, debates, and activities to enhance your global and intercultural mindset.
- Attend the Job Shadowing Program. Associate with alumni and peers. Participate in student led programs like the UTM Course Based Exchange (MCSS) or learn about and prepare for a future UTM Abroad Experience through the IEC to strengthen and enhance your intercultural skill set, and learn about other cultures while sharing your own!
- Attend the Mastering the Personal Statement workshop.
- Establish a professional presence on social media (e.g., LinkedIn).
- Join a professional association. Check out the Canadian Mathematical Society.
- Go to the Canadian Undergraduate Mathematics Conference or the Actuarial Students National Association Convention.
- Earn credits overseas! Apply to study for a summer, term or year at one of 140+ universities. The MCS department has identified partners which are most relevant to our students. Speak to the IEC for details about Course Based Exchange, funding and travel safety.
- Learn about working abroad. Read up on worldwide employment trends and industry outlooks through GoinGlobal. Attend the Go Global Expo. See if you are eligible for International Experience Canada.
- Market your skills to employers. Get your resume critiqued at the CC. Attend the CC workshop Now That I’m Graduating What’s Next?
- Write a strong application for further education. Attend the CC’s Mastering the Personal Statement workshop.

### PLAN FOR YOUR FUTURE
- Attend the Program Selection & Career Options workshop offered by the Office of the Registrar and the CC.
- Check out Careers at Major at the CC to see potential career options.
- Explore careers through the CC’s Job Shadowing Program.
- Considering further education? Attend the CC’s Further Education Showcase. Talk to professors – they are potential mentors and references.
- What’s your next step after undergrad?
- Considering further education? Research application requirements, prepare for admission tests (LSAT, GMAT) and research funding options (OGS, SSHRC).

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*Consult the Academic Calendar for greater detail on course requirements, program notes and degree requirements.
Skills developed in Mathematical Sciences

To be competitive in the job market, it is essential that you can explain your skills to an employer. Visit the Career Centre to learn how to articulate and market the following skills:

Critical thinking & communication: construct sound arguments and expose illogical ones; collaborate with others; and effectively communicate ideas and abstract concepts.

Problem solving: approach problems from different angles to identify key issues and apply a range of mathematical skills to different situations.

Abstraction: understand mathematical concepts, the rules of logic, and how to reason with them to solve problems of impressive complexity.

Investigation & organization: analyze large quantities of numerical data; find patterns and draw conclusions, as well as present mathematical arguments with accuracy.

Get involved

Check out the 100+ student organizations on campus. Here are a few:

- Mathematical and Computational Sciences Society (MCSS)
- UTM Student Union (UTMSU)
- UTM Athletics Council (UTMAC)

For a listing of clubs on campus visit www.utm.utoronto.ca/clubs.

Services that support you

- Accessibility Services (AS)
- Career Centre (CC)
- Centre for Student Engagement (CSE)
- Experiential Education Unit (EEU)
- Health & Counselling Centre (HCC)
- Indigenous Centre (IC)
- International Education Centre (IEC)
- Office of the Registrar (OR)
- Recreation, Athletics and Wellness Centre (RAWC)
- Robert Gillespie Academic Skills Centre (RGASC)
- The Math Learning Centre (MLC)
- UTM Library, Hazel McCallion Academic Learning Centre (HMALC)

FUTURE STUDENTS

Admission to UTM

All program areas require an Ontario Secondary School Diploma, or equivalent, with six Grade 12 U/M courses, or equivalent, including English. The admission average is calculated with English plus the next best five courses. The Grade 12 prerequisites for this program are Advanced Functions and Calculus. The approximate average required for admission is low to mid 80s. More information is available at utm.utoronto.ca/viewbook.

NOTE: During the application process, applicants will select the Computer Science, Mathematics & Statistics admissions category but will not officially be admitted to a formal program of study (Specialist, Major, and/or Minor) until after first year.

Sneak Peek

Where does Mathematics derive its great power from? Find out in MAT202H5 – a course that looks at abstraction and its power through a study of topics from discrete mathematics. Dive in to Linear Algebra in MAT240H5! Topics include Vector spaces over arbitrary fields, linear equations and matrices, bases and linear independence, diagonalization, the characteristic and minimal polynomials as well as the Cayley-Hamilton theorem.

Student Recruitment & Admissions

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Mississauga ON Canada L5L 1C6
905-828-5400
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