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 (POSt)

- 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 to create your own plan using My Program Plan. Update your plan yearly.

1ST YEAR
Choose a program of study (Subject POSt) 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 utmONE course. Build community and gain academic support through LAUNCH. Join a RGASC Peer Facilitated Study Group.

SKILLS
Facilitated Study Group.

BUILD A NETWORK
Networking simply means talking to people and developing relationships with them. Start by joining the Mathematical and Computational Sciences Society (MCSS). Follow them @MCSSUofT.
Get to know your TA. View the Math Learning Centre Schedule on the MCS departmental website. Visit the UTM Library Reference Desk.

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.

PLAN FOR YOUR FUTURE
Attend the Program Selection & Career Options workshop offered by the Office of the Registrar and the CC.
Check out Careers by Major at the CC to see potential career options.

Consult the Academic Calendar for greater detail on course requirements, program notes and degree requirements.

2ND YEAR
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.

BUILD A NETWORK
Use the Co-Curricular Record (CCR). Search for opportunities beyond the classroom, and keep track of your accomplishments.
Attend the Get Experience Fair through the Career Centre (CC) to learn about on- and off-campus opportunities.

BUILD A GLOBAL MINDSET
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!

PLAN FOR YOUR FUTURE
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.

3RD YEAR
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.

4TH OR FINAL YEAR
Enrol in an Independent Study Course to expand your knowledge beyond the regular courses and work closely with a faculty member.
Apply to become a mathematics teaching assistant. Polish your communication and presentation skills, and help first and second year students with their math courses.
Log on to ACORN and request graduation.

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.

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Planning your future: what’s next after undergrad?
- Enter the workforce? Evaluate your career options through a CC workshop. Write a strong application for further education. Attend the CC’s Mastering the Personal Statement workshop.
- Consider an independent research project. Visit the UTM Library. Schedule on the MCS departmental website. Visit the UTM Library Reference Desk.
- Enrol in an Independent Study Course to expand your knowledge beyond the regular courses and work closely with a faculty member.
- Attend the UofT Education Showcase or the Canadian Math Kangaroo Contest (both offered through the MCS department). Speak to the MCS Undergraduate Counsellor.

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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)

Department of Mathematical & Computational Sciences

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www.utm.utoronto.ca/math-cs-stats/

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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www.utm.utoronto.ca/future-students