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.

New for 2024-2025, students can choose between two streams in a Mathematical Sciences major: the 'original' Mathematics stream and an Applied Mathematics stream. In Applied Mathematics, students will explore some branches of mathematics which have applications in many fields

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: Mathematics (Science)
- Major Program ERMAJ2512 Mathematical Sciences: Applied Mathematics (Science)
- Minor Program ERMIN2511 Mathematical Sciences (Science)

Check out...

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.

UNIVERSITY OF TORONTO MISSISSAUGA

MATHEMATICAL SCIENCES

MAJOR Program Plan

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	2ND YEAR	3RD YEAR	4TH OR FINAL YEAR
PLAN YOUR ACADEMICS*	For both majors, enrol in courses MAT102H5, (132H5,134H5)/(135H5,136H5)/(137H5,139H5)/ (157H5,159H5), ISP100H5, 223H5/ 240H5. 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. Connect with the **Academic Advisor & Undergraduate Program Administrator (MAT & STA)** to discuss your plans. Develop foundational academic skills and strategies by enrolling in a **utmONE** course.	Enrol in several 200-level courses. See the **Academic Calendar** for exact details for the specific major you are interested in. Connect with the **Academic Advisor & Undergraduate Program Administrator (MAT & STA)** to discuss your program and the Office of the Registrar to review degree requirements. Consider applying for the **Research Opportunity Program (ROP)** course MAT299Y. Visit the EEU website for **ROP Course Prerequisites**.	Enrol in several 200 or 300+ level courses. See the **Academic Calendar** for exact details for the specific major you are interested in. Connect with the **Academic Advisor & Undergraduate Program Administrator (MAT & STA)** to discuss your program and the Office of the Registrar to review degree requirements.	Enrol in any 300+ level courses that you didn't complete in 3rd year. For Mathematical Sciences: Mathematics major, enrol in 0.5 additional credits in MAT at the 400-level. Connect with the **Academic Advisor & Undergraduate Program Administrator (MAT & STA)** to ensure your program is on track and the Office of the Registrar to ensure you are meeting all degree requirements for graduation Log on to ACORN and request graduation.
BUILD SKILLS	Use the **Co-Curricular Record (CCR)**. Search for opportunities beyond the classroom, and keep track of your accomplishments. Attend the **Get Hired Fair** through the Career Centre (CC) to learn about on- and off-campus opportunities while practicing interpersonal skills when talking to employers.	Use the **Career & Co-Curricular Learning Network (CLNx)** 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 CLNx. Attend the RGASC's **Program for Accessing Research Training (PART)** to enhance your research skills.	Consider completing an **Independent Study Course** under the supervision of a MAT Faculty member. Speak to the **Academic Advisor & Undergraduate Program Administrator (MAT & STA)** for more information.	Apply to become a mathematics teaching assistant (TA). Polish your communication and presentation skills and help first and second-year students with math learning. Inspire young minds to enjoy and pursue math: ask about how you can help with **Math Circles** and MCS involvement in UTM recruitment events. Speak to the **Academic Advisor & Undergraduate Program Administrator (MAT & STA).**
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 @utmmcss. Get to know your TA. View the **Math Learning Centre** Schedule on the MCS departmental website. Visit the UTM Library **Reference Desk**.	Do you have a professor you would really like to connect with? Ask them a question during office hours. Discuss an assignment. Go over lecture material. Don't be shy! Learn **Tips On How to Approach a Professor** available through the Experiential Education Unit (EEU). Learning more about their research journey can be inspirational	Establish a professional presence on social media (e.g., LinkedIn). Join the **Math Club.**	Join a professional association. Check out the **Canadian Mathematical Society**. Go to the **Canadian Undergraduate Mathematics Conference** or the **Actuarial Students National Association Convention**. Attend Career Centre (CC) events featuring MAT alumni.
BUILD A GLOBAL MINDSET	Engage with the many programs offered by the **International Education Centre (IEC)**, whether you are an international or domestic student. Consider joining the **Canada Eh?** day trips or **English Language Conversation Circles** to deepen your global mindset. First-year international students can also take advantage of **THRIVE'IN**, a one-day conference dedicated to helping you start your UTM journey successfully.	Participate in **International Education Week** and engage in programs like **Global and Intercultural Fluency Training Series (GIFTS)** to build on your leadership and communication skills in global citizenship. 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!	Expanding your intercultural awareness and developing intercultural skills will help you in your academics, personal growth and are highly sought out by employers. **Earn credits overseas!** Apply to study for a summer term, or year at one of 170+ universities. Speak to the IEC for details about **Course Based Exchange**, funding and travel safety. Attend Global Learning Week to learn about the various opportunities available to you!	Engage in programs like **ISTEP** and **THRIVE** to support your transition out of the University!
PLAN FOR YOUR FUTURE	Where should you start your career journey? The Career Centre's **model** can help you identify things to consider. You can get started today by visiting **My Career Centre** to begin exploring on your own. Get ready to select your Program of Study (POSt) by attending the **Program Selection & Career Options** workshop offered by the Office of the Registrar and CC.	Learn how your academics and career goals work together in a **Career Counselling appointment**. Explore careers through the CC's **Job Shadow Program** or **In the Field**. Considering **further education**? Attend the CC's **Graduate & Professional Schools Fair**. Research application requirements, prepare for admission tests (LSAT, GMAT) and research funding options (OGS, SSHRC)	Attend CC workshops to learn the basics of creating a resume and cover letter, preparing for an interview, and creating a strong LinkedIn profile. To register, visit the UTM Events page on **CLNx**. You would also find exciting networking opportunities to connect with employers, industry professionals and alumni. Are you ready to take the next step in preparing for further education? Get started by checking out the Pursue Learning section of **My Career Centre** and attending a drop-in session with a Career Counsellor for best practices for grad school preparation.	Attend the CC workshop, **Now That I'm Graduating What's Next** to learn how to develop your job search plan. Ready for employment? Schedule an **Employment Strategist Appointment** to review your documents and practice your skills. If you are still unsure about the next steps in your career journey, schedule a **Career Counsellor Appointment** to gain support exploring career options and establishing a career plan.

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

Revised on: 10/29/2024

Visit **www.utm.utoronto.ca/program-plans** for the online version and links.

MATHEMATICAL SCIENCES

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 the **Student Group and Societies Directory**

Services that support you

- **Accessibility Services (AS)**
- **Career Centre (CC)**
- **Centre for Student Engagement (CSE)**
- **Equity, Diversity & Inclusion Office (EDIO)**
- **Experiential Education Unit (EEU)**
- **Health & Counselling Centre (HCC)**
- **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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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

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