INFORMATION SECURITY (HBSc)

Department of Mathematical & Computational Sciences

Information Security is an interdisciplinary blend of Computer Science and Mathematics. Students will learn about cryptography, network security and digital forensics. The Information Security program provides you with tools for the modern technology driven world.

Our award winning faculty bring knowledge and experience from a variety of backgrounds. Your time in this program will be enriched with Research Opportunity Courses and with small group project 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**

Program of Study (POSt)

- Specialist Program ERSPE1038 Information Security (Science)

Check out...

Don't let those black hats crack your systems! Take CSC347H5 and learn how to identify and avoid common software development flaws that leave software vulnerable. Take CSC427H5 to learn about network attacks and defenses, operating system and application vulnerabilities, viruses, spyware, social engineering attacks, privacy, and digital rights management.

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: Information Security Analyst; Computer Systems Specialist; CSIS Communication Analyst; CSIS intelligence officer; Strategic planner; Network architect; Computer network specialist; Computer programmer; Operations research analyst; Database developer.

Workplaces: Computer/telecommunication companies; Government; Banks; Insurance; Engineering firms.

INFORMATION SECURITY

SPECIALIST 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*	Enrol in courses CSC108H5, CSC148H5; ISP100H5; MAT102H5, (MAT135H5,MAT136H5)/(MAT137H5,MAT139H5)/(MAT157H5, MAT159H5) and MAT223H5/MAT240H5. 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 academic skills and strategies by enrolling in a **utmONE** First-Year Foundations Course. Connect with the **Academic Advisor & Undergraduate Program Administrator (CS)** to discuss your plans.	Enrol in courses CSC207H5, CSC209H5, CSC236H5, CSC258H5, CSC263H5; MAT224H5/MAT240H5, MAT232H5/MAT257Y5; and STA246H5/STA256H5. Connect with the **Academic Advisor & Undergraduate Program Administrator (CS)** to discuss your plans and how to apply for the **Research Opportunity Program (ROP)**. Visit the EEU website for **ROP Course Prerequisites**.	Enrol in courses CSC311H5, CSC343H5, CSC347H5, CSC363H5, CSC369H5, CSC373H5; MAT301H5 and MAT302H5. Connect with the **Academic Advisor & Undergraduate Program Administrator (CS)** to discuss your program and the Office of the Registrar (OR) to review degree requirements.	Enrol in CSC358H5/ CSC458H5 and two of (CSC422H5, CSC423H5, CSC427H5, CSC490H5). What is **Experiential Education**? It means learn by doing! Check out the workshop-based courses CSC318H5 (the Design of interactive Computational Media) and CSC490H5 (Capstone Design). Connect with the **Academic Advisor & Undergraduate Program Administrator (CS)** to ensure your program is on track and the OR to ensure you are meeting all degree requirements for graduation. Log on to ACORN and request graduation.
BUILD SKILLS	Build community and gain academic support through **LAUNCH**. Attend the **Get Hired Fair** through the Career Centre (CC) to learn about on- and off-campus opportunities. Attend the **Experiential Education Fair.**	Join a RGASC **Peer Facilitated Study Group**. Use the **Co-Curricular Record (CCR)**. Search for opportunities beyond the classroom, and keep track of your accomplishments.	Use the **Career & Co-Curricular Learning Network (CLNx)** to find postings for **Work-Study**, off-campus work and volunteer opportunities. Apply to become a Computer Science **teaching assistant (TA)**. Polish your communication and presentation skills and help first and second-year students with Computer Science learning.	Conduct a research project under the supervision of a faculty member through CSC392H5, CSC393H5, CSC492H5 and CSC493H5. Speak to the **Academic Advisor & Undergraduate Program Administrator (CS)** for advice and details.
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 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, Facebook, "X" or blogs). Attend the UofT Electrical & Computer Engineering department's **Distinguished Lectures Series**.	Join a professional association. Check out the **Toronto Area Security Klatch**, the **American Society for Industrial Security (ASIS) International Toronto Chapter** or the **Association for Computing Machinery**. Go to the **Grace Hopper celebration**, the **SecTor Expo**, or **Def Con**.
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 **Outbound Exchange**, funding and travel safety. Attend Global Learning Week to learn about the various opportunities available to you!	Engage and programs like **ISTEP** and **THRIVE-OUT** to support your transition out of the University!
PLAN FOR YOUR FUTURE	Students can apply to join the **UTM Co-op Internship Program (UTMCIP)** stream at the end of their first year. The UTMCIP includes mandatory work-readiness modules, followed by a 12- or 16-month paid, full-time, academically related work experience. For personal guidance, drop in to an **Academic & Career Planning Session** to chat with Advisors and Career Counsellors. Visit the Career Corner in the **Student Services Hub.**	Explore your options with the CC's **Job Shadow Program**, **In the Field**, or a one-on-one with a **Career Counsellor**. Thinking about grad school? Attend the **Graduate & Professional School Fair**, research application requirements, admission tests, and explore funding options. Getting ready for work? Join workshops, drop-ins, and networking events to build experience and confidently share your skills – Register on **CLNx**.	Need job search support? Book a coaching appointment with an **Employment Strategist** for personalized guidance. Ready to take the next step for grad school, visit the Pursue Learning section on **MyCareerCentre** and drop-in to chat with a Career Counsellor about grad school prep tips. Want to grow your network? Attend the Career Centre Networking Series and Let's Talk About events — Register on **CLNx**.	Join the **Now That I'm Graduating, What's Next?** session to start building your job search plan. Attend the **Sweats to Suits Job Search Conference** and discover diverse career pathways. Work with the **Employment Strategist** team to review your resume and prep for interviews. Still figuring things out? Meet with a **Career Counsellor** to create a career plan and attend a **Career Wellness** session to support your well-being along the way.

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

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

INFORMATION SECURITY

Skills developed in Information Security

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:

Research: analyze and evaluate information; develop innovative systems; and develop ideas for presentation at a conference or in a journal.

Technical: write, debug, and test programs, with the support of Generative AI when appropriate. Research, design and develop computer systems (e.g., new computer languages, simulations, system analysis, etc.).

Problem-solving: conceptualize models; formulate, model and solve problems from diverse areas; and collect, organize, analyze, and interpret results.

Communication: articulate, explain, and teach technical informatio to others, as well as question and probe to diagnose computer problems.

Organizational: manage time effectively and organize and maintain stored data.

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 Groups and Societies Directory** or the **MCS Student organizations.**

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)**

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Academic Advising & Undergraduate Student Resources

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

The first two years of the program are an introduction to broadly applicable tools and ideas. You'll learn computing languages including, Python (CSC108H5) and Java (CSC207H5), as well as mathematical techniques (CSC236H5) and data structures (CSC148H5 and CSC263H5).

Our computing facilities are excellent. We have over 400 Linux PCs, Windows PCs and Apple Macs. Course offerings are intended to serve a wide variety of student interests ranging from information processing to applying computers to other fields. Our faculty enjoy a strong world-wide reputation in varied fields of research including: human-computer interaction, computer vision, machine learning, robotics and computing education.

Student Recruitment & Admissions

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3359 Mississauga Rd
Mississauga ON Canada L5L 1C6

905-828-5400
www.utm.utoronto.ca/future-students

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