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 CSC423H5 to learn how to collect and analyze electronic evidence, including sniffer logs, file metadata, and deleted data.

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](http://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 P001) once you complete 4.0 credits.** Use the Degree Explorer Planner and the Academic Calendar to plan your degree.
- **Start strong and get informed with utmONE and LAUNCH through the Centre for Student Engagement (CSE).** Join a RAGSC Peer Facilitated Study Group.

**2ND YEAR**

- **Enroll in courses**: CSC207H5, 209H5, 236H5, 258H5, 263H5, 290H5; MAT224H5 / 240H5, 232H5 / 257Y5; and STA265H5.
- **Consider applying for Research Opportunity Program (ROP) courses**: CSC299Y, CSC399Y and CSC499Y. Visit the EEU website for ROP Course Prerequisites. Attend the RAGSC’s Program for Accessing Research Training (P.A.R.T.) to enhance your research skills.

**3RD YEAR**

- **Enroll in courses**: CSC343H5, 347H5, 363H5, 369H5, 373H5; MAT301H5 and 302H5.
- **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 for assistance.

**4TH OR FINAL YEAR**

- **Enrol in courses**: CSC358H5, 458H5 and two of (CSC423H5, 423H5; 427H5, 490H5).
- **What is Experiential Education?** It means learn by doing! Speak to the MCS Undergraduate Counsellor about a workshop-based course such as CSC490H5 (Capstone Design).
- **Log on to ACORN and request graduation.**

**PLAN YOUR ACADEMICS**

- **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 SKILLS**

- **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 Help Room Schedule on the MCS departmental website. Visit the UTM Library Reference Desk.

**BUILD A NETWORK**

- **Attend events held by the International Education Centre (IEC), whether you are an international or domestic student.** Explore different cultures through food, music, sport or through sight-seeing around the GTA.
- **Embark on a UTM Abroad Experience through the IEC.** Take advantage of this opportunity to travel as part of a class, or a co-curricular opportunity, and learn about a topic of interest in a unique location.

**BUILD A GLOBAL MINDSET**

- **Attend the Program Selection & Career Options workshop offered by the Office of the Registrar and the CC.**
- **Explore careers through the CC’s Extern Job Shadowing Program.**
- **What’s your next step after undergrad?**
- **Entering the workforce?** Evaluate your career options through a CC Counselling appointment. Create a job search strategy — book a CC Employment Strategies appointment.
- **Market your skills to employers.** Get your resume critiqued at the CC. Attend the CC workshop: Now That I’m Graduating What’s Next?

**PLAN FOR YOUR FUTURE**

- **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.

**Visit [www.utm.utoronto.ca/program-plans](http://www.utm.utoronto.ca/program-plans) for the online version and links.**

*Consult the Academic Calendar for greater detail on course requirements, program notes and degree requirements.*
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 and 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 information to others, as well as question and probe to diagnose computer problems.

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

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)
- UTM Library, Hazel McCallion Academic Learning Centre (HMALC)

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.

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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 high-70s. 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 and computing education.

Student Recruitment & Admissions

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www.utm.utoronto.ca/future-students