

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. We have courses giving an overview of the field, as well as in-depth courses in the systems, number theory, and computation complexity aspects of computer security. 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 individual Research Opportunity (ROP) 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. 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 ERSPE1038 Information Security (Science)

Check out...

Don't let those black hats crack you! Take CSC347H5 and learn how to identify and avoid common software development flaws which leave software vulnerable. Take CSC423H5 to learn how to collect and analyze electronic evidence, including the use of 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; Retail; Graphic design firms; Engineering firms; Test development companies.



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.



	1 ST YEAR	2 ND YEAR
PLAN YOUR ACADEMICS*	<p>Enrol in courses CSC108H5, 148H5; MAT102H5, 134Y5/135Y5/ 137Y5/ 157Y5 and 223H5/ 240H5.</p> <p>Choose a program of study (Subject POST) once you complete 4.0 credits. Use the Degree Explorer Planner and the Academic Calendar to plan your degree.</p> <p>Start strong and get informed with utmONE and LAUNCH through the Office of Student Transition. Join a RGASC Peer Facilitated Study Group.</p>	<p>Enrol in courses CSC207H5, 209H5, 236H5, 258H5, 263H5, 290H5; MAT224H5/ 240H5, 232H5/ 257Y5; and STA256H5.</p> <p>Consider applying for Research Opportunity Program (ROP) courses CSC299Y, CSC399Y and CSC499Y. Visit the EEO website for ROP Course Prerequisites. Attend the RGASC's Program for Accessing Research Training (P.A.R.T.) to enhance your research skills.</p>
BUILD SKILLS	<p>Use the Co-Curricular Record (CCR). Search for opportunities beyond the classroom, and keep track of your accomplishments.</p> <p>Attend the Get Experience Fair through the Career Centre (CC) to learn about on- and off-campus opportunities.</p>	<p>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.</p>
BUILD A NETWORK	<p>Networking simply means talking to people and developing relationships with them. Start by joining the Mathematical and Computational Sciences Society (MCSS). Follow them @utmmcss.</p> <p>Get to know your TA. View the Math Help Room Schedule on the MCS departmental website. Visit the UTM Library Reference Desk.</p>	<p>Do you have a professor you really like or 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 Office (EEO).</p>
BUILD A GLOBAL MINDSET	<p>Attend events held by the International Education Centre (IEC) to explore different cultures through food, music, and sport or through sight-seeing around the GTA.</p>	<p>Embark on a UTM Abroad Co-Curricular Experience through the IEC. Take advantage of this opportunity to travel with a faculty member and learn about a topic of interest in a unique location.</p> <p>Prefer traveling in Canada? Check out the IEC's UTM Across Canada program.</p>
PLAN FOR YOUR FUTURE	<p>Attend the Program Selection & Career Options workshop offered by the Office of the Registrar and the CC.</p> <p>Check out Careers by Major at the CC to see potential career options.</p>	<p>Explore careers through the CC's Extern Job Shadowing Program.</p> <p>Considering further education? Attend the CC's Graduate and Professional Schools Fair. Talk to professors – they are potential mentors and references.</p>

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

3 RD YEAR	4 TH OR FINAL YEAR
<p>Enrol in courses CSC343H5, 347H5, 363H5, 369H5, 373H5; MAT301H5 and 302H5.</p> <p>Throughout your undergraduate degree:</p> <ul style="list-style-type: none"> 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. 	<p>Enrol in CSC358H5/ 458H5 and two of (CSC422H5, 423H5, 427H5, 490H5).</p> <p>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).</p> <p>Log on to ACORN and request graduation.</p>
<p>Use the Career Learning Network (CLN) to find postings for on- and off-campus work and volunteer opportunities.</p> <p>Work on-campus through the Work-Study program. View position descriptions on the CLN.</p>	<p>Conduct a research project under the supervision of a faculty member through CSC492H5 and CSC493H5. Speak to the MCS Undergraduate Counsellor for advice and details.</p>
<p>Establish a professional presence on social media (e.g., LinkedIn, Facebook, Twitter or blogs).</p> <p>Attend the UofT Electrical & Computer Engineering department's Distinguished Lectures Series.</p>	<p>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.</p> <p>Go to the Canadian Undergraduate Computer Science Conference, the SecTor Expo, or Def Con.</p>
<p>Earn credits overseas! Study for a summer, term or year at one of 120 universities. The MCS department's topic pick is Lund University (Sweden). Speak to the IEC for details about Course Based Exchange and funding.</p>	<p>Why not work abroad? Read up on worldwide employment trends and industry outlooks through GoGlobal. Attend the Go Global Expo. See if you are eligible for International Experience Canada.</p>
<p>What's your next step after undergrad?</p> <p>Entering the workforce? Evaluate your career options through a CC Career Counselling appointment. Create a job search strategy — book a CC Employment Strategies appointment.</p> <p>Considering further education? Research application requirements, prepare for admission tests (LSAT, GMAT) and research funding options (OGS, SSHRC).</p>	<p>Market your skills to employers. Get your resume critiqued at the CC. Attend the CC workshop Now That I'm Graduating What's Next?</p> <p>Write a strong application for further education. Attend the CC's Mastering the Personal Statement workshop.</p>

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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; research, design and develop computer systems; and develop programs (e.g., new computer languages, simulations, systems analysis).

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 solve computer problems.

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

Get involved

Check out 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

- AccessAbility Services (AS)
- Career Centre (CC)
- Centre for Student Engagement (CSE)
- Experiential Education Office (EEO)
- Health & Counselling Centre (HCC)
- Indigenous Centre (IC)
- International Education Centre (IEC)
- Office of Student Transition (OST)
- 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)

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 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 and CSC209H5), as well as mathematical techniques (CSC236H5) and structures (CSC148H5 and CSC263H5).

Our computing facilities are excellent. We have over 400 Linux PC's, Windows PC's 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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905-828-5400
www.utm.utoronto.ca/future-students

