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**

### 1ST YEAR

- **Choose a program of study (Subjekt POS1)** 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 RGASC Peer Facilitated Study Group.

### 2ND YEAR

- **Enrol in courses** CSC207H5, 209H5, 236H5, 258H5, 263H5, 290H5, MAT224H5/240H5, 232H5/257Y5; and STA256H5.
- **Consider applying for Research Opportunity Program (ROP)** courses CSC299Y, CSC399Y and CSC499Y. 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.
- **Consider a practical work-based experience through** Unit’s Professional Experience Year — Canada’s largest undergraduate paid internship program that offers 12-16-month work placements. Speak to the MCS Undergraduate Counsellor.

### 3RD YEAR

- **Enrol 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.
- **Establish a professional presence on social media (e.g., LinkedIn, Facebook, Twitter or blogs).**
- **Attend the UofT Electrical & Computer Engineering department’s Distinguished Lectures Series.**
- **Embark on a UTM Abroad Global Impact Project 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.
- **Interested in deepening your global perspective? Register for the Global Citizenship Certificate offered by the IEC.**
- **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.**
- **What’s your next step after undergrad?**
  - **Considering further education? Research application requirements, prepare for admission tests (LSAT, GMAT) and research funding opportunities (OGS, SSHRC).**

### 4TH OR FINAL YEAR

- **Enrol in 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).
- **Conduct a research project under the supervision of a faculty member through** the Research Opportunity Program (ROP) Course Prerequisites. Attend the RGASC’s Program for Accessing Research Training (P.A.R.T.) to enhance your research skills.
- **Join a professional association. Check out the Toronto Area Security Kinetik, the American Society for Industrial Security (ASIS) International Toronto Chapter or the Association for Computing Machinery.**
- **Go to the Canadian Undergraduate Computer Science Conference, the SecTor Expo, or Def Con.**
- **Why not work abroad? Read up on worldwide employment trends and industry outlooks through GeoGlobal. Attend the Go Global Expo. See if you are eligible for International Experience Canada.**
- **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.**

### 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.

*Reviewed on: 6/1/2018
Visit [www.utm.utoronto.ca/program-plans](http://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 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.

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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