

COMPUTER SCIENCE (HBSc)

Department of Mathematical & Computational Sciences

Computer science is concerned in the broadest sense with the study of computation and applications of computing. Its development has been stimulated by collaborations with many disciplines including engineering, the physical and life sciences, mathematics and statistics and commerce. However, computer science is much more than a set of techniques used in these application areas.

Computer science as a discipline encompasses a wide range of research areas including human-computer interaction, software engineering, numerical analysis, machine learning, and cryptography.

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 ERSPE1038 Information Security (Science)
- Specialist Program ERSPE1688 Computer Science (Science)
- Major Program ERMAJ1688 Computer Science (Science)
- Minor Program ERMIN1688 Computer Science (Science)

Check out...

Why not try machine learning? In CSC311H5 and CSC413H5, you can investigate how machines “learn” to classify situations with or without supervision (training data). Other courses introduce related topics: natural language understanding, reasoning and planning (CSC384H5), and image understanding (CSC420H5).

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: Data scientist; Software developer; Web/app developer; Software tester; Computer systems analyst; Systems architect; Network administrator; Database administrator; Business analyst; Computer architect.

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



COMPUTER SCIENCE

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.



	1 ST YEAR	2 ND YEAR
PLAN YOUR ACADEMICS*	<p>Enrol in courses CSC108H5, 148H5; MAT102H5 and (132H5, 134H5)/ (135H5, 136H5)/ 134Y5/ 135Y5/ 137Y5/ 157Y5.</p> <p>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.</p> <p>Start strong and get informed with utmONE and LAUNCH through the Centre for Student Engagement (CSE). Join a RGASC Peer Facilitated Study Group.</p>	<p>Enrol in courses CSC207H5, 236H5; MAT223H5/ 240H5; two of (CSC209H5, 258H5, 263H5), CSC290H5; and STA256H5. Review your Degree Explorer plan and the Academic Calendar to ensure you take the prerequisites you need for upper year courses.</p> <p>Consider applying for Research Opportunity Program (ROP) courses CSC299Y, CSC399Y and CSC499Y. Visit the EEU website for ROP Course Prerequisites. Attend the RGASC's 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 @utmccss.</p> <p>Get to know your TA. View the Math Learning Centre 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 Unit (EEU).</p>
BUILD A GLOBAL MINDSET	<p>Attend events held by the International Education Centre (IEC), whether you are an international or domestic student. Explore your culture and other cultures through weekly/regular conversations, Language Conversation Circles, debates, and activities to enhance your global and intercultural mindset.</p>	<p>Engage in programs like the Global and Intercultural Fluency Training Series (GIFTS) or 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!</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 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>Attain four half courses from any 300/400 level UTM CSC courses (including at least 0.5 credit from a 400-level course).</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. 	<p>What is Experiential Education? It means learn by doing! Speak to the MCS Undergraduate Counsellor about the workshop-based courses CSC318H5 (The Design of Interactive Computational Media) and CSC490H5 (Capstone Design).</p> <p>Log on to ACORN and request graduation.</p>
<p>Use the Career Learning Network (CLNx) 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 CLNx.</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).</p> <p>Attend the UofT Electrical & Computer Engineering department's Distinguished Lectures Series.</p> <p>Thinking about life after UTM? Connect with a UTM alumnus through the CSE's Alumni Mentorship Program!</p>	<p>Join a professional association. Check out the Association for Computing Machinery, Canadian Information Processing Society (headquartered in Mississauga) or the Canadian Artificial Intelligence Association.</p> <p>Go to the Canadian Undergraduate Computer Science Conference or the Connect IT Conference which works to bridge the gap between students and the industry.</p>
<p>Earn credits overseas! Apply to study for a summer, term or year at one of 140+ universities. The MCS department has identified partners which are most relevant to our students. Speak to the IEC for details about Course Based Exchange, funding and travel safety.</p>	<p>Learn about working abroad. Read up on worldwide employment trends and industry outlooks through GoInGlobal. 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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COMPUTER SCIENCE

Skills developed in Computer Science

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.

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.

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

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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

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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