

# STATISTICS, APPLIED (HBSc)

*Department of Mathematical & Computational Sciences*

**Numbers are all around us.** From the thickness of the ozone layer to infant mortality rates, from the cost of beer to the chances of contracting AIDS, the world is permeated with quantity. Most of the quantitative information we have is incomplete, or an estimate, or an average, or the result of inexact measurement. This does not mean the information is useless. What it means is that to consider ourselves well educated, we must be able to extract knowledge from numerical data that are subject to random error.

Statisticians do things as diverse as setting insurance rates, testing new drugs, estimating levels of air and water pollution, monitoring the quality of industrial products, and predicting the outcomes of national elections.

## 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](http://www.utm.utoronto.ca/program-plans)

### Programs of Study (POSt)

- Specialist Program ERSPE1540 Statistics, Applied (Science)
- Major Program ERMAJ1540 Statistics, Applied (Science)
- Minor Program ERMIN1540 Statistics, Applied (Science)

### Check out...

What's a strange attractor? Take MAT332H5 to learn about stability in nonlinear systems of bifurcation theory, chaos, and fractals. Crack that code! Embark on a journey through the methods of algebra and number theory in cryptography in CSC322H5.

### 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:** Actuary; Budget analyst; Insurance underwriter; Logistics specialist; Market research analyst; Mathematical technician; Numerical analyst; Operations research analyst; Statistician; Systems operation analyst; Data entry clerk; Epidemiologist.

**Workplaces:** Government Agencies; Banks; Investment firms; Insurance companies; Research and development firms.



# STATISTICS, APPLIED

## 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.



	1 <sup>ST</sup> YEAR	2 <sup>ND</sup> YEAR	3 <sup>RD</sup> YEAR	4 <sup>TH</sup> OR FINAL YEAR
PLAN YOUR ACADEMICS*	<p>Enrol in courses CSC108H5; 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 <b>Degree Explorer Planner</b> and the <b>Academic Calendar</b> to plan your degree.</p> <p>Start strong and get informed with <b>utmONE</b> and <b>LAUNCH</b> through the Office of Student Transition. Join a <b>RGASC Peer Facilitated Study Group</b>.</p>	<p>Enrol in courses MAT232H5/ 233H5/ 257Y5, 212H5/ 244H5; STA256H5, 258H5 and 260H5.</p> <p>Throughout your undergraduate degree:</p> <ul style="list-style-type: none"> <li>use the <b>Degree Explorer</b> to ensure you complete your degree and program requirements.</li> <li>see the <b>Office of the Registrar</b> and the <b>MCS Undergraduate Counsellor</b>.</li> </ul>	<p>Enrol in courses STA302H5, 304H5, 305H5 and 348H5. For third year and higher, attain 2.0 credits from STA312H5, 313H5, 413H5, 431H5, 437H5, 441H5 and 457H5, as well as 2.0 credits from CSC322H5, 411H5; MAT302H5, 311H5, 332H5, 334H5, 344H5 and 378H5.</p> <p>Consider applying for the <b>Research Opportunity Program (ROP)</b> course STA399Y. Visit the EEO website for <b>ROP Course Prerequisites</b>. Attend the RGASC's <b>P.A.R.T.</b> to enhance your research skills.</p>	<p>Conduct a research project under the supervision of a faculty member through STA378H5 and STA478H5. Speak to the <b>MCS Undergraduate Counsellor</b> for details.</p> <p>Log on to ACORN and request graduation.</p>
BUILD SKILLS	<p>Use the <b>Co-Curricular Record (CCR)</b>. Search for opportunities beyond the classroom, and keep track of your accomplishments.</p> <p>Attend the <b>Get Experience Fair</b> through the Career Centre (CC) to learn about on- and off-campus opportunities.</p>	<p>Use the <b>Career Learning Network (CLN)</b> to find postings for on- and off-campus work and volunteer opportunities.</p> <p>Work on-campus through the <b>Work-Study program</b>. View position descriptions on the CLN.</p>	<p>Consider a practical work-based experience through UofT's <b>Professional Experience Year</b> — Canada's largest undergraduate paid internship program that offers 12- to 16-month work placements. Speak to the <b>MCS Undergraduate Counsellor</b>.</p>	<p>Skills are transferrable to any job regardless of where you develop them. Need to strengthen your leadership skills? Consider being a <b>UTM Let's Talk Science Outreach</b> volunteer.</p>
BUILD A NETWORK	<p>Networking simply means talking to people and developing relationships with them. Start by joining the <b>Mathematical and Computational Sciences Society (MCSS)</b>. Follow them @utmccss.</p> <p>Get to know your TA. View the <b>Math Help Room Schedule</b> on the MCS departmental website. Visit the UTM Library <b>Reference Desk</b>.</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 <b>Tips On How to Approach a Professor</b> available through the Experiential Education Office (EEO).</p>	<p>Establish a professional presence on social media (e.g., LinkedIn).</p> <p>Attend the UofT Statistical Sciences department's <b>Seminar Series</b>.</p>	<p>Join a professional association. Check out the <b>Canadian Applied and Industrial Mathematics Society</b> and the <b>Statistical Society of Canada</b>. Consider joining their <b>Students and Recent Graduates Committee</b>.</p> <p>Go to the <b>Canadian Statistics Student Conference</b>.</p>
BUILD A GLOBAL MINDSET	<p>Attend events held by the <b>International Education Centre (IEC)</b> to explore different cultures through food, music, and sport or through sight-seeing around the GTA.</p>	<p>Embark on a <b>UTM Abroad Co-Curricular Experience</b> 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 <b>UTM Across Canada</b> program.</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 <b>IEC</b> for details about <b>Course Based Exchange</b> and funding.</p>	<p>Why not work abroad? Read up on worldwide employment trends and industry outlooks through <b>GoInGlobal</b>. Attend the <b>Go Global Expo</b>. See if you are eligible for <b>International Experience Canada</b>.</p>
PLAN FOR YOUR FUTURE	<p>Attend the <b>Program Selection &amp; Career Options</b> workshop offered by the Office of the Registrar and the CC.</p> <p>Check out <b>Careers by Major</b> at the CC to see potential career options.</p>	<p>Explore careers through the CC's <b>Extern Job Shadowing Program</b>.</p> <p>Considering <b>further education</b>? Attend the CC's <b>Graduate and Professional Schools Fair</b>. Talk to professors – they are potential mentors and references.</p>	<p>What's your next step after undergrad?</p> <p>Entering the workforce? Evaluate your career options through a <b>CC Career Counselling appointment</b>. Create a job search strategy — book a <b>CC Employment Strategies appointment</b>.</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 <b>resume critiqued</b> at the CC. Attend the CC workshop <b>Now That I'm Graduating What's Next?</b></p> <p>Write a strong application for further education. Attend the CC's <b>Mastering the Personal Statement</b> workshop.</p>

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



# STATISTICS, APPLIED

## Skills developed in Statistics, Applied

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:** design projects, experiments and other studies; analyze, summarize, make inferences and interpret the information collected; and write effective technical reports.

**Technical:** understand statistical concepts and the rules of logic, as well as use a range of specialized software to analyze large quantities of numerical data.

**Problem-solving:** approach problems from different angles to identify key issues and apply statistical theories and methods to solve problems.

**Critical thinking & communication:** effectively communicate ideas and abstract concepts and construct sound arguments.

## 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](http://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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[www.utm.utoronto.ca/math-cs-stats/](http://www.utm.utoronto.ca/math-cs-stats/)

## 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](http://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

What is statistical modeling? In STA256H5, you'll learn about probability distributions, expectation, continuous and discrete random variables and vectors, distribution functions and probability's role in statistical modeling. Why not learn some bootstrapping? Enrol in STA258H5 and learn about statistical methodology with emphasis on the relationship between data analysis and probability theory.

### Student Recruitment & Admissions

Innovation Complex, Room 1270  
University of Toronto Mississauga  
3359 Mississauga Rd  
Mississauga ON Canada L5L 1C6

905-828-5400

[www.utm.utoronto.ca/future-students](http://www.utm.utoronto.ca/future-students)

