

GEOGRAPHICAL INFORMATION SYSTEMS (HBSc)

Department of Geography, Geomatics and Environment

The **GIS BSc** offers an analytical perspective on geographical information. What you learn in the GIS program is applicable to employment in public and private sectors including public health and healthcare, urban transportation planning, natural resource management, and conservation agencies. In-depth studies — beyond basic geography — include mapping, spatial analysis, digital databases with specializations in modelling, statistical analysis and remote sensing.

Our Department prides itself in being at the forefront of the student experience at UTM. Our Faculty are very successful and active researchers who maintain research programs, laboratories, and supervise graduate students at UTM. They are also outstanding teachers, with several of our faculty being recognized with teaching awards from both inside and outside the university. We think that the wonderful opportunities and support in our Department will make your degree in GIS not only a meaningful and valuable learning experience, but also an exciting and fun one, while preparing you for a career.

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)

- Major Program ERMAJ0305 Geographical Information Systems (Science)
- Minor Program ERMIN0305 Geographical Information Systems (Science)

Check out...

What's the connection between GIS and population health? Use GIS to map and study health information such as the spatial patterns of disease in GGR322H5. Ever considered an internship? Apply for JEG400/401 and gain hands on experience.

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: GIS/Remote sensing analyst/specialist; Spatial data analyst/ scientist; Industrial/academic research; Transportation planning.

Workplaces: Data processing; Remote sensing; Map and atlas publishers; Transportation consulting firms; Environmental research agencies; Health care; Survey firms and land developers; Mining.



GEOGRAPHICAL INFORMATION SYSTEMS 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 any 100-level 1.0 credit.</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>Develop foundational academic skills and strategies by enrolling in a utmONE course. Build community and gain academic support through LAUNCH. Join a RGASC Peer Facilitated Study Group.</p>	<p>Enrol in GGR276H5 or STA256H5 and GGR278H5 and 1.0 credit from any other 200-level GGR or ENV courses.</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 Geography Academic Counsellor.
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 Hired Fair through the Career Centre (CC) to learn about on- and off-campus opportunities.</p> <p>Attend the Experiential Education Fair.</p>	<p>Use the Career & Co-Curricular 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>
BUILD A NETWORK	<p>Networking simply means talking to people and developing relationships with them. Start by joining the Student Association for Geography and Environment (SAGE).</p> <p>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. Ask the Geography Academic Counsellor about Professional Advancement for Geography and Environment Students (PAGES).</p> <p>Considering further education? Attend the CC's Graduate & 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 GGR321H5, 337H5 and 382H5. Attain 2.5 credits from (limited to 1.0 credit from ERS and CSC courses): CSC311H5, 343H5, 413H5, 477H5, ERS304H5, GGR311H5, 322H5, 335H5, 370H5, 372H5, 376H5, 437H5, 440H5, 442H5, 444H5, 463H5, 494H5 as well as 0.5 credit from any 300-level GGR or ENV course.</p> <p>Work in a foreign lab through the iROP program. Speak to the IEC Global Mobility Coordinator. Prefer staying local? Apply to the ROP course GGR399Y. Visit the EEU website for ROP Course Prerequisites. Attend the RGASC's P.A.R.T. to enhance your research skills.</p>	<p>What is Experiential Education? It means learn by doing! Gain experience designing and executing an independent senior thesis by enrolling in JEG417Y5 Honours Thesis. Speak to the GIS Program Advisor about enrolling in a course with hands on experience such GGR437H5 (Advanced Remote Sensing).</p> <p>Log on to ACORN and request graduation.</p>
<p>Explore your interests. Know a thing or two about computers? Work for UTM's Information & Instructional Technology Services.</p> <p>Are you into promoting mindfulness and building community? Investigate the UTM Library Ambassador Program.</p>	<p>Consider a practical work-based experience through the internship course JEG400/401. Speak to the Program Advisor for Geographical Information Systems for details.</p>
<p>Establish a professional presence on social media (e.g., LinkedIn).</p> <p>Attend department research seminars and participate in departmental networking events organized by SAGE.</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 Canadian Institute of Geomatics. Go to the Canadian Cartographic Association Conference or the GIScience Conference.</p>
<p>Earn credits overseas! Apply to study for a summer, term or year at one of 140+ universities. The Geography, Geomatics and Environment 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, MCAT), and research funding options (OGS, NSERC).</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> <p>Ready to transition from the classroom to the workplace? Check out the Recent Graduate Opportunities Program.</p>

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GEOGRAPHICAL INFORMATION SYSTEMS

Skills developed in Geographical Information Systems

To be competitive in the job market, it is essential that you can communicate your skills to an employer. Visit the Career Centre to learn how to articulate and market the following skills:

Technical: use specialized field equipment, satellite imagery and GIS and remote sensing software and programming packages, including ArcGIS, QGIS, ErDAS, ENVI, R and Python; and gain experience with computer modelling; conduct surveying and sampling; and conduct field studies.

Research: use spatial and non-spatial statistics, data management, big data applications and analysis.

Communication: data visualizations (spatial & non-spatial), with maps and graphs, summarize results of experiments; communicate across cultures; and maintain records.

Get involved

Check out the 100+ student organizations on campus. Here are a few:

- Student Association for Geography and Environment (SAGE)
- 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)
- Equity, Diversity & Inclusion Office (EDIO)
- Experiential Education Unit (EEU)
- 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 Geography, Geomatics and Environment

William G. Davis Building, Rm 3282
University of Toronto Mississauga
3359 Mississauga Rd
Mississauga ON Canada L5L 1C6

sabrina.ferrari@utoronto.ca
www.utm.utoronto.ca/geography

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 approximate average required for admission is mid- to high-70s. More information is available at utm.utoronto.ca/viewbook.

NOTE: During the application process, applicants will select the Chemical & Physical Sciences 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

Make maps using GIS! In GGR272H5 students explore map rendering in the digital and mobile worlds. What are the natural and anthropogenic origins of environmental change? Find out in the physical geography course GGR112H5.

Our department prides itself in being at the forefront of student experience at UTM. Our students use equipment satellite imagery, and state-of-the-art computers and software in the GIS laboratory. We also have an active weather station on campus monitoring local weather conditions. Students can run their own project related to weather monitoring using the latest data logging instruments.

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

