



# Geospatial Data Science (HBSc)

## Department of Geography, Geomatics and Environment

Geospatial Data Science (GDS) BSc offers an analytical perspective on geographical information. What you learn in the GDS 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 GDS not only a meaningful and valuable learning experience, but also an exciting and fun one, while preparing you for a career.

### 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.

### Programs of Study

- Major Program ERMAJ0305 Geospatial Data Science (Science)
- Minor Program ERMIN0305 Geospatial Data Science (Science)

**Make the most of your time at UTM!**

**We've pulled together the information you need to plan for how to maximize your university experience.**

As you review the inside pages, note that many of the suggestions need not be restricted to the year they are mentioned. Investigate what appeals to you in the proposed yearly plans and then create your own plan using the **My Program Plan Template** form found on **page 6** of this booklet.

# Geospatial Data Science (HBSc)

## Major Program Plan

### Plan Your Academics\*

Enrol in any 100-level 1.0 credit.

Choose a program of study (Subject POST) once you complete 4.0 credits. Use **Degree Explorer** and the **Academic Calendar** to plan your degree.

Develop academic skills and strategies by enrolling in a **utmONE** First-Year Foundations Course. Build community and gain academic support through **LAUNCH**. Join a RGASC **Peer Facilitated Study Group (FSG)**.

### Check out...

What's the connection between GDS and population health? Use GDS 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.

### Build a Global Mindset

Engage with the many programs offered by the **International Education Centre (IEC)**, whether you are an international or domestic student. Consider joining the **Canada Eh?** day trips or the **Language Exchange Program** to deepen your global mindset.

First-year international students can also take advantage of **THRIVE-IN**, a one-day conference dedicated to helping you start your UTM journey successfully.

## First Year

### Build Skills

Use the **Co-Curricular Record (CCR)** to search for opportunities beyond the classroom, and keep track of your accomplishments.

Attend the **Get Hired Fair** through the Career Centre (CC) to learn about on- and off-campus opportunities.

Attend the **Experiential Education Fair**.

### Build a Network

Networking simply means talking to people and developing relationships with them. Start by joining the **Student Association for Geography and Environment (SAGE)**.

Visit the UTM Library **Reference Desk** to meet supportive staff and start building your academic network in first year.

### Plan for Your Future

Start by exploring the **UTM Career Centre Model**—a chance to reflect and choose what's right for you with guided support. Access **MyCareerCentre** 24/7 for flexible, interactive career learning at your own pace.

Connect with support in-person: Drop-in to an **Academic & Career Planning Session** to chat with Advisors and Career Counsellors. Visit the Career Corner in the **Student Services Hub** to chat with a Peer Career Assistant about resources that fit your goals.

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

## Plan Your Academics\*

Enrol in GGR276H5 or STA256H5 and GGR278H5 and 1.0 credit from any other 200-level GGR or ENV courses.

Throughout your undergraduate degree, use **Degree Explorer** to track program requirements. Connect with the **Office of the Registrar** or the **GDS Academic Advisor** for recommended courses.

## Build a Network

Do you have a professor you would like to 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).

Apply to become an Experiential Education Unit **Student Ambassador** and earn a CCR notation.

# Second Year

## Build Skills

Use the **Career & Co-Curricular Learning Network (CLNx)** to find postings for on- and off-campus work and volunteer opportunities.

Work on-campus through the **Work-Study** program. View position descriptions on the CLNx.

## Build a Global Mindset

Participate in **International Education Week** and engage in programs like **Global and Intercultural Fluency Training Series (GIFTS)** to build on your leadership and communication skills in global citizenship.

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!

## Plan for Your Future

Explore your options with the Career Centre's **Job Shadow Program, In the Field**, or a one-on-one with a **Career Counsellor**.

Thinking about grad school? Attend the **Graduate & Professional School Fair**, research application requirements, admission tests, and explore funding options.

Getting ready for work? Join workshops, drop-ins, and networking events to build experience and confidently share your skills – Register on **CLNx**.



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## Major Program Plan

### Plan Your Academics\*

Enrol in GGR321H5, GGR337H5 and GGR382H5. Attain 2.5 credits from (limited to 1.0 credit from ERS and CSC courses): CSC311H5, CSC343H5, CSC413H5, CSC477H5, ERS304H5, GGR311H5, GGR322H5, GGR335H5, GGR370H5, GGR372H5, GGR376H5, GGR437H5, GGR440H5, GGR442H5, GGR444H5, GGR463H5, GGR494H5 as well as 0.5 credit from any 300-level GGR or ENV course.

Consider applying for the **Research Opportunity Program (ROP)** course GGR399Y5 to gain hands-on research skills by working one-on-one with faculty. Visit the EEU website for **ROP Course Prerequisites**.

Attend the RGASC's **Program for Accessing Research Training (PART)** to enhance your research skills.

### Build a Global Mindset

Expand your intercultural awareness and develop intercultural skills that will help you in your academics, personal growth and are highly sought out by employers.

**Earn credits overseas!** Apply to study for a summer term, or year at one of 170+ universities. Speak to the IEC for details about **Course Based Exchange**, funding and travel safety.

### Plan for Your Future

Need job search support? Book a coaching appointment with an **Employment Strategist** for personalized guidance.

Ready to take the next step for grad school, visit the Pursue Learning section on **MyCareerCentre** and drop-in to chat with a **Career Counsellor** about grad school prep tips.

## Third Year

### Build Skills

Explore your interests. Know a thing or two about computers? Work for UTM's **Information & Instructional Technology Services**.

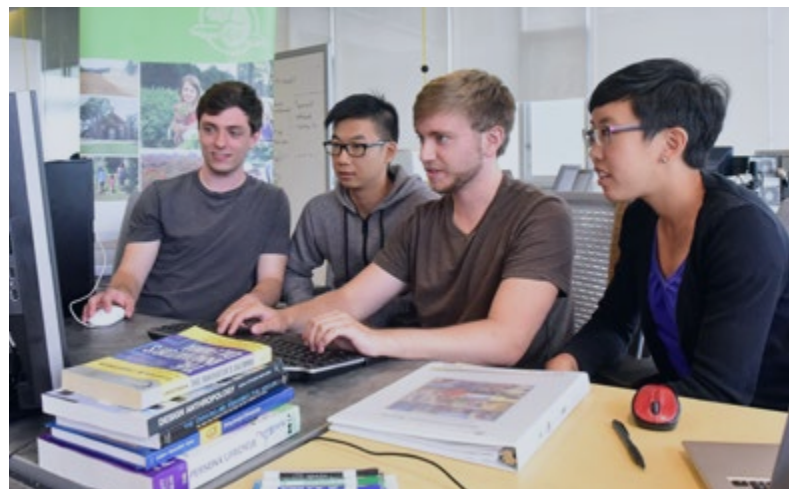
Are you into promoting mindfulness and building community? Investigate the UTM **Library Ambassador Program**.

### Build a Network

Establish a professional presence on social media (e.g., LinkedIn).

Attend department research seminars and participate in departmental **networking events** organized by SAGE.

Thinking about life after UTM? Connect with a UTM alumnus through the CSE's **Alumni Mentorship Program!**



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



# Final Year

## Build Skills

Skills are transferrable to any job regardless of where you develop them. Consider a practical work-based experience through the internship course JEG400/401Y5. Speak to the **GDS Academic Advisor** for details.

## Plan Your Academics\*

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 **GDS Academic Advisor** about enrolling in a course with hands on experience such GGR437H5 (Advanced Remote Sensing).

Enroll in GGR442: GDS Capstone Project.

Log on to ACORN and request graduation.

## Build a Global Mindset

Engage in programs like **ISTEP** and **THRIVE-OUT** to support your transition out of the University!

## Build a Network

Join a professional association. Check out the **Canadian Institute of Geomatics**. Go to the **Canadian Cartographic Association Conference** or the **GIScience Conference**.

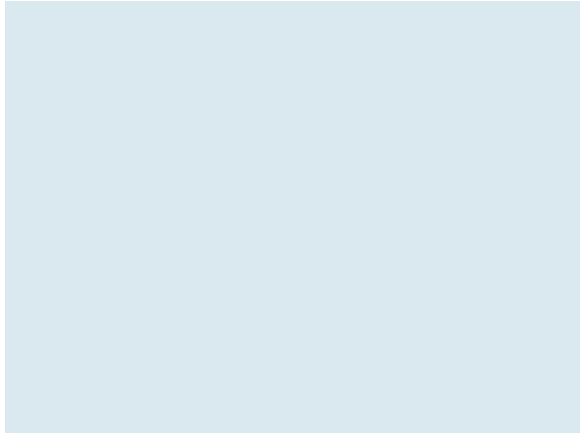
## Plan for Your Future

Attend the **Sweats to Suits Job Search Conference** and discover diverse career pathways. Work with the **Employment Strategist** team to review your resume and prep for interviews.

Still figuring things out? Meet with a **Career Counsellor** to create a career plan and attend a **Career Wellness** session to support your well-being along the way.

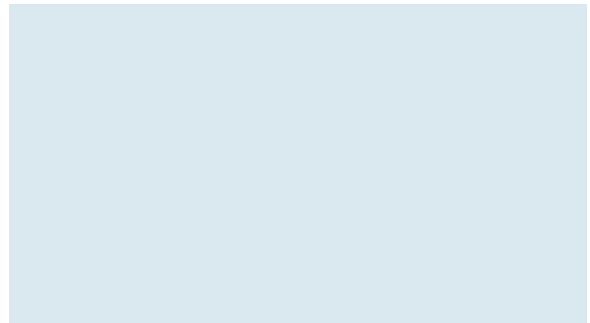
# My Program Plan Template

## Plan Your Academics\*

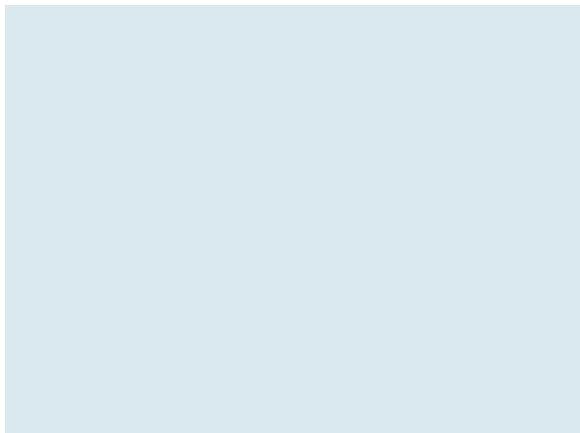


**Year:**

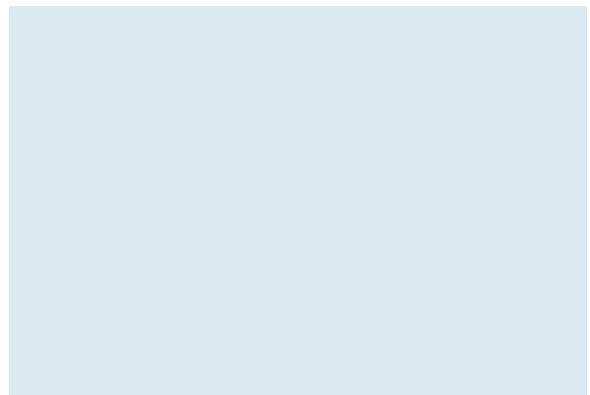
## Build a Network



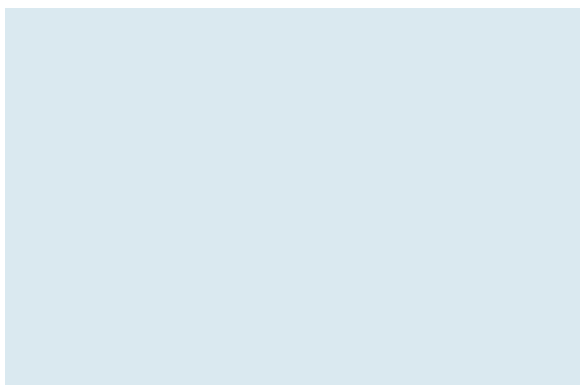
## Build a Global Mindset



## Plan for Your Future



## Build Skills



**Notes:**

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

Visit [www.utm.utoronto.ca/program-plans](http://www.utm.utoronto.ca/program-plans) for the online version and links.

# Geospatial Data Science (HBSc)

## 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 <https://www.utm.utoronto.ca/future-students/admissions/requirements>.

### 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.*

### Gain Hands-on Experience

Experiential learning at UTM empowers students to learn by doing, by taking what they study in the classroom and applying it in practical, hands-on settings. Build practical skills, explore career interests, and deepen your academic learning, giving you a strong advantage as you move toward your future goals.

- **Academic Internships**  
*Earn academic credit while completing a work placement.*
- **Alternative Reading Week**  
*Three-day community impact experience.*
- **Community Engaged Learning**  
*Learning with local communities.*
- **Field Courses**  
*Applying classroom knowledge in the field.*
- **Global Learning**  
*Learning across global contexts*
- **Research Opportunity Program**  
*Hands-on research with faculty.*
- **Skills Accelerator Program**  
*Build skills with an employer.*
- **Social Innovation Project**  
*Student teams solve local organizational challenges.*
- **UTM Co-op Internship Program**  
*Learning through immersive paid Co-op jobs.*
- **Work Study**  
*Part-time, paid work on campus.*

### 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](https://www.utm.utoronto.ca/future-students)

### Sneak Peek

Make maps using GDS! In GGR278H5 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 GDS 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.



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### Skills developed in Geospatial Data 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:

**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)

For a listing of clubs on campus visit the **Student Groups and Societies Directory**.

### Department of Geography, Geomatics and Environment

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

[advisor.gge.utm@utoronto.ca](mailto:advisor.gge.utm@utoronto.ca)  
[www.utm.utoronto.ca/geography](http://www.utm.utoronto.ca/geography)

### 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)
- 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)



This QR code leads to the online version of this Program Plan. Scan the code to gain access to all the live links.

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GRAVITY