

# Geological Engineering MASC Map

## Applying to and Navigating Graduate Studies

GRAD MAP FOR MASc STUDENTS 

### Why GRADUATE STUDIES in GEOLOGICAL ENGINEERING?

Geological Engineering is the application of geological knowledge to working with earth materials – whether for sustainable development of resources including water, oil, gas, and minerals; for construction of projects on, in, or of soil and rock; or to safeguard the public from geohazards. At Queen's, students in these fields will be exposed to geology from the field to the laboratory scale, and to analysis and decision-making in Earth Sciences, enjoying multiple field trips, and utilizing world-class labs for chemical and physical characterization of Earth materials, and numerical modelling of their behaviour.

Graduate students and their work are an important part of an ongoing research process that provides the community with ways of understanding natural, cultural, imaginative, social, and technological phenomena.

### Why QUEEN'S?

As a Master's student in Geological Engineering at Queen's you are part of one of the most research intensive universities in Canada. Our research program is internationally renowned with a wide range of research activities in all of the major specialization areas of geological engineering.

The Department of Geological Sciences and Geological Engineering provides opportunities for advanced studies and research in the Earth Sciences. Faculty interests span disciplines in Applied Geoenvironmental Sciences and Geotechnique, Geophysics and Geochronology, Economic Geology and Mineral Exploration, Petrology and Structural Geology, Sedimentology, Sedimentary Geochemistry and Paleobiology often in a multi-disciplinary fashion and including applications to economic and environmental problems.

Our students come from countries all over the world, such as Brazil, Chile, Greece, and China. At Queen's, graduate students from all disciplines learn and discover in a close-knit intellectual community.



*"Graduate level Geological Engineering has provided me with the opportunities to delve into my interests in Geophysics with intimate class sizes, impassioned instructors and spectacular locations for Graduate Field School."*

—Robin Maedel, MASc

We encourage you to identify an area of research interest and contact a potential supervisor before applying.

Visit the Geological Engineering website to read about faculty profiles and learn more about faculty members' research areas. When you find a faculty member with similar research interests to yours, contact them and tell them about your interest in graduate work and related experience.

### Program STRUCTURE

MASc (2 years): Course work and thesis.

### RESEARCH Areas

With high-tech geochemistry and geophysics labs, geomechanics computing tools, and Queen's Facility for Isotope Research lab, our students have the opportunity to engage in cutting-edge geoscience and geoengineering research. As well, students collaborate with industrial partners, government laboratories and surveys, academic institutions worldwide, and engage in extensive fieldwork on six continents, making our program truly a world-class experience. Students can avail themselves of opportunities to collaborate with other departments at Queen's, including the GeoEngineering Centre at Queen's and RMC, Mining, Environmental Studies, and Civil Engineering.



Queen's  
UNIVERSITY

GRADUATE STUDIES AND  
POSTDOCTORAL AFFAIRS

[queensu.ca/grad-postdoc](http://queensu.ca/grad-postdoc)

# Geological Engineering MAsc Map

MASTER OF APPLIED SCIENCE (MASc)



## GETTING STARTED

## INTERMEDIATE STAGE

## WRAPPING UP

### ACHIEVE YOUR ACADEMIC GOALS

- Start with key priorities like developing your relationship with your supervisor, forming your committee, doing your coursework, and creating a thesis proposal.
- Consider how your courses can contribute to your research thesis.
- Find your way through the academic process with help from departmental and School of Graduate Studies and Postdoctoral Affairs (SGSPA) professional development workshops, the Graduate Coordinator, and the SGSPA website.

- Complete your coursework; begin to research and write your Master's research thesis.
- Complete the AODA 800 non-credit course in Accessible Customer Service.
- Learn about academic integrity at Queen's.
- Become a Teaching or Research Assistant.
- Prepare a thesis proposal for supervisor(s) and the thesis committee.

- Complete and defend your Master's research thesis (GEOL 899).

### MAXIMIZE RESEARCH IMPACT

- Start to think about the audiences for your research.
- If you will be continuing graduate studies, apply for NSERC and OGS funding.

- Attend or present at a graduate conference such as the Advances in Earth Science Research Conference.
- Consider participating in the 3 Minute Thesis (3MT) or GRADflix competition.
- Expand your research audience through social media.
- Consider being interviewed on the SGSPA radio show Grad Chat to talk about your research.

- Consider publication options for your research.
- Attend a major conference in your field, such as the Canadian Geotechnical Society Annual Meeting, the American Association of Geographers Annual Meeting, or GeoConvention.
- Consider putting an article in The Conversation.

### BUILD SKILLS AND EXPERIENCE

- Consider positions in student services, the SGPS, or media outlets like the Queen's Journal, CFRC, and the SGSPA Blog. Look in the AMS Clubs Directory for more ideas.
- Serve on departmental, faculty, or university committees. Talk to the Jolliffe Club (the departmental graduate-student society) for tips on getting involved.
- See professional development workshops from SGSPA.

- Start keeping an eportfolio of your skills, experiences, and competencies.
- For help with teaching, get support from the Centre for Teaching and Learning. Enrol in SG5902 or the PUTL Certificate.
- Use a Research Assistant or Teaching Assistant position to develop your research or teaching skills.

- Practice articulating the skills you have been developing in settings outside the university, such as casual conversation, networking, and interviews. Get help from a Career Services workshop.
- Investigate internships from MITACS and other sources.
- Check out opportunities for extra training through CTL, School of Graduate Studies and Postdoctoral Affairs professional development, MITACS, or other sources to boost your skills.

### ENGAGE WITH YOUR COMMUNITY

- Explore how you can connect with your community through experiential opportunities on- and off-campus.
- Consider volunteering with different community organizations, such as the Engineering Society Design Team.

- Participate in your graduate and professional community through activities such as graduate student outreach programs, organizing conferences, and research groups.
- Prepare for work or studies in a multi-cultural environment by taking the Intercultural Awareness Training Certificate hosted by QUIC and Four Directions.
- If you are an international student interested in staying in Canada, consider speaking with an International Student Advisor.

- Do some targeted networking with people working in careers of interest, through Queens Connects on LinkedIn, the Queen's Alumni Association, professional associations, and at conferences. Get help from a Career Services workshop.
- Consider joining professional associations like the Canadian Geotechnical Society.

### LAUNCH YOUR CAREER

- Finding a career that fits starts with knowing yourself. Get help by taking a Career Services workshop or meeting with a career counsellor
- Browse non-academic labour market websites. Check admission test deadlines if needed for further studies.

- Explore different careers of interest by using Queens Connects on LinkedIn to connect with Queen's alumni. Check out Career Cruising for more information.
- If you are considering a PhD, explore programs of interest reach out to faculty, and apply to PhD programs and external scholarships.

- Participate in hiring committees and attend job talks. Start focusing on areas of interest. Research organizations of interest and start putting together your CV or resume for potential positions of interest. Get help from Career Services with job searching, resumes, and interviews.

## Knowledge & Workplace Skills

A graduate degree in Geological Engineering can equip you with valuable and versatile skills, such as:

- **Knowledge and technical skills**
- **Effective communication skills** in multiple forms for diverse audiences
- **Information management:** prioritize, organize, and synthesize large amounts of information
- **Time management:** meet deadlines and manage responsibilities despite competing demands
- **Project management:** develop ideas, gather information, analyze, critically appraise findings, draw and act on conclusions
- **Creativity and innovation**
- **Perseverance**
- **Independence** and experience as a collaborative worker
- **Awareness**, an understanding of sound ethical practices, social responsibility, responsible research, and cultural sensitivity
- **Professionalism** in all aspects of work, research, and interactions
- **Leadership:** initiative and vision leading people and discussion

## Career Possibilities

A Master's degree in Geological Engineering can take your career in many directions. Many of our MASc students choose to continue their academic inquiry with a PhD. Our Master's students are equipped with a strong foundation for careers in:

- Academia and Research
- Consulting
- Financial institutions
- Mining Companies
- Mining equipment and technology providers
- Non-Governmental Organizations

Taking time to explore career options, build experience, and network can help you have a smooth transition to the world of work after graduation.

### How to use this map

Use the 5 rows of the map to explore possibilities and plan for success in the five overlapping areas of career and academics. To make your own custom map, use the My Grad Map tool: [careers.queensu.ca/gradmaps](https://careers.queensu.ca/gradmaps).

# Graduate Studies FAQs

## How do I make the most of my time at Queen's?

Use the Grad Map to plan for success in five overlapping areas of your career and academic life. Everyone's journey is different - the ideas on the maps are just suggestions to help you explore possibilities. For more support with your professional development, take advantage of the SGSPA professional development framework and the new Professional Development Plan (PDP) process to set customized goals to help you get career ready when you graduate.

## Where can I get help?

Queen's provides you with a broad range of support services from your first point of contact with the university through to graduation. Ranging from help with academics and careers, to physical, emotional, or spiritual resources - our welcoming environment offers the programs and services you need to be successful, both academically and personally. Check out the SGSPA website for available resources.

## What is the community like?

At Queen's, graduate students from all disciplines learn and discover in a close-knit intellectual community. You will find friends, peers and support among the graduate students enrolled in Queen's more than 130 graduate programs within 50+ departments & research centres. With the world's best scholars, prize-winning professional development opportunities, excellent funding packages and life in the affordable, historic waterfront city of Kingston, Queen's offers a wonderful environment for graduate studies. Queen's is an integral part of the Kingston community, with the campus nestled in the core of the city, only a 10-minute walk to downtown with its shopping, dining and waterfront. For more about Kingston's history and culture, see Queen's University's Discover Kingston page.

# Application FAQs

## What do I need to know to APPLY?

### ACADEMIC REQUIREMENTS

- A Bachelor's degree in Geological Sciences or Geological Engineering, Mining Engineering, or Civil Engineering are acceptable. Degrees in related fields, such as Biology, Chemistry, Physics, Environmental Sciences, or Geography will be considered, but may require additional Geology courses during the period of study.
- **Grade requirements:** Work completed over all 4 years of the undergraduate degree will be considered, with emphasis on the last 2 years.

### ADDITIONAL REQUIREMENTS

- If English is not a native language, prospective students must meet the English language proficiency requirements in writing, speaking, reading, and listening. The following minimum scores are required: (1) TOEFL iBT: Writing (24/30); Speaking (22/30); Reading (22/30); Listening (20/30). Applicants must have the minimum score in each test as well as the minimum overall score, or (2) IELTS: 7.0 (academic module overall band score and a 7.0 for each test band), or (3) PTE Academics: 65, or (4) CAEL CE -70 (minimum overall score).

### KEY DATES & DEADLINES

- **Application due:** February 1.
- **Notification of acceptance:** Typically 4 weeks after the full application has been received.

Before you start your application, please review the Graduate studies application process.

## What about FUNDING?

Geological Engineering Master's students have a minimum funding of \$21,000 for domestic students and minimum funding of \$28,000 for international students. Research Assistantships are in consultation with the student's supervisor. Students should also consult the NSERC for the current levels of support this agency provides.

Queen's will automatically issue a one time \$5,000 top-up to Masters winners of federal government tri-council awards. For more information, see the School of Graduate Studies and Postdoctoral Affairs' information on awards and scholarships.



Kelly McCaugherty, Graduate Assistant  
(613) 533-2597

geolgradassistant@queensu.ca  
queensu.ca/geol/graduate