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 Geotechnology, 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.

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.

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 him/her and tell them about your interest in graduate work and related experience.

“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

www.queensu.ca/sgs
Geological Engineering

What will I learn?
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
- Finesse and technical skills
- Independence and experience as a collaborative worker
- Awareness of understanding social, ethical, and environmental implications
- Professionalism in all aspects of work, research, and interactions
- Leadership: initiative and vision leading people and discussion

Where can I go?
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
- Mining Companies
- Engineering and Consulting Firms
- Environmental Consulting Firms
- Governmental Organizations
- Financial Institutions
- Non-Governmental Organizations
- Business Owners and Entrepreneurs
- Self-employment

Getting Started

- 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 Expanding Horizons professional development workshops, the Graduate Coordinator and the SGS Habitat.
- Consider joining professional associations like the Geological Society of Canada.
- Visit careers.queensu.ca/gradmaps for the online version with links!

Intermediate Stage

- Complete your coursework; begin to research and write your Master’s research thesis.
- Complete the ADDA 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.
- Attend or present at a graduate conference such as the Advances in Earth Science Research Conference.
- Consider participating in the 3 Minute Thesis (3MT) competition.
- Expand your research audience through social media.
- Start keeping an inventory of your skills, experiences and competencies.
- For help with teaching, get support from the Centre for Teaching and Learning. Enroll in SGS901 or the PUTL certificate.
- Use a Research Assistant or Teaching Assistant position to develop your research or teaching skills.
- 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 QUAC’s Intercultural Competency Certificate.
- Do some targeted networking with people working in careers of interest, through Queen’s Connects on LinkedIn, the Queen’s Alumni Association, professional associations, and at conferences. Get help from a Career Services workshop.
- 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, or interviews.

Wrapping Up

- Complete and defend your Master’s research thesis (GEOE 899).
- Consider publishing options for your research.
- Attend a major conference in your field, such as the Canadian Geotechnical Society Annual Meeting.
- Attend a major conference in your field, such as the American Association of Geographers Annual Meeting.
- Practice articulating the skills you have been developing in settings outside the university, such as casual conversation, networking, and interviews.
- Investigate internships from Mitacs and other sources.
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- Review your experience and skills to prepare for the job market.
- Publish your research and disseminate your findings.
- Expand your research audience through social media.
- Attend or present at a graduate conference such as the Advances in Earth Science Research Conference.
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Academic Launch

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Career Launch

- 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 QUAC’s Intercultural Competency Certificate.
- Do some targeted networking with people working in careers of interest, through Queen’s Connects on LinkedIn, the Queen’s Alumni Association, professional associations, and at conferences. Get help from a Career Services workshop.
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Visit careers.queensu.ca/gradmaps for the online version with links!

* This map is intended to provide suggestions for activities and careers, but everyone’s abilities, experiences, and constraints are different. Build your own Grad Map using our online My Grad Map tool.
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 School of Graduate Studies requires the following minimum scores: TOEFL (paper-based): 550, (2) TOEFL iBT: Writing (24/30); Speaking (22/30); Reading (22/30); Listening (20/30), for a total of 88/120 (applicants must have the minimum score in each test as well as the minimum overall score), or (3) IELTS: 7.0 (academic module overall band score), or (4) PTE Academics: 65.

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 $5,000 top-up to Masters winners of federal government tri-council awards. For more information, see the School of Graduate Studies’ information on awards and scholarships.

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