Mining Engineering M.A.Sc. Map

Navigating Graduate Studies and Beyond

GRAD MAP FOR M.A.SC. STUDENTS

How do I **USE THIS MAP?**

Whether you are considering or have embarked on graduate studies at Queen's, use this map to plan for success in five overlapping areas of your career and academic life. The map helps you explore possibilities, set goals and track your individual accomplishments. Everyone's journey is different – the guide offers options for finding your way at Queen's and setting the foundation for your future. To make your own customized map, use the online **My Grad Map** tool.

Why **GRADUATE STUDIES in MINING ENGINEERING?**

Mining is the foundation of industrial civilization. It is the process of extracting minerals like gold, silver, copper, nickel and uranium (metallic) and salt, potash, coal, limestone aggregate and oil (non-metallic) formations that concentrate naturally in the earth. It may surprise you, but other than agricultural products, the raw ingredients for everything else in our modern lives comes from mining.

Mining Engineering is one part technical design and one part business management. Mining engineers are responsible for deciding how valuable a mineral deposit is and how best to mine it, for planning the day-to-day schedule and path of mining to maximize extraction and profit, and for ensuring the safety of people and equipment through applications in areas such as mine ventilation and rock mechanics.

Check out **whygradstudies.ca** for more reasons to choose graduate studies in engineering.

Why **QUEEN'S?**

"I would recommend this program to anyone in the industry with a problem to solve."

—George McIsaac, PhD

As a Master's student in Mining 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 mining engineering.

Queen's Mining Engineers work in metals and industrial minerals, with consulting companies, geotechnical groups, environmental groups, heavy and light equipment manufacturing companies, computer software and hardware development organizations, banks, government institutions and university organizations. We are at the forefront in developing computer applications for engineering design in mineral extraction and work in close contact with the mineral industry.

Our students come from all over the world. At Queen's, graduate students from all disciplines learn and discover in a close-knit intellectual community.

Why **KINGSTON?**

Described by students as both "quaint" and "eclectic," Kingston is big enough to provide all the conveniences of modern life, and small enough for students, staff, and faculty to feel instantly comfortable and at home.

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.

Program **STRUCTURE**

MASc (2 years): Course work, seminar, and research thesis.

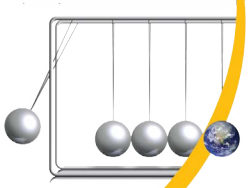
RESEARCH Areas

- Mining Engineering
- Mine-Mechanical
- Mineral Processing

Areas of **SPECIALIZATION**

- Mineral Planning & Design of Mechanical Systems
- Mineral Processing
- Geotechnical, Environmental, Sustainability, & Mineral Economics
- Occupational Health and Safety & Rock Mechanics
- Reliability, Maintenance, & Risk Assessment

School of Graduate Studies
Create an impact
www.queensu.ca/sgs



Mining Engineering M.A.Sc. MAP

MASTER OF APPLIED SCIENCE (M.A.SC.)

Queen's 175 YEARS

	GETTING STARTED	INTERMEDIATE STAGE	WRAPPING UP
ACHIEVE YOUR ACADEMIC GOALS	• Start with key priorities like developing your relationship with your supervisor, forming your committee, and doing your coursework. • Consider how your course choices can contribute to your research thesis. • Find your way through the academic process with help from departmental and **Expanding Horizons** professional development workshops, the department Grad Chair and the **SGS Habitat**.	• Complete your coursework; begin to research and write your thesis. • Complete the AODA 800 non-credit course in Accessible Customer Service. • Become a Teaching Assistant. • Attend the graduate seminar series (MINE 897). • Take the non-credit course on laboratory safety (CHEM 801) or (MINE 862).	• Present your research to Mining Engineering graduate students and faculty in the graduate seminar (MINE 897). • Complete and defend your Master's research thesis (MINE 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 **Canadian Institute of Mining (CIM)** Annual Meeting. • Consider participating in the **3 Minute Thesis (3MT)** competition. • Expand your research audience through social media such as Twitter or a blog.	• Consider publication options for your research. • Attend a major conference in your field, such as **Canadian Institute of Mining (CIM)** conferences or Annual General Meeting.
BUILD SKILLS AND EXPERIENCE	• Consider positions in student services, the **SGPS**, or media outlets like the **Queen's Journal**, **CFRC**, **QTV** and the **SGS Blog**. Look in the **AMS Clubs Directory** for more ideas. • Serve on departmental, faculty or university committees. Talk to the **Society of Graduate and Professional Students (SGPS)** for tips on getting involved. • See professional development workshops from **Expanding Horizons**.	• Start keeping an eportfolio 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**. • Collaborate with other departments, such as Geological, Mechanical, Chemical, and Civil Engineering.	• Practice articulating the skills you have been developing in settings outside the university, such as casual conversation, networking, and interviews. Get help with the **Skills and Experience workshop**. • Check out opportunities for extra training through CTL, Expanding Horizons, Mitacs, or other sources to boost your skills. • Investigate internships from **Mitacs** and **other sources**.
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.	• Participate in your graduate and professional community through activities such as graduate student outreach programs, organizing conferences, and research groups like **Material Matters**. • Prepare for work or studies in a multi-cultural environment by taking QUIC's **Intercultural Competency Certificate**. • 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 **QueensConnects** on LinkedIn, the **Queen's Alumni Association**, professional associations, and at conferences. Check out Career Services' **networking workshops**. • Consider joining professional associations like the **Mining Association of Canada (MAC)**, the Canadian Institute of Mining (CIM) and the **International Society of Mining Engineers (SME)**.
LAUNCH YOUR CAREER	• Finding a career that fits starts with knowing yourself. Get help by taking the Career Services Career Planning workshop or meeting with a career counsellor. Check out books like ***So What Are You Going to do With That?*** for advice on various career options. • Start reading publications like **University Affairs** and the **Chronicle of Higher Education**. Browse non-academic labour market websites. Stay on the lookout for special events like Graduate Student **Career Week** to explore your career pathways. • Check admission test deadlines if needed for further studies.	• Explore different careers of interest by reading **alumni profiles** on the SGS website, and using **QueensConnects** on LinkedIn to connect with Queen's alumni, or find alumni in various careers through "**Ask an Alum**". • Check out the free online modules at **MyGradSkills** to help you plan your career. • 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, or interviews**.

EMPLOYABILITY SKILLS

Knowledge and **technical skills** in area of specialization

Communication: effective and clear in written, oral and multimedia forms, for diverse audiences

Information management: prioritize, organize and synthesize large amounts of information

Time management: meet deadlines and responsibilities despite competing demands

Project management: develop ideas, gather information, analyze, critically appraise findings, draw and act on conclusions

Creativity and **innovation** to address complex, multifaceted challenges

Perseverance to work through challenges to achieve desired outcome

Independence and experience as a **collaborative** worker

Awareness and 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 discussions

Visit careers.queensu.ca/gradmaps for the online version with links!

M.A.Sc. Map FAQs

What do I need to know to apply?

ACADEMIC REQUIREMENTS

- A Bachelor's degree in Mining, Mechanical Engineering, Chemical Engineering or other related engineering fields. Many of our students come from industrial backgrounds. Anyone without academic prerequisites will be placed on probation and required to take additional courses before initiating a MASc program of study.
- **Grade requirements:** B- (70%) average.

ADDITIONAL REQUIREMENTS

- If English is not a native language, prospective students must meet the TOEFL requirements in writing, speaking, reading, and listening.

KEY DATES & DEADLINES

- **Application due:** March 1.
- **Notification of acceptance:** April 30.

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

How do I find a supervisor?

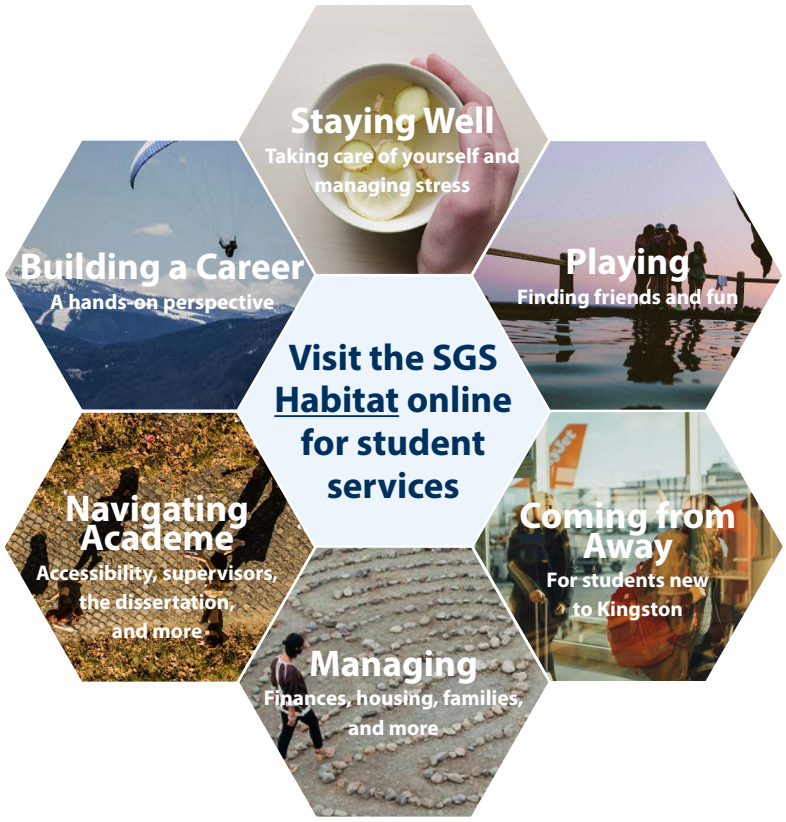
We encourage you to identify an area of research interest and contact a potential supervisor before applying.

Visit the Mining Engineering website to read 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.

What about funding?

Mining Engineering Master's students have a minimum funding level of $16,800. In addition to the minimum funding package, you may serve as a Teaching Assistant for at least one term per year and gain additional pay for this service. When necessary, serving as a Teaching Assistant for a second term will result in an increase in your funding package equivalent to half the value of the second TAship.

Apply for external funding from OGS, NSERC and other sources. 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.

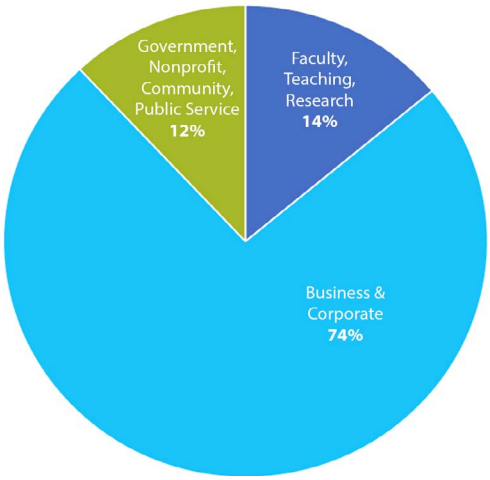


Where Can a Graduate Degree Take Me?

A Master's degree in Mining 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
- Mining Equipment and Technology Providers
- Non-Governmental Organizations
- Financial Institutions

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



M.A.Sc. Career Outcomes in Engineering

Council of Graduate Schools and Educational Testing Service. (2012). Pathways Through Graduate School and Into Careers.Princeton, NJ: Educational Testing Service.

Queen's University | DEPARTMENT OF MINING ENGINEERING

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