Mining Engineering MASc Map

Applying to and Navigating Graduate Studies

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, uranium (metallic), 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.



GRAD MAP FOR MASc STUDENTS 🕏



RESEARCH Areas

- Blasting, Mine to Downstream
 Operations
- Data analytics
- Geomechanics, Seismicity, Geodynamics
- Geostatistics, Geometallurgy
- Hydrometallurgy, Biohydrometallurgy, Environmental
- Health and Safety
- Mining Engineering
- Mine-Mechanical
- Mineral Processing
- Pyrometallurgy, Microwaves in metal extraction
- Reliability, Maintenance and Risk
 Assessment
- Social Risk and Community Relations
- Ventilation

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

Visit the <u>Mining Engineering website</u> 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 them and tell them about your interest in graduate work and related experience.

Why QUEEN'S?

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.

As technology evolves and the global economy changes, our students and researchers play a key role in defining the state of the art in mining. In close collaboration with industry partners, our faculty and students work to make mining operations safer, more efficient, more productive, less impactful on the natural environment, and more cost effective.

Program STRUCTURE

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



2023-2024 Mining 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, 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 School of Graduate Studies and Postdoctoral Affairs professional development workshops, the department Grad Chair, and the SGSPA website. 	 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). 	 Present your research to Mining E students and faculty in the gradua Complete and defend your Master 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 <u>Canadian Institute of Mining (CIM)</u> Annual Meeting. Consider participating in the <u>3 Minute Thesis (3MT)</u> competition. Expand your research audience through social media such as Twitter or a blog. 	 Consider publication options for y Attend a major conference in your Institute of Mining (CIM) conference Meeting. Set up a meeting with the School of Postdoctoral Affairs for a Grad Chainterests.
BUILD SKILLS AND EXPERIENCE	 Serve on departmental, faculty, or university committees. Talk to the <u>Society of Graduate and Professional Students (SGPS)</u> for tips on getting involved. Consider positions in student services, the SGPS, or media outlets like the Queen's Journal, CFRC, and the SGSPA Blog. Look in the <u>AMS Clubs Directory</u> for more ideas. 	 Start keeping an eportfolio of your skills, experiences, and competencies. For help with teaching, get support from the <u>Centre for</u> <u>Teaching and Learning</u>. Enrol in SGS902 or the PUTL Certificate. Collaborate with other departments, such as Geological, Mechanical, Chemical, and Civil Engineering. 	 Practice articulating the skills you houtside the university, such as case and interviews. Get help from a Cate Investigate internships from MITAGE Check out opportunities for extra to of Graduate Studies and Postdocted development, MITACS, or other some and the studies and the studies and the some and the studies and the some and the solution of the solution o
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 Teams. 	 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 Indigenous Student Centre. If you are an international student interested in staying in Canada, consider speaking with an International Student Advisor. 	 Do some targeted networking with of interest, through Queen's Conn- <u>Queen's Alumni Association</u>, profe conferences. Get help from a Care Consider joining professional asso <u>Association of Canada (MAC)</u>, the C (CIM), and the <u>International Societ</u>
LAUNCH YOUR CAREER	 Finding a career that fits starts with knowing yourself. Get help by taking a <u>Career Services</u> workshop or meeting with a career educator and coach. Start reading publications like <u>University Affairs</u> and the <u>Chronicle of Higher Education</u>. Browse non-academic labour market websites. Stay on the lookout for special events like School of Graduate Studies and Postdoctoral Affairs Career Week to explore your career pathways. Check admission test deadlines if needed for further studies. 	 Explore different careers of interest by <u>Queens Connects</u> 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 an focusing on areas of interest. Rese interest and start putting together potential positions of interest. Get with job searching, resumes, and i

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. The map just offers suggestions – you don't have to do it all! To make your own custom map, use the <u>My Grad Map</u> tool.



g Engineering graduate uate seminar (MINE 897). ter's research thesis (MINE

your research.

our field, such as <u>Canadian</u> ences or Annual General

ol of Graduate Studies and <u>Chat</u> to discuss your research

u have been developing in settings asual conversation, networking, Career Services workshop.

TACS and other sources.

ra training through CTL, Society ictoral Affairs professional sources to boost your skills.

vith people working in careers nnects on LinkedIn, the ofessional associations, and at areer Services workshop.

sociations like the <u>Mining</u> e Canadian Institute of Mining iety of Mining Engineers (SME).

and attend job talks. Start esearch organizations of her your CV or resume for fet help from Career Services d interviews.

WHAT WILL I LEARN?

A graduate degree in Mining Engineering can equip you with:

- 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

WHERE CAN I GO?

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
- 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.

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 <u>Individual</u> <u>Development Plan (IDP)</u> 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 <u>SGSPA website</u> for available resources.

What is the community like?

At Queen's, graduate students from all disciplines learn and discover in a closeknit 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.



Graduate Application 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 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 deadline: March 1st.
- Notification of acceptance: April 30th.

Before you start your application, please review the <u>Graduate studies application</u> process.

What about FUNDING?

Mining Engineering Master's students have a minimum funding level of \$25,000. 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 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 <u>awards and scholarships</u>.



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