Get to know GEOLOGICAL SCIENCES

Discovery, development and sustainability of water, mineral and energy resources as well as coping with climate change, human impact and natural hazards facing increasing global populations, all depend on a deep understanding of natural processes. Our students study the Earth in this context, with high-demand careers in diverse fields such as mineral and oil exploration, mining and hydrocarbon extraction, surface and underground construction, environmental assessment, protection and rehabilitation, groundwater investigation and resource management.

As a Geological Science student, you will learn in a variety of ways. Many courses involve laboratory and field work in a small group setting. Second and upper year courses include several extended field trips. When we aren’t in the field our students spend their time in one of our world-class teaching labs such as the Geochronology Lab that looks at items 100,000 years old or older, or the X-ray Diffraction and Clay Mineral Lab to separate and identify minerals and crystals. The Miller Museum collections of rocks and minerals provides students the opportunity to study samples collected from around the world.

We are one of the largest Geology departments in Canada - and yet we pride ourselves on our small group settings and classes. At the same time, most students rack up more than 240 hours of experience on various field trips.

“"The Earth is our classroom, and hands-on learning is the way we learn.”

Degree OPTIONS
Bachelor of Science (Honours)
Major / Minor / Specialization in Geology or Environmental Geology
Bachelor of Science (General)

Queen’s ADMISSIONS
Students apply to Queen’s Science (QS) through the OUAC (Ontario University Application Centre) website. Secondary School prerequisites include English 4U, Advanced Functions 4U, Calculus and Vectors 4U, plus two of: Biology 4U, Chemistry 4U or Physics 4U.

A Common START
Students in our Faculty are admitted into Arts, Science or Computing but the focus is on a common first year. Through self-exploration, and while you settle into university life, you have the chance to work with our advisors and faculty to uncover where your real interests and opportunities for success are. Sometimes that discovery happens fairly quickly, and for other students it takes some work and time before the “ah-ha!” happens – either way your first year will be a great experience at Queen’s.

Course HIGHLIGHTS
Diamonds anyone? Learn about the role of gemstones in society through the study of works of art and popular literature (GEOL 102). Volcanoes, Earthquakes, Climate Change? Examine the relationship between human-kind and our ever-changing planet, focusing on geologic hazards such as volcanic eruptions, earthquakes, tsunamis and more (GEOL 106). Where did life begin? Take a 4.5 billion year roller coaster through time to see how our planet has evolved (GEOL 107).

That is a degree from Queen’s.
quartsci.com
**Geological Sciences MAJOR MAP**

**BACHELOR OF SCIENCE HONOURS (SPECIALIZATION, MAJOR/ MINOR) | BACHELOR OF SCIENCE (GENERAL) | BACHELOR OF ARTS HONOURS (MINOR)**

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### 1ST YEAR

**GET THE COURSES YOU NEED**

- Take CHEM 112, PHYS 106, MATH 121, GEOL 104, GEOL 107.
- For plan requirements or thresholds, see the Arts and Science website. Speak to an Academic Advisor or the Undergraduate Chair for help.

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### 2ND YEAR

**GET RELEVANT EXPERIENCE**

- Join teams or clubs on campus such as the Queen's University Experimental Sustainability Team (QUEST) and the Queen's Project on International Development (QPID).
- See the Co-Curricular Opportunities Directory or AMS Clubs Directory for more ideas.

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### 3RD OR FINAL YEAR

**GET CONNECTED WITH THE COMMUNITY**

- Volunteer on or off campus with different community organizations, such as the Earth Centre and Women in Science and Engineering.

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### 4TH OR FINAL YEAR

**GET THINKING GLOBALLY**

- The Queen's University International Centre is your first stop to learn how to internationalize your degree or to leverage your existing cross-cultural experience. Speak to a QUIC advisor or get involved in their programs, events and training opportunities.

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### CONSIDER A 12-16 MONTH QUIP INTERNSHIP

- Investigate requirements for full-time jobs or other opportunities related to careers of interest.
- Assess what experience you're lacking and fill in gaps with volunteering, clubs, or internships – check out the Career Services skills workshop for help.

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### CONSIDER A 12-16 MONTH QUIP INTERNSHIP

- Consider joining professional organizations such as the Geological Association of Canada, the Canadian Society of Petroleum Geologists, the International Association of Hydrogeologists, and the National Ground Water Association.
- Join groups on LinkedIn reflecting specific careers or topics of interest in Geology.

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### WHERE COULD I GO AFTER GRADUATION?

- Agricultural sciences
- Architecture
- Business administration and management
- Community relations for the extractive industries
- Contaminant remediation
- Ecology
- Environmental conservation and management
- Forestry
- Geology
- Geomatics
- Geophysics
- International development
- Landscape architecture
- Law
- Meteorology
- Mineral industry
- Natural hazard identification and mitigation
- Oceanography
- Oil and gas exploration and extraction
- Paleontology
- Public administration
- Renewable energy
- Surveying and cartography
- Toxicology
- Volcanology
- Waste management
- Water conservation

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**Caution:** *This map is meant as a guide to provide suggestions throughout your university career. The activities, resources, and careers mentioned are possibilities – you are not restricted to them and you don’t have to follow this exact timeline. Every person (including you!) will find their own unique path through their degree at Queen's and beyond.*

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Visit careers.queensu.ca/majormaps.html for the online version with links!
How to use this map

• Got questions about careers and classes?
• Feeling a little lost or overwhelmed by choices?
• Wondering what you are “supposed” to be doing?

Use this map to plan for success in five overlapping areas of career and academic life. Each map helps you explore possibilities, set goals and track your accomplishments. To make your own custom map, use the My Major Map tool.

Don’t stress if you haven’t done all of the suggested activities. The map is not a prescription – it’s a tool for finding your own way at Queen’s.

Getting what you need to succeed in the workplace

WHAT DO EMPLOYERS WANT?
In a recent survey from the Canadian Council of Chief Executives the top 6 skills sought by employers were:
1 People skills
2 Communication skills
3 Problem-solving skills
4 Analytical abilities
5 Leadership skills
6 Industry-specific knowledge

HOW DO I GET THE SKILLS I NEED?
It is important to develop a balanced skill set – many of which you will develop during your studies. To stand out, take advantage of experiential learning through the multitude of clubs and activities in and around Queen’s. Check out the Get Relevant Experience section of this map.

WHAT CAN I LEARN STUDYING GEOLOGICAL SCIENCES AT QUEEN’S?
• Knowledge of principles and techniques of the earth sciences
• Practical applications of geological science techniques
• Understanding of the variability of earth materials and their changes with time and environment
• Fieldwork skills – design and carry out site investigations to solve problems
• Technical skills – use up-to-date geological analysis tools, equipment and software
• Research skills – conduct scientific research and analyze quantitative information, develop multiple working hypotheses
• Problem-solving – approach a range of problems from various perspectives
• Ability to work independently and in a team on a project
• Oral and written communication – clearly explain technical information and write reports
• Resource and time management

WHAT MAKES ME SPECIAL?
No one will get exactly the same experience as you. Take the time to think about what skills you have developed to be able to best explain them with compelling examples in future applications to employers and further education. For help with this, check out the Career Services skills workshop.