

GEOLOGY MAJOR (B.SC.) (66 CREDITS)

Offered by: Earth & Planetary Sciences (Faculty of Science)

Degree: Bachelor of Science

Program credit weight: 66

Program Description

The program curriculum provides a rigorous foundation in the fundamental earth science subjects and in advanced subjects relevant to exploration for energy resources, industrial and ore minerals, and to environmental geosciences. The program meets the academic requirements shared by the professional orders for geologists and environmental geoscientists in Canadian provinces.

Degree Requirements — B.Sc.

This program is offered as part of a Bachelor of Science (B.Sc.) degree.

To graduate, students must satisfy both their program requirements and their degree requirements.

- The program requirements (i.e., the specific courses that make up this program) are listed under the Course Tab (above).
- The degree requirements—including the mandatory Foundation program, appropriate degree structure, and any additional components—are outlined on the Degree Requirements page.

Students are responsible for ensuring that this program fits within the overall structure of their degree and that all degree requirements are met. Consult the Degree Planning Guide on the SOUSA website for additional guidance.

Note: For information about Fall 2025 and Winter 2026 course offerings, please check back on May 8, 2025. Until then, the "Terms offered" field will appear blank for most courses while the class schedule is being finalized.

Required Courses (30 credits)

Expand allContract all

Course	Title	Credits
EPSC 210	Introductory Mineralogy.	3
EPSC 212	Introductory Petrology.	3
EPSC 220	Principles of Geochemistry.	3
EPSC 231	Field School 1.	3
EPSC 233	Earth and Life Through Time	3
EPSC 240	Geology in the Field.	3
EPSC 303	Structural Geology.	3
EPSC 320	Elementary Earth Physics.	3
EPSC 340	Earth and Planetary Inference.	3
MATH 222	Calculus 3.	3

Complementary Courses (36 credits)

15 credits of advanced earth science

Expand allContract all

Course	Title	Credits
EPSC 355	Sedimentary Geology.	3
EPSC 423	Igneous Petrology.	3
EPSC 425	Sediments to Sequences.	3
EPSC 445	Metamorphic Petrology.	3
EPSC 452	Mineral Deposits.	3
GEOG 272	Earth's Changing Surface.	3

3 credits of environmental and ore-forming processes

Expand allContract all

Course	Title	Credits
EPSC 519	Isotopes in Earth and Environmental Science.	3
EPSC 325	Environmental Geochemistry.	3
EPSC 549	Hydrogeology.	3
EPSC 561	Ore-forming Processes.	3
EPSC 590	Applied Geochemistry Seminar.	3
GEOG 305	Soils and Environment.	3

18 credits of other specializations can be drawn from the categories above or from:

Expand allContract all

Course	Title	Credits
EPSC 331	Field School 2.	3
EPSC 334	Invertebrate Paleontology.	3
EPSC 470D1	Undergraduate Thesis Research .	3
EPSC 470D2	Undergraduate Thesis Research.	3
EPSC 482	Research in Earth and Planetary Sciences.	3
EPSC 501	Crystal Chemistry.	3
EPSC 520	Earthquake Physics and Geology.	3
EPSC 522	Advanced Environmental Hydrology.	3
EPSC 525	Microbiology of the Earth System.	3
EPSC 530	Volcanology.	3
EPSC 547	Modelling Geochemical Processes.	3
EPSC 548	Igneous Petrogenetic Mechanisms.	3
EPSC 567	Advanced Volcanology.	3
GEOG 201	Introductory Geo-Information Science.	3
GEOG 322	Environmental Hydrology.	3

Other ATOC, EPSC, ESYS, GEOG, MATH and MIME courses may also be used, with the permission of the Director of undergraduate studies, if they meet the academic requirements of professional orders in most Canadian provinces.