School of Geography & Earth Sciences

Areas of study

Earth & Environmental Sciences at McMaster University encompasses five major themes:

- **Aqueous Environmental Geochemistry**: Study of Earth processes and chemical interactions between the solid Earth, living organisms, the atmosphere and the hydrosphere.
- **Earth Sciences**: Study of solid Earth, its rocks, land forms, minerals and resources.
- **Environmental Hydrology and Climate**: Study of the Earth's water supply, movement, balance, quality and interaction with climate processes.
- **Environmental Policy**: Study of how human activities can be managed to prevent, reduce or mitigate harmful environmental impacts.
- **Geographical Information Systems (GIS) and Spatial Analysis**: Statistical study of human activities and their impacts, which relies on geographical information science.

It should be noted that each thematic area has its own sequence of courses and prerequisites. Students may elect to take some or all of the upper level courses from different areas. In addition, there is a set of courses encompassing research design, field work, internships, and the senior thesis or review paper.

Students in Honours Earth & Environmental Sciences may choose a suite of courses that fulfills the academic requirements for the professional recognition from the Association of Professional Geoscientists of Ontario (APGO – www.apgo.net).

Possible careers

Earth and Environmental Sciences is a multi-disciplinary degree that leads to careers in these and many other related fields:

- Climate Change
- Natural Disaster Prediction
- Environmental Assessment
- Environment and Health
- Hydrology
- Geochemistry
- Mineral Exploration
Co-op opportunities

The School of Geography & Earth Sciences offers a cooperative education option for Honours Earth & Environmental Sciences, Honours Environmental Sciences and Honours Geography & Environmental Sciences programs, beginning in Level III. Cooperative education extends the undergraduate program to five years, and is a great way to gain practical experience and develop a professional network. In addition, during the four, 4-month work terms, you will further enhance your technical and non-technical workplace skills, such as teamwork, effective communication and time management. Admission is based on academic achievement and an interview. For further information, consult the Undergraduate Calendar or stop by the Science Career and Cooperative Education office in BSB 127.

Field Experience

Students participate in a range of field-based activities through local and more distant sites of interest.

Level II Programs

### Admission Requirements

**Enrolment in this program is limited** and possession of the published minimum requirements does not guarantee admission. Admission is by selection but requires, as a minimum, completion of any Level I program with a Grade Point Average of at least 5.0 including:

- 6 units from EARTHSCI 1G03, ENVIRSC 1C03, 1G03 with an average of at least C+
- 3 units CHEM 1A03
- 3 units CHEM 1R03 and 3 units from the Science I Course List (See Admission Note 1)
- 3 units from MATH 1A03, 1LS3
- 12 units from BIOLOGY 1A03, 1M03, CHEM 1A03, MATH 1A03, 1B03, PHYSICS 1A03, 1A03, 1C03, 1CD3, SCIENCE 1A03

**Admission Notes**

1. Students who did not complete Grade 12 Chemistry U must complete CHEM 1R03 in Level I. Given this course is considered elective, an additional three units from the Science I Course List must be completed. CHEM 1A03 must be completed by the end of Level II.

2. PHYSICS 1A03 or 1C03 must be completed prior to graduation. Completion by the end of Level II is recommended. Students who did not complete Grade 12 Physics U must register in PHYSICS 1A03.

### Science I Course List:

- **ASTRON 1F03**, **BIOLOGY 1A03, 1M03**, **BIOPHYS 1S03**, **CHEM 1A03, 1AA3**, **ENVIRSC 1C03, 1G03**, **GEOG 1HA3, 1HB3**, **GEOG 1HA3, 1HB3**, **MATH 1A03, 1A03, 1B03, 1L33**, **MEDPHYS 1E03**, **PHYSICS 1A03, 1A03, 1C03, 1CD3, PSYCH 1F03, 1X03, 1XX3**, **SCIENCE 1A03**

### Science II Program Requirements

**Honours Earth & Environmental Sciences (Honours B. Sc.)**

- Completion of any Level I program with a Grade Point Average of at least 5.0 including:
  - 3 units from EARTHSCI 1G03, ENVIRSC 1C03, 1G03 with a grade of at least C+
  - 3 units from BIOLOGY 1M03
  - 3 units from MATH 1A03, 1LS3, 1M03
  - 3 units from GEGG 1HA3, 1HB3
  - 9 units from the Science I Course List

**Honours Environmental Sciences (Honours B. Sc.)**

- Completion of any Level I program with a Grade Point Average of at least 5.0 including:
  - 3 units from EARTHSCI 1G03, ENVIRSC 1C03, 1G03 with a grade of at least C+
  - 3 units from BIOLOGY 1M03
  - 3 units from MATH 1A03, 1LS3, 1M03
  - 3 units from GEGG 1HA3, 1HB3
  - 9 units from the Science I Course List

**Honours Geography & Environmental Sciences (Honours B. Sc.)**

- Completion of any Level I program with a Grade Point Average of at least 5.0 including:
  - 3 units from MATH 1A03, 1LS3
  - 6 units BIOPHYS 1S03, 1M03 with an average of at least 6.0
  - 3 units from EARTHSCI 1G03, ENVIRSC 1C03, 1G03 with a grade of at least C+
  - 12 units from ASTRON 1F03, BIOPHYS 1S03, CHEM 1A03, 1AA3, 1CD3, 1A03, 1C03, 1CD3, ENVIRSC 1C03, 1G03, GEGG 1HA3, 1HB3, LIFECI 1E03, MATH 1A03, 1A03, 1B03, 1L33, MEDPHYS 1E03, PHYSICS 1A03, 1A03, 1C03, 1CD3, PSYCH 1F03, 1X03, 1XX3, SCIENCE 1A03

**Honours Biology and Environmental Sciences (Honours B. Sc.)**

- Completion of any Level I program with a Grade Point Average of at least 3.5 including:
  - 3 units from MATH 1A03, 1LS3
  - 3 units from EARTHSCI 1G03, ENVIRSC 1C03, 1G03 with a grade of at least C+
  - 18 units from the Science I Course List

### Contact Information

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