

# ■ Environmental Geoscience

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## Program Coordinator

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## Associated Faculty

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The Trent School of the Environment offers the Environmental Geoscience program, which integrates the disciplines of geology, biology, chemistry, and geography to study the interaction between human activities and earth systems. Students receive foundational training in geoscience while also gaining knowledge in the other sciences. They will further develop their skills and experience from taking a breadth of advanced geoscience courses including a field methods course that provides opportunities to apply and master geoscience techniques.

## Notes

- The curriculum of the Environmental Geoscience program satisfies the knowledge requirements for professional certification with the Association of Professional Geoscientists of Ontario.
- For information on individual courses see Calendar entries for Biology, Chemistry, Computing & Information Systems, Environmental & Resource Science/Studies, Geography, Mathematics, and Physics & Astronomy.

## Bachelor of Science Program in Environmental Geoscience

- In addition to the program requirements listed below, students must satisfy the University degree requirements (see [p. 14](#)).

**The single-major Honours program.** 20.0 credits including the following 15.5 credits:

- 2.0 EGEO credits consisting of EGEO 2001H (or 3000H), 3001H, 3002H, and 3003H (or 2000H)
- 0.5 BIOL credit consisting of BIOL 1020H
- 1.5 CHEM credits consisting of CHEM 1000H, 1010H, and 2620H
- 1.5 ERSC credits consisting of ERSC 1010H, 2230H, and 2240H
- 4.0 GEOG credits consisting of GEOG 1040H, 2080H, 2090H, 2460H, 2540H, 3020H, 3560H, and 3590H
- 0.5 PHYS credit consisting of PHYS 1001H
- 0.5 MATH credit from MATH 1005H or 1110H\*
- 0.5 MATH credit from MATH 1120H\* or 1550H\*
- 0.5 GEOG credit from GEOG 3530H\* or 4080H\*
- 0.5 credit from CHEM-ERSC 3600H\* or ERSC-GEOG-BIOL 4060H\*
- 1.0 credit from category A
- 2.5 credits from category B

**A****Additional Foundation Science**

BIOL 1030H  
 CHEM 2400H  
 COIS 1020H  
 COIS 1520H  
 MATH 1110H\*  
 MATH 1120H\*  
 MATH 1550H\*  
 PHYS 1002H

**B****Other Geoscience**

CHEM-ERSC 3600H\*  
 EGEO 4000H  
 EGEO 4020D  
 ERSC 3450H  
 ERSC-GEOG-BIOL 4060H\*  
 ERSC-BIOL-GEOG 4070H  
 ERSC 4350H  
 ERSC 4530H  
 GEOG 2401H  
 GEOG-ERSC 3010H  
 GEOG 3410H  
 GEOG 3440H  
 GEOG 3510H  
 GEOG 3520H  
 GEOG 3530H\*  
 GEOG 3540H  
 GEOG-ERSC-SAFS 3650H  
 GEOG 4080H\*  
 GEOG 4090H  
 GEOG-ERSC 4450H  
 GEOG-ERSC 4640H

**\*Important note:** Asterisked courses may only be counted once toward program requirements. Students are encouraged to carefully plan when selecting courses to ensure they acquire prerequisites, particularly for ERSC 2240H, CHEM-ERSC 3600H, and GEOG 4080H. Furthermore, students are strongly encouraged to take additional courses listed in category B beyond the program requirements to extend their Geoscience background.

**Please consult the academic timetable for information on courses that will be offered in 2019–2020, including when they will be scheduled.**

» **EGEO-GEOG 2001H: Earth Materials (Sc)**

Introduces students to the study of rocks and minerals, including their description, classification, and origin. Rocks and minerals of environmental (e.g., human health) and economic importance are emphasized. Practical laboratory exercises enable students to become proficient at identifying rocks and minerals using physical and optical properties. Prerequisite: GEOG 1040H or permission of instructor. Excludes EGEO-GEOG 3000H.

» **EGEO-ANTH-FRSC 3001H: Applied and Environmental Geophysics (Sc)**

Geophysics is the study of geologic properties, processes and phenomena using non-destructive physical and mathematical methods, including reflection and refraction seismology, gravity and magnetics, and electrical and electromagnetic methods. This course emphasizes how geophysical techniques can be used for resource and archeological exploration, climate change detection, and environmental investigations. Prerequisite: PHYS 1001H or 1.0 MATH credit.

» **EGEO-GEOG 3002H: Structural Geology (Sc)**

Examines the causes and outcomes of deformation in the Earth's crust. Students are introduced to the different geologic structures and methods to describe them, and will understand their relevance to mineral, water and fuel resources as well as subsurface contamination. Required field trips. Prerequisite: EGEO-GEOG 2001H.

» **EGEO-ERSC-GEOG 3003H: Field Methods in Environmental Geoscience (Sc)**

Students learn essential field skills, including designing a field study, mapping, and measurement techniques. The geology of Southern Ontario and its mining industry are examined along with the potential for environmental impacts. Most instruction takes place during required field trips with students submitting weekly technical reports. Prerequisite: EGEO-GEOG 2001H or permission of instructor. Excludes EGEO-ERSC-GEOG 2000H.

» **EGEO 4000H: Environmental Geoscience Placement/Outreach Experience (Sc)**

Designed to provide students with a capstone experience in Environmental Geoscience, which may include either a job-shadowing/placement experience or the development and presentation of an outreach/education module. Placement/job shadowing experiences occur at a local agency or firm, whereas education modules are developed and presented at a local elementary school, high school, or environmental camp, or on campus through the School of Education & Professional Learning or the Trent Academic Camps enrichment program. Prerequisite: Open only to students who are registered in the Environmental Geoscience program with 13.5 university credits completed. Students are eligible to apply in the year before anticipated enrolment in the course. Application forms can be obtained from the Trent School of the Environment Office.

» **EGEO 4020D: Honours Thesis (Sc)**

Design, implementation, and dissemination of a major research project in environmental geoscience featuring independent work under the supervision of a faculty supervisor. Prerequisite: 14.0 university credits and a minimum cumulative average of 75%. Students must find a faculty member who is agreeable to supervise their project. Applications are available from the Trent School of the Environment Office, and should be submitted in the academic year before enrolment in the course.