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This document is a guide only. Students should consult the official Trent Academic Calendar, academic advisors, and program coordinator.

Environmental Geoscience

Program Coordinator - Ian Power, BSc, PhD (Western), P.Geo. (ON)

Trent School of the Environment Website (trentu.ca/environment)

Recommended Schedule

First Year

Fall Term

- CHEM 1000H
- ERSC 1010H
- EGEO 1040H
- PHYS 1000H or BIOL 1020
- MATH 1005H or 1110H

Winter Term

- CHEM 1010H
- MATH 1120H or 1550H
- 1.0 credits courses (2 half courses) from Category A

Second Year

Fall Term

- PHYS 1000 or BIOL 1020H
- ERSC 2240H
- EGEO 2090H
- GEOG 2460H
- EGEO 2540H

Winter Term

- CHEM 2620H
- EGEO 2001H
- ERSC 2230H
- GEOG 2080H

A minimum 3.0 credits are required from category B to complete an EGEO degree. Courses at the 2000-level are recommended, e.g., GEOG 2401.

Third and Fourth Years

Fall Term

- EGEO 4060H

- EGEO 3002H (offered every other year)
- EGEO 3003H
- EGEO 3530H
- EGEO 3560H

Winter Term

- EGEO 3001H (offered every other year)
- EGEO 3590H
- Credits from category B as required.

A minimum 3.0 credits are required from category B to complete an EGEO degree.

Bachelor of Science Program in Environmental Geoscience

Program Coordinator

I. M. Power, BSc, PhD (Western)

Associated Faculty

H. Dang, Environment; **M. C. Eimers**, Environment; **C. McKenna Neuman**, Environment; **R. Ponce-Hernandez**, Environment; **S. Watmough**, Environment

Geoscientists play a crucial role in the sustainable development of Earth resources that individuals, industries, and countries, such as Canada, rely upon every day. Students in Trent's Environmental Geoscience program study the Earth's geologic and natural systems to understand the environment and the impacts of human activities. With experiential learning at its core, this professionally accredited program equips students with the skills needed to tackle pressing environmental challenges from climate change to contaminated groundwater to geohazards, leading them to exciting careers as geoscientists.

Notes

- Trent's Environmental Geoscience program meets the knowledge requirements of Professional Geoscientists Ontario (PGO) in the environmental geoscience stream. Courses that are used to meet these requirements have been approved by PGO. In the case of a student receiving a waiver for a required course, it is the student's responsibility to ensure that the PGO knowledge requirements are being met. Furthermore, it is the applicant who must demonstrate to the PGO that they meet each individual knowledge requirement.
- For information on individual courses see Calendar entries for Biology, Chemistry, Computer Science, Environmental & Resource Science/Studies, Geography, Mathematics, and Physics & Astronomy.
- There may be a small additional fee for field trips in certain courses.
- The Accelerated Master's program in Environmental & Life Sciences allows students to obtain a research-based MSc within a shorter timeframe. See

trentu.ca/els/experience/msc-program/accelerated-masters-program for details.

Bachelor of Science Program in Environmental Geoscience

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

- 5.5 EGEO credits consisting of EGEO 1040H, 2001H, 2090H, 2540H, 3001H, 3002H, 3003H, 3530H, 3560H, 3590H, and 4060H
- 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
- 1.0 GEOG credit consisting of GEOG 2080H and 2460H
- 0.5 MATH credit from MATH 1005H or 1110H*
- 0.5 MATH credit from MATH 1120H* or 1550H*
- 0.5 PHYS credit from PHYS 1000H or 1001H
- 1.0 credit from category A in addition to the above
- 3.0 credits from category B in addition to the above
- In addition to the program requirements listed above, students must satisfy the University degree requirements (see p. 15), including 0.5 credit from the Approved Indigenous Course List (see p. 1

A Additional Foundation Science	B Other Geoscience
BIOL 1030H	EGEO 2180H
CHEM 2400H	EGEO 2401H
COIS 1020H	EGEO 4000H
COIS 1400H	EGEO 4020D
COIS 1520H	EGEO 4070H
MATH 1110H*	EGEO 4080H
MATH 1120H*	ERSC 3450H
MATH 1550H*	ERSC 4530H
PHYS 1002H	GEOG-ERSC 3010H
	GEOG 3020H
	GEOG 3440H
	GEOG 3510H
	GEOG 3520H
	GEOG 3540H
	GEOG-ERSC-SAFS 3650H
	GEOG 4090H
	GEOG-ERSC 4450H

A Additional Foundation Science	B Other Geoscience
	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 and EGEO 4080H. Furthermore, students are strongly encouraged to take additional courses listed in category B beyond the program requirements to extend their Geoscience background.

Bachelors of Science (Honours) – Environmental Geoscience (EGEO)

Trent's Environmental Geoscience program meets the knowledge requirements of Professional Geoscientists Ontario (PGO) in the environmental geoscience stream. Courses that are used to meet these requirements have been approved by PGO. In the case of a student receiving a waiver for a required course, it is the student's responsibility to ensure that the PGO knowledge requirements are being met. Furthermore, it is the applicant who must demonstrate to the PGO that they meet each individual knowledge requirement.

Trent Environmental Geoscience requirements	Professional Geoscientists Ontario knowledge requirements for the environmental geoscience stream
EGEO 2001H: Earth Materials	2A
EGEO 3001H: Applied and Environmental Geophysics	2B
EGEO 3002H: Structural Geology	2A
EGEO 3003H: Field Methods in Environmental Geoscience	2A
BIOL 1020H: Foundations of Biodiversity	1B
CHEM 1000H: Introductory Chemistry I	1A
CHEM 1010H: Introductory Chemistry II	1B
CHEM 2620H: Environmental Chemistry	2C
ERSC 1010H: Environmental Science and Sustainability	Trent EGEO requirement
ERSC 2230H: Environmental Assessment: Sampling and Analysis	2C
ERSC 2240H: Ecological Assessment for Natural Resource Management	Trent EGEO requirement
EGEO 4060H: The Geochemistry of Natural Waters	2B
EGEI 1040H: Earth's Physical Processes and Environments	Trent EGEO requirement
GEOG 2080H: Natural Science Statistics	1B

Trent Environmental Geoscience requirements	Professional Geoscientists Ontario knowledge requirements for the environmental geoscience stream
EGEO 2090H: Introduction to Geographical Information Systems	2B
GEOG 2460H: The Global Climate System	2C
EGEO 2540H: Earth's Dynamic Landforms	2B (or 2C)
EGEO 3560H: Soil Science	2C (or 2B)
EGEO 3590H: Sedimentary Processes	2A
EGEO 3530H: Hydrology	2B
MATH 1005H: Applied Calculus* OR 1110H: Calculus I: Limits, Derivatives, and Integrals*	1A
MATH 1120H: Calculus II: Integrals and Series* OR MATH 1550H: Probability I: Introduction to Probability*	1B
PHYS 1000: Foundations of Physics OR 1001H: Introductory Physics I	1A
1.0 credits from Category A – Additional Foundation Science	1B
3.0 credits from category B – Other Geoscience	2C Note: EGEO 4020D: Honours Thesis counts as 2.0 credits and therefore, 4 EUs. Thesis research must be based on at least one foundational geoscience field, including mineralogy, petrology, sedimentary processes, geochemistry, hydrology/hydrogeology, geomorphology, and soil science.

*Important notes: 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 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.

Bachelors of Science (Honours) – Environmental Geoscience (EGEO)

Trent's Environmental Geoscience program meets the knowledge requirements of Professional Geoscientists Ontario (PGO) in the environmental geoscience stream. Courses that are used to meet these requirements have been approved by PGO. In the case of a student receiving a waiver for a required course, it is the student's responsibility to ensure that the PGO knowledge requirements are being met. Furthermore, it is the applicant who must demonstrate to the PGO that they meet each individual knowledge requirement.

PGO assesses your education on a course-by-course basis to meet each individual knowledge requirement. They do not simply accept an applicant's degree as having met the requirements.

The following is a guide:

Professional Geoscientists Ontario knowledge requirements for the environmental geoscience stream	Trent Environmental Geoscience requirements
Not required for PGO accreditation. Needed as prerequisites for many courses in the School of the Environment	EGEO 1040H: Earth's Physical Processes and Environments (required)
Not required for PGO accreditation. Needed as prerequisites for many courses in the School of the Environment	ERSC 1010H: Environmental Science and Sustainability (required)
Not required for PGO accreditation. Needed as prerequisites for many courses in the School of the Environment	ERSC 2240H: Environmental Science and Sustainability (required)

1A - Compulsory Foundation Science

(Total 3 EUs - 1 in each area required)

Professional Geoscientists Ontario Knowledge Requirements for the environmental geoscience stream	Trent Environmental Geoscience requirements
Chemistry	CHEM 1000H: Introductory Chemistry I (required)
Math (Calculus)	MATH 1005H: Applied Calculus* OR MATH 1110: Calculus I: Limits, Derivatives, and Integrals* (required)
Physics	PHYS 1000: Foundations of Physics OR 1001H: Introductory Physics I (required)

1B - Additional Foundation Science

(Total 6 EUs - No more than 2 EUs in any of the six subject areas)

Professional Geoscientists Ontario knowledge requirements for the environmental geoscience stream	Trent Environmental Geoscience requirements
Biology	BIOL 1020H: Foundations of Biodiversity (required), BIOL 1030H: Foundations of Cellular and Molecular Biology
Computer Programming	COIS 1020H: Programming for Computing Systems, COIS 1400H: Introduction to Data Science, COIS 1520H: Programming for Information Systems
Chemistry	CHEM 1010H: Introductory Chemistry II (required), CHEM 2400H: Analytical Chemistry
Mathematics	MATH 1110H: Calculus I: Limits, Derivatives, and Integrals*(required), MATH 1120H: Calculus II: Integrals and Series* (required) (both of these are options under the program requirements)
Physics	PHYS 1002H: Introductory Physics II
Statistics	GEOG 2080H: Natural Science Statistics (required), MATH 1550H: Probability I: Introduction to Probability (required) (listed as an option under program requirements)

2A - Compulsory Foundation Geoscience

(Total 4 EUs - 1 in each area required)

Professional Geoscientists Ontario knowledge requirements for the environmental geoscience stream	Trent Environmental Geoscience requirements
Field Techniques	EGEO 3003H: Field Methods in Environmental Geoscience (required)
Mineralogy & Petrology	EGEO 2001H: Earth Materials (required)
Sedimentation & Stratigraphy	EGEO 3590H: Sedimentary Processes (required)
Structural Geology	EGEO 3002H: Structural Geology (required)

2B - Additional Foundation Geoscience

(Total 5 EUs - Geology and Environmental Science require a minimum of 1 and at most 2 from each sub-group, but no more than one in each subject)

Professional Geoscientists Ontario knowledge requirements for the environmental geoscience stream	Trent Environmental Geoscience requirements
Geochemistry Geophysics	EGEO 4060H: Geochemistry of Natural Waters (required) EGEO 3001H: Applied Geophysics (required)
Hydrogeology/Hydrology Engineering Geology	EGEO 3530H: Hydrology
Geomorphology/Soil Science Glacial Geology Remote Sensing/GIS	EGEO 2540H: Earth's Dynamic Landforms (required) OR EGEO 3560H: Soil Science (required) EGEO 2090H: Introduction to Geographical Information Systems (required)

2C - Other Geoscience

(Minimum Total 9 EUs. 9 EUs must be from the EUs list or must be at a second year university level or higher and acceptable for science credit toward a degree in science, applied science or engineering and relevant to geoscience. Introductory geoscience is not included in the EU count as it is anticipated that this course would have been required for admission to year 2 core geoscience courses. Extra courses not used in 2A and 2B can be used in 2C. Advanced courses in these topics can also be used. No one single EU course can be used to cover more than one requirement.)

Professional Geoscientists Ontario knowledge requirements for the environmental geoscience stream	Trent Environmental Geoscience requirements
Communication	EGEO 4000H: Environmental Geoscience Placement Course EGEO 4020D: Honours Thesis Note: The thesis counts as 2.0 credits and therefore, 4 EUs. Thesis research must be based on at least one foundational geoscience field, including mineralogy, petrology, sedimentary processes, geochemistry, hydrology/hydrogeology, geomorphology, and soil science.
Earth Systems	EGEO 2401H: Environmental Geology GEOG 2460H: The Global Climate System (required) GEOG 3470H: Climate Change Impacts ERSC 3450H: Environmental Air Pollution GEOG 3440H: Microclimatology

Professional Geoscientists Ontario knowledge requirements for the environmental geoscience stream	Trent Environmental Geoscience requirements
	GEOG 4090H: Geosystems ERSC 4350H: Climatic Change
Environmental Assessment	ERSC 2230H: Environmental Assessment: Sampling and Analysis (required) ERSC 4530: Remediation and Reclamation of Sites
Geochemistry	CHEM 2620H: Environmental Chemistry (required) ERSC-BIOL-GEOG 4070H: The Fate of Contaminants in the Aquatic Environment
Geomorphology/Surficial	GEOG 2180H: Apocalypse Now GEOG 2540H: Earth's Dynamic Landforms (required) OR GEOG 3560H: Soil Science (required) GEOG 3510H: Glacial and Quaternary Geomorphology GEOG 3520H: Large-Scale Geomorphology GEOG 3540H: River Environments and Processes GEOG-ERSC-SAFS 3650H: Soil Management and Conservation
Hydrology/Hydrogeology	GEOG 4080H: Hydrogeology GEOG-ERSC 4640H: Integrated Watershed Management: Approaches and Methods
Quantitative Analysis	GEOG-ERSC 3010H: Fundamentals of Geographical Information Systems Analysis GEOG-ERSC 4450H: Spatial Modelling with Geographical Information Systems
Remote Sensing	GEOG 3020H: Remote Sensing

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