

ENVIRONMENTAL TECHNOLOGY

Program: ENVR

Credential: Ontario College Advanced Diploma, Co-op

Delivery: Full-time

Work Integrated Learning: 3 Co-op Work Terms

Length: 6 Semesters, plus 3 work terms

Duration: 3 Years

Effective: Fall 2023

Location: Barrie

Description

In this program, students gain advanced skills in the use of environmental sampling, monitoring and testing equipment; data analysis; and information technology tools. They become familiar with applying the principles of ecosystem-based management for sustainability and develop the ability to manage environmental projects from planning through to implementation and maintenance. Through applied knowledge of health, safety and environmental requirements, students contribute to risk assessment and environmental systems management. Students are provided an opportunity to apply their skills through partnerships in the community and stresses the need for designing and implementing systems to prevent, control and clean-up environmental contamination.

Career Opportunities

The field of environmental technology is diverse and rapidly evolving to meet increasingly stringent regulatory requirements. Given the diversity in program skills and knowledge, a number of career options can be pursued upon graduation. Traditionally, graduates have found employment in the environmental field working for small and large corporations. Potential employers include environmental consulting firms, government agencies (municipal, provincial, federal), and environmental services departments in a variety of organizations.

Program Learning Outcomes

The graduate has reliably demonstrated the ability to:

1. collect representative environmental samples, perform routine and specialized tests and interpret results, using current and relevant tools;
2. identify, select and use scientific concepts and models in the prevention, control, and elimination of environmental hazards and in the remediation of contaminated sites;
3. analyze water/soil/air samples in a manner that contributes to the resolution of environmental problems through the selection and application of relevant scientific and engineering principles;
4. participate in the planning, design, implementation and maintenance of environmental projects, following standard procedures;
5. promote and maintain sustainable practices by applying the elements of ecosystem-based management;
6. carry out work responsibilities adhering to standards of professional conduct and principles of professional ethics;
7. suggest strategies aimed at ensuring all tasks are completed in adherence to occupational health and safety standards and applicable legislative requirements;

8. contribute to the development, implementation and maintenance of environmental management systems;
9. provide ongoing support for project management;
10. communicate technical information accurately and effectively in oral, written, visual and electronic forms;
11. develop and present strategies for ongoing personal and professional development to enhance performance as an environmental technologist;
12. use various information technology tools to assemble, analyze and present environmental data effectively;
13. apply basic entrepreneurial strategies to identify and respond to new opportunities.

Practical Experience

All co-operative education programs at Georgian contain mandatory work term experiences aligned with program learning outcomes. Co-op work terms are designed to integrate academic learning with work experience, supporting the development of industry specific competencies and employability skills.

Georgian College holds membership with, and endeavours to follow, the co-operative education guidelines set out by the Co-operative Education and Work Integrated Learning Canada (CEWIL) and Experiential and Work-Integrated Ontario (EWO) as supported by the Ministry of Colleges and Universities.

Co-op is facilitated as a supported, competitive job search process. Students are required to complete a Co-op and Career Preparation course scheduled prior to their first co-op work term. Students engage in an active co-op job search that includes applying to positions posted by Co-op Consultants, and personal networking. Co-op work terms are scheduled according to a formal sequence that alternates academic and co-op semesters as shown in the program progression below.

Programs may have additional requirements such as a valid driver's license, strong communication skills, industry specific certifications, and ability to travel. Under exceptional circumstances, a student may be unable to complete the program progression as shown below. Please refer to Georgian College Academic Regulations for details.

International co-op work terms are supported and encouraged, when aligned with program requirements.

Further information on co-op services can be found at www.GeorgianCollege.ca/co-op (<https://www.georgiancollege.ca/co-op/>)

External Recognition

This program is accredited by the Canadian Association for Co-operative Education.

Program Progression

The following reflects the planned progression for full-time offerings of the program.

Fall Intake

- **Sem 1:** Fall 2023
- **Sem 2:** Winter 2024
- **Work Term 1:** Summer 2024

- **Sem 3:** Fall 2024
- **Sem 4:** Winter 2025
- **Work Term 2:** Summer 2025
- **Work Term 3:** Fall 2025
- **Sem 5:** Winter 2026
- **Sem 6:** Summer 2026

Articulation

A number of articulation agreements have been negotiated with universities and other institutions across Canada, North America and internationally. These agreements are assessed, revised and updated on a regular basis. Please contact the program co-ordinator for specific details if you are interested in pursuing such an option. Additional information can be found on our website at <https://www.georgiancollege.ca/admissions/credit-transfer/> (<http://www.georgiancollege.ca/admissions/credit-transfer/>)

Admission Requirements

OSSD or equivalent with

- Grade 12 English (C or U)
- Grade 12 Mathematics (C or U)

Mature students, non-secondary school applicants (19 years or older), and home school applicants may also be considered for admission. Eligibility may be met by applicants who have taken equivalent courses, upgrading, completed their GED, and equivalency testing. For complete details refer to: www.georgiancollege.ca/admissions/academic-regulations/ (<https://www.georgiancollege.ca/admissions/academic-regulations/>)

Applicants who have taken courses from a recognized and accredited post-secondary institution and/or have relevant life/learning experience may also be considered for admission; refer to the Credit for Prior Learning website for details: www.georgiancollege.ca/admissions/credit-transfer/ (<https://www.georgiancollege.ca/admissions/credit-transfer/>)

Additional Information

Full Ontario G driver's license is strongly recommended in order to support a wider job search and facilitate more co-op employment opportunities.

Laptop is strongly recommended (Windows compatible recommended); Online access and/or student trial license opportunities available for most required software.

The Ministry of Environment, Conservation and Parks Operator in Training (OIT) certification should be completed within first 6 months of school of starting the program (www.owwco.ca). Details will be provided during CPHR0001 Co-op and Career Preparation course in Semester 1.

Appropriate clothing for fieldwork is required. This includes green patch safety boots/shoes.

Graduation Requirements

- 33 Program Courses
- 1 Program Option Course
- 2 Communications Courses

3 General Education Courses

3 Co-op Work Terms

Graduation Eligibility

To graduate from this program, the passing weighted average for promotion through each semester, from year to year, and to graduate is 60%. Additionally, a student must attain a minimum of 50% or a letter grade of P (Pass) or S (Satisfactory) in each course in each semester unless otherwise stated on the course outline.

Program Tracking

The following reflects the planned course sequence for full-time offerings of the Fall intake of the program. Where more than one intake is offered contact the program co-ordinator for the program tracking.

Semester 1		Hours
Program Courses		
COMP 1059	Computer Technology for Environmental Applications	42
ENVR 1005	Workplace Safety and Employment Readiness	42
ENVR 1006	Earth Science	42
ENVR 1009	Foundations of Environmental Science	42
MATH 1035	Applied Environmental Mathematics	42
PHYS 1004	Physical Systems in the Environment	42
Communications Course		
Select 1 course from the communications list during registration.		42
Hours		294
Semester 2		
Program Courses		
BIOL 1008	Biological Systems	42
CHEM 1003	Introduction to Applied Chemistry	70
ENVR 1004	Geospatial Technology	56
ENVR 1007	Water Treatment	42
Communications Course		
Select 1 course from the communications list during registration.		42
General Education Course		
Select 1 course from the general education list during registration.		42
Hours		294
Semester 3		
Program Courses		
CHEM 2002	Applied Organic Chemistry	42
ENVR 2012	Ecosystems and Environmental Sampling	42
ENVR 2013	Limnology and Watershed Management	42
ENVR 2014	Environmental Management Systems and Audits	28
ENVR 2017	Soil Properties	42
SURV 2002	Environmental Surveying	42
General Education Course		
Select 1 course from the general education list during registration.		42
Hours		280
Semester 4		
Program Courses		
ENVR 2004	Waste Management Strategies	42
ENVR 2018	Environmental Assessment and Contaminants in the Environment	56
ENVR 2019	Environmental CAD	42
ENVR 2020	Wastewater Treatment	42
LAWS 2010	Environmental Law and Policy	42
STAT 2006	Applied Statistics for Environmental Applications	42
General Education Course		
Select 1 course from the general education list during registration.		42
Hours		308

Semester 5
Program Courses

ENVR 3000	Applied Hydrology and Hydrogeology	42
ENVR 3002	Toxicology and Contaminants in Organisms	28
ENVR 3013	Sustainable Technologies	42
ENVR 3015	Stakeholder Engagement and Management	42
ENVR 3018	Advanced GIS	56
ENVR 3019	Applied Research and Entrepreneurship	28
MENG 3013	Environmental Fluid Mechanics	42
Hours		280

Semester 6
Program Courses

CHEM 3002	Applied Environmental Chemistry	70
ENVR 3009	Spill Response and Emergency Preparedness	42
ENVR 3010	Advanced Environmental Sampling	42
ENVR 3016	Atmospheric Science	42

Program Option Course

Select 1 course from the available list during registration.	42
Hours	238

Total Hours **1694**

Co-op Work Terms
Hours

COOP 1023	Environmental Work Term 1 (occurs after Semester 2)	560
COOP 2018	Environmental Work Term 2 (occurs after Semester 4)	560
COOP 3010	Environmental Work Term 3 (occurs after Work Term 2)	560

Hours **1680**

Total Hours **1680**

Code Title
Program options may include:

ENVR 3011	Industrial Ecology
ENVR 3017	Applied Research Project

Graduation Window

Students unable to adhere to the program duration of three years (as stated above) may take a maximum of six years to complete their credential. After this time, students must be re-admitted into the program, and follow the curriculum in place at the time of re-admission.

Disclaimer: *The information in this document is correct at the time of publication. Academic content of programs and courses is revised on an ongoing basis to ensure relevance to changing educational objectives and employment market needs.*

Program outlines may be subject to change in response to emerging situations, in order to facilitate student achievement of the learning outcomes required for graduation. Components such as courses, progression, coop work terms, placements, internships and other requirements may be delivered differently than published.