

# 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 2019

**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

Co-operative Education is a mandatory component of all Co-op programs at Georgian College; it has been designed as a process by which students integrate their academic education with work experience related to their programs of study. This integration affects much more than simply earning a salary, including the adjustment to the work environment and the development of professionalism. It also reinforces skills and theory learned during academic semesters, develops professional contacts, job knowledge and career path, improves human relations and communication skills, and promotes personal maturity and financial independence.

Students are requested to register, attend and participate in their scheduled co-operative education classes. These classes are scheduled for all first year students and are expected to be completed in order for students to proceed successfully to their first co-op work experiences. To ensure students are eligible to proceed onto any co-op work experience, students should refer to Promotional Status and Eligibility for Co-op as outlined in the College Calendar. Co-op policies and procedures can be located on our website:

[www.georgiancollege.ca/student-services/co-op-and-career-services/students-tab/](http://www.georgiancollege.ca/student-services/co-op-and-career-services/students-tab/) (<http://www.georgiancollege.ca/student-services/co-op-and-career-services/students-tab/>)

Georgian College follows the Co-operative Education guidelines set out by the Canadian Association for Co-operative Education (CAFCE) and Education at Work Ontario (EWO) by supporting the learning outcomes designed for the program specific graduate profile and curriculum as set out by the Ministry of Advanced Education and Skills Development.

## External Recognition

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

## The Program Progression Fall Intake

- **Sem 1:** Fall 2019
- **Sem 2:** Winter 2020
- **Work Term 1:** Summer 2020
- **Sem 3:** Fall 2020
- **Sem 4:** Winter 2021
- **Work Term 2:** Summer 2021
- **Work Term 3:** Fall 2021

- **Sem 5:** Winter 2022
- **Sem 6:** Summer 2022

## 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 <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/policies-procedures/](http://www.georgiancollege.ca/admissions/policies-procedures/) (<http://www.georgiancollege.ca/admissions/policies-procedures/>)

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 Transfer Centre website for details: [www.georgiancollege.ca/admissions/credit-transfer/](http://www.georgiancollege.ca/admissions/credit-transfer/) (<http://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 (<http://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

Course	Title	Hours
<b>Semester 1</b>		
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
<b>Semester 2</b>		
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
<b>Semester 3</b>		
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
<b>Semester 4</b>		
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
<b>Semester 5</b>		
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	Fluids in the Environment	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

Course	Title	Hours
<b>Co-op Work Terms</b>		
COOP 1023	Environmental Work Term 1	560
COOP 2018	Environmental Work Term 2	560
COOP 3010	Environmental Work Term 3	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.

*Information contained in College documents respecting programs 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. The college reserves the right to add or delete programs, options, courses, timetables or campus locations subject to sufficient enrolment, and the availability of courses.*