Seneca POLYTECHNIC

2024-2025

ENVIRONMENTAL TECHNOLOGY (EMT)

About the Program

In this three-year advanced diploma program, you will build a career where urban and human needs meet to share the earth's resources. You will focus on environmental technology, water resources and applied sciences. In your final two semesters, you will benefit from advanced computer modelling, water management and analytical courses. You will also develop problem-solving and communication skills needed to succeed in the environmental sector.

Laptop Requirement

It is strongly recommended that you have a laptop before the first day of this program. It should include the following technical specifications:

- Windows 10 Operating System
- Intel i7 or equivalent processor
- 16 GB of RAM (32 GB of RAM is recommended)
- 256 GB Solid State Hard Drive (SSD) (512 GB SSD is recommended)
- High-end graphics video card (consider a dedicated video card with at least 2 GB of video memory)
- 13 inch or larger screen
- Three USB 3.0 ports
- Wireless 802.11ac

Credential Awarded

Ontario College Advanced Diploma

Duration

6 Semesters (3 Years)

Starts

September

Program and Course Delivery

This program is offered in Seneca's hybrid delivery format with some courses available in Seneca's flexible delivery format. Some coursework is online and some must be completed in person. Students will need to come on campus to complete in-person learning requirements. For courses offered in the flexible delivery format, professors use innovative learning spaces and technology to teach students in a classroom or lab and broadcast in real time to students attending remotely. In flexible courses, students have the choice of coming on campus or learning online.

Skills

Throughout this program you will develop the following skills:

- Leadership
- Problem-solving
- Environmental assessment investigation
- Environmental sampling
- Data collection and management
- Mapping
- Computer modelling
- Watershed planning and management
- Land development
- Construction monitoring
- Surveying
- Geospatial data analysis and interpretation
- Environmental planning

Work Experience

Optional Co-op

Students meeting all academic requirements may have the opportunity to complete an optional co-op work term(s) in a formal work environment. In most cases the work term(s) is a full-time paid position completed between two academic semesters. In programs with limited co-op opportunities, additional academic requirements and a passing grade on a communication assessment may be required for eligibility. Eligibility for participation does not guarantee a work position will be secured. Additional fees are required for those participating in the optional co-op stream regardless of success in securing a work position.

Review eligibility requirements for work-integrated learning (https://www.senecapolytechnic.ca/employers/seneca-works/work-integrated-learning/eligibility.html)

Your Career

Graduates of the program can explore the following career options:

- Geospatial data analyst
- Environmental education and awareness program co-ordinator
- Environmental inspector
- Watershed planner
- Team lead for environmental sampling and monitoring teams
- Urban and environmental planner
- Hydrological and groundwater modelling

Program of Study

Course Code	Course Name	Weekly Hours
Semester 1		
BEA101	CAD Fundamentals	4
COM101	Communicating Across Contexts	3
or COM111	Communicating Across Contexts (Enriched)	
EVP151	Environmental Field Practices	4
EVS141	Environmental Science	3
GTY171	Geomorphology and Soils	4
MTA100	Mathematics 100	5
Semester 2		
CHE251	Chemistry and the Environment	5
DMA251	Data Management and Analysis	3
FSC200	Field School: Stream Assessment	2
GEO251	Geospatial Data Collection and Techniques	5
SAR251	Site Assessment and Remediation	4
TEC400	Technical Communications	3
WTP100	Work Term Preparation *	1
plus: General Education Course (1)		3
Work-Integrated Learning Term 1		
EMT331	Environmental Technology, Co-op *	30

Semester 3		
ATE351	Aquatic and Terrestrial Ecology	4
ESA351	Environmental Sampling and Analysis	5
FSC300	Field School: Plant Identification	2
GEM351	Soil Science and Geomechanic Principles	4
GEO351	Geospatial Analysis	4
HWM351	Hydrology and Watershed Management	4
plus: General Education Course (1)		3
Semester 4		
AIR451	Air Pollution	5
EAL451	Environmental Auditing and Legislation	3
ERM451	Erosion and Sediment Management	4
FSC400	Field School: Soil and Groundwater	2
GEO451	Image Analysis and Interpretation	5
WWT451	Water and Wastewater Processes and Treatment	6
plus: General Education Course (1)		3
Work-Integrated Learning Term 2		
EMT332	Environmental Technology, Co-op II *	30
Semester 5		
ETR591	Engineering Technical Report I	2
GIS551	Advanced Environmental GIS	5
PLR643	Planning	4
WRM551	Fundamentals of Water Resource Modeling	4
WSM551	Watershed Management	5
Semester 6		
EPM551	Environmental Project Management	4
ETR592	Engineering Technical Report II	2
MPT651	Municipal Engineering Systems	4
PPE651	Professional Practices and Ethics	3
WMD651	Water Management Systems Design	4

* Work-Integrated Learning option only

Program Learning Outcomes

This Seneca program has been validated by the Credential Validation Service as an Ontario College Credential as required by the Ministry of Colleges and Universities.

As a graduate, you will be prepared to reliably demonstrate the ability to:

- Collect representative environmental samples, perform routine and specialized tests and interpret results, using current and relevant tools.
- Identify, select and use scientific concepts and models in the prevention, control and elimination of environmental hazards and in the remediation of contaminated sites.
- 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.
- Participate in the planning, design, implementation and maintenance of environmental projects, following standard procedures.
- Promote and maintain sustainable practices by applying the elements of ecosystem-based management.
- Carry out work responsibilities adhering to standards of professional conduct and principles of professional ethics.
- Suggest strategies aimed at ensuring all tasks are completed in adherence to occupational health and safety standards and applicable legislative requirements.
- Contribute to the development, implementation and maintenance of environmental management systems.
- Provide ongoing support for project management.
- Communicate technical information accurately and effectively in oral, written, visual and electronic forms.
- Develop and present strategies for ongoing personal and professional development to enhance performance as an environmental technologist.

Admission Requirements

- Ontario Secondary School Diploma (OSSD), or equivalent, or a mature applicant (https://www.senecapolytechnic.ca/registrar/canadian-applicants/admission-requirements/mature-applicants.html)
- English: Grade 12 C or U, or equivalent course
- Mathematics: Grade 12 C or U, or Grade 11 Functions (MCR3U), or equivalent course

Canadian citizens and permanent residents may satisfy the English and/or mathematics requirements for this program through successful Seneca pre-admission testing. (https://www.senecapolytechnic.ca/registrar/canadian-applicants/admission-requirements/mature-applicants.html)

Recommended upgrading for applicants who do not meet academic subject requirements (https://www.senecapolytechnic.ca/registrar/canadian-applicants/admission-requirements/upgrading-options.html).

International Student Information

International admissions requirements vary by program and in addition to English requirements (https://www.senecapolytechnic.ca/international/apply/how-to-apply/admission-requirements/english-requirements.html), programs may require credits in mathematics, biology, and chemistry at a level equivalent to Ontario's curriculum, or a postsecondary degree or diploma, equivalent to an Ontario university or college. Program-specific pre-requisite courses and credentials are listed with the admission requirements on each program page. To review the academic requirements please visit: Academic Requirements - Seneca, Toronto, Canada (senecapolytechnic.ca) (https://www.senecapolytechnic.ca/international/apply/how-to-apply/admission-requirements/academic-requirements.html).

Pathways

As a leader in academic pathways, we offer a range of options that will allow you to take your credential further in another Seneca program or a program at a partner institution.

To learn more about your eligibility, visit the Academic Pathways (https://www.senecapolytechnic.ca/pathways.html) web page.

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