Area of Interest: Environmental Science

Environmental Technician (Co-op and Non Co-op Version)

Ontario College Diploma
42 Weeks
Pembroke Campus

Academic Year: 2020/2021
Program Code: 1212X04FPM

Our Program

Preserve the present for the future - Explore a career in the environmental sciences.

The two-year Environmental Technician program, delivered in a compressed format over 42 weeks, offers theoretical and extensive practical education in all areas of environmental sciences.

You explore the disciplines of biology, chemistry, physical science and engineering as you learn to collect, measure and analyze variables commonly considered in environmental studies. Gain field and laboratory experience in soil, water and air testing as you develop a basic knowledge of:

- freshwater environment systems
- soils and land forms
- the chemistry of pollutants
- ecological processes

Use the appropriate tools and equipment needed in biology, hydrology, ecological field sampling and analytical chemistry.

This program includes applied research projects that allow you to apply skills and theory to real environmental issues, all while supporting important community initiatives, such as:

- water quality monitoring and implementation of agricultural best management practices in the Muskrat Lake watershed
- soil testing, weather/climate monitoring and pest/disease surveying for a local vineyard.

Benefit from the opportunity to gain more than 20 certifications in various preferred specialties including provincial certification in water and wastewater operation, electrofishing, and geospatial analysis.

Students also have the option to gain real-world experience through a paid co-operative education (co-op) work term (see Additional Information for more details). Please note that places in the co-op version of the program are subject to availability. Students who elect to apply to the non co-op version of the program may not have the opportunity to transfer to the co-op version at a later date.

Upon graduation, you are ready to help meet the current and growing need for skilled entry-level practitioners within the environmental sciences sector. Graduates may find entry-level employment in roles such as:

- remediation technician
- field sampling technician
- geographical information systems (GIS) technician
• contaminated site assessor
• environmental assessor
• water and wastewater facility operator
• environmental consultant

SUCCESS FACTORS
This program is well-suited for students who:
• Seek an active, outdoor, hands-on learning environment.
• Are eager to measure, monitor, protect and improve the environment.
• Want to become familiar with both field and laboratory methods used broadly in the environmental sector.

Employment
Graduates may find entry-level employment in the compliance and promotion sectors, as remediation technicians, in the areas of water and wastewater treatment operations, as contaminated site assessment technicians or working within the consulting industry as environmental practitioners.

Learning Outcomes
The graduate has reliably demonstrated the ability to:
• Collect representative environmental samples and perform routine tests, using current and relevant tools.
• Use scientific concepts and models when contributing to the prevention, control and elimination of environmental hazards and remediation of contaminated sites.
• Assist with analysis of water/soil/air samples and with the resolution of environmental problems through the application of scientific and engineering principles.
• Follow standard procedures for conducting environmental sampling projects including the use of appropriate equipment and materials.
• 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.
• Complete assigned tasks in adherence to occupational health and safety standards and applicable legislative requirements.
• Follow established protocols in support 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 technician.
• Identify and apply discipline-specific practices that contribute to the local and global community through social responsibility, economic commitment and environmental stewardship.

Program of Study
## Environmental Technician (Co-op and Non Co-op Version)

### Level: 01

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Hours</th>
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<tbody>
<tr>
<td>BIO7612</td>
<td>Environmental Biology</td>
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<tr>
<td>CHE7611</td>
<td>Environmental Chemistry</td>
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<td>DAT7670</td>
<td>Microcomputer Applications</td>
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<td>ENL7777</td>
<td>Communications I</td>
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<tr>
<td>ENV7401</td>
<td>Freshwater Environments</td>
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<tr>
<td>ENV7402</td>
<td>Field Botany</td>
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<tr>
<td>FOR7314</td>
<td>Soils and Landforms</td>
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<tr>
<td>MAT7205</td>
<td>Mathematics</td>
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<tr>
<td>SCI7614</td>
<td>Physical, Chemical and Biological Sampling</td>
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### Level: 02

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<tr>
<td>ADN7104</td>
<td>Ecology</td>
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<tr>
<td>ENL7669</td>
<td>Communications for Environmental Technicians</td>
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<tr>
<td>ENV7413</td>
<td>Hydrology and Hydrogeology</td>
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<td>ENV7418</td>
<td>Wildlife Identification</td>
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<td>ENV7419</td>
<td>Project Management for Environmental Technicians</td>
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<td>ENV7420</td>
<td>Contaminants in the Environment</td>
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<td>ENV7421</td>
<td>Water and Wastewater Treatment Technologies</td>
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<tr>
<td>GIS7315</td>
<td>Geographical Information Systems</td>
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Choose one from equivalencies:

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<th>Course Code</th>
<th>Course Name</th>
<th>Hours</th>
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<tbody>
<tr>
<td>GED1212</td>
<td>General Education Elective</td>
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### Co-op: 01

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<tr>
<td>WKT7102</td>
<td>Cooperative Education Work Term</td>
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<tr>
<td>ENV7415</td>
<td>Field Certifications</td>
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<tr>
<td>ENV7437</td>
<td>Environmental Issues and Solutions</td>
<td>56.0</td>
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<td>ENV7438</td>
<td>Environmental Assessments</td>
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<tr>
<td>ENV7439</td>
<td>Contaminated Site Assessment</td>
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<td>ENV7440</td>
<td>Land and Water Stewardship</td>
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<td>ENV7441</td>
<td>Remediation Strategies</td>
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<tr>
<td>MAT7221</td>
<td>Environmental Data Analysis</td>
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**Gen Ed On-line Elective: choose 2 Courses**

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<tr>
<td>AST2000</td>
<td>Introduction to Astronomy</td>
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<tr>
<td>ENL1726</td>
<td>Symbols, Text and Meaning</td>
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<td>ENV5004</td>
<td>Waste-Free Ontario</td>
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<tr>
<td>FIN2300</td>
<td>Introduction to Personal Finance</td>
<td>42.0</td>
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<tr>
<td>GED0021</td>
<td>Disability in Film: Portrayals and Identity</td>
<td>42.0</td>
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<td>GED0022</td>
<td>Positive Psychology: the Science of Happiness and Well-Being</td>
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<td>GED2200</td>
<td>Free Speech and the Challenge of Social Media</td>
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<td>GED5002</td>
<td>Victimology</td>
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<td>GED5003</td>
<td>The Science of Play</td>
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<td>GED5004</td>
<td>Living Green</td>
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<td>GED5005</td>
<td>Greek Mythology</td>
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<td>GED5006</td>
<td>World Religions</td>
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<td>GED5007</td>
<td>Slavery, the Slave Trade and Its Abolition</td>
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<td>GED5010</td>
<td>The Fungus Among Us</td>
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<tr>
<td>GED5200</td>
<td>Learning Disabilities, the Invisible Disability</td>
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<td>GED5300</td>
<td>The Science of Everyday Life</td>
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<td>GED5301</td>
<td>On Death, Dying and the Growing Acceptance of Euthanasia</td>
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<tr>
<td>GED6022</td>
<td>A Sense of Humour</td>
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Environmental Technician (Co-op and Non Co-op Version)

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<tr>
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<th>Course Title</th>
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<tr>
<td>GED7019</td>
<td>Becoming an Entrepreneur: Is It for Me?</td>
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<tr>
<td>GEN1001</td>
<td>Ethics: What Is the Big Deal?</td>
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<tr>
<td>GEN1957</td>
<td>Science Fiction</td>
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<tr>
<td>GEN2003</td>
<td>Healthy Lifestyle</td>
<td>42.0</td>
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<td>GEN2007</td>
<td>Community Service</td>
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<td>GEO0012</td>
<td>Foreign Landscapes and Their Inhabitants</td>
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<td>HIS0001</td>
<td>Saints and Heroes: Shining a Spotlight on the 'Dark Ages', Europe A.D. 410-1096</td>
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<td>HOS2228</td>
<td>Wine, Food and Culture</td>
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<td>LIB1982</td>
<td>Reading for Recreation</td>
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<td>MGT7330</td>
<td>Trends in Today’s Workplace</td>
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<td>MVM8800</td>
<td>The Impact of the Car on North American Culture</td>
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<td>PSI0003</td>
<td>Globalization and Sustainability</td>
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<td>RAD2001</td>
<td>Popular Culture</td>
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<td>SCI2200</td>
<td>Dynamic DNA: You Are Not Alone</td>
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<tr>
<td>SOC2003</td>
<td>Understanding Human Sexuality</td>
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Fees for the 2020/2021 Academic Year

Tuition and related ancillary fees for this program can be viewed by using the Tuition and Fees Estimator tool at [http://www.algonquincollege.com/fee-estimator](http://www.algonquincollege.com/fee-estimator)

Further information on fees can be found by visiting the Registrar’s Office website at [http://www.algonquincollege.com/ro](http://www.algonquincollege.com/ro)

Fees are subject to change.

Additional program-related expenses include:

This program is part of the college’s e-textbook initiative which provides digital resources to students at significantly reduced prices (up to 40% savings) in comparison to print versions. Supplies and other program incidentals can be purchased at the campus store.

Major, one-time equipment costs are approximately $500. Students should arrive with a CSA approved hard hat, CSA approved work boots, a Fox 40 whistle, a high visibility vest and chest waders. As part of the field certification course in the second level, fees for certifications are assessed separately.

Admission Requirements for the 2021/2022 Academic Year

College Eligibility

- Ontario Secondary School Diploma (OSSD) or equivalent. Applicants with an OSSD showing senior English and/or Mathematics courses at the Basic Level, or with Workplace or Open courses, will be tested to determine their eligibility for admission; **OR**
  - Academic and Career Entrance (ACE) certificate; **OR**
  - General Educational Development (GED) certificate; **OR**
- Mature Student status (19 years of age or older and without a high school diploma at the start of the program). Eligibility may be determined by academic achievement testing for which a fee of $50 (subject to change) will be charged.

Program Eligibility

- English, Grade 12 (ENG4C or equivalent).
- Mathematics, Grade 12 (MAP4C or equivalent).
- Biology Grade 11 or 12 is strongly recommended.
• Chemistry Grade 11 or 12 is strongly recommended.

• Applicants with international transcripts must provide proof of the subject specific requirements noted above and may be required to provide proof of language proficiency. Domestic applicants with international transcripts must be evaluated through the International Credential Assessment Service of Canada (ICAS) or World Education Services (WES).

• IELTS-International English Language Testing Service (Academic) Overall band of 6.0 with a minimum of 5.5 in each band OR TOEFL-Internet-based (iBT) Overall 80, with a minimum of 20 in each component: Reading 20; Listening 20; Speaking 20; Writing 20.

Should the number of qualified applicants exceed the number of available places, applicants will be selected on the basis of their proficiency in English and mathematics.

A current Standard First Aid and CPR certificate is preferred prior to registration. Otherwise, the student must obtain the certificate within the first two months of the first level. Students must also obtain WHMIS certification within the first two months of the first level.

Admission Requirements for 2020/2021 Academic Year

College Eligibility

• Ontario Secondary School Diploma (OSSD) or equivalent. Applicants with an OSSD showing senior English and/or Mathematics courses at the Basic Level, or with Workplace or Open courses, will be tested to determine their eligibility for admission; OR

• Academic and Career Entrance (ACE) certificate; OR

• General Educational Development (GED) certificate; OR

• Mature Student status (19 years of age or older and without a high school diploma at the start of the program). Eligibility may be determined by academic achievement testing for which a fee of $50 (subject to change) will be charged.

Program Eligibility

• English, Grade 12 (ENG4C or equivalent).

• Mathematics, Grade 12 (MAP4C or equivalent).

• Biology Grade 11 or 12 is strongly recommended

• Chemistry Grade 11 or 12 is strongly recommended.

• International applicants must provide proof of the subject specific requirements noted above along with proof of either: (IELTS / TOEFL) IELTS-International English Language Testing Service (Academic) Overall band of 6.0 with a minimum of 5.5 in each band; OR TOEFL-Internet-based (iBT) Overall 80, with a minimum of 20 in each component: Reading 20; Listening 20; Speaking 20; Writing 20.

• Applicants with international transcripts must provide proof of the subject specific requirements noted above and may be required to provide proof of language proficiency.

Should the number of qualified applicants exceed the number of available places, applicants will be selected on the basis of their proficiency in English and mathematics.

A current Standard First Aid and CPR certificate is preferred prior to registration. Otherwise, the student must obtain the certificate within the first two months of the first level. Students must also obtain WHMIS certification within the first two months of the first level.

Application Information

ENVIRONMENTAL TECHNICIAN
Program Code 1212X04FPM

Applications to full-time day programs must be submitted with official transcripts showing completion of the academic admission requirements through:
Students currently enrolled in an Ontario secondary school should notify their Guidance Office prior to their online application at http://www.ontariocolleges.ca/

Applications for Fall Term and Winter Term received by February 1 will be given equal consideration. Applications received after February 1 will be processed on a first-come, first-served basis as long as places are available. applicants please visit this link for application process information: https://algonquincollege.force.com/myACint

For further information on the admissions process, contact:

Registrar’s Office
Algonquin College in the Ottawa Valley
1 College Way
Pembroke, ON K8A0C8
Local: 613-735-4700
Toll-free 1-800-565-4723
TTY: 1-866-620-3845
Fax: 613-735-4739
https://algonquincollege.com/pembroke

Additional Information

Programs at Algonquin College are Bring Your Own Device (BYOD). To see the BYOD requirements for your program, please visit: http://www7.algonquincollege.com/byod.

Apply directly to the co-op or non co-op version of this program through OntarioColleges.ca or our International Application Portal.

Cooperative education (Co-op) allows students to integrate their classroom learning with a real-world experience though paid work terms. Two academic terms prior to the cooperative education work term, students are required to actively participate in and successfully complete the self-directed co-op online readiness activities and in-person workshops.

Students must actively conduct a guided, self-directed job search and are responsible for securing approved program-related paid co-op employment. Students compete for co-op positions alongside students from Algonquin and other Canadian and international colleges and universities. Algonquin College’s Co-op Department provides assistance in developing co-op job opportunities and facilitates the overall process, but does not guarantee that a student will obtain employment in a co-op work term. Co-op students may be required to relocate to take part in the co-op employment opportunities available in their industry and must cover all associated expenses; e.g., travel, work permits, visa applications, accommodation and all other incurred expenses.

Co-op work terms are typically 14 weeks in duration and are completed during a term when students are not taking courses.

International students enrolled in a co-op program are required by Immigration, Refugees and Citizenship Canada (IRCC) to have a valid Co-op/Internship Work Permit prior to commencing their work term. Without this document, International students are not legally eligible to engage in work in Canada that is a mandatory part of an academic program.

For more information, please visit https://www.algonquincollege.com/coop.

The cost of some certificates and licenses are in addition to the established program tuition.

For more information, please contact Patrick Nicholson at 613-735-4700 ext. 2647 or mailto:nicholp@algonquincollege.com.

Course Descriptions

ADN7104 Ecology
A broad overview of ecological concepts and issues is provided. The ecological foundation that students need to understand the environment and the impacts of development on a variety of ecosystems is also presented. Students study ecological principles, sustaining biodiversity and humans as agents of change. These ecological principles are studied and discussed in the context of current ecological issues, as they relate to local, regional and global sustainability.

Prerequisite(s): none
Corerequisite(s): none

**AST2000 Introduction to Astronomy**

What can the sky tell us about our place in the universe, and how life began? This introductory course to astronomy will teach students indigenous and Western constellations in the sky, as well as introduce them to the major planets. Students will act as beginning astronomers and engineers by performing sketches, doing research on astronomy topics, and learning about missions to Mars that are on the hunt for signs of life.

Prerequisite(s): none
Corerequisite(s): none

**BIO7612 Environmental Biology**

Students are introduced to the fundamental principles of biology and microbiology, particularly as they relate to the environment. Students gain significant experience in the use of analytical laboratory equipment. The structure, function and biological processes of organisms are major areas of concentration. Further study demonstrating the abilities of organisms to react and cope with changes in their surrounding environment is delivered through field and lab activities.

Prerequisite(s): none
Corerequisite(s): none

**CHE7611 Environmental Chemistry**

Students are exposed to the fundamental principles of chemistry that build the foundation for understanding chemistry applications in the environmental fields. Students explore various states of matter, understand how matter is described and its characteristics. Chemical bonding and the properties of solutions are areas of concentration. Laboratory exercises emphasize phase changes, solution concentrations, chemical reactions relevant to the environmental sciences and the safe handling of chemicals and laboratory equipment.

Prerequisite(s): none
Corerequisite(s): none

**DAT7670 Microcomputer Applications**

The ability to communicate effectively using technology is essential in the education and employment fields. Students develop and apply college and workplace specific computer skills, and become familiar with e-learning resources. Email, word processing, internet searches and interaction with web-based tools relevant to the industry are practised. The effective use of presentation software and the visualization of data using both spreadsheets and graphics are key areas of focus.

Prerequisite(s): none
Corerequisite(s): none

**ENL1726 Symbols, Text and Meaning**

Symbols and text are used to express, evoke, and manipulate an entire range of human emotions and reactions. In this interactive, discussion-based course, students will explore historical and contemporary approaches to using symbols, text, and language in conceptual and contemporary art, graphic design and advertising, poetry and lyrics, and in online technology. Through discussion, analysis, informal debate, and critical thinking, students will explore how symbols and text influence individuals, society and culture.
Prerequisite(s): none  
Corerequisite(s):none

**ENL7669 Communications for Environmental Technicians**

Students develop workplace communication skills. Topics include technical writing style; critical reading; written and oral reports; employment correspondence; locating, evaluating and documenting technical information; interpreting and using visuals; and other communication skills that environmental technicians require in the workplace.

Prerequisite(s): ENL7777  
Corerequisite(s):none

**ENL7777 Communications I**

Communication remains an essential skill sought by employers, regardless of discipline or field of study. Using a practical, vocation-oriented approach, students focus on meeting the requirements of effective communication. Students practise writing, speaking, reading, listening, locating and documenting information, and using technology to communicate professionally. Students develop and strengthen communication skills that contribute to success in both educational and workplace environments.

Prerequisite(s): none  
Corerequisite(s):none

**ENV5004 Waste-Free Ontario**

Ontario continues to generate more and more waste; historically, three quarters of this waste has been discarded. In this course, learners are introduced to the tremendous environmental and economic opportunities that exist to embrace resource conservation ideology and a circular economy - a system in which products are never discarded, but reused, recycled and reintroduced into new products. With interactive activities, videos, and gaming; learners identify concepts and technologies to make informed decisions regarding waste management. Learners reflect on material learned, connect it to their own personalized industry or interest, and locate innovation and entrepreneurship opportunities.

Prerequisite(s): none  
Corerequisite(s):none

**ENV7401 Freshwater Environments**

Physical, chemical and biological characteristics of freshwater environments are introduced. Students specifically gain an understanding of the ecological importance of lakes, rivers, streams and wetlands. The relationships between landscapes and aquatic environments are explored. Field trips are used to familiarize students with freshwater systems and to provide practical training in an array of aquatic observational, measuring and sampling techniques. Protocols for collecting, identifying, analyzing, storing and transporting aquatic samples are practised.

Prerequisite(s): none  
Corerequisite(s):none

**ENV7402 Field Botany**

Students gain hands-on field experience in the identification of Ontario’s trees, shrubs and groundcover herbaceous plants. Leaf, stem and fruit characteristics are explored. Students are introduced to the structure and classification of several representative species and become proficient in the use of common dichotomous keys and field guides.

Prerequisite(s): none  
Corerequisite(s):none
ENV7413 Hydrology and Hydrogeology

The hydrological cycle, the movement of water through the atmosphere and on the earth's surface and subsurface is introduced. The physical principles that govern the movement of water and associated contaminants are discussed. Students learn to perform calculations and apply models that describe these flows. The effect of human activities on hydrology is covered.

Prerequisite(s): none
Corerequisite(s): none

ENV7415 Field Certifications

Students have the opportunity to gain certifications in various preferred specialties. Possible certifications include: Electrofishing, Pleasure Craft Operator, Transportation of Dangerous Goods, Float Plane Safety, Aquatic Biomonitoring, Erosion and Sediment Control, GPS and GIS ESRI Arc Map.

Prerequisite(s): none
Corerequisite(s): none

ENV7418 Wildlife Identification

Students learn to identify and classify various Ontario species of fish, amphibians, reptiles and mammals by their common names. The unique characteristics and habitat requirements of these species, especially those considered to be “at risk", are explored.

Prerequisite(s): none
Corerequisite(s): none

ENV7419 Project Management for Environmental Technicians

Environmental Technicians should be able to write, communicate and interpret a project scope of work. Students identify and apply skills and tools to manage environmental projects. Through case studies, micro scale projects and local research team projects, students create management techniques to plan, organize, budget and communicate tasks.

Prerequisite(s): none
Corerequisite(s): none

ENV7420 Contaminants in the Environment

Students gain a broad understanding of existing natural and man-made contaminants in the environment, and understand their potential impacts on terrestrial and aquatic organisms, populations and ecosystems. Principles of natural background concentrations, bioaccumulation, biomagnification, degradation and the chemical fates of contaminants are explored. Legislation and regulations that apply to contaminants are reviewed.

Prerequisite(s): none
Corerequisite(s): none

ENV7421 Water and Wastewater Treatment Technologies

Students gain a comprehensive overview of key aspects of water and wastewater treatment technologies including site visits at local facilities. Water and wastewater characteristics and sources, disinfection, treatment, sampling, regulations, plant infrastructure and standard laboratory operating procedures are covered. Students use a diverse array of monitoring and diagnostic equipment common in the industry. Students are prepared to challenge both the Operator in Training (OIT) Water Treatment and Wastewater Treatment Exams offered by the Ministry of Environment.

Prerequisite(s): none
Corerequisite(s): none
ENV7437 Environmental Issues and Solutions

Students learn about key global, regional and local environmental issues, proposed solutions and their inter-dependencies. Students are required to explore environmental issues using field and lab analysis both individually and in teams. Students develop the ability to critically evaluate information related to environmental issues, and problem solve to come up with potential solutions. Opportunities to analyze issues and share solutions using a variety of communication strategies are provided.

Prerequisite(s): none
Corerequisite(s): none

ENV7438 Environmental Assessments

Environmental Assessments (EAs) are legislated requirements for many environmentally related projects. Students have the opportunity to conduct an Environmental Assessment in collaboration with local industry partners. The various phases of an EA and the requirements of a technician at each phase are introduced. Students are responsible for conducting preliminary site assessments, initiating a monitoring plan, collecting and compiling relevant data and making recommendations to an industry partner.

Prerequisite(s): none
Corerequisite(s): none

ENV7439 Contaminated Site Assessment

Environmental Site Assessments are legislated requirements for many private and government owned properties. ESAs identify the presence and extent of contamination on a site of interest. The various phases of an ESA and the roles and responsibilities of an environmental technician are discussed. Students compete site inspections, compile observations in field books and present findings in formal reports. Students demonstrate site characterization skills by verifying the presence, absence or extent of contamination at a site through preparation of a sampling plan, collection of samples and compilation of relevant data.

Prerequisite(s): none
Corerequisite(s): none

ENV7440 Land and Water Stewardship

Students focus on protecting and enhancing the environment through delivery of a variety of land and/or water-based stewardship projects. Students explore joint stewardship opportunities with local stakeholders in areas of shared interest. The establishment of formal partnerships with industry/community-based organizations allows students to apply basic project management skills and actively contribute to the implementation of on-the-ground environmental solutions.

Prerequisite(s): none
Corerequisite(s): none

ENV7441 Remediation Strategies

Successful environmental site remediation requires an understanding of the site characteristics and application of available tools to evaluate the preferred remediation strategies. Students learn about new and emerging technologies along with industry standard practices for contaminated site cleanup. Students develop a conceptual site model for a contaminated site, and use industry tools to evaluate variables and select a remediation strategy. Bench testing of remediation systems are completed in both field and lab scenarios to assess the effectiveness of the chosen remediation strategy.

Prerequisite(s): none
Corerequisite(s): none

FIN2300 Introduction to Personal Finance
Establishing and maintaining healthy personal financial affairs are important steps towards overall success in life. Through self-study of text material, review questions, self-test quizzes, assignments and a final examination, students acquire knowledge and skills concerning credit and debt, home ownership and mortgages, the savings challenge, government programs to encourage saving, fixed-income and equity investments, mutual funds, budgeting and financial planning, retirement strategies, public and private pensions, business ownership and insurance.

Prerequisite(s): none
Corerequisite(s): none

**FOR7314 Soils and Landforms**

The characteristics of common soils with emphasis on the physical, chemical and biological features are explored. Students spend a portion of their time conducting field and lab exercises to examine soil textures and profiles, and the correlation between landforms, soil types and species. Soil fertility, conservation and management are examined.

Prerequisite(s): none
Corerequisite(s): none

**GED0021 Disability in Film: Portrayals and Identity**

Film has a powerful influence on our perceptions. Students describe and explore through case studies a range of disabilities and their unique features. Using film, inquiry and discussion students critique historical and modern day portrayals of individuals with disabilities. Students consider the attitudes and social barriers that individuals with disabilities face and focus on the link between the formation of cultural identity and the arts.

Prerequisite(s): none
Corerequisite(s): none

**GED0022 Positive Psychology: the Science of Happiness and Well-Being**

While fulfillment and well-being mark some people's lives, many others remain dissatisfied with life. Positive Psychology is concerned with explaining how individuals and communities flourish through the scientific exploration of happiness, optimal human functioning, and civic engagement. The field of Positive Psychology has the objective of making life more satisfying and meaningful through interventions that promote and develop qualities such as self-knowledge, learned optimism, gratitude, mindfulness, resilience, and community connection. Students participate in both interactive lectures and on-line discussions, maintain weekly journals, and develop personal strengths through direct engagement with well-being initiatives.

Prerequisite(s): none
Corerequisite(s): none

**GED1212 General Education Elective**

Students choose one course, from a group of general education electives, which meets one of the following five theme requirements: Arts in Society, Civic Life, Social and Cultural Understanding, Personal Understanding, and Science and Technology.

Prerequisite(s): none
Corerequisite(s): none

**GED2200 Free Speech and the Challenge of Social Media**

This course will allow students to explore social media and its effects on free speech and public discourse in contemporary society. It will cover the philosophical foundations of free speech, the legal and institutional expressions of free speech in modern democracies, the characteristics of social media infrastructure, how our society's free speech is being influenced if not transformed by this infrastructure, and perspectives on the need, or not, for "regulatory fixes" advanced from different viewpoints.
GEDS002 Victimology
An increased awareness of the ripple effect of crime has given rise to victimology as a significant field of study. Students investigate victims of crime and the impact that crime has on their lives, their families and society by studying the history of victimology and the victims' movement, the nature and extent of victimization, its emerging theories and resulting legislation. In addition victims' services, accessibility to services, rights of the victim and the victim in the criminal justice system are examined. Students also learn about crime in the workplace, schools, and campuses and the importance of recognizing those at risk.

GEDS003 The Science of Play
Toys and games, key components of play, have evolved from homemade trinkets to highly engineered items in a multi-billion-dollar industry. Students explore the connections between technology and play, specifically the benefits, drawbacks and ethical implications of toy and game design. Case studies allow students to consider familial, cultural, sociological, and other influences upon toy and game design over the last century. Through discussion, analysis and workshops, students move towards designing their own toy or game, or modifying an existing one.

GEDS004 Living Green
The need to lead healthy, environmentally conscious lives is increasingly important. Students acquire the practical knowledge and skills required to explore current environmental challenges and identify personal plans for living in an environmentally responsible manner. Through a combination of assignments, discussion boards, and quiz work, students investigate the history and development of current environmental concerns, the environmental impact of our choices and behaviours, and strategies involved in living green.

GEDS005 Greek Mythology
Students explore intriguing characters, important places and famous myths of Classical Greece. By examining a variety of popular myths, students discover how the Ancient Greeks crafted narratives of gods, goddesses, monsters, and heroic figures to make sense of their lives and the world around them. Using examples from art, science, and industry, students examine how these epic stories from oral tradition have endured and continue to influence contemporary society.

GEDS006 World Religions
In Canada, society embraces people from many cultures of the world. By exploring different religious beliefs about the world, the individual, the meaning of life and death, and how individuals are encouraged to conduct themselves, students begin to appreciate the underlying forces that shape followers' lives. Students explore the history and basic teachings of six of the major religions of the world: Hinduism, Buddhism, Judaism, Christianity, Islam, and the Baha'i Faith. Each religion's distinctive features are highlighted, while their similarities and shared values are examined. Students have the opportunity to broaden their worldview through an exposure to divergent religious traditions.
GED5007 Slavery, the Slave Trade and Its Abolition

The effects of transatlantic slavery, which began in the 15th century and was not abolished until the 19th, are still present in contemporary social, political and economic systems. In this course, students are provided with a chronological understanding of the transatlantic slave trade that charts: 1) its creation and its economic underpinnings in European and American power and wealth; 2) the resistance to slavery and its eventual abolition; and 3) the afterlife of slavery in the present day. Through class discussion, examination of academic and non-academic literature, and analysis of images and videos, students will be introduced to the history and continuing legacy of the transatlantic slave trade.

Prerequisite(s): none
Corerequisite(s): none

GED5010 The Fungus Among Us

Understanding fungi is critical for a more complete picture of both natural history, as well as historical and current human affairs. Students learn the major groups of fungi most of which are beneficial to humans. Students learn the influence of fungi on historical and cultural activities including art and food. Students also examine the direct involvement of fungi on industrial processes and current medical and biotechnological processes. Students explore the role of fungi as it relates to soil fertility and best practices in agriculture and environmental sustainability. Students will connect fungi to the world around them.

Prerequisite(s): none
Corerequisite(s): none

GED5200 Learning Disabilities, the Invisible Disability

Students increase their awareness of, and sensitivity to, persons with learning disabilities in social, educational and work settings. The field of learning disabilities is introduced through an historical overview, definitions, characteristics, and various models of the causes of learning disabilities. Students learn about the impact learning disabilities have on people’s day-to-day lives and the strategies that may be used to compensate for them. Activities include group work, independent research, reflection and case studies. Students are encouraged to share personal experience and knowledge.

Prerequisite(s): none
Corerequisite(s): none

GED5300 The Science of Everyday Life

The mysteries of science surround us constantly and play a significant role in everyone’s daily life regardless of their level of awareness. Familiarity with the basic concepts of science in disciplines such as biology, physics, and chemistry, helps students better understand the world in which they live, the attitudes and opinions of those with whom they interact, and the reasons why many things happen. By examining everyday occurrences, students are introduced to scientific ways of thought and to problem-solving methods used by scientists. A background in science and math is not required.

Prerequisite(s): none
Corerequisite(s): none

GED5301 On Death, Dying and the Growing Acceptance of Euthanasia

Though death is an immutable consequence of life, society’s attitudes and reactions to it have been ever-changing. The viewpoint that life is sacrosanct, to be protected at all costs, is now being challenged by individuals demanding greater control of their quality of life, including the right to die. A historical overview of attitudes towards death will be examined, with a focus on the growing acceptability of euthanasia, and the reasons behind this movement (demographics, economics, medicine). This course, through discussion of differing social perspectives, government legislation,
case studies, research, images and videos will provide students a greater understanding of society's past and present approaches to death.

Prerequisite(s): none
Corerequisite(s): none

**GED6022 A Sense of Humour**

Humour is a universal tool of communication and social influence. Students survey the development, use, and value of humour in Canadian visual and creative arts. Varieties of humour, such as irony, satire and farce are positioned in the context of Canadian culture to enhance the student's appreciation of humour and self-awareness.

Prerequisite(s): none
Corerequisite(s): none

**GED7019 Becoming an Entrepreneur: Is It for Me?**

Do you have what it takes to be an entrepreneur? From government incentive and mentoring programs, to courses, training programs and reality television, it is clear that there is a growing need for people who can transform innovative ideas into viable products. Through self-evaluation, a variety of decision-making models and exposure to the experiences of local entrepreneurs, students acquire the necessary knowledge and tools to determine if entrepreneurship is a direction they would like to explore.

Prerequisite(s): none
Corerequisite(s): none

**GEN1001 Ethics: What Is the Big Deal?**

In today's society there is increasingly more attention focused on questions of right or wrong, good or evil. Ethical issues relating to a wide variety of concerns are examined. Students clarify their own moral values and explore how these values impact the course of their lives. Students practise using tools and decision-making models to deal with personal and professional dilemmas.

Prerequisite(s): none
Corerequisite(s): none

**GEN1957 Science Fiction**

Science fiction is both a major genre of popular entertainment and an effective mode of social commentary. Students explore the formal conventions and the history of the genre, analyze a representative range of science fiction, and develop their critical appreciation of the role and place of science fiction in society. In addition to writing reflective and analytical assignments, students have an opportunity to create their own piece of science fiction.

Prerequisite(s): none
Corerequisite(s): none

**GEN2003 Healthy Lifestyle**

Are you eating healthy foods? Do you exercise regularly? Do you know how to prevent injuries and disease? These are some of the skills necessary to live a healthy lifestyle. Through self-evaluation, weekly journals, and hands-on exercises students assess their personal lifestyles and learn how to improve them.

Prerequisite(s): none
Corerequisite(s): none

**GEN2007 Community Service**

Volunteerism not only benefits a community; it can broaden the worldview of the volunteer.
Students who give their time and energy to a particular cause, gain an opportunity to reflect on the value of the volunteer in contemporary society. Through research and discussion, students consider different types of volunteer settings, trace the history of volunteer organizations, examine the various roles volunteers play within society and reflect on ethical issues.

Prerequisite(s): none
Corerequisite(s): none

**GEO0012 Foreign Landscapes and Their Inhabitants**

Understanding the natural environment and the geological features and landscapes that shape our world is vital for students to have a greater understanding and respect for others by being more globally and culturally aware. The transformation of Earth as we know it has been a 4.5 billion year marvel in the making. The ever-changing continents, oceans, seas, and geographic landforms continue to reshape our world. Through the exploration of the unique landscapes of Earth and the examination of the geographic distribution of populations, countries, and regions of the world, students will use virtual field trips, case studies, and web quests to enhance their sense of global community.

Prerequisite(s): none
Corerequisite(s): none

**GIS7315 Geographical Information Systems**

Analysis of spatial data is introduced. Students learn to efficiently use ESRI's ArcMAP software as the primary geographical information system software. Students practise basic skills in manipulating and presenting spatial information with a particular focus on the integration and appropriate delivery of technical data. Students gain further exposure to a wide variety of emerging online spatial resources and tools. ArcPAD hand-held field technologies are also introduced.

Prerequisite(s): none
Corerequisite(s): none

**HIS0001 Saints and Heroes: Shining a Spotlight on the 'Dark Ages', Europe A.D. 410-1096**

When the mighty Roman Empire began to collapse, it was attacked from all directions by Barbarian armies. The resulting turmoil caused Europe to sink into a period of social and political upheaval known as The Dark Ages. However, during these troubled times, extraordinary warriors and missionaries emerged whose profound influence has played a vital role in shaping what has become our modern world. Students examine the social, political, intellectual, and economic history of this era and explore its enduring impact on modern Western society.

Prerequisite(s): none
Corerequisite(s): none

**HOS2228 Wine, Food and Culture**

An understanding of culture can be discovered by exploring eating and drinking customs. Students experience a virtual global tour, exploring culture, history and traditions through the lens of wine and food. Students acquire a sense of the customs of their culture and those of others. Through comparison, observation, discussion, and reflection, students discover something found in all cultures: the importance of food and drink.

Prerequisite(s): none
Corerequisite(s): none

**LIB1982 Reading for Recreation**

Reading gives us knowledge and new ideas to draw from in the future. It tones the mind in ways similar to the way exercise tones the body. As a result, time spent in reading for recreation has benefits beyond the immediate appreciation of the text. Students examine appeal factors of various genres of fiction and non-fiction by reviewing the history and classics of each genre, considering the therapeutic values of reading, and examining recent trends in online reading and publishing.
Prerequisite(s): none
Corerequisite(s): none

**MAT7205 Mathematics**

Mathematical principles that are required to solve numerical problems in the environmental sciences are introduced. Emphasis is placed on the study of fractions, decimals, scientific notation, geometry and scales. Students express word problems in mathematical terms and interpret results.

Prerequisite(s): none
Corerequisite(s): none

**MAT7221 Environmental Data Analysis**

Interpreting results is a critical aspect of environmental studies. Students are introduced to the following topics in statistics: the collection, organization and presentation of statistical data; measures of tendencies and variation; basic probability concepts; errors in data and construction of indices. Students enhance their knowledge of statistical theory by applying it to environmental case studies and data generated from concurrent courses using common industry spreadsheet and statistical software tools.

Prerequisite(s): none
Corerequisite(s): none

**MGT7330 Trends in Today's Workplace**

In today’s culture of work, every employee needs to be knowledgeable about current trends and issues in the workplace. Students explore emerging issues facing employees in today’s technology-driven workplace and investigate the realities of social networking, diversity in the workplace, and work mobility.

Prerequisite(s): none
Corerequisite(s): none

**MVM8800 The Impact of the Car on North American Culture**

Students explore the social, economic, political, and environmental impact of the automobile on North American lives. Through a combination of assignments, discussion boards, and quiz work, students study the history of the automobile, from its introduction to the present day. Doing so allows students to track the changes the car has introduced to manufacturing, lifestyles, design principles, transportation systems, the environment, labour-management negotiation, and economic organization.

Prerequisite(s): none
Corerequisite(s): none

**PSI0003 Globalization and Sustainability**

The rapid growth of the global economy raises fundamental questions: How do trade and politics affect development and the environment? What are the effects of free trade and the rise of multinational corporations on local cultures? What are the effects of the "clash of cultures" produced by international travel, migration, and new social, collaborative technologies that send film, books, television, music and other "proprietary" content spinning around the world instantly? Is globalization environmentally sustainable? Students examine these and other questions and analyze the day-to-day choices raised by globalization in an increasingly interconnected world.

Prerequisite(s): none
Corerequisite(s): none

**RAD2001 Popular Culture**
One dictionary definition of popular culture is the “totality of socially transmitted behaviour patterns, arts, beliefs, institutions, and all other products of human work and thought.” This definition allows us great freedom and scope. Students examine recent North American popular culture including trends, fads, styles, theories and the cult of the new. By exploring our perceptions of culture and the trivialization of society, students begin to appreciate how the media has relentlessly helped to shape today’s values. Through online research, assigned readings, and participation in self-directed learning, students critique popular culture’s place in North American society, concentrating on their decade of choice.

Prerequisite(s): none
Corerequisite(s): none

**SCI2200 Dynamic Dna: You Are Not Alone**

DNA, an individual's most intimate blueprint, offers uniqueness in a population of billions. But just how unique is an individual? Humans share 99% of DNA with each other, 98.5% with chimpanzees, and even 60% with a banana. Examination will demonstrate the paradox of DNA composition, making that person both unique, and similar, at the same time. DNA testing types will be explored, including the more popular public DNA testing kits. This course will discuss DNA history and technology, social attitudes, case studies, research, images and videos, providing students a greater understanding of their genetic make-up, both on a personal and global level.

Prerequisite(s): none
Corerequisite(s): none

**SCI7614 Physical, Chemical and Biological Sampling**

Students practise the appropriate field methods and protocols required to collect a wide range of air, water, soil and biological samples. Students learn safe handling procedures, preservation techniques, protocols for legal samples and best practices for sample shipping. Various types of equipment are used by students to collect, analyze and preserve samples.

Prerequisite(s): none
Corerequisite(s): none

**SOC2003 Understanding Human Sexuality**

Students study human sexuality through an interdisciplinary approach. Students gain a basic understanding of human sexuality through an investigation of history, culture, physiology, sexual development, sexual behaviours, sexually transmitted diseases, attitudes, sex, deviance and sexual relationships.

Prerequisite(s): none
Corerequisite(s): none

**WKT7102 Cooperative Education Work Term**

For students who qualify academically and who choose to participate, there is the opportunity to enhance their diploma with an officially recognized co-op designation. This designation is achieved by successfully completing a paid co-op educational employment experience where students have the chance to gain valuable work experience, network and make contacts in the industry and assess their skills and weaknesses in a real-world work environment.

Prerequisite(s): none
Corerequisite(s): none