PRE-ENGINEERING TECHNIQUES

Program: PTEC
Credential: Ontario College Certificate
Delivery: Full-time
Length: 2 Semesters
Duration: 1 Year
Effective: Fall 2026, Winter 2027
Location: Muskoka

Description

Build your foundation in engineering with our hands-on Pre-Engineering Techniques program! This two-semester Ontario College Certificate prepares you with foundational skills for a future in engineering and technology. Through a mix of practical lab work and in-class learning, you'll explore key concepts in electrical systems, construction and environmental practices, and advanced manufacturing. Working individually and in teams, you'll develop problem-solving skills, learn to operate computer systems and assisted design (CAD) software, as well as how to apply safety and compliance standards essential to any engineering environment.

Career Opportunities

This program offers a potential pathway to further studies in specialized engineering and technology programs or apprenticeships. As a graduate, you'll be eligible to move into entry-level roles in manufacturing, construction, or environmental fields, or be eligible to apply for and continue your education in a variety of different programs, such as Environmental Technician/Technology, Civil Engineering Technician/Technology, or Electromechanical Engineering Technician/Technology.

Program Learning Outcomes

The graduate has reliably demonstrated the ability to:

1. implement mathematical calculations to solve engineering problems and optimize processes;
2. troubleshoot technical problems to identify and provide potential solutions;
3. convey technical information effectively to facilitate collaboration on projects with individuals of diverse technical backgrounds;
4. create technical designs and reports to support the development and implementation of engineering solutions;
5. identify opportunities for continued up-skilling and professional growth to enhance work performance and maintain currency with industry;
6. identify and report unsafe practices and potential hazards to ensure the safety of self and others;
7. collaborate on diverse teams to reduce risk and meet project goals.

Program Progression

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

Fall Intake

- **Sem 1:** Fall 2026
- **Sem 2:** Winter 2027

Winter Intake

- **Sem 1:** Winter 2027
- **Sem 2:** Fall 2027

Admission Requirements

- Ontario Secondary School Diploma (OSSD), or equivalent, or mature student status
- Grade 12 English (C or U)
- Grade 11 or 12 Mathematics (C, M 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/)

Graduation Requirements

13 Program Courses
1 Communications Course

Graduation Eligibility

To graduate from this program, the passing weighted average for promotion through each semester, 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
DRFT 1003	Introduction to Technical Drafting	42
ENVR 1005	Workplace Safety and Employment Readiness	42
MATH 1018	Introduction to Technical Mathematics	42
METR 1000	Electrical Components	56
SURV 1001	Civil / Construction Surveying	42
Communications Course		42
Select 1 course from the communications list during registration		
	Hours	**308**
Semester 2		
Program Courses		
CNCT 1013	CNC Applications 1	56

COMP 1107	Principles of Programming	42
CONS 1003	Construction Practices	42
ELEC 1002	Electrical Systems and Control	56
MATH 1047	Applied Engineering Math	42
MENG 2023	Additive Manufacturing Project	42
PHYS 1007	Engineering Physics	42
	Hours	**322**
	Total Hours	**630**

Graduation Window

Students unable to adhere to the program duration of one year (as stated above) may take a maximum of two 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.