

POWER ENGINEERING TECHNOLOGY

Program: PETY

Credential: Ontario College Advanced Diploma, Co-op

Delivery: Full-time

Work Integrated Learning: 1 Co-op Work Term + 1 Field Placement

Length: 5 Semesters, plus 1 work term

Duration: 2 Years

Effective: Fall 2019, Winter 2020, Summer 2020

Location: Owen Sound

Description

This program has been developed for those seeking employment as power engineering technologists who operate and troubleshoot the energy components in such industries as industrial power plants (chemical, food, pulp and paper etc.), electrical power plants (coal, gas, nuclear, wind, solar, methane, cogeneration, flex fuel etc.), or commercial buildings. Operating (Power) Engineers are certified professionals who apply technologies and operate and maintain equipment such as boilers, steam turbines, refrigeration, and gas compression. Subjects of instruction will follow the Standardized Power Engineers Examination Committee (SOPEEC) syllabus and prepare the students to write the Technical Standards and Safety Authority (TSSA) examinations for 4th and 3rd class certification. This program features co-operative training and use of a state-of-the-art power systems control room simulator.

Career Opportunities

The graduate of this program may find a rewarding career as a power or operating engineer in a wide variety of industries including electrical power generating plants, heavy and lighter industries, schools, hospitals and other commercial buildings. This may include operation of a small scale power plant such as those that exist in remote northern aboriginal communities.

Program Learning Outcomes

The graduate has reliably demonstrated the ability to:

1. work in accordance with practices and procedures that minimize risk and enhance personal and public safety;
2. operate the components of a power plant including boilers, steam turbines, refrigeration systems, gas compression, electrical generators, and other auxiliary equipment;
3. use industry standard power engineering technology in the performance of work and be able to adapt to changes in the industry;
4. relate effectively to coworkers, subordinates, and supervisors in the work environment;
5. perform duties in accordance with established codes, regulations, and legislation;
6. work in a professional manner and employ ethical practices;
7. use strategies that mitigate the effects of power generation on the environment;
8. identify problems with power plant systems and equipment;
9. 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/>)

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.

The Program Progression

Fall Intake

- **Sem 1:** Fall 2019
- **Sem 2:** Winter 2020
- **Sem 3:** Summer 2020
- **Sem 4:** Fall 2020
- **Work Term:** Winter 2021
- **Sem 5:** Summer 2021

Winter Intake

- **Sem 1:** Winter 2020
- **Sem 2:** Summer 2020
- **Work Term:** Fall 2020
- **Sem 3:** Winter 2021
- **Sem 4:** Summer 2021
- **Sem 5:** Fall 2021

Summer Intake

- **Sem 1:** Summer 2020
- **Sem 2:** Fall 2020
- **Work Term:** Winter 2021
- **Sem 3:** Summer 2021
- **Sem 4:** Fall 2021
- **Sem 5:** Winter 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/>)

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/>)

Graduation Requirements

- 23 Program Courses
- 2 Communications Courses
- 3 General Education Courses
- 1 Field Placement
- 1 Co-op Work Term

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		
CHEM 1010	Chemistry and the Environment	42
ELEC 1009	Electricity and Controls	70
PENG 1005	Power Plant Simulation	42
PENG 1007	Introduction to Power Engineering	28
PENG 1008	Power Engineering Sciences	56
PENG 1010	Heating Systems	56
Hours		294

Semester 2

Program Courses		
HRAC 1000	Refrigeration and Air Conditioning	56
PENG 1006	Power Plant Operations	84
PENG 1009	Power Engineering Skills Lab	56
PENG 1011	Prime Movers and Engines	42
WETC 1012	Welding and Metallurgy	28
Communications Course		
Select 1 course from the communications list during registration.		42
Hours		308

Semester 3

Program Courses		
MATH 2010	Power Engineering Mathematics	42
MENG 2018	Applied Mechanics	42
PENG 2005	Power Engineering Skills Lab 2	28
PENG 2006	Thermodynamics and Fluid Mechanics	56
General Education Course		
Select 2 courses from the general education list during registration.		84
Hours		252

Semester 4

CHEM 2003	Advanced Chemistry and the Environment	42
PENG 2007	Advanced Power Plant Operations	70
PENG 2008	Advanced Prime Movers and Engines	42
PENG 2009	Power Plant Management	56
Communications Course		
Select 1 course from the communications list during registration.		42
General Education Courses		
Select 1 course from the general education list during registration.		42
Hours		294

Semester 5

Program Courses		
ELEC 3011	Instrumentation and Control Systems	40
ELEC 3012	Power Engineering Electricity	40
HRAC 3006	Advanced Refrigeration and Air Conditioning	40
PENG 3007	Piping and Auxiliaries	50
Field Placement		
PENG 3008	Power Engineering Work Integrated Learning	160
Hours		330
Total Hours		1478

Co-op Work Term

COOP 1030	Power Engineering Work Term (occurs after Semester 2)	560
Hours		560
Total Hours		560

Graduation Window

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