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

**Winter Intake**
- **Sem 1**: Winter 2020
- **Sem 2**: Summer 2020
- **Work Term 1**: 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 1**: Winter 2021
- **Sem 3**: Summer 2021
- **Sem 4**: Fall 2021
- **Sem 5**: Winter 2022

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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

### Semester 1

<table>
<thead>
<tr>
<th>Program Courses</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 1010 Chemistry and the Environment</td>
<td>42</td>
</tr>
<tr>
<td>ELEC 1009 Electricity and Controls</td>
<td>70</td>
</tr>
<tr>
<td>PENG 1005 Power Plant Simulation</td>
<td>42</td>
</tr>
<tr>
<td>PENG 1007 Introduction to Power Engineering</td>
<td>28</td>
</tr>
<tr>
<td>PENG 1008 Power Engineering Sciences</td>
<td>56</td>
</tr>
<tr>
<td>PENG 1010 Heating Systems</td>
<td>56</td>
</tr>
</tbody>
</table>

**Total Hours:** 294

### Semester 2

<table>
<thead>
<tr>
<th>Program Courses</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HRAC 1000 Refrigeration and Air Conditioning</td>
<td>56</td>
</tr>
<tr>
<td>PENG 1006 Power Plant Operations</td>
<td>84</td>
</tr>
<tr>
<td>PENG 1009 Power Engineering Skills Lab</td>
<td>56</td>
</tr>
</tbody>
</table>

**Total Hours:** 308

### Semester 3

<table>
<thead>
<tr>
<th>Program Courses</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 2010 Power Engineering Mathematics</td>
<td>42</td>
</tr>
<tr>
<td>MENG 2018 Applied Mechanics</td>
<td>42</td>
</tr>
<tr>
<td>PENG 2005 Power Engineering Skills Lab 2</td>
<td>28</td>
</tr>
<tr>
<td>PENG 2006 Thermodynamics and Fluid Mechanics</td>
<td>56</td>
</tr>
<tr>
<td>General Education Course</td>
<td></td>
</tr>
</tbody>
</table>

**Select 2 courses from the general education list during registration.**

**Total Hours:** 252

### Semester 4

<table>
<thead>
<tr>
<th>Program Courses</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 2003 Advanced Chemistry and the Environment</td>
<td>42</td>
</tr>
<tr>
<td>PENG 2007 Advanced Power Plant Operations</td>
<td>70</td>
</tr>
<tr>
<td>PENG 2008 Advanced Prime Movers and Engines</td>
<td>42</td>
</tr>
<tr>
<td>PENG 2009 Power Plant Management</td>
<td>56</td>
</tr>
<tr>
<td>Communications Course</td>
<td></td>
</tr>
</tbody>
</table>

**Select 1 course from the communications list during registration.**

**General Education Courses |**

**Select 1 course from the general education list during registration.**

**Total Hours:** 294

### Semester 5

<table>
<thead>
<tr>
<th>Program Courses</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELEC 3011 Instrumentation and Control Systems</td>
<td>40</td>
</tr>
<tr>
<td>ELEC 3012 Power Engineering Electricity</td>
<td>40</td>
</tr>
<tr>
<td>HRAC 3006 Advanced Refrigeration and Air Conditioning</td>
<td>40</td>
</tr>
<tr>
<td>PENG 3007 Piping and Auxiliaries</td>
<td>50</td>
</tr>
<tr>
<td>Field Placement</td>
<td></td>
</tr>
<tr>
<td>PENG 3008 Power Engineering Work Integrated Learning</td>
<td>160</td>
</tr>
</tbody>
</table>

**Field Placement:**

**Total Hours:** 330

**Total Hours:** 1478

### Co-op Work Term

<table>
<thead>
<tr>
<th>Program Courses</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>COOP 1030 Power Engineering Work Term (occurs after Semester 2)</td>
<td>560</td>
</tr>
</tbody>
</table>

**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.

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