ELECTRICAL ENGINEERING TECHNOLOGY

Program: EETY
Credential: Ontario College Advanced Diploma, Co-op
Delivery: Full-time
Work Integrated Learning: 3 Co-op Work Terms
Length: 6 Semesters, plus 3 work terms
Duration: 3 Years
Effective: Fall 2024, Winter 2025
Location: Barrie

Description

This Ontario Association of Certified Engineering Technicians and Technologists (OACETT) accredited program, offers students advanced courses in electrical power systems, robotics, programmable logic controllers, networking, instrumentation and project management. Students gain hands-on experience in associated lab classes using state of the art hardware and test equipment. These courses, together with experience gained in three coop work terms with industry partners, provide students with a broad technical background and a wide range of employment opportunities in the electrical industry.

Career Opportunities

There has never been a better time to enter the field of engineering technology to serve today's global market economy. The numbers of jobs in the electrical automation sector have been growing steadily, including opportunities in specialized robotics manufacturers, automotive support industries and equipment manufacturers. The utility sector also offers exciting career possibilities working with green technologies and utilities companies. Additional employment opportunities may be found in product installation and service, design and testing, research, maintenance, industrial sales and marketing, estimating, contract and project administration as well as quality control.

Program Learning Outcomes

The graduate has reliably demonstrated the ability to:

1. analyze, interpret, and produce electrical and electronics drawings, technical reports including other related documents and graphics;
2. analyze and solve complex technical problems related to electrical systems by applying mathematics and scientific principles;
3. design, use, verify, and maintain instrumentation equipment and systems;
4. design, assemble, test, modify, maintain and commission electrical equipment and systems to fulfill requirements and specifications under the supervision of a qualified person;
5. commission and troubleshoot static and rotating electrical machines and associated control systems under the supervision of a qualified person;
6. design, assemble, analyze, and troubleshoot electrical and electronic circuits, components, equipment and systems under the supervision of a qualified person;
7. design, install, analyze, assemble and troubleshoot control systems under the supervision of a qualified person;
8. use computer skills and tools to solve a range of electrical related problems;
9. create, conduct and recommend modifications to quality assurance procedures under the supervision of a qualified person;
10. prepare reports and maintain records and documentation systems;
11. design, install, test, commission and troubleshoot telecommunication systems under the supervision of a qualified person;
12. apply and monitor health and safety standards and best practices to workplaces;
13. perform and monitor tasks in accordance with relevant legislation, policies, procedures, standards, regulations, and ethical principles;
14. configure installation and apply electrical cabling requirements and system grounding and bonding requirements for a variety of applications under the supervision of a qualified person;
15. design, commission, test and troubleshoot electrical power systems under the supervision of a qualified person;
16. select and recommend electrical equipment, systems and components to fulfill the requirements and specifications under the supervision of a qualified person;
17. apply project management principles to contribute to the planning, implementation, and evaluation of projects;
18. apply basic entrepreneurial strategies to identify and respond to new opportunities;
19. explain how electrical and electronic systems and work practices impact the environment.

Practical Experience

All co-operative education programs at Georgian contain mandatory work term experiences aligned with program learning outcomes. Co-op work terms are designed to integrate academic learning with work experience, supporting the development of industry specific competencies and employability skills.

Georgian College holds membership with, and endeavours to follow, the co-operative education guidelines set out by the Co-operative Education and Work Integrated Learning Canada (CEWIL) and Experiential and Work-Integrated Ontario (EWO) as supported by the Ministry of Colleges and Universities.

Co-op is facilitated as a supported, competitive job search process. Students are required to complete a Co-op and Career Preparation course scheduled prior to their first co-op work term. Students engage in an active co-op job search that includes applying to positions posted by Co-op Consultants, and personal networking. Co-op work terms are scheduled according to a formal sequence that alternates academic and co-op semesters as shown in the program progression below.

Programs may have additional requirements such as a valid driver's license, strong communication skills, industry specific certifications, and ability to travel. Under exceptional circumstances, a student may be unable to complete the program progression as shown below. Please refer to Georgian College Academic Regulations for details.

International co-op work terms are supported and encouraged, when aligned with program requirements.

Further information on co-op services can be found at www.GeorgianCollege.ca/co-op (https://www.georgiancollege.ca/co-op/)

External Recognition

This program is accredited by Technology Accreditation Canada (TAC) and by the Ontario Association of Certified Engineering Technicians and Technologists (OACETT).

This program is accredited by the Canadian Association for Co-operative Education (CAFCE).

Program Progression

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

Fall Intake

- **Sem 1:** Fall 2024
- **Sem 2:** Winter 2025
- **Work Term 1:** Summer 2025
- **Sem 3:** Fall 2025
- **Sem 4:** Winter 2026
- **Sem 5:** Summer 2026
- **Work Term 2:** Fall 2026
- **Work Term 3:** Winter 2027
- **Sem 6:** Summer 2027

Winter Intake

- **Sem 1:** Winter 2025
- **Sem 2:** Summer 2025
- **Work Term 1:** Fall 2025
- **Sem 3:** Winter 2026
- **Sem 4:** Summer 2026
- **Sem 5:** Fall 2026
- **Work Term 2:** Winter 2027
- **Work Term 3:** Summer 2027
- **Sem 6:** Fall 2027

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 https://www.georgiancollege.ca/admissions/credit-transfer/ (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/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/)

Additional Information

Students who have graduated from Georgian College's Electrical Techniques Certificate program (ELTQ) must apply to be admitted with advanced standing. ELTQ students, upon admission, must complete a selection of semester 1 and 2 courses to align with program progression.

Graduation Requirements

32 Program Courses
2 Communications Courses
3 General Education Courses
3 Co-op Work Terms

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		
DRFT 1003	Introduction to Technical Drafting	42
ELEN 1000	DC Circuit Fundamentals	56
MATH 1018	Introduction to Technical Mathematics	42
PHYS 1001	Physical Sciences	42
Communications Course		
Select 1 course from the communications list during registration.		42
General Education Course		
Select 1 course from the general education list during registration.		42
	Hours	**266**
Semester 2		
Program Courses		
ELEC 1000	CAD Electrical Circuits	42
ELEC 1001	AC Circuit Fundamentals	56
ELEC 1002	Electrical Systems and Control	56
MATH 1019	Technical Mathematics	42
Communications Course		
Select 1 course from the communications list during registration.		42
General Education Course		
Select 1 course from the general education list during registration.		42
	Hours	**280**
Semester 3		
Program Courses		
ELEC 2005	Electrical Machines	56

ELEC 2007	CAD Electrical Layouts	42
ELEC 2023	Power Transmission and Distribution 1	56
ELEC 2024	Electronic Fundamentals	42
GEOG 2000	Geographic Information Systems	42
ROBT 2000	Introduction to Robotics	42
	Hours	**280**
Semester 4		
Program Courses		
COMP 2123	Introduction to Microprocessors	42
ELEC 2008	Programmable Logic Controller 1	42
ELEC 2010	Preventative Electrical Maintenance	42
ELEC 2014	Hydro Codes and Standards	56
ELEC 2025	Digital Circuits	42
STAT 3002	Applied Statistics	42
General Education Course		
Select 1 course from the general education list during registration.		42
	Hours	**308**
Semester 5		
Program Courses		
ELEC 3002	Instrumentation	42
ELEC 3007	Electrical Protection and Control	42
ELEC 3010	Advanced Programmable Logic Controllers	56
MATH 3000	Calculus	42
MGMT 2002	Project Management	42
ROBT 3003	Advanced Robotics	42
	Hours	**266**
Semester 6		
Program Courses		
COMP 3031	Networking	42
ELEC 3004	Systems Integration	42
ELEC 3006	Power Quality and Distribution	42
ELEC 3009	Power Transmission and Distribution 2	56
ELEN 3001	Electronic Motor Control	42
TECR 3008	Technical Report	42
	Hours	**266**
	Total Hours	**1666**

Co-op Work Terms		**Hours**
COOP 1044	Electrical Engineering Work Term 1	560
COOP 2036	Electrical Engineering Work Term 2	560
COOP 3014	Electrical Engineering Work Term 3	560
	Hours	**1680**
	Total Hours	**1680**

Graduation Window

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