MECHANICAL ENGINEERING TECHNOLOGY

Program: METY
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 2019, Winter 2020
Location: Barrie

Description

Mechanical technology is a cornerstone of sophisticated and advanced economies. Students in this program are learning the skills to apply scientific and engineering principles to solve mechanical engineering related problems. They are also undertaking the design and fabrication of mechanical apparatus and systems. These include automation and control systems, manufacturing processes and material handling.

Career Opportunities

Graduates may find a range of occupations in many industrial sectors including automotive, aerospace, advanced automation, natural resources and processing. They may participate in an engineer-technologist-technician team in mechanical consulting, manufacturing or mechanical design and maintenance. Careers are possible in machine and fixture building, manufacturing and production, quality assurance, testing, manufacturing management, technical sales and service. Specific industries may include automotive parts and assembly, metal fabricating and machining, and machine building.

Program Learning Outcomes

The graduate has reliably demonstrated the ability to:

1. monitor compliance with current legislation, standards, regulations and guidelines;
2. plan, co-ordinate, implement and evaluate quality control and quality assurance procedures to meet organizational standards and requirements;
3. monitor and encourage compliance with current health and safety legislation, as well as organizational practices and procedures;
4. develop and apply sustainability best practices in workplaces;
5. use current and emerging technologies to implement mechanical engineering projects;
6. analyze and solve complex mechanical problems by applying mathematics and fundamentals of mechanical engineering;
7. prepare, analyze, evaluate and modify mechanical engineering drawings and other related technical documents;
8. design and analyze mechanical components, processes and systems by applying fundamentals of mechanical engineering;
9. design, manufacture and maintain mechanical components according to required specifications;
10. establish and verify the specifications of materials, processes and operations for the design and production of mechanical components;
11. plan, implement and evaluate projects by applying project management principles;
12. develop strategies for ongoing personal and professional development to enhance work performance;
13. apply business principles to design and engineering practices;
14. 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
- **Work Term 1:** Summer 2020
- **Sem 3:** Fall 2020
- **Sem 4:** Winter 2021
- **Sem 5:** Summer 2021
- **Work Term 2:** Fall 2021
- **Work Term 3:** Winter 2022
- **Sem 6:** Summer 2022

Winter Intake

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

- **Work Term 1:** Fall 2021
- **Work Term 2:** Winter 2022
- **Sem 6:** Summer 2022
- **Work Term 3:** Fall 2022

Admission Requirements

OSSD or equivalent with

- Grade 12 English (C or U)
- any 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/)

Additional Information

Students should hold, or obtain, a minimum Class G2 Ontario driver's license to ensure the greatest opportunity for co-op work terms.

Graduation Requirements

34 Program Courses
2 Communications Courses
1 Program Option Course
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

Semester 1		**Hours**
Program Courses		
COMP 1084	Computer Aided Drafting 1 For Mechanical Engineering Technology	56
ENVR 1000	Environmental Science and Sustainability	42
MATH 1018	Introduction to Technical Mathematics	42
MCHN 1001	Machine Shop	70
MENG 1019	Manufacturing Processes	42
Communications Course		
Select 1 course from the communications list during registration.		42
	Hours	294
Semester 2		
Program Courses		
COMP 1025	Computer Aided Design 2 for Mechanical Engineering Technology	42
COMP 2043	Computers and Programmable Controllers	42
MATH 1019	Technical Mathematics	42
MENG 1008	Engineering Materials	42
PHYS 1007	Engineering Physics	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	294
Semester 3		
Program Courses		
COMP 2120	Computer Aided Design 3 for Mechanical Engineering Technology	42
MATH 2008	Calculus and Engineering Mathematics	56
MENG 2003	Statics	42
MENG 2004	Workplace Design and Industrial Ergonomics	42
MENG 2005	Fluid Mechanics	42
MGMT 2002	Project Management	42
General Education Course		
Select 1 course from the general education list during registration.		42
	Hours	308
Semester 4		
Program Courses		
COMP 2121	Computer Aided Engineering (CAE)	42
MATH 2003	Statistical Analysis - SPC	42
MCHN 2001	Engineering Tooling	42
MENG 2007	Strength of Materials	42
MENG 2019	Thermodynamics	56
MENG 3011	Dynamics	42
General Education Course		
Select 1 course from the general education list during registration.		42
	Hours	308
Semester 5		
Program Courses		
COMP 1085	Computer Aided Manufacturing	42
MENG 3006	Instrumentation and Controls	42
MENG 3007	Design of Energy Systems	42
MENG 3010	Machine Design	42
MENG 3020	Advanced Materials	42
MENG 3021	Quality and Reliability	42
ROBT 2000	Introduction to Robotics	42
	Hours	294
Semester 6		
Program Courses		
BUSI 3008	Economics, Ethics and Entrepreneurship	42
MENG 3022	Facilities Design and Production Control	42
MENG 3023	Vibrations	42
MENG 3024	Mechatronics	42
TDIE 2000	Hydraulics and Pneumatics	42
Program Option Courses		
Select 1 course from the available list during registration.		42
	Hours	252
	Total Hours	1750

Co-op Work Terms		**Hours**
COOP 1043	Mechanical Work Term 1 (Fall Intake occurs after Semester 2, Winter Intake occurs after Semester 5)	560
COOP 2035	Mechanical Work Term 2 (Fall Intake occurs after Semester 5, Winter Intake occurs after Work Term 1)	560

COOP 3013	Mechanical Work Term 3 (Fall Intake occurs after Work Term 2, Winter Intake occurs after Semester 6)	560
	Hours	1680
	Total Hours	1680

Code	Title
Program options may include:	
ENGN 3000	Engineering Project
REAS 3002	Applied Research Project

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.

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.