

MECHANICAL TECHNICIAN - PRECISION SKILLS

Program: MTPS

Credential: Ontario College Diploma, Co-op

Delivery: Full-time

Work Integrated Learning: 1 Co-op Work Term

Length: 4 Semesters, plus 1 work term

Duration: 2 Years

Effective: Fall 2023, Summer 2024

Location: Barrie

Description

This program provides students with opportunities to acquire precision skills that are in high demand within the advanced manufacturing sector.

Students learn to safely set-up and operate conventional machine tools and other complex machining equipment, such as CNC lathes, mills and accessories. They develop the knowledge and skills to manufacture components, assist with design of jigs and fixtures, tools, moulds and dies and perform troubleshooting to enact repairs on production tooling. Through experiential learning opportunities, students use accurate measuring and testing methods to ensure precision in a variety of manufactured components.

Career Opportunities

This program prepares the graduate for the Aerospace, Energy, Mining, and Automotive industries, along with advanced manufacturing facilities. Career path options include CNC Programmers, CNC Set-Up Technicians, Tool and Die Makers, Mould Makers, Millwrights and General Machinists, as well as many other precision manufacturing opportunities. As employees, responsibilities may include design, custom production, maintenance and troubleshooting of complex tooling, moulds, dies and/or related tooling. Demand in Canada for individuals with excellent precision skills is typically high.

Program Learning Outcomes

The graduate has reliably demonstrated the ability to:

1. complete all work in compliance with current legislation, standards, regulations and guidelines;
2. apply quality control and quality assurance procedures to meet organizational standards and requirements;
3. comply with current health and safety legislation, as well as organizational practices and procedures;
4. apply sustainability best practices in workplaces;
5. use current and emerging technologies to support the implementation of mechanical and manufacturing projects;
6. analyze and solve mechanical problems by applying mathematics and fundamentals of mechanics;
7. interpret, prepare and modify mechanical drawings and other related technical documents;
8. perform technical measurements accurately using appropriate instruments and equipment;
9. manufacture, assemble, maintain and repair mechanical components according to required specifications;

10. contribute to the planning, implementation and evaluation of projects;
11. employ environmentally sustainable practices within the profession;
12. apply basic entrepreneurial strategies to identify and respond to new opportunities.

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 the Canadian Association for Co-operative Education.

Program Progression

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

Fall Intake

- **Sem 1:** Fall 2023
- **Sem 2:** Winter 2024
- **Work Term:** Summer 2024
- **Sem 3:** Fall 2024
- **Sem 4:** Winter 2025

Summer Intake

- **Sem 1:** Summer 2024
- **Sem 2:** Fall 2024
- **Work Term:** Winter 2025

- **Sem 3:** Summer 2025
- **Sem 4:** Fall 2025

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)
- any Grade 11¹ or 12 Mathematics (C, M, or U)

¹ Minimum of 60% in Grade 11 College or University level Mathematics (MBF3C or MCF3M)

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

- 16 Program Courses
- 2 Communications Courses
- 3 General Education Courses
- 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	
CNCT 1013 CNC Applications 1	56

MATH 1042	Mathematics for Mechanical Technician	42
TDIE 1001	Basic Machine Tool Application	112
TDIE 1013	Basic Machine Tool Theory	42
TDIE 1015	Interpreting Engineering Drawings	28

Communications Course	
Select 1 course from the communications list during registration.	42
Hours	322

Semester 2		
Program Courses		
CNCT 1012	CAD CAM Design 1	42
CNCT 1014	CNC Applications 2	56
TDIE 1014	Advanced Machine Tool Applications	126
TDIE 1016	Advanced Machine Tool Theory	42
Communications Course		
Select 1 course from the communications list during registration.		42
Hours		308

Semester 3		
Program Courses		
CNCT 1005	CNC Process and Fixture Technology	28
CNCT 2009	CAD Cam Design 2	42
TDIE 2010	Basic Tool Making Theory	42
TDIE 2011	Basic Tool Making Applications	154
General Education Course		
Select 1 course from the general education list during registration.		42
Hours		308

Semester 4		
Program Courses		
CNCT 2010	CNC Manufacturing (Design and Applications)	168
TDIE 2003	Integration of Manufacturing Processes	28
TDIE 2008	Advanced Tool Making Theory	42
General Education Courses		
Select two 42 hour courses from the general education list during registration.		84
	Hours	322
	Total Hours	1260

Co-op Work Term		Hours
COOP 1057	Mechanical Technician – Precision Skills Work Term 1	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.

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.