

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 2019, Summer 2020

Location: Barrie

Description

Students safely set-up and operate standard machine tools and complex machining equipment, such as CNC lathes and mills. Knowledge and skills learned are used to repair or manufacture components, assist with design of jigs, fixtures, tools, moulds and dies and perform troubleshooting to enact repairs on production tooling. Students use accurate testing methods to ensure accuracy of manufactured components.

Career Opportunities

This program prepares the graduate for the Aerospace, Energy, Mining, and Automotive industries, to name a few. Career paths include careers such as 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 project;
11. employ environmentally sustainable practices within the profession;

12. 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.

External Recognition

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

The Program Progression

Fall Intake

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

Summer Intake

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

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)
- 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/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

- 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

Semester 1		Hours
Program Courses		
CNCT 1013	CNC Applications 1	56
MATH 1018	Introduction to Technical Mathematics	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 1021	Mechanical Technician Work Term 1 (occurs after Semester 2)	640
Hours		640
Total Hours		640

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.