



INSTITUTE OF MACHINE TOOL TECHNOLOGY

CNC MILL & LATHE SETUP PROGRAM OUTLINE

PROGRAM DETAILS

The CNC Mill Setup & CNC Lathe Setup Certificate programs at the Institute of Machine Tool Technology (IMTT) are vocational programs designed to equip students with the practical, job-ready skills to safely and accurately set up CNC milling and lathes machines. This hands-on training emphasizing machine startup, fixture alignment, tool offsets, wear compensation, and troubleshooting — preparing students for essential setup roles in today's manufacturing industry.

Whether entering the workforce or upgrading existing skills, graduates will gain the setup expertise that employers in aerospace, automotive, medical, and general manufacturing industries demand.

ADMISSION REQUIREMENTS

- Grade 12, Diploma or equivalent GED
- Minimum 18 years or older
- English Language Proficiency

Note: For the most accurate and up-to-date admission requirements, we recommend contacting our institute directly or visiting our website.

EMPLOYMENT PROFILE

CNC Setup Technicians play a vital role in modern machining across industries such as aerospace, automotive, medical, and general manufacturing. Their work involves preparing and aligning fixtures, vices, and stock materials, establishing work coordinate systems and reference points, and setting tool length and wear offsets to ensure precision. They are also responsible for running warm-up and verification cycles, as well as troubleshooting alarms, errors, and machining accuracy issues. By ensuring machines are correctly prepared for production, CNC Setup Technicians enable operators and programmers to maintain efficient operations and achieve high-quality, precision parts.

CAREER OPPORTUNITIES

Graduates are qualified for entry-level to mid-level setup roles across multiple industries. Potential job titles include:

- CNC Mill Setup Technician
- CNC Lathe Setup Technician
- Machining Tool Operator
- Production Machinist
- Junior CNC Technician

Annual Salary	\$47k - \$66k
Hourly Rate	\$23/hr - \$32/hr

**According to jobbank.gc.ca (NOC code 72100)*

PROGRAM DURATION

CNC Mill Setup	39 Hours
CNC Lathe Setup	39 Hours

PROGRAM FOCUS

The CNC Mill & Lathe Setup Program equips students with essential CNC setup fundamentals through practical, hands-on learning. Training covers machine startup and warm-up procedures, work holding and fixture alignment, stock preparation and reference setting, as well as tool length and wear offset management. Students also develop skills in verification, troubleshooting, and setup documentation, ensuring they are fully prepared to support production efficiently and accurately.

Here are the program's core focus areas:

- CNC workshop safety and WHMIS training
- Machine startup, cold start, and warm-up cycles
- Work holding, fixture alignment, and hydraulic chuck setup
- Stock preparation, referencing, and establishing work coordinate systems (WCS)
- Tool length, tool nose radius, and wear offset management
- Dry runs, verification procedures, and troubleshooting of common errors
- Setup documentation, inspection tools, and process logs
- Final setup projects demonstrating full mill and lathe preparation

PROGRAM SUMMARY

This table will display a summary of total Instructional hours and delivery format. The Ministry, Career College, and any subject or education assessors may refer to this section for a general understanding of the program's components.

Type of Learning	Total Instruction Hours	Mode of Delivery
CNC Mill Setup	39 Hours	In-Person Workshop
CNC Lathe Setup	39 Hours	In-Person Workshop

List of subjects for each level and delivery format:

CNC Mill Setup	
Delivery Format: In-Person Workshop	
1	Introduction to CNC Milling
2	Machine Startup Procedures
3	Workholding and Fixture Setup
4	Tool Setup and Offsets
5	Verification and Troubleshooting
6	Final Project & Assessment
CNC Lathe Setup	
Delivery Format: In-Person Workshop	
1	Introduction to CNC Turning
2	Machine Initialization
3	Workholding and Stock Preparation
4	Work Coordinate System Setup
5	Tool Setup and Offsets
6	Verification and Troubleshooting
7	Final Project & Assessment

**The course content may be changed as per industry standards*

Please Note:

- a)** Course order may differ from the sequence shown in this outline.
- b)** Program fees include all textbooks, supplies, and required certifications.
- c)** Some program components may be delivered online, through computer-assisted learning, or a blended format with instructor support.
- d)** The College may update program content, schedules, materials, instructors, or technology as needed to support ongoing improvement. Changes take effect upon implementation.

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