



CNC Milling Technology

The CNC Milling Technology course introduces students to the fundamentals of CNC (Computer Numerical Control) milling. Students learn the core skills of CNC milling by working with the BenchMill 6100 or the ProMill 8000 to accurately machine a series of complex parts. Activities challenge students to develop and edit programs, and machine assorted parts. Each project teaches job setup, drawing construction, tool path generation, tool path verification and NC code generation. Students use the skills they learn to produce a part on the machine

Course Information

Type	Virtual; Lab
Units of measurement	Imperial; Metric
Hardware	BenchMill 6100, ProMill 8000
Languages	English
Hours of instruction	15
Catalog #	88-3147-0000

Course Outline

- Introduction and Safety
- CNCBase Control Software
- Mounting the Workpiece
- Tooling
- Reference Positions
- Verifying a Program
- Running a Program
- Fundamentals of NC Programming
- Programming the House (Project #1)
- Machining Project #1
- Arc Programming
- Programming the Star (Project #2)
- Machining Project #2
- Programming Your Initials (Project #3)
- Final Project


Machining Center Components

Your machining center is a vertical mill that is controlled by a computer. The system consists of:

- The milling machine
- A computer and control software

CNCMotion allows you both to simulate the actions of the milling machine as well as control the real one!

Move on to the next page, where you will learn more about the components of the actual machine.



13/24

CNC Milling curriculum for the BenchMill 6100 or ProMill 8000 is delivered through LearnMate®, Intelitek’s learning management system (LMS). LearnMate, fully hosted in the cloud, provides an easy-to-implement and easy-to-use LMS for education organizations of all types that provides the best technology and capabilities without the burden of IT support and maintenance. LearnMate provides everything needed for the ultimate blended learning experience:

- SCORM-compliant interactive content
- Anytime, anywhere accessibility
- Student and class management
- Flexible content leasing options for continuous updates

Activity 1: Introduction to CNC

Welcome to the CNC Milling Technology course!

CNC Machining is very common in the manufacturing industry, and we hope that this course offers you with an insightful prelude to this important class of technology.

At any time, you can click the [Home button](#) to return to the machine selection page.

This activity includes the following topics:

- What is CNC?
- What is a Mill?
- The components of your mill



4/24



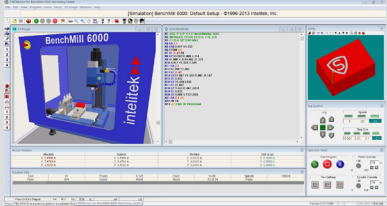
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Intelitek’s e-learning curriculum combines interactive simulation with world-class hardware. Lab courses feature interactive on-line curriculum and robust hardware for the ultimate hybrid learning experience! Curriculum is fully integrated with our lab equipment, including the ability to launch software directly from the content.





CNC Turning Technology

The CNC Turning Technology course introduces students to the fundamentals of CNC (Computer Numerical Control) turning. Students learn the core skills of CNC turning by working with BenchTurn 7100 or ProTurn 9000. Students learn the CNC process through a series of projects. Activities challenge students to develop and edit programs, and machine assorted parts. Each project teaches job setup, drawing construction, tool path generation, tool path verification and NC code generation. Students use the skills they learn to produce a part on the machine.

Course Information

Type	Virtual; Lab
Units of measurement	Imperial; Metric
Hardware	BenchTurn 7100, ProTurn 9000
Languages	English
Hours of instruction	15
Catalog #	88-3148-0000

Course Outline

- Introduction and Safety
- CNC Control Software
- Securing the Workpiece
- Tooling
- Reference Positions
- Verifying a Program
- Running a Program
- Fundamentals of NC Programming
- Programming a Taper
- Machining Project #1
- Arc Programming
- Programming Project #2
- Machining Project #2
- Project #3
- Final Project



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Objectives

In this activity you will accomplish the following:

- Define the term computer numerical control (CNC).
- Explore applications of CNC in industry.
- Follow a typical CNC turning process.
- Identify the components of your turning center.
- Review safety procedures for working with a turning center.

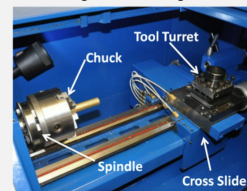


CNC Turning curriculum for the BenchTurn 7100 or ProTurn 9000 is delivered through LearnMate®, Intelitek’s learning management system (LMS). LearnMate, fully hosted in the cloud, provides an easy-to-implement and easy-to-use LMS for education organizations of all types that provides the best technology and capabilities without the burden of IT support and maintenance. LearnMate provides everything needed for the ultimate blended learning experience:

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Your Turning Center

In this course, you will learn about CNC lathes through use of a BenchTurn 7x00 Turning Center. While lathe operation may vary from lathe to lathe, the concepts used to operate a CNC lathe are the same for all lathes. Working with the BenchTurn 7x00 (or the simulated equivalent) will provide you with an excellent insight into CNC turning.



Emergency Stop Button

Safety Shield



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