

COMPETENCY PROFILE

INTRO TO CNC MACHINING

BTC: MACH 241 - (8 credits)

This course teaches the operation and programming of the CNC lathe and the Bridgeport EZ Trac milling machine (or other similar milling machines). Also taught is the basic rapid and linear G codes needed for machine operation. The focus of this course is "manual programming" operations.



Upon completion of high school courses equivalent to the following competencies:

- Demonstrate shop safety practices.
- Create part path programs to manufacture dimensionally correct machine parts.
- Demonstrate the ability to write programs using G & M codes.
- Design parts and simulate the manufacturing process using appropriate computer software.
- Create CAD drawings. (not required competency for this college course, but good practice)
- Load a program from disk through the computer.
- Set up the tooling required to produce a machined part on both the mill and the CNC lathe.
- Do simple program editing. Run a first part using the dry run feature.
- Do first part inspection of a completed part.
- Use cutter compensation to make final adjustments to machine a part to proper size.
- Learn the manufacturing process from initial design through end product.

Assignments/Assessment:

To be determined by high school instructor

College Textbooks:

Machine Tool and Manufacturing Technology

Textbook Readings/Assignments: Section 11: pages 179-210

- Unit 39 Computer Numerical Control (pg 384-395; answer all questions on pages 395-396)
- Unit 40 How CNC Controls Machines (pg 397-410; answer all questions on page 410)
- Unit 41 Preparing for Programming (pg 411-428; answer all questions on page 428)
- Unit 42 Linear Programming (pg 429-443; answer all questions on pages 443-444)
- Unit 43 Circular Interpolation (pg 445-459; answer all questions on pages 459-460)