

# MANUFACTURING TECHNOLOGIES, SKILLS CERTIFICATE

MTT 292	Computer-Aided Manufacturing I	4
Semester Total		14
Total Units		14

## Machining Level 1-CNC Milling: Operations and Programming

This skills certificate will introduce students to computer numerical control (CNC) milling operations, program formats, and machine setups. G and M codes, control functions, the letter address system, and math issues related to CNC mills are included. Students will program, set-up and produce a variety of CNC milling projects. This skills certificate will prepare students to take four credentialing exams: 1) Materials, Measurement, and Safety, 2) Job Planning, Benchwork, and Layout, 3) CNC Milling-Operations, and 4) CNC Milling-Programming, Setup, and Operations through the National Institute for Metalworking (NIMS) Machining Level 1, an 11-part series of tests for entry-level positions. Students must pass all coursework with a score of 70% or higher.

### Outcomes

Students completing the certificate will:

- Write ISO standard G-Code programs for CNC milling operations.
- Set-up, operate, and produce a finished product using CNC milling equipment.
- Employ appropriate workplace skills, including the application of personal and mechanical safety measures for CNC mill equipment.

Skills Certificates provide training for entry level positions or career advancement and are designed to prepare students to take state, national and/or industry-recognized certifications or licensing exams. Skills certificates are awarded upon completion of coursework and marked on a student’s transcripts at the end of the semester (Student are unable to declare intent to complete a skills certificate.) Skills Certificates are not eligible for Financial Aid.

To earn a skills certificate, students must:

1. Maintain a minimum cumulative GPA of 2.0
2. Have no financial or library obligation to the college

Code	Title	Units
<b>Certificate Requirements</b>		
MTT 101	Introduction to Machine Shop	3
MTT 110	Machine Shop II	3
MTT 232	Computer Numerical Control II	4
MTT 292	Computer-Aided Manufacturing I	4
Total Units		14

1st semester		Units
MTT 101	Introduction to Machine Shop	3
MTT 110	Machine Shop II	3
MTT 232	Computer Numerical Control II	4