

MANUFACTURING CNC MACHINE OPERATOR - ONE-YEAR CERTIFICATE (CC1)

Program Description

The Manufacturing CNC Machine Operator One-Year Certificate of Completion incorporates introductory manufacturing processes to provide hands-on experiences emphasizing computer numerical control (CNC) setup, operation, and code modification. The certificate skill sets align with industry-recognized proficiencies that qualify a graduate to apply for positions as a computer-controlled machine tools operator or CNC setup technician.

Program Learning Outcomes

Upon successful completion of the certificate, students will be able to:

1. Interpret part drawings and their tolerances.
2. Fabricate items with computer aided drafting/computer aided manufacturing.
3. Use precision measurement tools.
4. Set up and operate computer numerical control mills and lathes safely.

Entrance Requirements

Academic Entrance Requirements

Recommended:

- High school diploma or GED
- Completion of MTH 060 Beginning Algebra or minimum placement Math Level 10
- College-level computer skills

Additional Costs (Beyond Standard Tuition/Fees and Textbooks)

Material Costs

Required:

- Personal protective equipment and tools: approximately \$250

Enrollment Fees

- Fees on specific MFG courses: \$600

Course Requirements

Course	Title	Credits
MFG 100	Manufacturing Technology Orientation	1
MFG 101	Blueprint Reading	3
MFG 103	Welding Technology I	4
MFG 110	Manufacturing Processes I	4
MFG 119 or MFG 119M	Manufacturing Design and Drafting Techniques Mechanical Drawing Techniques	4
MFG 133	Quality Assurance	3
MFG 161	Capstone Project I	3
MFG 250	Additive Manufacturing I	3
MFG 257	CNC Mill I	4
MFG 258	CAM Mill I	4

MFG 259	CNC Lathe Programming	4
MFG 260	CNC Lathe I	4
MTH 102	Applied Technical Mathematics (Or one math course from the foundational requirements math list)	4
WR 121Z	Composition I	4
Choose one course from the following:		4
COMM 115	Introduction to Intercultural Communication	
COMM 218Z	Interpersonal Communication	
COMM 219	Small Group Communication	
Total Credits		53

Advising Notes

Manufacturing Technology courses are structured to enable students to meet benchmarks through the completion of labs and hands-on projects.

Upon starting their program, students review their desired certificate or degree outcome with their advisor. Students should continue to meet with their advisors on a continuous basis to ensure they remain on track for degree completion.

This certificate is designed for students to directly enter the manufacturing workforce. Transferability of course credits to other public, or private, institutions' degree programs is dependent on those institutions' policies.

Performance Standards

Academic Requirements:

- Students must have a 2.0 cumulative GPA to earn a COCC certificate or degree.
- All courses in the program must be completed with a grade of C or higher.

Sample Plan

First Year

First Term		Credits
MFG 100	Manufacturing Technology Orientation	1
MFG 101	Blueprint Reading	3
MFG 110	Manufacturing Processes I	4
MFG 119 or MFG 119M	Manufacturing Design and Drafting Techniques or Mechanical Drawing Techniques	4
Credits		12

Second Term

MFG 257	CNC Mill I	4
MFG 258	CAM Mill I	4
MTH 102	Applied Technical Mathematics (Or one math class from the foundational requirements list)	4
Credits		12

Third Term

Choose one from the following:		4
COMM 115	Introduction to Intercultural Communication	
COMM 218Z	Interpersonal Communication	
COMM 219	Small Group Communication	
MFG 133	Quality Assurance	3
MFG 259	CNC Lathe Programming	4
MFG 260	CNC Lathe I	4
Credits		15

Fourth Term

MFG 103	Welding Technology I	4
MFG 161	Capstone Project I	3
MFG 250	Additive Manufacturing I	3
WR 121Z	Composition I	4
Credits		14
Total Credits		53