

TECHNOLOGY STUDIES: ADVANCED MANUFACTURING MACHINE TECHNOLOGY CERTIFICATE OPTION 2

Program code: AMC2-CC-COT

Location: Asnuntuck, Housatonic, Middlesex, Tunxis

Program Description

The Advanced Manufacturing Machine Technology certificate provides students with the opportunity to train in a hands-on manufacturing environment. Throughout the duration of their training, students will develop an advanced level of skillsets that will lead directly into a career in the vast world of manufacturing, such as an entry level machinist or a quality inspector. The programs were developed in response to Connecticut manufacturers' needs for a highly skilled workforce to match the needs of the regional industry sector partnerships around the state of Connecticut that graduates of the program are placed with. The student who completes the Advanced Manufacturing Machine Technology certificate program has a choice to pursue employment or to matriculate in an associate degree program. To earn this certificate, you will choose nine directed electives based on regional industry needs for specific courses.

Asnuntuck Community College's Advanced Manufacturing Technology Center is accredited by the National Institute for Metalworking Skills (NIMS (<https://www.nims-skills.org/>)). Housatonic, Manchester, Middlesex, and Naugatuck Valley are in the process of applying for NIMS accreditation.

Learning Outcomes

1. Read and interpret engineering drawings/blueprints (mechanical)
2. Understand the types of fits and mating parts
3. Be able to interpret geometric dimensioning and tolerancing requirements applied to engineering drawings
4. Exhibit competency in machining on a manual lathe
5. Exhibit competency in machining on manual milling machine
6. Exhibit competency in two-dimensional and three-dimensional CAD as applied to mechanical parts and geometries
7. Exhibit competency in creating blueprints from solid models generated through CAD
8. Read and write G and M codes for CNC programming
9. Setup 3 axis CNC Machining and 2 axis Turning Centers
10. Be able to load and execute post processed CNC programs onto FANUC controlled CNC Machining and Turning Centers
11. Understand metrology and its applications in quality control and production
12. Understand basic principles of quality control and lean manufacturing

Certificate Requirements

Code	Title	Credits
Required Courses		
MFG 1405	Manufacturing Math	3
MFG 1415	Safety in the Workplace	1
MFG 1424 or EGR 1120	Blueprint Reading 1 Engineering Drawing Specs	3
MFG 1453	Benchwork	2
MFG 1477	Machine Technology Fundamentals	4
MFG 1478	CNC Fundamentals	3
MFG 1479	Career Awareness for Manufacturing	1
MFG 2456	Advanced CNC	3
MFG 2477	Advanced Machine Technology	4
Choose four of the following Directed Electives:		12
MFG 1010/CAD 2200	Parametric Design (SolidWorks)	
MFG 1414 or MFG 1413	Quality and Lean Principles Principles of Quality Control	
MFG 1420	Metrology	
MFG 1425	Blueprint Reading 2 with Geometric Dimensioning & Tolerancing	
MFG 2405	Principles of CNC w/Mastercam	
MFG 2439	Geometric Dimension and Tolerancing (G, D, and T)	
MFG 1400	Advanced Metrology with CMM (Coordinate Measuring Machines)	
MFG 1409	Introduction to MasterCAM	
Total Credits		36

- Technology Studies: Advanced Manufacturing Machine Technology, AS - Option 2