TECHNOLOGY STUDIES: PRECISION MANUFACTURING CERTIFICATE

Program code: PRMC-CC-COT

Location: Manchester

Program Description

The Precision Manufacturing certificate program equips students with the necessary hands-on experience and foundational knowledge to qualify for entry-level positions as machine operators and quality control inspectors. In this program, students are taught both conventional machining techniques and Computer Numerical Control (CNC) machining techniques. 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. The student who completes the Precision Manufacturing certificate program has a choice to pursue employment or to matriculate in an associate degree program.

Manchester is in the process of applying for National Institute for Metalworking Skills (NIMS (https://www.nims-skills.org/)) 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 the engineering drawings
4. Exhibit competency in machining on a lathe;
5. Exhibit competency in machining on 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. Be able to load and execute post processed CNC programs onto Haas CNC Machining Centers and Turning Center
10. Understand metrology and its applications in quality control and production
11. Understand basic principles of lean manufacturing

Certificate Requirements

Code	Title	Credits
Required Courses		
MFG 1405	Manufacturing Math	3
MFG 1411	Manufacturing Materials and Processes I	3
MFG 1414	Quality and Lean Principles	3
MFG 1415	Safety in the Workplace	1
MFG 1420	Metrology	3
MFG 1467	Conventional Process Machining Lab	4
MFG 2405	Principles of CNC w/Mastercam	3
MFG 2439	Geometric Dimension and Tolerancing (G, D, and T)	3
MFG 2444	CNC I	3
MFG 2445	CNC II	4
CAD 2200	Parametric Design (SolidWorks)	3
EGR 1120	Engineering Drawing Specs	3
or MFG 1424	Blueprint Reading 1	
MFG 1479	Career Awareness for Manufacturing	1
Total Credits		**37**

- Technology Studies: Precision Manufacturing, AS