

COMPETENCIES FOR COMPUTERIZED MACHINING AND MANUFACTURING

MFG 111 Measuring Systems and Quality Assurance Level 1 (3 cr)

1. Parts Inspection Duty: Develop an inspection plan and inspect simple parts using precision tools and techniques.
2. Basic Measuring Instruments Definition: Recognizes and applies basic measuring instruments such as rules, protractors, and basic transfer tools such as simple inside and outside calipers.
3. Precision Measuring Instruments Definition: Recognizes and applies precision measuring instruments such as micrometers, vernier, dial, and electronic calipers, dial indicators, precision transfer tools such as telescoping gages and adjustable parallels.
4. Surface Plate Instruments Definition: Recognize and applies appropriately precision tools and instruments for surface plate work such as precision angle plates and tool blocks, precision transfer gages, and precision height gages.

MFG 112 Shop Safety and Production Procedures Level 1 (2 cr)

1. Manual Operations: Benchwork Duty: Tap holes. Use files, scrapers and coated adhesives to deburr parts. Use bench vises and hand tools appropriately.
2. Manual Operations: Layout Duty: Layout the location of hole centers and surfaces within an accuracy of +/- .015.
3. Power Saw Operation Duty: Set up and operate saws for cutoff operations.
4. General Housekeeping and Maintenance Duty: Keep the duty station clean and safe for work. Keep the tools, workbenches, and manual equipment clean, maintained, and safe for work.
5. Preventive Maintenance, Machine Tools Duty: Inspect and assess the general condition of an assigned machine tool. Make routine adjustments as necessary and as authorized. Report problems to supervision which are beyond the scope of authority.
6. Material Properties Definition: Recognizes common materials and their principal properties relevant to machining tasks. Recognizes differences between ferrous and non-ferrous, magnetic, and ductile materials. Understands the changes which heat-treat.
7. Machine Operations and Material Handling Duty: Carry out assigned responsibilities while adhering to safe practices in accordance with OSHA requirements and guidelines. Document safety activities as required.

MFG 113 Cutting Tools and Workholding Level 1 (2 cr)

1. Tooling Maintenance Duty: Inspect and assess the condition of tooling. Refurbish tooling where appropriate. Refer tooling for repair or regrind where appropriate.
2. Cutting Theory Definition: Understands and can explain the ideas of heat, shock, friction, zone of direction, cutting interface, machinability, cutter presentation, cutter geometry, and chip-holding capacity as they relate to machining applications.
3. Tooling Definition: Recognize a wide variety of cutting tools, tool holding devices, and workholding devices. Understand the appropriate application of these cutters and devices.
4. Cutting Fluids and Coolants Definition: Recognizes, selects, and applies appropriate coolants and coolant delivery systems.

South King County Tech Prep Consortium
COMPUTERIZED MACHINING AND MANUFACTURING COMPETENCIES
Green River Community College

COMPETENCIES FOR COMPUTERIZED MACHINING AND MANUFACTURING

MFG 114 Manufacturing Planning and Processes Level 1 (1 cr)

1. Job Process Planning Duty: Develop a process plan for a part requiring milling, drilling, turning, or grinding. Fill out an operation sheet detailing the plan and required speeds and feeds.

2. Machine Tools Definition: Recognizes the common classes of machine tools, understands the function of the major subsystems of the machine tools, selects and applies a given machine tool appropriately.

MFG 117 Conventional Milling Level 1 (2 cr)

1. Power Feed Milling Duty: Set up and operate a horizontal or vertical milling machine using power feeds. Perform routine milling.
2. Vertical Milling Duty: Set up and operate vertical milling machines. Perform routine milling, and location of hole centers within +/- .005".

MFG 118 Conventional Turning Level 1 (2 cr)

Turning Operations: Chucking Duty: Set up and carry out chucking operations for turning.

Approved 9/11/09