MANUFACTURING TECHNOLOGY, AS

Technology and Health Division
Degree S0918

The Associate in Science degree in Manufacturing Technology is designed to prepare students for entrance into the manufacturing field in one of the machining occupations such as manual and computer numerical control (CNC) machinists, machinery technicians, or machinist apprentices, computer aided design (CAD) operators, draftsmen, or design engineers, and computer aided manufacturing (CAM) machine programmers. This program provides students with a broad foundation in common manufacturing processes such as injection molding, vacuum forming, sheet metal, casting processes, and laser cutting.

Graduates may enter the manufacturing field in areas dealing with production, research and development, tool and die construction, mold making, or computerized manufacturing. Laboratory practice utilizes industrial types of equipment and precision measuring instruments to provide training in the various machining occupations. This degree covers setup and tooling procedures and part certification upon completion of the metal removing process. It includes instruction on industry-based CAD and CAM methodologies and all types of lathes, mills, grinders, and specialized equipment such as CNC. Supplementary instruction is also provided in mechanical literacy, bench work, layout, inspection process, blueprint reading, metal composition, heat treatment, assembly procedures, jig and fixture design, and construction.

This degree requires the completion of General Education coursework plus the following:

Required Courses

Course Prefix	Course Name	Units
MFG 110	Introduction to CAD	4
MFG 120	CAD for Manufacturing	4
MFG 130	Manufacturing Processes and Materials	3
MFG 140	Print Reading and Shop Practice	3
MFG 150	Manual Machining I	3
MFG 155	Manual Machining II	2
MFG 160	Introduction to Mechanical Principles	3
MFG 210	Advanced CAD	3
MFG 220	Computer Aided Manufacturing II	3
MFG 250	Introduction to CNC Programming	3
MFG 260	CNC Operation	3
Three (3) units of Work Experience		3
EDT 89	Engineering Design Technology Work Experience	
Total Units		37

Manufacturing Website (http://www.mtsac.edu/manufacturing)

Program Learning Outcomes

Upon successful completion of this program, a student will:

- Be technically competent.
- Be employed or seeking employment in their area or a related area.
- Demonstrate ability to create a CAD model, 2D print, or fabricate a part from a 2D print using manual or CNC methods.

Review Student Learning Outcomes (SLOs) for this program.