

## Machining & Manufacturing Technology

**Award Type:** Associate in Science

Machining and Manufacturing Technology is an occupational program designed to prepare students for a variety of entry-level positions in a manufacturing environment. These positions may include manual machine operator, computer numerical control operator, computer aided drafting and manufacturing (CAD/CAM) designer, manufacturing generalist or programmer. Classes are designed for first-time college students, re-entry students, and current industry employees requiring skill enhancement or upgrade training. Learned skills may include the ability to operate conventional and computer numerical controlled (CNC) machinery, program CNC machinery, operate various CAD/CAM systems and interpret blueprints. A degree in Machining and Manufacturing Technology is structured to encourage transfer to a comparable program at a four-year college or university.

**The graduate of the Associate in Science in Machining & Manufacturing Technology will:**

- Understand the importance of attendance and punctuality.
- Have experience working in collaboration with others.
- Possess essential academic skills in reading, writing, math, using and locating information and basic computer competency.
- Communicate effectively and interpret key instructions.
- Understand the basics of safety, quality assurance and continuous improvement or lean manufacturing.
- Function effectively in a manufacturing environment containing a variety of production, welding, machining and metal-forming or CNC equipment.
- Possess a variety of basic and high-tech skills consistent with modern manufacturing processes.

### Program Requirements

**A total of 30 units is required for the associate in science degree.**

**Required core courses (18 units):**

| Course Number | Course Title                          | Units |
|---------------|---------------------------------------|-------|
| MT 109        | Survey of Machining and Manufacturing | 4.0   |
| MT 110        | CNC G Code                            | 4.0   |
| MT 111        | CNC CAD/CAM                           | 4.0   |
| MT 115        | Lean Manufacturing                    |       |
| MT 117        | Print Reading and Interpretation      | 3.0   |

**Plus 12 units in the following area of specialization:**

| Course Number | Course Title                           | Units |
|---------------|--|-------|
| MT 112        | CNC Multi-Axis                         | 4.0   |
| MT 113        | SolidWorks 1                           | 3.0   |
| MT 114        | SolidWorks 2                           | 3.0   |
| MT 116        | Mastercam 1 (CAD/CAM)                  | 3.0   |
| MT 118        | Understanding and Measuring GD&T       | 3.0   |
| MT 300        | Shop Math and Measurement              | 3.0   |
| MT 301        | Introduction to Safety                 | 2.0   |
| MT 302        | Quality & Process Improvement          | 2.0   |
| MT 303        | Manufacturing Processes and Production | 2.0   |
| MT 304        | Maintenance Awareness                  | 2.0   |