



Title: Manufacturing Technology/Technician.

CIP#: 15.0613

Definition: A program that prepares individuals to apply basic engineering principles and technical skills to the identification and resolution of production problems in the manufacture of products. Includes instruction in machine operations, production line operations, engineering analysis, systems analysis, instrumentation, physical controls, automation, computer-aided manufacturing (CAM), manufacturing planning, quality control, and informational infrastructure.

Potential pathway focuses beyond general manufacturing:

Mechatronics

Welding & fabrication technology

Bio-manufacturing

COMMON COMPETENCIES

Upon completion of their selected pathway program, all NH CTE students will:

- Use correct terminology, vocabulary and appropriate language to communicate effectively in the workplace
- Select and safely use appropriate tools, supplies, and equipment for a specific task or set of tasks.
- Employ effective time and project management strategies to complete work efficiently and proficiently.
- Apply math concepts, including measurement, operations, and higher mathematics to relevant applications and specific tasks.
- Demonstrate awareness strategies to safely work in a variety of workspaces and locations.
- Explore careers within the cluster to include developing individual career documents.

PATHWAY COMPETENCIES

Upon completion of the manufacturing pathway, students will achieve competency in six areas

Each student will demonstrate:

- The principles and practices specific to workplace manufacturing processes in order to continuously improve and meet the needs of a manufacturing organization and its customers. **[MANUFACTURING PROCESSES AND PRODUCTION]**
- The methodologies used to interpret, create, and prototype by using blueprints, drawings, and new technologies including but not limited to 3D printing, laser cutting, solid modeling, and/or AR/VR. **[DESIGN/TECHNICAL DRAWINGS]**
- The variety of automation resources such as but not limited to smart manufacturing, robotics, automation, pneumatics and hydraulic systems found within industry and be able to identify and relate their impact to manufacturing. **[AUTOMATION & MECHATRONIC PROCESSES]**
- The tools and techniques associated with the quality control, processes, and standards associated with the manufacturing industry. **[QUALITY CONTROL/ QUALITY ASSURANCE]**
- The methodologies and practices associated with pre-programmed software within industry, and apply those processes in a manufacturing environment. **[SOFTWARE&NUMERICAL CONTROL]**
- Lean philosophies in ways to positively impact the manufacturing process and environment **[LEAN PROCESSING]**