



# MACHINING TECHNOLOGY

## PATHWAY COURSE SEQUENCE:

1

### Level 1: Principles of Manufacturing

Exposes you to various occupations and pathways in Advanced Manufacturing.

#### You will develop an understanding of:

- General steps involved in the manufacturing process
- Essential skills needed to be an effective manufacturing team member
- Basic quality principles and processes, blueprints and schematics, and systems

2

### Level 2: Principles of Machining I

Provides you with the skills and knowledge to be effective in production environments as a machinist, computer numerical control (CNC) operator, or supervisor.

#### You will learn:

- Safety practices concerning machining technology, proper measurement and layout techniques
- How to read and interpret drawings and blueprints
- Production design processes and quality control procedures

3

### Level 3: Principles of Machining II

Advanced level course with emphasis on quality control, safety and engineering codes and standards, and production-grade machining systems.

#### You will work individually and in teams to:

- Examine blueprints and specification drawings to plan and apply the manufacture of products, machine parts to designs using both manual and computer-controlled machine tools
- Measure, examine and test products for defects and conformance to plans
- Design, produce and maintain products defined by detailed technical descriptions

## MACHINING TECHNOLOGY PATHWAY COURSE SEQUENCE (continued)

4

### Level 4: Manufacturing Practicum

A Capstone course providing you with the chance to apply your skills and knowledge of manufacturing within a professional working environment.

#### You will:

- Work in teams to plan the production of an advanced product
- Develop troubleshooting and problem solving mechanisms
- Analyze productions and write professional reports
- Connect your experiences with future careers and post-high school opportunities

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### Pathway Elective: Work Based Learning (WBL) Career Practicum:

Helps you connect your classroom knowledge to high-demand, high-skill careers in Tennessee. You will develop employability skills preparing you for post-high school education and future careers. As a junior or senior (16 years or older), you may earn high school credit for Capstone WBL through internships, apprenticeships, and paid work experiences.

*\*Course sequence is identified by Tennessee Department of Education. Each school district determines courses offered in each pathway.*



### CERTIFICATE TCAT\*\*

**\$21,000 - 37,000\***

- Converting Machine Operator
- Manual Machinist
- Machine Operator

TCAT Athens  
TCAT Chattanooga



### ASSOCIATE COMM. COLLEGE

**\$31,000 - 61,000\***

- CNC Machinist Machinery
- Industrial Machinery Mechanic

Chattanooga State  
Cleveland State



### BACHELOR'S UNIVERSITY

**\$56,000 - 85,000\***

- Manufacturing Engineer
- Project Engineer

UTC - University of  
Tennessee at Chattanooga

*\*Median wage ranges based on Tennessee Department of Labor & Workforce Development Labor Market Information- June 2014. Job standards, descriptions, and wages vary by company.*

*\*\*TCAT - Tennessee College of Applied Technology*