# ELECTROMECHANICAL 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: Introduction to Electromechanical**
Introduces you to basic electromechanical skills necessary in a manufacturing facility.

**You will learn about:**
- Safety, construction drawings, site layout and hand power tools
- Linear and angular measurements and how to apply algebraic and geometric equations to construction problems
- Troubleshooting electromechanical systems

3

**Level 3: Advanced Electromechanical Technology**
Provides you with the skills and knowledge to effectively perform basic industrial maintenance procedures in an advanced manufacturing facility.

- Fundamental safety practices
- Shielded metal arc welding (SMAW)
- Basic metal inert gas (MIG) welding
- Electrical systems
- AC and DC motors
- Calibrating instruments
- Drive systems
- Pipe fabrication
- Hydraulic systems
- Pumps
- Digital electronics
- Programmable logic controllers (PLC)
- Troubleshooting procedures

## ELECTROMECHANICAL TECHNOLOGY PATHWAY COURSE SEQUENCE (continued)

### 4

**Level 4: Manufacturing Practicum**

A capstone course providing you 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 career and post-high school opportunities

### E

**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<br>TCAT** | ASSOCIATE<br>COMM. COLLEGE | BACHELOR'S<br>UNIVERSITY |
|---|---|---|---|
| | **$21,000 - 47,000*** | **$36,000 - 56,000*** | **$56,000 - 110,000*** |
| | • Electrician<br>• Technician | • Machine Set Up/Mold Tech Operator<br>• Maintenance Technician | • Senior Project Engineer<br>• Manufacturing Engineer |
| | TCAT Athens<br>TCAT Chattanooga | Chattanooga State<br>Cleveland State | 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*