



WELDING

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: Welding I

Provides you skills and knowledge to effectively perform basic cutting and welding techniques.

You will develop proficiency in the following welding practices:

- Interpreting drawings
- Creating computer aided drawings
- Identifying and using joint designs
- Quality control
- Basic shielded metal arc welding (SMAW)
- Mechanical and thermal properties of metals
- Efficiently laying out parts for fabrication

You will also understand the requirements to pursue the American Welding Society (AWS) Entry Welder qualification and examination.

3

Level 3: Welding II

Provides you opportunities to learn and perform advanced cutting and welding techniques.

You will learn:

- Additional welding techniques and apply them in different environments
- Basic safety practices of welding such as: gas metal arc (GMAW), flux cored arc (FCAW), gas tungsten arc (GTAW) and quality control methods

You will also be eligible to take the American Welding Society (AWS) Entry Welder qualification and certification.

WELDING PATHWAY COURSE SEQUENCE (continued)

4

Level 4: Manufacturing Practicum

A capstone course providing you the opportunity 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 TCAT**

\$25,000 - 46,000*

- Welder
- MIG Welder

TCAT Athens
TCAT Chattanooga



ASSOCIATE COMM. COLLEGE

\$50,000 - 73,000*

- Welding Group Leader

Chattanooga State
Cleveland State



BACHELOR'S UNIVERSITY

\$56,000 - 110,000*

- Senior Project Engineer
- Manufacturing 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*