



<http://www.lcctc.edu>

Welding/Welder

CIP 48.0508

Instructor: Mr. Sam Santiago

Email: SSantiago@lcctc.edu

QUESTIONS?

Contact the School Counselors:

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Lebanon County Career and Technology Center

Mission Statement

The Mission of Lebanon County Career and Technology Center is to provide all students with quality career and technical education that prepares students for high skill, innovative, and in demand occupations to be career ready in a global economy.



Our Vision

The Vision of the Lebanon County Career and Technology Center is to lead the transformation and expansion of career and technical pathways, continuously improving and diversifying educational offerings, bridging the gap between evolving industries and skilled talent.

Welding Technology (CIP 48.0508)

Program Description:

This program prepares students to apply technical knowledge and skills in the welding and fabrication of metal structures and components.

Instruction includes shielded metal arc welding (SMAW), gas metal arc welding (GMAW), gas tungsten arc welding (GTAW), oxy-fuel cutting, blueprint reading, metallurgy, and safety practices. Students develop skills in layout, fabrication, inspection, and repair of welded assemblies.

Emphasis is placed on hands-on skill development, safety, and adherence to industry standards. Students are expected to maintain a clean and organized work area. Attendance and participation are critical.



Two Year Half-Day Program

Year One: 8:00am – 10:25am (36 weeks – 3 credits)

Year Two: 11:25am – 2:00pm (36 weeks – 3 credits)

Program Costs:

Students are required to purchase the following at an estimated cost of \$500.

Required PPE, which includes:

- Safety glasses (must be worn at all times in the shop)
- Welding helmet (prices vary based upon features and options)
- Welding gloves
- Protective jackets, sleeves, or aprons
- Hearing protection when needed
- Closed-toed, steel-toed, leather work boots or shoes

Course Structure & Competency Areas

1. Year 1: Foundations

- Orientation & Shop Safety (OSHA awareness, PPE, hazard identification)
- Tools, Equipment, and Measurement
- Blueprint Reading & Welding Symbols
- Oxy-Fuel Cutting and Heating
- Shielded Metal Arc Welding (SMAW) – Basic Positions
- Introduction to Metallurgy
- Weld Quality & Inspection Basics



2. Year 2: Core Welding Processes

- Gas Metal Arc Welding (GMAW / MIG)
- Flux-Cored Arc Welding (FCAW)
- Gas Tungsten Arc Welding (GTAW / TIG)
- Advanced SMAW Techniques
- Fabrication & Layout
- Structural and Pipe Welding Applications
- Weld Testing & Inspection (Visual, Destructive, NDT basics)
- Career Readiness & Employability Skills

Assessments & Certifications

- NOCTI Welding Assessment – End-of-Program Assessment
- AWS (American Welding Society) Certifications – Optional (e.g., AWS D1.1 Structural Welding)
- OSHA 10-Hour Certification – Recommended

Instructional Materials

- Textbook: Welding Principles and Applications by Larry Jeffus (Digital or Print)
- Supplemental Resources: AWS standards, WPS, industry videos and simulation software

Career Pathways (For more information visit: <http://www.onetonline.org>)

Graduates are prepared for entry-level positions such as:

- Welder (Structural, Production, or Pipe)
- Fabrication Technician
- Maintenance Welder
- Metal Fabricator



With further education and experience:

- Welding Inspector (CWI)
- Welding Engineer
- Shop Supervisor / Foreman
- Technical Instructor

CTC Knowledge Transfers to College Credits

Visit: www.collegetransfer.net select search and SOAR credits at the bottom.

- Community College of Allegheny County
- Delaware County Community College
- Greater Altoona
- Harrisburg Area Community College
- Northampton County Area Community College
- Thaddeus Stevens College of Technology (2 options)
- Westmoreland County Community College

Welding Behavior and Safety Procedures

1. You must observe the office safety policies in place within the classroom.
2. Students will complete the safety program leading to certification.
3. No outside electronic devices will be allowed.
4. In case of an injury, regardless of severity, it must be reported to the instructor



About Your Instructor



Instructor Name: Mr. Sam Santiago
Hire Year: 2025
Email Address: ssantiago@lcctc.edu

Biography

I am a dependable, safety-conscious welder bringing over 37 years of experience ranging from fire aerial apparatus weld operations to 30 years of experience in weld manufacturing of motorcycles for Harley Davidson. During my career, I have been involved in team projects focused on safety and production of aluminum gas tanks and created a staple piece for the International Aerospace and Machinists Union.

Overall my professional career has helped to develop a detail-oriented skillset focus and provided experience in working with aluminum, steel, and stainless steel. I pride myself on having high-quality and safety standards that ensure people and products are prioritized. I am an enthusiastic vocational graduate who values this trade to a high degree and am passionate about training the next generation of welders with a commitment to safety, efficiency, and accuracy.

Education

Certificated of Welding -Brownstown Vocational Technology School

- Completed 161 safety courses related to production environment including confined space training and hazmat training
- Completed 700 courses related to welding area responsibilities and production of motorcycles
- Completed a vocational machine shop course for basic machine and basic CNC

Certifications and Awards

- Certified in SMAW, GMAW, FMAW, GTAW
- Certified in oxygen acetylene torching and brazing
- Certified blueprint reader
- AWS certification in 100% penetration down 1 on 3/32 aluminum
- AWS certification on right vertical up 3/8 inch bend test



Welding Work Experience (Related to CTE Program)

Welder - Harley-Davidson York Vehicle Operations

- SMAW on frame welding
- SMAW and GTAW with gas tanks and swing arms
- Lead tooling improvement project associated with aluminum gas tank drain plug with a focus on production, safety and quality
- Pivotal role in construction of International Aerospace and Machinist conference gavel and strike plate
- Train incoming staff on safety, job instructions, robot operations
- Work with aluminum, steel and stainless steel
- Operated on assembly line, paint shop and machine shop



Welder - Simon Ladder Towers Industry - Ephrata, PA

- Received AWS certification on right vertical up 3/8 inch bend test
- Operated on aerial ladder line using SMAW and GMAW
- Worked on aerial basket line and waterway area line using GTAW
- Performed GMAW on truck frame and out rigger area and turn tables
- Completed all welds following UL testing qualifications
- Worked with aluminum, stainless steel and steel
- Functioned as a team leader and helped onboard and train new employees
- Licensed in tow motor operations

Grading Scale

The LCCTC grading system incorporates three components: competencies (skill— 33.3%), career skills (work ethic— 33.3%), and theory (knowledge—33.3%). Each academic class implements a performance evaluation/student grading system that incorporates career skills (work ethic), and theory (knowledge). Each component is weighted equally.



Please refer to the Student Handbook, available on the school website at <http://www.lcctc.edu> for a complete list of grading components.

Progress Reports

Students will receive a “Progress Report” each mid-quarter through the mail for any student with a 70% or less, and a “Report Card” will be given to each student at the end of each quarter. It is the student's responsibility to share this information with their parents/guardians. Both reports will utilize student performance data obtained from competencies, career skills, and theory grades.

Please Note: 40% is the minimum grade for the first 3 marking periods. However, students with excessive absences may be assigned an earned grade with administrative approval. There is no minimum grade for the 4th marking period.