ENGINEERING TECHNOLOGY

Welding Technology Careers

The welding technician plays an important role in industry today. The technician conducts experiments and tests and evaluates data to assist welding engineering personnel in development and application of new and improved welding equipment, welding techniques, procedures and practices, and specifications for heat treating. The welding technician assists engineering personnel in testing and evaluating welding equipment, metals and alloys, and evaluates data and conducts experiments to develop applications of new equipment or improved techniques, procedures and practices. New techniques are being developed to weld dissimilar materials and non-metallic materials such as plastics and composites. Laser beam and electron beam welding, new fluxes and other technologically advanced processes are improving the results of welding and making it applicable to a wider range of manufacturing processes.

The welding technician recommends adoption of new developments and applications to engineering personnel and demonstrates practicability of recommendations. Welding technicians inspect welded joints and conduct tests to ensure welds meet company standards, national code requirements and customer job specifications. The welding technician submits reports to welding engineering personnel, and conducts certification tests for qualification of personnel with national code requirements.

A continuing emphasis on computer-aided manufacturing and automated welding systems requires the necessary knowledge to operate, oversee and assist in programming various welding operations.

Job Outlook

Welders will have excellent job opportunities as some welding employers report difficulty finding trained welders. Employment of welding, soldering, and brazing workers is expected to grow about five percent over the 2006-16 decade. Welding has grown significantly over the long term because of advances that have allowed it to replace other joining technologies in many applications. Thus, demand for welders is increasing in the construction, manufacturing, and utilities industries. Despite overall employment declines in the manufacturing industry, the outlook for welders in manufacturing is far stronger than for other occupations. The basic skills of welding are the same across industries, so welders can easily shift from one industry to another depending on where they are needed most.

Earnings

The range of earnings of welders reflects the wide range of skill levels. Median wage-and-salary earnings of welders, cutters, solderers, and brazers were $15.10 an hour in May 2006. The middle 50 percent earned between $12.30 and $18.47. Median wage-and-salary earnings of welding, soldering, and brazing machine setters, operators, and tenders were $14.90 an hour in May 2006. The middle 50 percent earned between $12.02 and $18.90.

Related Careers

Other job opportunities include:

- Welding Supervisor
- Welding Inspector
- Welding Cost Estimator
- Manufacturing Engineering Technician

Welding Technology Careers

Educational Opportunities in Welding Technology at LCCC

Associate of Applied Science in Welding Technology

This program is a stand-alone, two-year, full-time program that provides students with the knowledge, skills and professional behaviors necessary for competent performance as a welding technician.

Students who excel in the welding technology program may be qualified to take certain welding certification tests. Students may also elect to participate in LCCC's Work-Based Learning program where the student spends one or two semesters working in industry. During this time, the student earns a wage and earns two to three hours of college credit while gaining important work experience.

Graduates of LCCC's welding technology program who take a calculus-based sequence of math and science courses would qualify for transfer to Ohio State University's baccalaureate degree in welding engineering program. The student must consult an academic advisor before enrolling in LCCC's Welding Technology program.

Other Educational Opportunities in Engineering Technology at LCCC

Associate of Applied Science Programs

- Alternative Energy Technology –Wind Turbine
- Automation Engineering Technology – Maintenance/Repair
- Automation Engineering Technology – Systems Specialist
- Electronic Engineering Technology – Applied Electronics
- Computer Engineering Technology – Computer and Digital Forensics
- Computer Engineering Technology – Industrial Computing Applications Specialist
- Electronic Engineering Technology – Computer Maintenance and Networking
- Electric Power Utility Technology – Overhead Line Technology
- Electric Power Utility Technology – Substation Technology
- Manufacturing Engineering Technology – Computer Aided Machining
- Manufacturing Engineering Technology – Mechanical Design
- Manufacturing Engineering Technology – Quality Assurance
- Welding Technology

One Year Technical Certificate / Certificate of Proficiency

- Alternative Energy Technology -Wind Turbine
- Computer Engineering Technology -Computer and Digital Forensics
- Computer Engineering Technology -Industrial Computing Applications Specialist
- Electronic Engineering Technologies – Computer Maintenance and Networking
- Manufacturing Engineering Technologies – Computer Aided Design Operator
- Manufacturing Engineering Technologies – Computer Aided Machining Operator
- Manufacturing Engineering Technologies – Quality Control
- Welding Technology – Welding Operator

Short-Term Technical Certificate / Certificate of Completion

- Alternative Energy Technology – Wind Turbine
- Electronic Engineering Technologies – Computer Maintenance and Networking
- Manufacturing Engineering Technology – Computer Aided Design
- Manufacturing Engineering Technologies – Computer Aided Machining/Manufacturing Processes
- Manufacturing Engineering Technologies – Quality Inspector
- Welding Technology – Welding

Educational/Training Opportunities at LCCC's Materials Joining Institute (MJI)

LCCC's Materials Joining Institute (MJI) offers many welding courses that are designed to meet employers' specialized needs. Welding certification is available from the LCCC MJI in:

- Arc welding
- Flux core arc
- Gas metal arc welding
- Gas tungsten arc

Other types of weld certification may also be arranged. All certification programs meet the standards and specifications of the American Welding Society.

Continuing educational welding courses offered on an as-needed basis through the MJI include:

- Arc welding – one-inch plate
- Arc welding – six-inch plate
- Basic arc – processes
- Flux core arc welding
- Gas metal arc welding (GMAW)– six-inch pipe
- Gas metal arc welding (GMAW) – structural
- Gas tungsten arc welding – aluminum
- Gas tungsten arc welding – stainless
- Metal fabrication project
- Non-destructive testing
- Welding refresher course

LCCC's Materials Joining Institute offers beginners the opportunity to learn basic welding techniques while giving the experienced welder a chance to brush up on a variety of welding skills. The Materials Joining Institute is located in LCCC's Nord Advanced Technology Center and features 19 bays with each bay capable of handling seven types of welding. These capabilities include:

- Bays that can be reconfigured to train small groups with a variety of sessions going on simultaneously.
- A designated quality control area, which allows students to assess their progress toward attaining the skills necessary to pass AWS certification requirements.
- Customized training to target techniques and skills required to work on specialty equipment.

For more information about the education and training opportunities at the Materials Joining Institute, phone (440) 366-4959.

About Lorain County Community College

Lorain County Community College continues to experience enrollment growth because attending LCCC is the most economical way to reach educational goals that help graduates become valuable players in the future economic growth of the county and region. Because of the variety and quality of learning opportunities LCCC provides, enrollment has grown 78 percent since 2000.

Lorain County Community College, which opened in 1963, is one of Ohio's leading colleges delivering credit programs at its Elyria campus and outreach centers in downtown Elyria, Lorain, Wellington and Brunswick. Plus more than 200 courses are offered via distance-learning education options, and the Associate of Arts degree can be completed entirely online.

Students can choose from more than 80 educational programs. Students can complete the first half — and sometimes more — of a bachelor's degree through LCCC's University Partnership, which brings eight universities to the LCCC campus offering 40 bachelor's and master's degree programs. Students can upgrade, retrain and improve current life skills.

In addition to providing a great education for those who enter college with aspirations of a degree, LCCC helps those who have changed their career goals, who want to broaden their horizons, and who want to return to work. LCCC provides learning and training for those who want to move up but find they need new or improved skills for the kind of professional opportunities they seek.

LCCC faculty is recognized locally and nationally for their work as professors and in other areas. They all have advanced degrees and real world experience and understand their primary responsibility at LCCC is to teach classes.

LCCC is fully accredited by the Higher Learning Commission of the North Central Association of Colleges and Schools, which is the regional accrediting authority for Ohio colleges and universities. Since opening its doors, LCCC has served more than 300,000 people. More than six million students enroll annually in credit courses at America's community colleges, representing about 46 percent of all students in higher education and about 56 percent of all first-time college entrants.

Lorain County Community College

The University Partnership
of Lorain County Community College

1005 N Abbe Road
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Source: Bureau of Labor Statistics, U.S. Department of Labor, *Occupational Outlook Handbook, 2009-10 Edition*, on the Internet at http://www.bls.gov/oco.

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