FCC's Welding Trades Program

Frederick Community College offers a tiered set of training options to individuals seeking entry-level employment or career advancement within the welding trade. Coursework completed at each tier for a specific trade (known as a “track”) may be applied to the next level to acquire additional skills and training.

Continuing Education Certificate - Career Training

Awarded upon successful completion of four basic 90-hour welding courses offering fundamentals, application, and specialized training.

Letter of Recognition (LOR) - Welding Track (11 credits)
Introduction to the basics of welding and includes an opportunity to earn industry certification for AWS D1. 1, Structural/Welding Code -- Steel in vertical (3G) and overhead (4G) positions.

Career Certificate - Welding Track (24-25 credits)
To further build an individual’s knowledge of the welding trade, the program incorporates advanced courses in layout and fabrication, pipe welding, customer relations and opportunities for internship.

Associate of Applied Science (A.A.S.) Building Trades - Welding Track (60-64 credits)
Degree program requiring successful completion of fundamental coursework in addition to all welding and construction management courses.

FCC and UMUC Articulation Agreement
Frederick Community College (FCC) and the University of Maryland University College (UMUC) are proud to partner in education through an articulation agreement. Students earning an A.A.S. at FCC may transfer and apply earned credits towards a Bachelor of Science, Management Studies, at UMUC.

Program Costs
Actual costs vary for in-county and out-of-county residents. FCC provides a tuition payment plan for most programs. Scholarship and loan assistance is available for eligible students. Visit us on campus or online at www.frederick.edu for updated course schedules, tuition and fee information.

Program Mission & Goals

Mission - Provide students with a comprehensive mixture of academic and practical training in the areas involved in building trades technology.

Goals - Students will gain general knowledge of equipment and materials and develop skills required to be an entry-level employee upon completion of designated programs.

Acquiring Industry Knowledge
Students successfully completing the program will understand how to:
- Identify the basic welding joints and welding positions
- Produce fillet and groove welds in flat position
- Select correct electrode types, size parameters and positions when welding on mild steel
- Demonstrate and use the correct SMAW electrode and torch angles
- Layout offset angles to prepare for layout of pipe offsets
- Layout 90 and 45 degree welding pipe offsets
- Use wraparound formulas and tables to layout lines on pipe surfaces
- Prepare and assemble a pipe joint
- Make a single V groove weld butt joint in a horizontal fixed position
- Read a puddle to determine weld quality

The Welding Trades Industry

Related Job Titles:
- Welder, cutter, solderers & brazers
- Pipe welder

Job Outlook: According to the U.S. Bureau of Labor Statistics, employment of welders, cutters, solderers, and brazers is expected to grow 15 percent from 2010 to 2020, about as fast as average for all 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. Properly skilled welders with up-to-date training often have the best job prospects.

Median Wage: The median annual wage for a fully-trained welder is $55,450. Wages vary based on the welder’s experience, skill level and industry of employment.

Description of Work: Welding, the process of melting and fusing metal pieces to form a permanent bond, is applied in construction, manufacturing, shipbuilding, aerospace applications and more. Before utilizing equipment to produce a final product, welders review specifications, calculate dimensions and inspect structures to be welded. Soldering and brazing workers use molten metal to join two pieces of metal whereby the metal added during the process has a melting point lower than that of the piece, so only the added metal is melted, not the piece. Brazing is often used to connect thinner metals while soldering is commonly used to make electronic circuit boards. The type of work and equipment varies depending on the industry.

TRADES & INDUSTRY: Welding

Opportunities in the Building Trades Industry

With increasing construction demands fueling the building trades industry, now is the best time to enhance your career and increase your earning potential with affordable professional training at FCC. FCC’s Trades & Industry program provides participants with expert knowledge, high-tech skills and hands-on experience at the Monroe Center, a state-of-the-art college training facility located within minutes of FCC’s main campus. Industry experts provide extensive, relevant instruction in classroom and fully-equipped labs. To best fit the needs of our students, both continuing education (noncredit) and academic (credit) training programs are available at FCC.

Academic Credit Programs
Credit programs are graded experiences requiring prerequisite courses and placement testing. Students are eligible to earn a letter of recognition, a certificate and/or apply credits to transfer to another college or university.

Letter of Recognition – (11 credits) indicates participant demonstrates basic skills and knowledge required for immediate entry-level employment.

Career Certificate – (12+ credits) earned within a specialized discipline, often designed for individuals seeking specific skills for entry into the job market.

Continuing Education Programs
While continuing education does not award credits, these are short-term training opportunities providing technical expertise, a Continuing Education Certificate and/or Continuing Education Units (CEUs). Continuing Education Certificate – acknowledges successful attendance, participation and completion of a designated course or unit of courses.

Continuing Education Units (CEUs) – formal recognition of an individual’s completion of a designated program – many professionals are required to earn CEUs to verify ongoing professional development.

Data Sources: Bureau of Labor Statistics: www.bls.gov; OED, Departments of Labor: www.dol.gov and www.dfr.state.md.us

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