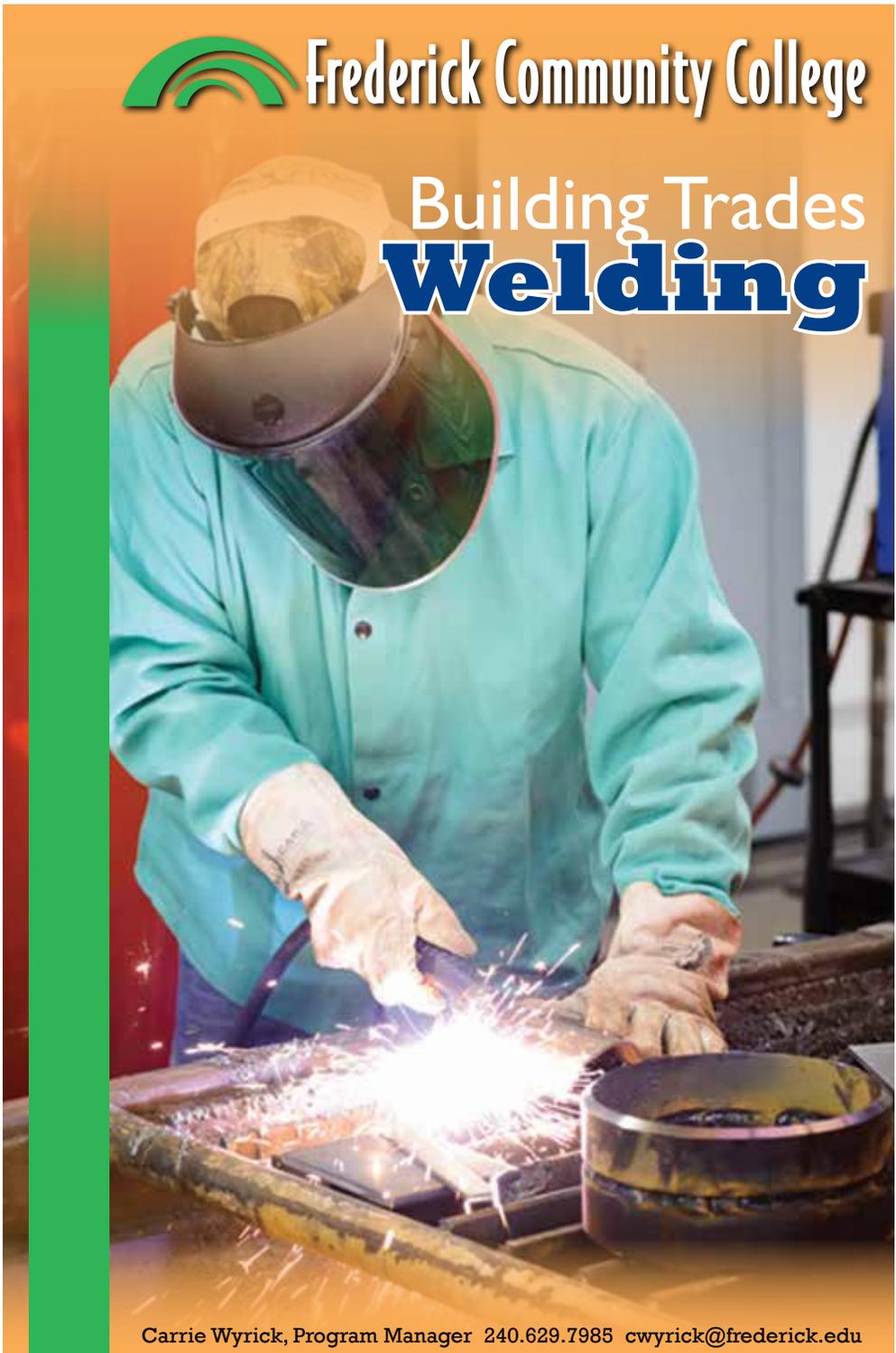




Frederick Community College

Building Trades Welding



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CREDIT TRACK 2: WELDING			
Class	Letter of Recognition	Career Certificate	Prerequisites
BLD 121 Introduction to Welding	4	4	EN 51 or ESL 97
BLD 122 Advanced Welding: SMAW	4	4	BLD 121
BLD 125 Advanced Welding: GTAW		4	BLD 122
BLD 126 Pipe Welding Fundamentals		4	BLD 122
BU 274 Customer Relations		3	EN 50A/EN 52 or ESL 95/ESL 99
INTR 102 Internship (Optional)		2	
Total credits	8	19-21	

CONTINUING EDUCATION CERTIFICATE: WELDING		
Class	Continuing Education Certificate	Prerequisites
WLD 105 Introduction to Welding	90 hours	EN 51 or ESL 97
WLD 106 Advanced Welding: SMAW	90 hours	WLD 105
WLD 126 Advanced Welding: GTAW	90 hours	WLD 106
WLD 135 Pipe Welding Fundamentals	90 hours	WLD 106
Total Hours	360 hours	

Building Trades Welding



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 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.

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) - (8 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. Participant demonstrates basic skills and knowledge required for immediate entry-level employment.

Career Certificate - (19-21 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. Earned within a specialized discipline, the certificate is often designed for individuals seeking specific skills for entry into the job market.

The college prohibits discrimination against any person on the basis of race, religion, gender, color, national origin, ancestry, age, sexual orientation, marital status, physical or mental disability of otherwise qualified individuals and any other category protected by federal, state or local law. Frederick Community College subscribes to full access to all college facilities as outlined in the Americans with Disabilities Act of 1990 and as amended. The designated coordinator for the college's compliance with Section 504 of the Rehabilitation Act of 1973 and for the Americans with Disabilities Act is Kate Kramer-Jefferson, 301.846.2409.

Accommodation Statement Frederick Community College makes every effort to accommodate individuals with disabilities. If you have accommodation needs, please call 301.846.2408. To request a sign language interpreter, please call 301.846.2476 (Voice) or 240.575.2366/866.616.7243 (Videophone). Requests for any accommodation should be made at least five working days prior to attending a scheduled event.

Gainful employment For more information about our graduation rates, the median debt of students who completed the program, and other important information, please visit our website at www.frederick.edu/gainfulemployment.

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.

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
- 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 wrap-around 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 & brazer
- Pipe welder

Job Outlook: According to the U.S. Bureau of Labor Statistics, employment of welders, cutters, solderers, and brazers is expected to grow 6 percent from 2012 to 2022. Employment growth reflects the need for welders because of the importance and versatility of welding as a manufacturing process. As the basic skills of welding are the same across industries, 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 \$36,300. 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 Building Trades 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.

Employers often prefer to hire trained workers with credentials, thus students successfully completing FCC's program have an advantage in the marketplace. Welders and welding machine operators with an understanding of the welding process and the ability to inspect welds are highly valued as companies prefer workers with experience and training gained at a respected facility.

Industry Certification and Licensure

Additional courses leading to certification are offered at many welding schools including the American Welding Society offering the Certified Welder and Certified Welding Fabricator designations. Specific welding positions may require general welding certification and/or specific certification such as Certified Welding Inspector and Certified Robotic Arc Welding.

Data Sources: Bureau of Labor Statistics: www.bls.gov/ooh, Departments of Labor: www.dol.gov and www.dlfr.state.md.us

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