

Lakeland

COMMUNITY COLLEGE

PROGRAM GUIDE

Mathematics, Engineering Technologies, Natural & Social Sciences Division

Industrial Welding

- Associate of Technical Studies Degree in Industrial Welding

Opportunity
starts **HERE**
lakelandcc.edu



Industrial Welding



The Associate of Technical Studies degree in industrial welding prepares students for careers in the manufacturing sector. Welding is a hands-on profession that requires specific knowledge and skills to join metals. Welding is used in products such as cars, ships, buildings, bridges, and more. People who go into this field learn industry-wide techniques such as stick, MIG, TIG, and flux-cored arc welding as well as oxyfuel cutting, welding and braze welding. Some may go on to learn additional techniques if they choose to specialize in any number of areas, such as motorsports welding.

Career Opportunities

Students at Lakeland not only earn a degree, but are also prepared to take the national certification exams that many employers require. Upon certification, students can apply to companies anywhere in the country or the world that have job openings in the welding field.

Job Outlook

The state of Ohio has the third largest manufacturing capabilities in the country. According to the U.S. Bureau of Labor Statistics, employment in the welding industry is expected to grow 15 percent through 2020. The defense industry and the nation's aging infrastructure are expected to drive growth in the field. The program at Lakeland was developed, in part, because of the current demand and the growing concern over impending baby boomer retirements expected in the coming years. This is expected to result in an even greater shortage of qualified welders throughout the many industries that rely on professional, skilled welders.

Lakeland's Program

Those interested in advancing their skills and improving their credentials have several ways to earn the Associate of Technical Studies degree in industrial welding at Lakeland.

The first option consists of a partnership that allows students to take welding classes at both Lakeland and Lincoln Electric, and then complete the other classes required for the associate degree online. For 15 weeks, students take Weld Shop Fundamentals (WELD 1020) on Lakeland's campus and, at the same time, participate in Lincoln Electric's Comprehensive Welding Program at their training facility in Cleveland. This option combines an onsite training element with the convenience of completing the rest of the required courses at home in an online format. It is particularly well suited for out-of-state students, and Lincoln Electric can provide a list of lodging facilities for the 15-week portion if needed.

Another option is for students interested in taking all of their classes at Lakeland. Students take the welding classes at the college along with the other courses required to attain the associate degree, such as English, mathematics and business. Those classes can either be taken online or on Lakeland's campus in a traditional classroom setting.

For students already holding welding certificates required in the degree, Lakeland can offer college credit for those skills toward an associate degree through a process called credit by certification. The remaining courses required for the degree can be taken either on campus or online.

For all of the options, students may transfer their credits to colleges and universities to further their education.

Lakeland Community College Admission Requirements

For admission into Lakeland, students must be a high school graduate or have obtained a high school diploma equivalency. Please consult Lakeland Community College's Enrollment Guide (available on Lakeland's website at www.lakelandcc.edu/enrollment) for specific admissions requirements and procedures.

For more information

1.800.589.8520 • www.lakelandcc.edu

Rich Basinski
Chair, Mechanical Engineering and Computer
Integrated Manufacturing Technologies
440.525.7168 • rbasinski@lakelandcc.edu

The Associate of Technical Studies degree in Industrial Welding provides courses for welding certification and includes courses to prepare the graduate for being a welding supervisor or manager. On site instruction can be accomplished in a 15-week period by successfully completing both Lincoln Electric's Comprehensive Welding Program and Lakeland's WELD 1020. All other course credits may be obtained through online courses and credit by certification.

Required Technical Courses:

Required welding instruction courses:

Comprehensive Lincoln Electric Welding Program

OR the following four courses:

WELD 1220.....Oxyfuel Gas Welding	2
WELD 1240.....Stick Welding	2
WELD 1255.....FCAW and GMAW (MIG/MAG) Welding	3
WELD 1265.....GTAW (TIG) Welding.....	3
	10

Required shop and safety courses:

WELD 1020.....Weld Shop Fundamentals	6
CIVT 2025.....Safety in Construction.....	2

OR

OSHA 30-Hour General Industry Outreach Training

OR

OSHA 30-Hour Construction Industry Outreach Training

8

Required welding courses:

NOTE: Students who have current and verifiable certificates can receive credit by certification for the corresponding courses.

WELD 1810.....AWS D1.1 - 3G 7018 Certification Preparation.....	1
WELD 1820.....AWS D1.1 - 3G GMAW-P Certification Preparation.....	1
WELD 1830.....AWS D1.1 - 3G FCAW-G Certification Preparation	1
WELD 1840.....AWS D1.1 - 3G FCAW-S Certification Preparation.....	1
WELD 1850.....AWS D1.1 ' GTAW MS 3F Certification Preparation.....	1
WELD 1855.....AWS D1.2 ' GTAW AL 3F Certification Preparation	1
WELD 1860.....AWS D1.6 ' GTAW SS 3F Certification Preparation	1
WELD 1865.....AWS D1.1 - 4G 7018 Certification Preparation.....	1
WELD 1870.....AWS D1.1 - 4G GMAW-P Certification Preparation.....	1
WELD 1875.....AWS D1.1 - 4G FCAW-G Certification Preparation	1
WELD 1880.....AWS D1.1 - 4G FCAW-S Certification Preparation.....	1
WELD 2020 ASME - 6G 6010 root 7018 out SMAW Certification Preparation.....	1
OR	
WELD 2025 API 1104 Certification Preparation.....	1
	12

Credit hours for required technical courses: 30

Required Basic and Related Courses:

BUSM 1300.....Introduction to Business.....	3
BUSM 2000.....Principles of Management.....	3
BUSM 2200.....Organizational Behavior.....	3
	9

Required General Studies Courses:

COMM 1000.....Effective Public Speaking.....	3
OR	
COMM 1100.....Effective Interpersonal Communications	
ECON 2600.....Principles of Microeconomics.....	3
ENGL 1110.....English Composition I (A).....	3
OR	
ENGL 1111.....English Composition I (B)	
ENGL 1121.....English Composition II - Technical Focus	3
OR	
MECT 1150.....Technical Communications	
MATH 1001.....Introduction to Technical Mathematics.....	4

OR the following two (2) courses

MATH 1040.....Applied Business Mathematics	3
MATH 1050.....Mathematics of Finance	
PHYS 1550.....Everyday Physics	3
Choose course(s) from the Arts and Humanities Electives list.....	3
	22

Total Credit Hours: 61

**English course selection is based on placement test results (ENGL 1111 is 4 credits, only 3 credits apply to the degree).*

Arts and Humanities Electives: minimum 3 credits

ARTS 1120, 2220, 2230; ENGL 2250, 2260, 2280, 2290; HUMX 1100, 1200; MUSC 1200, 1215, 1800, 2200, 2250; PHIL 1500, 2000; PHOT 1000

FCAW and GMAW (MIG/MAG) Welding Certificate (4329)

NOTE: No prior welding experience is necessary for this course.

WELD 1255.....FCAW and GMAW (MIG/MAG) Welding	3
	Certificate Total: 3

GTAW (TIG) Welding Certificate (4330)

NOTE: No prior welding experience is necessary for this course.

WELD 1265.....GTAW (TIG) Welding	3
	Certificate Total: 3

Oxyfuel Gas Welding and Cutting Certificate (4325)

NOTE: No prior welding experience is necessary for this course.

WELD 1220.....Oxyfuel Gas Welding	2
	Certificate Total: 2

Stick Welding Certificate (4326)

NOTE: No prior welding experience is necessary for this course.

WELD 1240.....Stick Welding	2
	Certificate Total: 2

To further your education, Lakeland's Holden University Center offers a variety of bachelor's degree programs from a number of four-year colleges and universities offering you the opportunity to *stay here and go far!* Visit lakelandcc.edu/uc to explore your options.



Industrial Welding

Manufacturing Technology Related Degrees

General Manufacturing Major (9430)
Maintenance and Repair Concentration (9439)

Manufacturing Related Certificates

CNC Operator Mini Certificate (4315)
CNC Set-Up and Programming Technology Certificate (4312)
Computer Integrated Manufacturing Technology Certificate (4311)
Industrial Computer Hardware Technician Certificate (4241)
Production Shift Leader/Manufacturing Management Certificate (4351)
Tool and Die Technology Certificate (4303)
Tool Room/Maintenance Machinist Apprentice Certificate (4302)

Mechanical Engineering Technology Related Degrees

Mechanical Engineering Technology (9440)
Computer Aided Design (CAD) Concentration (9444)

Mechanical Engineering Technology Related Certificates

AutoCAD Operator Certificate (4443)
CAD Design Certificate (4442)



Lakeland Community College provides additional training opportunities to meet the needs of local manufacturers.



Students can earn a certificate or an Associate of Applied Science degree in computer integrated manufacturing through an initiative with the Alliance for Working Together Consortium (AWT), that aligns with the National Association of Manufacturers industry standards and skills certificate program. For more information, visit lakelandcc.edu/AWT.



Through a partnership with global steel giant ArcelorMittal, Lakeland students can earn an Associate of Applied Science degree in electronic engineering technology or in computer integrated manufacturing that provides the technological background needed to advance in this lucrative field. To learn more, visit lakelandcc.edu/steel or ArcelorMittal's steelworkerforthefuture.com website.



Quality Education

Lakeland prepares you for a high-demand career or for transfer to a four-year college or university. Professors at Lakeland are experts in their fields with real-world experience. Small class sizes allow for personalized attention.



Affordable Tuition

Save thousands on your college education. Lakeland's tuition is about one-third the cost of most four-year schools. Financial assistance is available, including federal and state grants, scholarships, loans, and work study employment.



Convenience

Lakeland offers convenient day, evening and weekend class times, and a growing number of online courses. The main campus in Kirtland is only 20 miles northeast of Cleveland. Classes are also offered in Madison.



Focus on Students

Lakeland offers a variety of student services to help you succeed, such as counseling, tutoring, wireless computer labs, career services, free parking, and affordable child care.

Accreditation

Lakeland Community College is accredited through the Higher Learning Commission (HLC) and participates in the Academic Quality Improvement Program (AQIP). The Higher Learning Commission, 230 South LaSalle Street, Suite 7-500, Chicago, IL 60604-1413, phone: 800.621.7440, www.hlcommission.org.

Lakeland
COMMUNITY COLLEGE