

WELDING (442)

442-103. Heavy Equip Welding Fund. (2 Credits)

Gain basic knowledge and learn the techniques of welding needed to repair and maintain heavy equipment.

See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=442&num=103>)

442-131. Automotive Welding Fundamental. (2 Credits)

Learn and apply safe and correct welding and cutting processes commonly used in automotive applications.

See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=442&num=131>)

442-150. Gas Metal Arc Welding (GMAW). (4 Credits)

This course teaches Gas Metal Arc Welding (GMAW) principles and techniques. The course includes metal preparation processes, equipment set-up, and welding techniques related to different metal types and welding positions. This course helps prepare students for American Welding Society (AWS) entry-level certifications.

See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=442&num=150>)

442-151. Gas Metal Arc Welding 1. (2 Credits)

Learn Gas Metal Arc welding principles and techniques, including metal preparation processes, equipment setup and welding techniques related to different joints and welding positions. Explore safe practices and AWS D1.1, AWS D1.3 standards.

Prerequisites: 457-110 (may be taken concurrently) with a minimum grade of C

See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=442&num=151>)

442-152. Gas Metal Arc Welding 2. (2 Credits)

Build on skills from GMAW 1 to further develop Gas Metal Arc welding operations on carbon steel. Demonstrate the proper use of codes and standards, and identify the characteristics of acceptable welds. This course focuses on safe practices and AWS D1.1, AWS D1.3 standards. Prerequisites: 442-151 (may be taken concurrently) with a minimum grade of C and 457-110 (may be taken concurrently) with a minimum grade of C

See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=442&num=152>)

442-160. Auto Collision Welding. (2 Credits)

Students will learn and apply safe and correct welding skills typically used in auto collision applications.

Prerequisites: 405-121 (may be taken concurrently) with a minimum grade of C-

See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=442&num=160>)

442-161. Adv Auto Collision Welding. (2 Credits)

This course will build on previous skills attained during the 442-160 Auto Collision Welding course. The majority of the class will be spent on MIG/spool-gun techniques, and aluminum welding to I-CAR standards while preparing for the I-CAR MIG welding certification test. In addition, students will gain further skills in the TIG welding process.

Prerequisites: 442-160 with a minimum grade of C-

See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=442&num=161>)

442-168. Shielded Metal Arc Fund 1. (1 Credit)

Learn Shield Metal Arc welding principles and techniques, including metal preparation processes, equipment setup and welding techniques related to different joints and welding positions. Explore safe practices and AWS D1.1 standards.

See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=442&num=168>)

442-169. Shielded Metal Arc Fund 2. (1 Credit)

Build on skills from SMAW 1 to further develop your Shielded Metal Arc welding abilities. Demonstrate the proper use of codes and standards, and identify the characteristics of acceptable welds. This course focuses on safe practices and AWS D1.1 standards.

Prerequisites: 442-168 (may be taken concurrently) with a minimum grade of C

See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=442&num=169>)

442-170. Flux Cored Arc Welding. (4 Credits)

This course teaches Flux Cored Arc Welding (FCAW) principles and techniques. The course includes metal preparation processes, equipment set-up, welding techniques and welding positions. This course helps prepare students for American Welding Society (AWS) entry-level certifications.

Prerequisites: (442-150 with a minimum grade of C- or 457-350 with a minimum grade of C-)

See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=442&num=170>)

442-171. Flux Core Arc Welding 1. (2 Credits)

Learn Flux Core Arc welding principles and techniques, including metal preparation processes, equipment setup and welding techniques related to different joints and welding positions. This course focuses on safe practices and AWS D1.1, AWS D1.3 standards.

Prerequisites: 442-150 with a minimum grade of C or (442-151 with a minimum grade of C and 442-152 with a minimum grade of C)

See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=442&num=171>)

442-172. Flux Core Arc Welding 2. (2 Credits)

Build on FCAW 1 to further develop skills in Flux Core Arc Welding operations on carbon steel. Demonstrate the proper use of codes and standards, and identify the characteristics of acceptable welds. This course focuses on safe practices and AWS D1.1, AWS D1.3 standards.

Prerequisites: 442-171 (may be taken concurrently) with a minimum grade of C

See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=442&num=172>)

442-180. Gas Tungsten Arc Welding. (4 Credits)

This course teaches Gas Tungsten Arc Welding (GTAW) principles and techniques. The course includes metal preparation processes, equipment set-up, and welding techniques related to different metal types and welding positions. This course helps prepare students for American Welding Society (AWS) entry-level certifications.

See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=442&num=180>)

442-181. Gas Tungsten Arc Welding 1. (2 Credits)

Explore welding principles and techniques used in Gas Tungsten Arc Welding, including metal preparation, equipment setup and welding techniques related to different joints and welding positions. This course focuses on safe practices and AWS D1.1, AWS D1.3 standards.

See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=442&num=181>)

442-182. Gas Tungsten Arc Welding 2. (2 Credits)

Build on GTAW 1 to further develop skills in Gas Tungsten Arc welding operations on stainless steel and aluminum. Demonstrate the proper use of codes and standards, and identify the characteristics of acceptable welds. This course focuses on safe practices and AWS D1.1, AWS D1.3 standards.

Prerequisites: 442-181 (may be taken concurrently) with a minimum grade of C

See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=442&num=182>)

442-190. Robotic Arc Welding 1. (3 Credits)

This course is designed to provide students with an introduction to robotic welding operation, setup and programming. The student will be required to produce a number of acceptable piece parts from standard blueprints. Students will learn to safely jog robots, create tool center points and programs, develop welding schedules, edit programs to minimize cycle times, and operate the cell in automatic mode. In order to successfully complete the course, students must possess MIG welding skills developed by completing the Gas Metal Arc Welding 442-150 course or through work/life experience. For more information on the proficiency assessment, contact the Welding Advisor at 262-691-5400.

Prerequisites: (442-150 with a minimum grade of C or 442-152 (may be taken concurrently) with a minimum grade of C)

See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=442&num=190>)

442-191. Robotic Arc Welding 2. (3 Credits)

This course is designed to continue the student's knowledge and experience beyond Robotic Welding 1 with instruction that progressively challenges the students in robotic welding operation, setup and programming. The student will be required to produce a number of acceptable piece parts from standard blueprints. This course will also continue to emphasize safety.

Prerequisites: 442-190 (may be taken concurrently) with a minimum grade of C

See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=442&num=191>)

442-201. Int'l Welding Experience. (1 Credit)

In this short-term international experience, share your welding expertise and provide technical assistance to local residents while gaining an understanding of how people live in another part of the world.

Prerequisites: 442-301 with a minimum grade of B

See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=442&num=201>)

442-303. Related Welding I. (2 Credits)

Become skilled in various welding processes, including elementary oxyacetylene weld, brazing and cutting, and arc (stick) electrode in the flat and vertical down positions.

See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=442&num=303>)

442-305. Related Welding II. (2 Credits)

Explore out-of-position welding in the oxyacetylene and shielded metal arc (stick) processes. Machine tool operators will become familiar with the basic GMA and GTA techniques necessary to repair dies and fixtures, while the industrial maintenance mechanic will develop more skills in the arc and gas processes.

Prerequisites: (442-303 with a minimum grade of C)

See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=442&num=305>)

442-350. Welding and Cutting/Basic. (1 Credit)

Learn and apply basic welding and cutting skills.

See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=442&num=350>)

442-403. Oxy Acetylene Basics. (0.8 Credits)

The basic concepts of oxy-acetylene welding will be covered.

See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=442&num=403>)

442-408. Basic Welding and Safety. (1.2 Credits)

In this introductory course to welding processes, participants will successfully identify and utilize safe practices with welding equipment and procedures, explore components of different welding processes, and properly and safely set up welding machinery.

See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=442&num=408>)

442-432. GMAW Principles/Techniques. (9.6 Credits)

This course teaches Gas Metal Arc Welding "GMAW" principles and techniques. The course includes equipment set up, various metal transfer methods, & welding techniques as it pertains to thicker materials.

See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=442&num=432>)

442-432A. Advanced MIG Welding Refresher. (0.4 Credits)

This course will provide participants with a comprehensive review of MIG welding symbols, blueprint reading and learn how to prevent welding defects and discontinuity. Attendees will have an opportunity to refine their welding techniques and patterns, and gain tips for improved torch angles.

See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=442&num=432A>)

442-435. Basic Shielded Metal Arc 1. (0.6 Credits)

Use the shielded metal-arc process and practice flat and vertical down positions. Learn to weld on thin (16 gauge) and medium (1/4 inch plate) thickness steel, single and multipass using alternating and direct current welding machines, and covered electrodes (6013 and 7014). Explore arc welding fundamentals, welding with safety, arc welding machines and electrode classifications and selections.

See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=442&num=435>)

442-436. Basic Shielded Metal Arc 2. (0.6 Credits)

Use the shielded metal-arc process, all positions, welding on thin (16 gauge) and medium (1/4 inch plate) thickness of steel, single and multipass using alternating and direct current welding machines, and covered electrodes (6010, 7018, 7014). Explore arc welding fundamentals, welding with safety, arc welding machines and electrode classifications and selection.

See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=442&num=436>)

442-437. Structural Welding. (0.25 Credits)

Gain the necessary skills and knowledge in welding to successfully meet the requirements of the American Welding Society's D1.1 Structural Welding Code in order to obtain Wisconsin's State Department of Industry, Labor and Human Relations (DIHLR) welding certification.

See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=442&num=437>)

442-438. Blueprint Reading. (0.4 Credits)

Learn the theoretical concepts of blueprint reading.

See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=442&num=438>)

442-439. Advanced Blueprint Reading. (1.2 Credits)

Learn the advanced theoretical concepts of blueprint reading.
See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=442&num=439>)

442-445. Fundamentals of Welding. (4 Credits)

In this introductory course to welding processes, students will successfully identify and utilize safe practices with welding equipment and procedures, identify and describe the components of different welding processes, properly and safely set up welding machinery.
See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=442&num=445>)

442-446. Intro to Brazing. (2 Credits)

Learn to successfully identify and use safe practices with brazing equipment and procedures, identify and describe the components of the brazing process, and safely set up brazing equipment and tools.
See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=442&num=446>)

442-460A. D1.1 Welding. (0.2 Credits)

This course is designed to prepare participants for the D1.1 Welding Examination by aligning with D1.1 codebook standards, regulations, and guidelines, and will focus on the structural nature and integrity of the Welds produced.
See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=442&num=460A>)

442-505. Welding for Apprentices. (1 Credit)

Become familiar with various welding applications used in industry.
See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=442&num=505>)

442-506. Shop Safety Welding Apprentice. (0.5 Credits)

Examine safe work practices for welders, fabricators, and related trades. Apprentices will explore industrial safety standards; personal protective equipment; machine guards and protective devices. Course relates 5S concepts to safe work practices and trade processes.
See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=442&num=506>)

442-507. Apprentice Wld Plumbing. (1 Credit)

Acquire basic welding skills, use several types of electrodes, and practice torch cutting steel, soldering water systems, and brazing.
See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=442&num=507>)

442-508. Welding Apprentice Blpt Rdg. (1.5 Credits)

This course introduces blueprint reading and trade math as they relate to the welding and fabrication trade. The apprentice will learn to apply common math formulas to welding and fabrication processes. The apprentice will also learn about concepts and techniques of inspection with emphasis on completed products per drawing specifications.
See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=442&num=508>)

442-509. Apprentice Welding Processes 1. (1 Credit)

This course introduces the Welding/Fabrication apprentice to Gas Metal Arc Welding (GMAW) and Shielded Metal Arc Welding (SMAW). Inspection of welds and industry standards will be addressed. There will also be an emphasis on safe work procedures.
See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=442&num=509>)

442-510. Fabrication for Apprentices 1. (1 Credit)

This course introduces the Welding/Fabrication apprentice to fabrication and layout processes and techniques. There will be instruction on producing precision fabrication of parts and assemblies according to industry standards and drawing specifications. There will be an emphasis on safe work procedures.
See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=442&num=510>)

442-511. Weld Apprentice Blpt Reading. (1.5 Credits)

This course introduces blueprint reading and trade math as they relate to the welding and fabrication trade. The apprentice will learn to apply common math formulas to welding and fabrication processes. The apprentice will also learn about concepts and techniques of inspection with emphasis on completed products per drawing specifications.
See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=442&num=511>)

442-514. Fabrication for Apprentices 2. (1.5 Credits)

This course introduces the Welding/Fabrication apprentice to advanced fabrication and layout processes and techniques. There will be instruction on topics of applied math, applied print reading, rolling, bending, forming, advanced layout, soldering, and brazing. There will be an emphasis on safe work procedures.
See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=442&num=514>)

442-516. Welding Apprentice Metallurgy. (1 Credit)

This course introduces the Welding/Fabrication apprentice to the areas of basic ferrous metallurgy, distortion control, and the properties of metals. Apprentices will perform both destructive and non-destructive testing of metals. Although the emphasis of the course will be on basic ferrous metallurgy; the course will briefly cover the properties of cast irons, stainless steels, and aluminum.
See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=442&num=516>)

442-517. Apprentice Welding Processes 2. (1 Credit)

This course introduces the Welding/Fabrication apprentice to Gas Tungsten Arc Welding (GTAW) and Flux Cored Arc Welding (FCAW). Inspection of welds and industry standards will be addressed. There will also be an emphasis on safe work procedures.
See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=442&num=517>)

442-522. Apprentice Welding Processes 1. (1 Credit)

This course introduces the Welding/Fabrication apprentice to Gas Metal Arc Welding (GMAW) and Shielded Metal Arc Welding (SMAW). Inspection of welds and industry standards will be addressed. There will also be an emphasis on safe work procedures.
See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=442&num=522>)

442-526. Automated Cutting Apprentices. (2 Credits)

This course introduces the Welding/Fabrication apprentice to CNC programming and automated cutting processes. Apprentices will be given the opportunity to setup, program, operate and perform maintenance on CNC controlled machines used to process different materials. Cutting processes covered during the duration of this course will be, Laser, Plasma, and Oxy/Acetylene cutting. Apprentices will be required to operate multiple pieces of equipment throughout the course of the semester.
See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=442&num=526>)

442-527. Robotic Welding for Apprentice. (1 Credit)

This course introduces the Welding/Fabrication apprentice to robotic welding operation, setup and programming. The apprentice will be required to produce a number of acceptable piece parts from standard blueprints. Apprentices will learn to safely jog robots, create tool center points and programs, develop welding schedules, edit programs to minimize cycle times, and operate the cell in automatic mode.

See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=442&num=527>)

442-528. Troubleshooting for Fabricator. (1 Credit)

This course covers troubleshooting of layout, cutting, welding, fabrication equipment and processes. The course introduces the apprentice to basic troubleshooting procedures and applies those steps to specific equipment and manufacturing work processes.

See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=442&num=528>)

442-529. Automated Cutting Apprentices. (2 Credits)

This course introduces the Welding/Fabrication apprentice to CNC programming and automated cutting processes. Apprentices will be given the opportunity to setup, program, operate and perform maintenance on CNC controlled machines used to process different materials. Cutting processes covered during the duration of this course will be, Laser, Plasma, and Oxy/Acetylene cutting. Apprentices will be required to operate multiple pieces of equipment throughout the course of the semester.

See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=442&num=529>)