

Welding (WELD)

Courses

WELD 1105 Welding: 1-4 semester hours.

Introduction to and practice of arc welding. Metals and various types of welds. F, S

WELD 1130 Safety and Leadership: 2 semester hours.

The student will identify lab organization and safety procedures, demonstrate applied leadership skills and abilities, demonstrate and identify hand tools and their proper usage. The student will also demonstrate and identify power tools and equipment including their proper usage and maintenance. PREREQ: Permission of instructor and a minimum score of 14 on ALEKS or equivalent. F,S,D

WELD 1131 Welding Practice I: 12 semester hours.

Welding practice techniques for successful fillet and groove welds in all positions utilizing SMAW E7018, GMAW ER70S-6, and FCAW E71T-1 processes and filler metals. PREREQ: Minimum score of 14 on ALEKS or equivalent. F,S

WELD 1131A Shielded Metal Arc Welding: 4 semester hours.

SMAW to include fillet and groove welds in all positions to the AWS standards. Successfully completing this course may lead to certification. PREREQ: Permission of instructor. F, S, D

WELD 1131B Gas Metal Arc Welding: 4 semester hours.

Fillet, groove, and open groove welding using the GMAW process and ER70S-6 filler metal combination. All welding and destructive testing will comply with AWS D1.1 Structural Steel Welding Code. PREREQ: Permission of Instructor. COREQ: WELD 1131A. F, S, D

WELD 1131C Flux Cored Arc Welding: 4 semester hours.

Fillet, groove, and open groove welding using FCAW and E71T-1 filler metal combination. All welding and destructive testing will comply with AWS D1.1 Structural Steel Welding Code. PREREQ: Permission of instructor. COREQ: WELD 1131A and WELD 1131B. F, S, D

WELD 1132 Welding Practice II: 12 semester hours.

Open groove welding practice to develop skills in preparation to weld pipe. Students will first become proficient on plate and progress into carbon steel pipe welding using E6010 and E7018 electrodes. PREREQ: WELD 1131. F, S

WELD 1140 Welding Theory: 2 semester hours.

This course consists of basic metallurgy, identification of metals and electrodes, theory of welding processes, identify proper usage of testing methods, welding gases, joint design and configuration, welding positions, welding currents and polarity. Welding qualifications and procedures will also be covered. PREREQ: Minimum score of 14 on ALEKS or equivalent. F

WELD 1141 Mechanical Drawing: 2 semester hours.

Proper care and use of equipment, alphabet of lines, orthographic projections, dimensioning, section view drawing, freehand sketching of isometrics, pattern development and geometric construction. PREREQ: Minimum score of 14 on ALEKS or equivalent. S

WELD 1142 Blueprint Reading for Welders: 2 semester hours.

The blueprint course will cover basic lines, views, dimensioning and structural shapes, abbreviation and weld symbols, working with structural and piping drawings, and bill of materials. PREREQ: Minimum score of 14 on ALEKS or equivalent. S

WELD 1143 Shop Math I: 2 semester hours.

Basic study of trade math concentrating on basic arithmetic, common fractions, decimals, ratio, percentages, square root, and appropriate conversions as they apply to the welding trade. PREREQ: Minimum score of 14 on ALEKS or equivalent. F

WELD 1159 Arc Welding: 1 semester hour.

Special course with emphasis on shop practice in the general areas of arc welding. Open for enrollment only with approval of the advisor, program coordinator and CTech counselor. (This is a special certificate option.) F, S

WELD 2231 Welding Practice III: 13 semester hours.

Low hydrogen, stainless steel, and pipe welding techniques in shop applications. PREREQ: WELD 1132. F

WELD 2232 Welding Practice IV: 13 semester hours.

GTAW process welding practice using both manual and automated orbital equipment, procedures, and techniques. Carbon and stainless steel pipe welding emphasized; includes high-purity and sanitary stainless welding. PREREQ: WELD 2231. S

WELD 2237 Nuclear Pipe Welding Theory: 1 semester hour.

Students will become familiar with Quality Assurance/Quality Control procedures, stainless steel metallurgy, nuclear welding theory, and non-destructive testing processes. PREREQ: Instructor approval required

WELD 2238 Nuclear Pipe Welding Practice: 3 semester hours.

Students will perform nuclear grade pipe welds using the Gas Tungsten Arc Welding (GTAW) process with automated, semi-automated, and manual pipe welds. Students will become familiar with Quality Assurance/Quality Control procedures and non-destructive testing processes. PREREQ: Instructor approval required.

WELD 2241 Metal Layout: 3 semester hours.

Introduction to geometric construction, principles of metal layout, special trade charts and tables. PREREQ: WELD 1141. F

WELD 2243 Shop Math II: 3 semester hours.

Continuation of WELD 1143, with introduction to specific trade formulas, basic algebra, proportions, right triangle math, trigonometry, special trade charts and tables. PREREQ: WELD 1143. S

WELD 2296 Independent Study: 1-8 semester hours.

Addresses specific learning needs of individuals for the enhancement of knowledge and skills within the program area under the guidance of an instructor. May be repeated. Graded S/U, or may be letter-graded. PREREQ: Permission of the instructor. D

WELD 2298 Special Topics: 1-8 semester hours.

Addresses the specific needs of industry, enabling students to upgrade technical skills that are not included in the current program curriculum. May be repeated. Graded S/U, or may be letter-graded. PREREQ: Permission of instructor. D