

WELDING (WELD)

WELD 100 2.5 UNITS

Welding Fundamentals

Class Hours: 2.0 Lecture / 2.0 Laboratory

Total Contact Hours: 36 Lecture / 36 Laboratory

This introductory course is designed to familiarize the student with the history, principles, and practices of the welding industry and their relationship to our economy and society. Emphasis is placed on technical and practical applications of metal cutting, brazing and soldering, shielded metal arc, gas metal arc, flux cored arc, and gas tungsten arc welding processes, shop and field safety practices, weld testing and welding metallurgy.

Transfer Credit: CSU

WELD 120 5.0 UNITS

Beginning Arc Welding

Class Hours: 4.0 Lecture / 4.0 Laboratory

Total Contact Hours: 72 Lecture / 72 Laboratory

Recommendation: WELD 100 with a grade of Pass or "C" or higher or concurrent enrollment or appropriate work experience.

This course is designed for the beginning student welder covering the technical and practical aspects of the shielded metal arc welding (SMAW), gas metal arc welding (GMAW), and flux cored arc welding (FCAW) processes on ferrous and non-ferrous metals. Emphasis is placed on the safe operation of manual and semi-automatic welding and cutting tools and equipment.

Transfer Credit: CSU

WELD 130 5.0 UNITS

Gas Tungsten Arc Welding Fundamentals

Class Hours: 4.0 Lecture / 4.0 Laboratory

Total Contact Hours: 72 Lecture / 72 Laboratory

Recommendation: WELD 100 or WELD 120 or equivalent with a grade of Pass or "C" or higher or concurrent enrollment or appropriate work experience.

This course is designed to provide the student with technical and practical welding skills on ferrous and non-ferrous metals using the gas tungsten arc welding process (GTAW), commonly known as TIG. Related classroom instruction covers technical data pertaining to this welding process with special emphasis on operational parameters of inverter type machines.

Transfer Credit: CSU

WELD 149 4.0 UNITS

Welding Shop Math

Class Hours: 4.0 Lecture

Total Contact Hours: 72 Lecture

Recommendation: WELD 100 or WELD 120 or WELD 130 or equivalent with a grade of "C" or higher or "Pass".

This course is designed to familiarize the student with the shop math typical to the welding industry. Emphasis will be placed on the practical applications of measuring, measuring instruments, area, volume, fractions, decimals, and the metric system. (Formerly WELD 49)

Transfer Credit: CSU

WELD 153 2.0 UNITS

Pipe Layout

Class Hours: 1.0 Lecture / 4.0 Laboratory

Total Contact Hours: 18 Lecture / 72 Laboratory

Prerequisite: WELD 120 or equivalent with a grade of Credit or "C" or higher, or appropriate work experience.

This advanced welding course emphasizes practical techniques of pipe layout, terminology, use of layout tools, fittings, offset tie-ins, and rolled offset tie-in of parallel pipelines. Instruction in more advanced layout techniques will cover layout of calculated fittings involving pipelines of unequal sizes and compound offset tie-in fittings. (Formerly WELD 53)

Transfer Credit: CSU

WELD 159 4.0 UNITS

Blueprint Reading for the Welding Trades

Class Hours: 4.0 Lecture

Total Contact Hours: 72 Lecture

Recommendation: WELD 100 or WELD 120 or WELD 130 or equivalent with a grade of "C" or higher or "Pass" .

This course is designed to enable the student to read and interpret shop and structural drawings and blueprints. Emphasis is placed on structural shape identification, nomenclature, and welding symbols. (Formerly WELD 59)

Transfer Credit: CSU

WELD 160 1.0 UNITS

Welding and Metal Fabrication Safety

Class Hours: 1.0 Lecture

Total Contact Hours: 18 Lecture

This course is designed to familiarize the welding student with recognized safety practices of the industry. Emphasis will be placed on compliance with government safety codes and regulations. Students will be introduced to preventive health and safety techniques and practices. Safety concerns relating to welding and cutting will be covered for both shop and field work environments. (Formerly WELD 60)

Transfer Credit: CSU

WELD 170 2.0 UNITS

Structural Fabrication

Class Hours: 1.0 Lecture / 4.0 Laboratory

Total Contact Hours: 18 Lecture / 72 Laboratory

Prerequisite: WELD 120 or equivalent with a grade of "C" or higher or "Pass".

Recommendation: WELD 149 and WELD 159 or equivalent with grades of "C" or higher or "Pass".

This is a course designed to develop welding skills and structural fabrication techniques on real or simulated metal construction projects. Emphasis will be on the safe operation of fabricating equipment as applied to structural steel components.

Transfer Credit: CSU

WELD 172L Advanced Structural Fabrication Laboratory Class Hours: 3.0 Laboratory Total Contact Hours: 54 Laboratory	1.0 UNITS	WELD 220 Certification and Licensing for Welders Class Hours: 2.0 Lecture Total Contact Hours: 36 Lecture	2.0 UNITS
Prerequisite: WELD 170 or equivalent with a grade of Pass or "C" or higher. This is a course designed to enhance the previously acquired welding and fabrication skills and techniques commonly used within industry. Emphasis is on safety in the shop environment and the use of typical fabrication shop and field equipment. Transfer Credit: CSU		Recommendation: WELD 200 or equivalent with a grade of Pass or "C" or higher or concurrent enrollment or appropriate work experience. This is a technical course for the advanced welding student. Material covered will include data on all approved modern welding processes, welding filler metals, approved welded joint design, and welding procedures. Special emphasis will be placed on welding symbols and American Welding Society (AWS) Structural Code specifications leading to Los Angeles City and AWS welding certifications. Transfer Credit: CSU	
WELD 200 Intermediate Arc Welding Class Hours: 2.0 Lecture / 6.0 Laboratory Total Contact Hours: 36 Lecture / 108 Laboratory	4.0 UNITS	WELD 240L Intermediate Gas Tungsten Arc Welding Laboratory Class Hours: 6.0 Laboratory Total Contact Hours: 108 Laboratory	2.0 UNITS
Prerequisite: WELD 120 or equivalent with a grade of Credit or "C" or higher, or appropriate work experience. This is a course designed to refine the student's previously acquired welding skills and prepare the student to pass welding certification tests. Emphasis is placed on welding in the vertical and overhead positions and the welding of alloy steels with compatible filler metals using the shielded metal arc (SMAW), gas metal arc (GMAW), and flux cored arc (FCAW) welding processes. Related classroom instruction is given in the technical data pertaining to these processes. Transfer Credit: CSU		Prerequisite: WELD 130 or equivalent with a grade of Pass or "C" or higher. This is an intermediate welding course using the Gas Tungsten Arc Welding (GTAW) process. This course is designed to further the skills of the student in this process. Special emphasis is placed on the welding of ferrous and non-ferrous metals in the various positions. (Not open to students with credit in Weld 240.) Formerly WELD 240 Transfer Credit: CSU	
WELD 210L Advanced Arc Welding Laboratory Class Hours: 6.0 Laboratory Total Contact Hours: 108 Laboratory	2.0 UNITS	WELD 250L Advanced Gas Tungsten Arc Welding Lab Class Hours: 6.0 Laboratory Total Contact Hours: 108 Laboratory	2.0 UNITS
Prerequisite: WELD 200 or equivalent with a grade of Credit or "C" or higher. This advanced welding course is designed to prepare the student welder for structural steel welding applications using (Shielded Metal Arc Welding (SMAW) and (Flux Cored Arc Welding (FCAW) processes. Transfer Credit: CSU		Prerequisite: WELD 240L or equivalent with a grade of Pass or "C" or higher. This advanced course is designed to further increase the manipulative skills and technical knowledge of the student welder using the Gas Tungsten Arc Welding (GTAW) process on .020 to .030 thickness metals as well as welding the root bead on high pressure pipe. All welding samples will comply with standards set by the American Welding Society or industry. Transfer Credit: CSU	
WELD 212L Shielded Metal Arc Welding (SMAW) Certification Laboratory Class Hours: 6.0 Laboratory Total Contact Hours: 108 Laboratory	2.0 UNITS	WELD 251L Advanced ARC Welding Specialty Lab Class Hours: 3.0 Laboratory Total Contact Hours: 54 Laboratory	1.0 UNITS
Prerequisite: WELD 210L or equivalent with a grade of Pass or "C" or higher. This advanced certification laboratory is designed specifically to enhance and prepare the welding students for structural steel welding certifications using the shielded metal arc welding (SMAW) process. Transfer Credit: CSU		Prerequisite: WELD 120 or equivalent with a grade of Pass or "C" or higher. This advanced level welding course is designed to further develop Advanced Arc Welding skills in the structural steel, piping, sheet metal, and construction industries. (Formerly WELD 51L) Transfer Credit: CSU	
WELD 214L Flux Cored Arc Welding (FCAW) Certification Laboratory Class Hours: 6.0 Laboratory Total Contact Hours: 108 Laboratory	2.0 UNITS		
Prerequisite: WELD 210L or equivalent with a grade of Pass or "C" or higher. This advanced certification laboratory is designed specifically to enhance and prepare the welding students for structural steel welding certifications using the Flux Cored Arc Welding (FCAW) process. Transfer Credit: CSU			

<p>WELD 252L Pipe Welding Level 1 Class Hours: 6.0 Laboratory Total Contact Hours: 108 Laboratory</p> <p>Prerequisite: WELD 210L or equivalent with a grade of "C" or higher or "Pass" or Current Los Angeles City or AWS certification for structural steel (D1.1). This advanced welding course is designed to utilize previously acquired welding skills and techniques on ferrous pipe in the rotated and fixed positions. Emphasis is placed on the welding of open groove pipe joints using the shielded metal arc welding (SMAW) process. Subjects covered will include joint preparation, alignment techniques, pre-heat and inter-pass temperatures, and post-heat requirements. (Formerly WELD 52) Transfer Credit: CSU</p>	<p>2.0 UNITS</p>	<p>WELD 260L Gas Tungsten Arc Welding (GTAW) Aerospace Certification Laboratory Class Hours: 6.0 Laboratory Total Contact Hours: 108 Laboratory</p> <p>Prerequisite: WELD 250L or equivalent with a grade of Pass or "C" or higher. This is an advanced welding course using the Gas Tungsten Arc Welding (GTAW) process. This course is designed to develop the skills needed to be successful within the aerospace industry. Emphasis is placed on GTAW of various types and thickness of materials commonly used in the aerospace industry. Transfer Credit: CSU</p>	<p>2.0 UNITS</p>
<p>WELD 254L Pipe Welding Level 2 Class Hours: 6.0 Laboratory Total Contact Hours: 108 Laboratory</p> <p>Prerequisite: WELD 52 or equivalent with a grade of Credit or "C" or higher. This is a course designed to building and/or refine the student's previously acquired pipe welding skills and prepare the student to pass a certification test in pipe welding. Emphasis is placed on welding various diameters of ferrous pipe in the flat 1G, horizontal fixed 2G, vertical fixed 5G using shielded metal arc (SMAW) process. (Formerly WELD 54L) Transfer Credit: CSU</p>	<p>2.0 UNITS</p>	<p>WELD 270 Structural Layout Class Hours: 2.0 Lecture / 2.0 Laboratory Total Contact Hours: 36 Lecture / 36 Laboratory</p> <p>Prerequisite: WELD 153 or WELD 170 or equivalent with a grade of Pass or "C" or higher. This advanced course is designed to further develop layout skills on structural plate, beams, channel, and angle iron. The student will work from prints utilizing measuring tools and fabrication equipment to develop weldments typical in the industry. Transfer Credit: CSU</p>	<p>2.5 UNITS</p>
<p>WELD 256L Pipe Welding Level 3 Class Hours: 6.0 Laboratory Total Contact Hours: 108 Laboratory</p> <p>Prerequisite: WELD 254L or equivalent with a grade of Pass or "C" or higher. This is a course designed to refine the student's previously acquired pipe welding skills and prepare the student to pass a certification test in pipe welding. Emphasis is placed on welding 6" ferrous pipe in the vertical fixed (5G) and 45 degree inclined (6G) positions using the Shielded Metal Arc Welding (SMAW) process. (Formerly WELD 56L) Transfer Credit: CSU</p>	<p>2.0 UNITS</p>	<p>WELD 281L Shielded Metal Arc Welding (SMAW) Specialty Laboratory Class Hours: 3.0 Laboratory Total Contact Hours: 54 Laboratory</p> <p>Prerequisite: WELD 120 or equivalent with a grade of Pass or "C" or higher. This advanced level welding course is designed to further develop advanced specialized welding skills in the structural, piping, sheet metal, and construction industries using the SMAW process. (Formerly WELD 81L) Transfer Credit: CSU</p>	<p>1.0 UNITS</p>
<p>WELD 258L Pipe Welding Level 4 Class Hours: 6.0 Laboratory Total Contact Hours: 108 Laboratory</p> <p>Prerequisite: WELD 256L or equivalent with a grade of Pass or "C" or higher. This is a course to refine the student's previously acquired pipe welding skills and prepare the student to pass a certification test in pipe welding. Emphasis is placed on welding 2" ferrous pipe in the vertical fixed (5G) and 45 degree inclined (6G) positions using the Shielded Metal Arc Welding (SMAW) process. (Formerly WELD 58L) Transfer Credit: CSU</p>	<p>2.0 UNITS</p>	<p>WELD 282L Semiautomatic Welding Process Specialty Laboratory Class Hours: 3.0 Laboratory Total Contact Hours: 54 Laboratory</p> <p>Prerequisite: WELD 120 or equivalent with a grade of Pass or "C" or higher. This advanced level welding course is designed to further develop advanced specialized welding skills in the structural, sheet metal, and construction industries using the FCAW process. (Formerly WELD 82L) Transfer Credit: CSU</p>	<p>1.0 UNITS</p>
		<p>WELD 283L Gas Tungsten Arc Welding (GTAW) Specialty Laboratory Class Hours: 3.0 Laboratory Total Contact Hours: 54 Laboratory</p> <p>Prerequisite: WELD 130 or equivalent with a grade of "C" or higher or "Pass" or higher, or concurrent enrollment. This advanced level welding course is designed to further develop advanced Gas Tungsten Arc Welding (GTAW) skills. This is a lab-only course. (Formerly WELD 83L) Transfer Credit: CSU</p>	<p>1.0 UNITS</p>