2021-2022 Official Catalog

Welding

Overview

The CRC welding program is designed for students interested in seeking employment or advancing employment in welding fabrication and industrial repairs. Current job statistics show a long-term and growing industry demand for skilled welders with very good pay for those with experience. Welding encompasses study in electrical, metallurgy, chemistry, physics, design, and mechanical engineering.

Degrees and Certificates Offered

A.S. in General Agriculture
A.S. in Welding Technology
Welding Code Certificate
Welding Fabricator Certificate
Welding Technology Certificate

Dean
Bob Johnson
Department Chair
Kevin Rogers
Phone
(916) 525-4323
Email
johnsor3@crc.losrios.edu

Associate Degrees

A.S. in General Agriculture

Agriculture is a vital component of our local, state, and national economies and offers many exciting employment opportunities. In addition to the production of a wide range of valuable agricultural commodities, the Sacramento region is home to numerous multi-national agricultural corporations and statewide governmental agencies. It is also a center for international agricultural trade and commerce. This program is designed for students majoring in Agriculture while also allowing the student to select courses that fit his/her individual needs and desires.

As a General Agriculture major, you will:

*Study a general agriculture curriculum representing all of the departments of the Cosumnes River College agriculture program including: agriculture business, horticulture, welding, veterinary technology and plant science.
*Develop your leadership and communication skills.
*Identify the agricultural career you are most interested in and build a course of study to better qualify you for a profession.

HIGHLIGHTS

*As the only community college agriculture program in the Sacramento region, the CRC General Agriculture program provides an excellent opportunity for individuals who wish to pursue a career in agriculture and receive a General Agriculture Associate of Science degree.
*The faculty in this program works closely with the five California agricultural degree offering universities to provide a quality program for students interested in agriculture business, management and economics.
*The Sacramento region is fortunate to have some of the best high school agriculture programs in California. The faculty in the CRC Ag program works closely with these feeder schools to articulate coursework and facilitate the successful transition of agriculture students from high school to the university.
*Internships in agriculture are available for students interested in work experience opportunities.

NOTE TO TRANSFER STUDENTS: If you are interested in transferring to a four-year college or university to pursue a bachelor's degree in this major, it is critical that you meet with a CRC counselor to select and plan the courses for your major. Schools vary widely in terms of the required preparation. The courses that CRC requires for an Associate's degree in this major may be different from the requirements needed for the Bachelor's degree.
# Degree Requirements

<table>
<thead>
<tr>
<th>COURSE CODE</th>
<th>COURSE TITLE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGB 310</td>
<td>Agriculture Computer Applications</td>
<td>3</td>
</tr>
<tr>
<td>AGB 320</td>
<td>Agriculture Accounting</td>
<td>3</td>
</tr>
<tr>
<td>AGB 321</td>
<td>Agriculture Economics</td>
<td>3</td>
</tr>
<tr>
<td>AMT 306</td>
<td>Small Engine Repair</td>
<td>3</td>
</tr>
<tr>
<td>HORT 300</td>
<td>Introduction to Horticulture</td>
<td>3</td>
</tr>
<tr>
<td>PLTS 310</td>
<td>Soils, Soil Management, and Plant Nutrition (3)</td>
<td>3</td>
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<tr>
<td>or HORT 302</td>
<td>Soils, Soil Management, and Plant Nutrition (3)</td>
<td>3</td>
</tr>
<tr>
<td>ANSC 300</td>
<td>Introduction to Animal Science</td>
<td>3</td>
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<tr>
<td>PLTS 300</td>
<td>Introduction to Plant Science</td>
<td>3</td>
</tr>
<tr>
<td>WELD 100</td>
<td>Introduction to Welding &amp; Safety</td>
<td>1.5</td>
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<tr>
<td></td>
<td><strong>A minimum of 2 units from the following:</strong></td>
<td></td>
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<tr>
<td>WEXP 498</td>
<td>Work Experience in (Subject) (1 - 4)</td>
<td></td>
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<tr>
<td></td>
<td><strong>Subtotal Units:</strong></td>
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**Agriculture Business**

<table>
<thead>
<tr>
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<th>COURSE TITLE</th>
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</thead>
<tbody>
<tr>
<td>AGB 300</td>
<td>Introduction to Agriculture Business</td>
<td>3</td>
</tr>
<tr>
<td>AGB 330</td>
<td>Agriculture Sales and Communication</td>
<td>3</td>
</tr>
<tr>
<td>AGB 331</td>
<td>Agriculture Marketing</td>
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<td><strong>Agriculture Business Units:</strong></td>
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<td><strong>Total Units:</strong></td>
<td><strong>36.5</strong></td>
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**Horticulture**

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<thead>
<tr>
<th>COURSE CODE</th>
<th>COURSE TITLE</th>
<th>UNITS</th>
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<tbody>
<tr>
<td>HORT 305</td>
<td>Plant Identification-Fall Selections</td>
<td>3</td>
</tr>
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<td>HORT 312</td>
<td>Plant Propagation</td>
<td>3</td>
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<td></td>
<td><strong>Horticulture Units:</strong></td>
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<td></td>
<td><strong>Total Units:</strong></td>
<td><strong>33.5</strong></td>
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**Landscape**

<table>
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<tr>
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<th>COURSE TITLE</th>
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<tbody>
<tr>
<td>HORT 320</td>
<td>Sustainable Landscape Construction</td>
<td>3</td>
</tr>
<tr>
<td>HORT 324</td>
<td>Sustainable Landscape Maintenance</td>
<td>3</td>
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<td></td>
<td><strong>Landscape Units:</strong></td>
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<td></td>
<td><strong>Total Units:</strong></td>
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**Welding**

<table>
<thead>
<tr>
<th>COURSE CODE</th>
<th>COURSE TITLE</th>
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<tbody>
<tr>
<td>WELD 110</td>
<td>Shielded Metal Arc Welding Procedures</td>
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</tr>
<tr>
<td></td>
<td><strong>Welding Units:</strong></td>
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<td></td>
<td><strong>Total Units:</strong></td>
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</table>

\(^1\) This major requires that you complete all courses in the required program plus one area of concentration.

The General Agriculture Associate in Science (A.S.) degree may be obtained by completion of the required program, plus general education requirements, plus sufficient electives to meet a 60-unit total. See CRC graduation requirements.

## Student Learning Outcomes

Upon completion of this program, the student will be able to:

- PSLO 1: Demonstrate knowledge and hands-on experience in the basic concepts of all aspects of agriculture.
Career Information

Management; Supervision; Finance; Insurance; Government; Marketing; Distribution; International Trade; Sales and Service; Nursery Management and Operations; Park Maintenance; Landscape Design, Teaching, Communication; Contracting & Maintenance; Fertilizer & Insecticide Application; Research; Retail/Wholesale; Estimator; Consultant; Government Agency employee; Welding Technician; Inspection; Welding Engineering; Sculpting; Home/Handicraft & Hobby; Construction; Trucking & Automotive

Some positions, however, require a four-year degree for which CRC’s program is a good base for transfer.

A. A. in Welding Technology

The Welding Program at Cosumnes River College specializes in welding training to meet current needs for the Welding Industry. In addition to learning technical welding skills of Shielded Metal Arc, Gas Metal Arc, Gas Tungsten Arc and Flux Core Arc Welding processes, students will be introduced to safety standards, common metal working machinery and welding practices common with the welding industry.

Catalog Date: January 1, 2022

Degree Requirements

<table>
<thead>
<tr>
<th>COURSE CODE</th>
<th>COURSE TITLE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>WELD 100</td>
<td>Introduction to Welding &amp; Safety</td>
<td>1.5</td>
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<td>A minimum of 8 units from the following:</td>
<td></td>
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<tr>
<td>WELD 110</td>
<td>Shielded Metal Arc Welding Procedures (4)</td>
<td>8</td>
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<tr>
<td>WELD 111</td>
<td>Pipe Welding Procedures (4)</td>
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</tr>
<tr>
<td>WELD 113</td>
<td>Flux Core Arc Welding Process (4)</td>
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<tr>
<td>A minimum of 9 units from the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WELD 126</td>
<td>Gas Metal Arc Welding of Plate &amp; Pipe (3)</td>
<td>9</td>
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<tr>
<td>WELD 127</td>
<td>Gas Metal Arc Welding Process of Sheet Metal (3)</td>
<td></td>
</tr>
<tr>
<td>WELD 128</td>
<td>Gas Tungsten Arc Welding of Aluminum Alloys (3)</td>
<td></td>
</tr>
<tr>
<td>WELD 129</td>
<td>Gas Tungsten Arc Welding of Stainless Steel (3)</td>
<td></td>
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<tr>
<td>A minimum of 5 units from the following:</td>
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<tr>
<td>WELD 298</td>
<td>Work Experience in Welding (0.5 - 4)</td>
<td>5</td>
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<tr>
<td>WELD 145</td>
<td>Design, Layout &amp; Fabrication (3)</td>
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<tr>
<td>WELD 151</td>
<td>Welding Industry Training (4)</td>
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</tr>
</tbody>
</table>

Total Units: 23.5

The Welding Technology Associate in Science (A.S.) degree may be obtained by completion of the required program, plus general education requirements, plus sufficient electives to meet a 60-unit total. See CRC graduation requirements.

Student Learning Outcomes

Upon completion of this program, the student will be able to:

- Demonstrate welding skills to meet or exceed Industry Standards. PSLO #1
- Understand and implement Welding Procedures and Welding Specifications to meet or exceed the Welding Code Standards. PSLO #2
- Understand and implement Cal-OSHA and FED-OSHA Safety Regulations and Procedures that pertain to the Welding Industry. PSLO #3
- Apply academic skills in reading, mathematics, chemistry, physics, business, communication, engineering design and concepts to welding fabrication. PSLO #4
- Demonstrate work attributes that contribute to personal success and contribute to the goals of the company or organization for which one is employed. PSLO #5

Career Information

Production Shop Welder Production Field Welder Welding Fabricator Welding Safety Trainer Welding Inspector Welding Quality Control Supervisor Welding Supervisor Welding Teacher (High-School) Welding Instructor (Trade or College) Welding Sales Welding Safety Owner or Operator of a welding business

Certificates of Achievement

Welding Code Certificate

The Welding Code Certificate specializes in the American Welding Society Structural Steel Welding Code (D1.1) and Seismic Welding Code (D1.8). Students have the option to select one of the three courses; Flux Core Arc Welding, Shielded Metal Arc Welding and Pipe Welding procedures as a focus course to prepare to take the Certified Welding Inspector (CWI) exam at an AWS testing site. Students may take all of the focus courses to assist with preparing for the CWI exam, but only one of the optional courses is needed to earn the certificate.

Certificate Requirements
Student Learning Outcomes

Upon completion of this program, the student will be able to:

- PSLO 1: Demonstrate welding skills sufficient to meet industry standards.
- PSLO 2: Identify and recall American Welding Society Structural Steel regulations pertaining to construction and or fabrication of weldments.

Career Information

Job advancement in the welding industry as a welder, quality control inspector or welding supervisor. Certified Welding Inspector Certified Welding Supervisor Certified Welding Educator

Welding Fabricator Certificate

The Welding Fabricator Certificate specializes in up to date welding code and safety regulations, modern power sources and techniques, fabrication procedures with the Gas Metal Arc Welding Process and the Gas Tungsten Arc Welding Process. Students will have the opportunity to meet or exceed industry standards in-order to become employed in the welding industry.

Catalog Date: January 1, 2022

Certificate Requirements

<table>
<thead>
<tr>
<th>COURSE CODE</th>
<th>COURSE TITLE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>WELD 145</td>
<td>Design, Layout &amp; Fabrication</td>
<td>3</td>
</tr>
<tr>
<td>WELD 125</td>
<td>Introduction to the Gas Metal Arc Welding Process (1.5)</td>
<td></td>
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<tr>
<td>WELD 126</td>
<td>Gas Metal Arc Welding of Plate &amp; Pipe (3)</td>
<td></td>
</tr>
<tr>
<td>WELD 127</td>
<td>Gas Metal Arc Welding Process of Sheet Metal (3)</td>
<td></td>
</tr>
<tr>
<td>WELD 128</td>
<td>Gas Tungsten Arc Welding of Aluminum Alloys (3)</td>
<td></td>
</tr>
<tr>
<td>WELD 129</td>
<td>Gas Tungsten Arc Welding of Stainless Steel (3)</td>
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<tr>
<td>WELD 160</td>
<td>Welding Technology for the Automotive Industry (1.5)</td>
<td></td>
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<tr>
<td></td>
<td><strong>Total Units:</strong></td>
<td><strong>10.5</strong></td>
</tr>
</tbody>
</table>

Student Learning Outcomes

Upon completion of this program, the student will be able to:

- PSLO #1: Fabrication and Certification: Use proper hand, measuring and layout tools to fabricate welding projects or certification coupons.
- Be able to properly and accurate measure a welding bead with a fillet weld gage.
- Be able to properly measure the height of a welding bead with a “V Wac” gage or “Bridge Cam” gage.
- PSLO #2: Professionalism: Demonstrate work attributes that contribute to personal success and contribute to the goals of the company or organization for which one is employed.
- Be able to be a team player who shows up to work on time.

Career Information

Job advancement and or employment in the welding industry.

Welding Technology Certificate

The CRC welding program is designed for students interested in seeking employment or advancing employment in welding fabrication and industrial repairs.

Current job statistics show a long-term and growing industry demand for skilled welders with very good pay for those with experience in Gas Metal Arc Welding, Shielded Metal Arc Welding and Flux Core Arc Welding talents.

Welding encompasses study in Electrical, Metallurgy, Chemistry, Physics, Design, and Mechanical Engineering.

This welding certificate can be used in conjunction with other technology areas such as:

* Automotive Mechanics Technology
* Building Inspection Technology
* Construction Management Technology
Welding (WLD) Courses

**WELD 100 Introduction to Welding & Safety**

*Units: 1.5*

*Hours: 18 hours LEC; 27 hours LAB*

*Prerequisite: WELD 128 and 129 with grades of “C” or better*

*Catalog Date: January 1, 2022*

This is an introductory course that covers the safety procedures of operating an electric arc welding machine, oxygen-acetylene cutting torch, oxygen-propane cutting and heating torch, plasma arc cutting, flux core arc welding, gas metal arc welding and the gas tungsten arc welding process. The course also includes the scientific theory of welding and cutting, modern power sources, welding symbols, proper joint design, the proper welding procedures and techniques for all types of welding and cutting processes.

**WELD 110 Shielded Metal Arc Welding Procedures**

*Units: 4*

*Hours: 54 hours LEC; 54 hours LAB*

*Prerequisite: None.*

*Catalog Date: January 1, 2022*

The WELD 110 welding course specializes in welding procedures common with the shielded metal arc welding (SMAW) process for the construction of structural steel and includes safety procedures. Students will be introduced to electrical theory, machine and tool operations, welding fundamentals of the SMAW process and carbon air arc removal techniques, welding parameters, electrode classifications, distortion, pre-heat and post-heat procedures, acceptable code procedures and practices. Laboratory assignments will prepare students to be successful in the WELD 151 Industry Training course.

**WELD 111 Pipe Welding Procedures**

*Units: 4*

*Hours: 54 hours LEC; 54 hours LAB*

*Prerequisite: None.*

*Catalog Date: January 1, 2022*

The WELD 111 welding course specializes in welding procedures common with the shielded metal arc welding (SMAW) process for the construction of structural steel and includes safety procedures. Students will be introduced to electrical theory, machine and tool operations, welding fundamentals of the SMAW process and carbon air arc removal techniques, welding parameters, electrode classifications, distortion, pre-heat and post-heat procedures, acceptable code procedures and practices. Laboratory assignments will prepare students to be successful in the WELD 151 Industry Training course.

Certificate Requirements

**Course Code**

<table>
<thead>
<tr>
<th>COURSE CODE</th>
<th>COURSE TITLE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>WELD 100</td>
<td>Introduction to Welding &amp; Safety</td>
<td>1.5</td>
</tr>
<tr>
<td>WELD 125</td>
<td>Introduction to the Gas Metal Arc Welding Process</td>
<td>(1.5)</td>
</tr>
<tr>
<td>WELD 160</td>
<td>Welding Technology for the Automotive Industry</td>
<td>(1.5)</td>
</tr>
<tr>
<td>WELD 110</td>
<td>Shielded Metal Arc Welding Procedures</td>
<td>(4)</td>
</tr>
<tr>
<td>WELD 111</td>
<td>Pipe Welding Procedures</td>
<td>(4)</td>
</tr>
<tr>
<td>WELD 113</td>
<td>Flux Core Arc Welding Process</td>
<td>(4)</td>
</tr>
<tr>
<td>WELD 126</td>
<td>Gas Metal Arc Welding of Plate &amp; Pipe</td>
<td>(3)</td>
</tr>
<tr>
<td>WELD 127</td>
<td>Gas Metal Arc Welding Process of Sheet Metal</td>
<td>(3)</td>
</tr>
<tr>
<td>WELD 128</td>
<td>Gas Tungsten Arc Welding of Aluminum Alloys</td>
<td>(3)</td>
</tr>
<tr>
<td>WELD 129</td>
<td>Gas Tungsten Arc Welding of Stainless Steel</td>
<td>(3)</td>
</tr>
<tr>
<td>WELD 295</td>
<td>Independent Studies in Welding</td>
<td>(1 - 3)</td>
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<tr>
<td>WELD 151</td>
<td>Welding Industry Training</td>
<td>(4)</td>
</tr>
<tr>
<td>WELD 145</td>
<td>Design, Layout &amp; Fabrication</td>
<td>(3)</td>
</tr>
<tr>
<td>WELD 298</td>
<td>Work Experience in Welding</td>
<td>(0.5 - 4)</td>
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</table>

**Minimum of 13 units from the following:**

- WELD 125: Introduction to the Gas Metal Arc Welding Process (1.5)
- WELD 160: Welding Technology for the Automotive Industry (1.5)
- WELD 110: Shielded Metal Arc Welding Procedures (4)
- WELD 111: Pipe Welding Procedures (4)
- WELD 113: Flux Core Arc Welding Process (4)
- WELD 126: Gas Metal Arc Welding of Plate & Pipe (3)
- WELD 127: Gas Metal Arc Welding Process of Sheet Metal (3)
- WELD 128: Gas Tungsten Arc Welding of Aluminum Alloys (3)
- WELD 129: Gas Tungsten Arc Welding of Stainless Steel (3)
- WELD 295: Independent Studies in Welding (1 - 3)
- WELD 151: Welding Industry Training (4)
- WELD 145: Design, Layout & Fabrication (3)
- WELD 298: Work Experience in Welding (0.5 - 4)

**Total Units:** 14.5

Student Learning Outcomes

Upon completion of this program, the student will be able to:

- PSLO #1: Demonstrate welding skills sufficient to meet industry standards.
- PSLO #2: Apply integrated knowledge with incremental skill improvement resulting in functional application of welding techniques.
- PSLO #3: Interpret safety codes and regulations that pertain to the welding industry.
- PSLO #4: Use proper hand, measuring and layout tools to fabricate welding projects or certification coupons.
- PSLO #5: Demonstrate work attributes that contribute to personal success and contribute to the goals of the company or organization for which one is employed.

Career Information

Welding Technician; Sales; Inspection; Supervision & Management; Welding Engineering; Welding Teacher; Welding Safety Trainer; Sculpting; Home/Handicraft & Hobby; Construction; Trucking & Automotive
Pipe Welding Procedures covers personal safety, hand and power tool safety, machinery safety and operational procedures for preparing metal for welding. The student will be introduced to the proper procedures of beveling pipe with a cutting torch and grinder, welding in the 5G and 6G positions with the SMAW, FCAW, GMAW or the GTAW process. The course will also include Metallurgy, Materials, Fabrication, Welding Codes, Industry Standards, Welding Procedures and Welding Inspection procedures. Laboratory assignments will allow students to focus on pipe to pipe fit-up and welding bead quality to meet or exceed industry standards.

### WELD 113 Flux Core Arc Welding Process

<table>
<thead>
<tr>
<th>Units:</th>
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<tbody>
<tr>
<td>Hours:</td>
<td>54 hours LEC; 54 hours LAB</td>
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<tr>
<td>Prerequisite:</td>
<td>None.</td>
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<tr>
<td>Advisory:</td>
<td>WELD 100 with a grade of “C” or better; Students without any prior welding training or experience should complete WELD 100 (Introduction to Welding &amp; Safety).</td>
</tr>
<tr>
<td>Catalog Date:</td>
<td>January 1, 2022</td>
</tr>
</tbody>
</table>

The flux core arc welding process course provides training to develop semi-automatic welding skills on carbon steel plate to structural welding code standards. Topics include safety training, welding inspection and testing procedures with various size diameter flux cored electrodes, with and without external shielding gas, in all positions on fillet and groove welds. The laboratory assignments will prepare the student for the WELD 151 Industrial Training course.

### WELD 125 Introduction to the Gas Metal Arc Welding Process

<table>
<thead>
<tr>
<th>Units:</th>
<th>1.5</th>
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<tbody>
<tr>
<td>Hours:</td>
<td>18 hours LEC; 27 hours LAB</td>
</tr>
<tr>
<td>Prerequisite:</td>
<td>None.</td>
</tr>
<tr>
<td>Catalog Date:</td>
<td>January 1, 2022</td>
</tr>
</tbody>
</table>

The Gas Metal Arc Welding (GMAW) course is an introductory welding course designed for the career or non-career welding student who requires the proper safety training and welding procedures to perform the GMAW process to meet industry safety and welding standards.

### WELD 126 Gas Metal Arc Welding of Plate & Pipe

<table>
<thead>
<tr>
<th>Units:</th>
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<tbody>
<tr>
<td>Hours:</td>
<td>36 hours LEC; 54 hours LAB</td>
</tr>
<tr>
<td>Prerequisite:</td>
<td>None.</td>
</tr>
<tr>
<td>Catalog Date:</td>
<td>January 1, 2022</td>
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</tbody>
</table>

Gas Metal Arc Welding Process of Plate and Pipe focuses on safety, hand and power tools, machinery, welding parameters, welding code and power supplies. The laboratory assignments will allow students to focus on proper preparation methods and welding techniques to perform correct pipe to pipe connections to meet or exceed industry standards.

### WELD 127 Gas Metal Arc Welding Process of Sheet Metal

<table>
<thead>
<tr>
<th>Units:</th>
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<tbody>
<tr>
<td>Hours:</td>
<td>36 hours LEC; 54 hours LAB</td>
</tr>
<tr>
<td>Prerequisite:</td>
<td>None.</td>
</tr>
<tr>
<td>Catalog Date:</td>
<td>January 1, 2022</td>
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</tbody>
</table>

Gas Metal Arc Welding Process of sheet metal is a welding course that specializes in the safety, shop hand and power tools, machinery, power supplies, welding codes and welding techniques of the Gas Metal Arc Welding process. Laboratory assignments will be completed on medium carbon steel, aluminum alloy or stainless steel sheet-metal to meet industry standards. AWS, ASME and API Qualifications may be issued by the employer, not the college welding program.

### WELD 128 Gas Tungsten Arc Welding of Aluminum Alloys

<table>
<thead>
<tr>
<th>Units:</th>
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<tbody>
<tr>
<td>Hours:</td>
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</tr>
<tr>
<td>Prerequisite:</td>
<td>WELD 100 or 160 with a grade of “C” or better</td>
</tr>
<tr>
<td>Catalog Date:</td>
<td>January 1, 2022</td>
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</table>

Gas Tungsten Arc Welding of Aluminum Alloy focuses on welding safety, shop tools and machinery, welding codes, welding inspection, power supplies, welding technique and welding parameters. Laboratory assignments will be completed with the Gas Tungsten Arc Welding process with modern inverter power supplies on Aluminum Alloy material to prepare students for employment in the welding industry.AWS, ASME and API Qualifications may be issued by the employer, not the college welding program.

### WELD 129 Gas Tungsten Arc Welding of Stainless Steel

<table>
<thead>
<tr>
<th>Units:</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Hours:</td>
<td>36 hours LEC; 54 hours LAB</td>
</tr>
<tr>
<td>Prerequisite:</td>
<td>WELD 100 or 160 with a grade of “C” or better</td>
</tr>
<tr>
<td>Catalog Date:</td>
<td>January 1, 2022</td>
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Gas Tungsten Arc Welding of stainless steel focuses on welding safety, shop tools and machinery, welding codes, welding inspection, power supplies, welding technique and welding parameters. Laboratory assignments will be completed with the Gas Tungsten Arc Welding process with modern inverter power supplies on stainless steel material. AWS, ASME and API Qualifications may be issued by the employer, not the college welding program.
WELD 145 Design, Layout & Fabrication

Design, Layout & Fabrication (WELD 145) is a basic course that provides the student the opportunity to design a project with pencil and paper drawings or computer assisted drawing prints, estimate material costs and labor for construction. Each project is specifically selected by the student and professor based on skill level, available funds, student skills and applicable welding processes. The blueprints will include proper welding symbols, weld bead size and welding parameters common to industry standards.

WELD 151 Welding Industry Training

The WELD 151 Welding Industry Training course is an advanced welding course that prepares students for immediate employment in the welding industry. Students will focus on specific welder qualification procedures to meet industry standards. Students will be able to practice on an industry standard welder qualification procedure in the Shielded Metal Arc Welding process (SMAW), Flux Core Arc Welding process (FCAW), Gas Metal Arc Welding process (GMAW) and Gas Tungsten Arc Welding process (GTAW) during the laboratory portion of the course. The purpose of the WELD 151 course is to prepare the student for a pre-employment qualification welding test that is specific to an industry standard at the desired location of employment. AWS, ASME and API qualifications will be issued by the employer, not the college welding program.

WELD 160 Welding Technology for the Automotive Industry

This is an introductory level course that addresses safety and the proper procedures pertaining to the following equipment: Oxygen Acetylene and Oxygen Propane Cutting and Heating equipment, Electric Arc Welding, Plasma Arc Cutting equipment, Gas Metal Arc Welding equipment and Gas Tungsten Arc Welding equipment. The course focuses on welding technology for the purpose of modification and/or repair of automotive related components.

WELD 294 Topics in Welding

WELD 294 is a course developed in cooperation with the industry to meet specialized training needs of the Sacramento area or specifically high demand welding processes for the welding industry.

WELD 295 Independent Studies in Welding

An independent studies project involves an individual student or small group of students in study, research, or activities beyond the scope of regularly offered courses. See the current catalog section of "Special Studies" for full details of Independent Studies.

WELD 298 Work Experience in Welding

This course provides students with opportunities to develop marketable skills in preparation for employment in their major field of study or advancement within their career. It is designed for students interested in work experience and/or internships in associate degree level or certificate occupational programs. Course content includes understanding the application of education to the workforce; completion of required forms which document the student's progress and hours spent at the work site; and developing workplace skills and competencies. Appropriate level learning objectives are established by the student and the employer. During the semester, the student is required to participate in a weekly orientation and 37.5 hours of related paid work experience, or 30 hours of unpaid work experience for 0.5 unit. An additional 37.5 or 30 hours of related work experience is required for each additional 0.5 units. Students may take up to 16 units total across all Work Experience course offerings. This course may be taken up to four times when there are new or expanded learning objectives. Only one Work Experience course may be taken per semester.

WELD 299 Experimental Offering in Welding
This is the experimental courses description.