

WELDING

PROGRAMS

- Associate of Science (A.S.)
- Certificate of Achievement

DESCRIPTION

The Welding Technology program provides students with entry- and advanced-level employment skills in welding and metalworking techniques that are relevant to the needs of local employers and industries.

The program provides training in a variety of welding methods including SMAW, GTAW, GMAW and FCAW. Advanced level courses in plate and pipe welding prepare students for American Welding Society welding certification testing. The program offers courses in sheet metal fabrication and welding fabrication that focus on print reading and metalworking skills. In addition, courses are offered in architectural/ornamental ironwork fabrication, as well as toolmaking and hardfacing techniques that are used in the construction and agriculture industries.

Job opportunities for students in this area include machine shop welder, autobody worker, sheet metal worker, structural and ironwork welder, maintenance welder, pipe welder, and agricultural welding and fabrication.

As a result of ongoing changes in technology, the need to expand competencies, and changing transfer requirements, certificate and degree requirements may also change. If you note changes in degrees or certificate requirements, or if courses are not offered in a particular semester, please consult with a counselor or faculty on how best to complete the program in which you are enrolled.

LEADS TO CAREER OPPORTUNITIES SUCH AS:

- Aerospace
- Agriculture
- Automotive Manufacturer and Repair
- Chemical Processing
- Construction
- Cutter
- General Manufacturing
- Oil and Gas Extraction
- Plumbing and Pipe Welding
- Underwater Welding
- Welder



HARTNELL COLLEGE

TRANSFER PREPARATION

Courses that fulfill major requirements for an associate degree may differ from those needed to prepare for transfer. Students who plan to transfer to a four-year college or university should schedule an appointment with a Hartnell College counselor to develop a student education plan before beginning their program.

TRANSFER RESOURCES

www.ASSIST.org – CSU and UC Articulation Agreements and Major Search Engine

CSU System Information - <http://www2.calstate.edu>

FINANCIAL AID

Paying for the cost of a college education requires a partnership among parents, students and the college. As the cost of higher education continues to rise we want you to know that Hartnell College offers a full array of financial aid programs, federal loan programs, and fee waivers.

<https://www.hartnell.edu/students/fa/net-price-calculator.html>

WELDING (AS.WLD)

ASSOCIATE OF SCIENCE

Program Outcomes: Upon successful completion of this program a student will be able to:

- demonstrate the use of welding and metal cutting processes safely and correctly.
- perform welding procedures in two or more methods on steel test plates in two or more welding positions.
- interpret and analyze fabrication prints, develop parts and cutting lists, and select and calibrate welding and cutting methods to fabricate assigned projects.

Required Courses (28 units)

| | | |
|--------------------------|--|-----|
| <input type="checkbox"/> | CMA-74 – Industrial Print Reading and Drawing | 3.0 |
| <input type="checkbox"/> | MFGT-169 – Hazardous Materials and Industrial Safety | 2.0 |
| <input type="checkbox"/> | WLD-150 – Introduction to Arc Welding | 3.0 |
| <input type="checkbox"/> | WLD-151 – Introduction to GTAW/TIG Welding | 3.0 |
| <input type="checkbox"/> | WLD-152 – Sheet Metal Fabrication | 2.0 |
| <input type="checkbox"/> | WLD-153 – Welding Fabrication | 3.0 |
| <input type="checkbox"/> | WLD-154 – Advanced Arc Welding | 3.0 |
| <input type="checkbox"/> | WLD-155 – Ornamental Ironwork | 2.0 |
| <input type="checkbox"/> | WLD-156 – Toolmaking | 2.0 |
| <input type="checkbox"/> | WLD-157 – Pipe Welding | 3.0 |
| <input type="checkbox"/> | WLD-158 – Hardfacing and Surfacing | 2.0 |

Restricted Major Electives (Complete 9 units)

| | | |
|--------------------------|---|---------|
| <input type="checkbox"/> | CMA-75 – Engineering Drawing/Solid Works | 3.0 |
| <input type="checkbox"/> | CMA-81 – Computer Aided Drafting and Design | 3.0 |
| <input type="checkbox"/> | MFGT-130 – Introduction to Metal Fabrication | 3.0 |
| <input type="checkbox"/> | MFGT-150 – Introduction to Industrial Electricity | 2.0 |
| <input type="checkbox"/> | WLD-99 – Cooperative Work Experience | 1.0-4.0 |

SUBTOTAL: 37 UNITS

General Education – Required Courses

Students must complete one of the following General Education Plans:

HCCD GE (see page 68) *MAT-126 or higher*

- Natural Sciences Social & Behavioral Sciences Humanities
 Ethnic Groups in the US Language and Rationality

SUBTOTAL: 21 UNITS

Students can double-count required courses and courses for General Education

- *Electives (Courses Numbered 1-199) required when degree units plus GE units total fewer than 60.*

TOTAL: 60 UNITS

WELDING (CT.WLD)

CERTIFICATE OF ACHIEVEMENT

Program Outcomes: Upon successful completion of this program a student will be able to:

- demonstrate the use of welding and metal cutting processes safely and correctly.
- perform welding procedures in two or more methods on steel test plates in two or more welding positions.
- interpret and analyze fabrication prints, develop parts and cutting lists, and select and calibrate welding and cutting methods to fabricate assigned projects.

Required Major Courses (24 units)

| | | |
|--------------------------|--|-----|
| <input type="checkbox"/> | CMA-74 – Industrial Print Reading and Drawing | 3.0 |
| <input type="checkbox"/> | MFGT-169 – Hazardous Materials and Industrial Safety | 2.0 |
| <input type="checkbox"/> | WLD-150 – Introduction to Arc Welding | 3.0 |
| <input type="checkbox"/> | WLD-151 – Introduction to GTAW/TIG Welding | 3.0 |
| <input type="checkbox"/> | WLD-153 – Welding Fabrication | 3.0 |
| <input type="checkbox"/> | WLD-154 – Advanced Arc Welding | 3.0 |
| <input type="checkbox"/> | WLD-155 – Ornamental Ironwork | 2.0 |
| <input type="checkbox"/> | WLD-156 – Toolmaking | 2.0 |
| <input type="checkbox"/> | WLD-157 – Pipe Welding | 3.0 |

Major Electives (Complete 6 units)

| | | |
|--------------------------|--------------------------------------|---------|
| <input type="checkbox"/> | WLD-152 – Sheet Metal Fabrication | 2.0 |
| <input type="checkbox"/> | WLD-158 – Hardfacing and Surfacing | 2.0 |
| <input type="checkbox"/> | WLD-99 – Cooperative Work Experience | 1.0-4.0 |

Other Required Courses

| | | |
|--------------------------|---|-----|
| <input type="checkbox"/> | ENG-101* – Intermediate Composition and Reading | 3.0 |
| OR | | |
| | ESL-101* – Academic Writing and Reading II | 5.0 |
| <input type="checkbox"/> | MAT-106** – Integrated Mathematics | 3.0 |

TOTAL: 30 UNITS

*Eligibility for ENG-1A or ENG-1AX fulfills this requirement.

**Eligibility for MAT-126 or any higher level math class fulfills this requirement.

GAINFUL EMPLOYMENT INFORMATION:

See the certificate program cost and the employment outlook for graduates by clicking the link below:
<https://www.hartnell.edu/academics-affairs/gecp/>

FINANCIAL AID

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