

Web

See CSIS - Web Technology

Welding (WELD)

Contact the Trade and Industry Department for further information.

(760) 744-1150, ext. 2545

Office: T-1

Associate in Arts Degrees -

AA Degree requirements are listed in Section 6 (green pages).

- Welding Technology

Certificates of Achievement -

Certificate of Achievement requirements are listed in Section 6 (green pages).

- Welding Technology

Certificates of Proficiency -

Certificate of Proficiency requirements are listed in Section 6 (green pages).

- Entry-Level Gas Metal Arc/Flux Cored Arc Welding
- Entry-Level Gas Tungsten Arc Welding
- Entry-Level Shielded Metal Arc Welding

PROGRAMS OF STUDY

Entry-Level Gas Metal Arc/ Flux Cored Arc Welding

Provides the skills necessary for entry-level employment as a gas metal arc welder/flux cored arc welder.

CERTIFICATE OF PROFICIENCY

Program Requirements		Units
IT/WELD 108	Technical Mathematics	3
WELD 100	Welding I	3
WELD 120	Gas Metal Arc and Flux Cored Arc Welding	3
WELD 135	Print Reading for Welders	3
WELD 160	Metal Layout for Fabrication	3
TOTAL UNITS		15

Entry-Level Gas Tungsten Arc Welding

Introduction to GTAW, GMAW, and SMAW welding process with concentration on GTAW. Basic math, print reading, and layout skills and knowledge will be taught to prepare students for entry-level employment as a GTAW welder.

CERTIFICATE OF PROFICIENCY

Program Requirements		Units
IT/WELD 108	Technical Mathematics	3
WELD 100	Welding I	3
WELD 115	Gas Tungsten Arc Welding	3
WELD 135	Print Reading for Welders	3
WELD 160	Metal Layout for Fabrication	3
TOTAL UNITS		15

Entry-Level Shielded Metal Arc Welding

Provides the skills necessary for entry-level employment as a shielded metal arc welder.

CERTIFICATE OF PROFICIENCY

Program Requirements		Units
IT/WELD 108	Technical Mathematics	3
WELD 100	Welding I	3
WELD 110	Shielded Metal Arc Welding	3

WELD 135	Print Reading for Welders	3
WELD 160	Metal Layout for Fabrication	3
TOTAL UNITS		15

Welding Technology

Provides training for a career in the field of welding. Following the study of basic welding processes, the student may elect to concentrate in one or more of the basic welding processes and to prepare for the industrial certification test.

A.A. DEGREE MAJOR OR CERTIFICATE OF ACHIEVEMENT

Program Requirements		Units
WELD 100	Welding I	3
WELD 105	Metal Cutting, Brazing, Soldering	3
WELD/ IT 108	Technical Mathematics	3
WELD 110	Shielded Metal Arc Welding	3
WELD 115	Gas Tungsten Arc Welding	3
WELD 120	Gas Metal Arc and Flux Cored Arc Welding	3
WELD 135	Print Reading for Welders	3
WELD 140	Qualification of Welders	3
WELD 145	Pipe Welding	3
WELD 150	Welding Inspection	3
WELD 160	Metal Layout for Fabrication	3
TOTAL UNITS		33

COURSE OFFERINGS

WELD 100 Welding I (3)

1½ hours lecture - 4½ hours laboratory

Note: May be taken 2 times

Transfer acceptability: CSU

Introduction to safe practices, setup, and operation of Shielded Metal Arc Welding, Gas Tungsten Arc Welding, Flux Core Arc Welding, and Gas Metal Arc Welding.

WELD 105 Metal Cutting, Brazing, Soldering (3)

1½ hours lecture - 4½ hours laboratory

Note: May be taken 4 times

Transfer acceptability: CSU

Cutting metals with oxyfuel, plasma, carbon, and air arc gouging. Joining metals using oxyfuel welding, brazing, and soldering.

WELD 108 Technical Mathematics (3)

3 hours lecture

Note: Cross listed as IT 108

Transfer acceptability: CSU

Methods and experience in defining and solving mathematical problems in industrial technology. Special emphasis will be given to the application of these basic processes to the solution of the unique mathematical problems encountered in the areas of architecture, automotive, drafting, machine, welding, and woodworking technology.

WELD 110 Shielded Metal Arc Welding (3)

1½ hours lecture - 4½ hours laboratory

Prerequisite: A minimum grade of 'C' in WELD 100

Note: May be taken 4 times

Transfer acceptability: CSU

Welding steel plate in all positions using the Shielded Metal Arc Welding process.

WELD 115 Gas Tungsten Arc Welding (3)

1½ hours lecture - 4½ hours laboratory

Prerequisite: A minimum grade of 'C' in WELD 100

Note: May be taken 4 times

Transfer acceptability: CSU

Safe setup, operation, and maintenance of Gas Tungsten Arc Welding equipment. Welding stainless steel, carbon steel, and aluminum in the flat and horizontal positions.

WELD 116 Advanced Gas Tungsten Arc Welding (3)

1½ hours lecture - 4½ hours laboratory

Prerequisite: A minimum grade of 'C' in WELD 115**Note:** May be taken 4 times**Transfer acceptability:** CSU

Safe setup, operation and maintenance of Gas Tungsten Arc Welding equipment. Welding stainless steel, carbon steel, aluminum, and other exotic metals in all positions according to building codes, military specifications, and aerospace standards.

WELD 117 Geometric Dimensioning and Tolerancing (2.5)

2 hours lecture - 2 hours laboratory

Note: Cross listed as DT 117; may be taken 2 times**Transfer acceptability:** CSU

An introduction to geometric dimensioning and tolerancing ASME Y14.5-2009. Students will learn to identify, use appropriate geometric symbols and techniques of geometric dimension, and produce industrial quality drawings. Students will also learn to measure and verify geometric dimensions and tolerances of manufactured items.

WELD 120 Gas Metal Arc and Flux Cored Arc Welding (3)

1½ hours lecture - 4½ hours laboratory

Prerequisite: A minimum grade of 'C' in WELD 100**Note:** May be taken 4 times**Transfer acceptability:** CSU

Gas Metal Arc Welding steel and aluminum sheet metal, and plate with short arc and spray arc technique. Flux Cored Arc Welding steel plate in flat, horizontal, and vertical positions.

WELD 130 CAD/CAM Machining (3)

1½ hours lecture - 4½ hours laboratory

Prerequisite: A minimum grade of 'C' in DT 110 and DT 128**Note:** Cross listed as DT 130. May be taken 2 times**Transfer acceptability:** CSU

Hands-on operation of importing three-dimensional solid and parametric three-dimensional models into CAD/CAM operations.

WELD 135 Print Reading for Welders (3)

3 hours lecture

Note: May be taken 4 times**Transfer acceptability:** CSU

Line interpretation, sketching, bill of materials, structural shapes, welding symbols, joint types, weld types, and metric conversions.

WELD 140 Qualification of Welders (3)

1½ hours lecture - 4½ hours laboratory

Prerequisite: A minimum grade of 'C' in WELD 101**Recommended Preparation:** WELD 110, WELD 115 or WELD 120**Note:** May be taken 4 times**Transfer acceptability:** CSU

Designed to train the students to be familiar with the provisions of the various welding standards and codes. Supervised training is provided so that students will be able to qualify for certification on any code or standard.

WELD 145 Pipe Welding (3)

1½ hours lecture - 4½ hours laboratory

Prerequisite: A minimum grade of 'C' in WELD 110**Note:** May be taken 4 times**Transfer acceptability:** CSU

Provides a thorough technical understanding of pipe welding nomenclature, weld quality, and pipe fit-up and welding procedures. Provides training to develop welding skills necessary to make high quality welds on steel pipe in the 5G, 2G and 6G positions.

WELD 150 Welding Inspection (3)

3 hours lecture

Note: May be taken 4 times**Transfer acceptability:** CSU

Designed to improve understanding of the role, duties, and technical requirements of welding inspectors. The course will cover topics in fundamentals of welding, welding symbols, documents used in welding, codes, specification, stan-

dards, weld joint geometry, destructive testing methods, nondestructive testing methods, discontinuities, and visual inspection of welds. Provides knowledge useful for passing the American Welding Society's Certified Welding Inspector's exam.

WELD 160 Metal Layout for Fabrication (3)

2 hours lecture - 3 hours laboratory

Note: May be taken 4 times**Transfer acceptability:** CSU

This course provides students with knowledge of basic layout, fitup, fabrication, safe operation of shop equipment. Parallel line, radial line, and triangulation layout will be taught. Students will work from drawings or sketches to prepare, form, or cut multiple parts for assembly.

WELD 196 Special Problems in Welding (1, 2, 3)

3, 6, or 9 hours laboratory

Prerequisite: A minimum grade of 'C' in WELD 100, or concurrent enrollment in WELD 100**Note:** May be taken 4 times**Transfer acceptability:** CSU

This course is designed to aid the student in the enrichment of the area of concentration in welding and is of a research nature. Content to be determined by the need of the student under signed contract with the instructor.

WELD 197 Welding Technology Topics (.5-3)

Units awarded in topics courses are dependent upon the number of hours required of the student. Any combination of lecture and/or laboratory may be scheduled by the department. Refer to Class Schedule.

Note: May be taken 4 times**Transfer acceptability:** CSU

Topics in Welding Technology. See Class Schedule for specific topic offered. Course title will designate subject covered.

Women's Studies

Contact the Behavioral Sciences Department for further information.

(760) 744-1150, ext. 2329

Office: MD-241

Associate in Arts Degrees -

AA Degree requirements are listed in Section 6 (green pages).

• Women's Studies

PROGRAM OF STUDY**Women's Studies**

This major offers the student an opportunity to study women and their contributions from a female perspective. It also provides intensive, interdisciplinary lower-division preparation necessary for pursuing advanced coursework in Women's Studies. Transfer students should consult the four-year college or university catalog for specific requirements.

A.A. DEGREE MAJOR

Program Requirements		Units
SOC 115	Introduction to Women's Studies	3
Electives (Select a minimum of 15 units)		
AIS 165	Native Women in the Americas	3
COMM 105	Race, Gender and Media Effects	3
ENG 280	Women and Literature	3
HIST 130	Women in United States History	3
PSYC/SOC 125	Human Sexuality	3
PSYC 130	Psychology of Women	3
SOC 135	Gender and Society	3
PSYC/SOC 145	Psychology and Sociology of Aging	3
TOTAL UNITS		18

Recommended Electives: ENG 100 and 202 with emphasis in Women's Studies issues.