WELDING TECHNOLOGY (WELD)

WELD A100 **3 Units (36 lecture hours; 72 lab hours)**
Arc & Oxy-acetylene Welding
Grading Mode: Standard Letter
Transfer Credit: CSU.

Beginning course in arc and oxy-acetylene welding that covers safety practices, use of equipment, brazing and cutting operations, and applications to various types of steels.

WELD A101 **4 Units (36 lecture hours; 108 lab hours)**
Arc & Oxy-acetylene Welding
Grading Mode: Standard Letter
Transfer Credit: CSU.

Beginning course in arc and oxy-acetylene welding that covers safety practices, use of equipment, welding in all positions, brazing and cutting operations, and applications to various types of steels.

WELD A102 **0.5 Units (27 lab hours)**
Weld Testing GMAW 1
Prerequisite(s): WELD A100 or WELD A101 or concurrent enrollment or industry experience.

Grading Mode: Pass/No Pass
Transfer Credit: CSU.

Weld testing for mastery of levels I, II, III and/or IV in the Gas Metal Arc Welding process. A Welder Qualification Certification will be issued. When completed, may lead to a Certificate of Specialization. Enroll only when ready to test. Fee charged for qualification test. Offered on a pass-no pass basis only. Lab.

WELD A103 **0.5 Units (27 lab hours)**
Weld Test GMAW 2
Prerequisite(s): WELD A100 or WELD A101 or concurrent enrollment or industry experience.

Grading Mode: Pass/No Pass
Transfer Credit: CSU.

Weld testing for mastery of Gas Metal Arc Welding process to the industry standard set by the Inter-Industry Conference on Auto Collision Repair (I-CAR) required tests. A Welder Qualification Certification will be issued. Enroll only when ready to test. Fee charged for qualification test. Offered on a pass-no pass basis only. Lab.

WELD A104 **0.5 Units (27 lab hours)**
Weld Test GTAW
Prerequisite(s): WELD A100 or WELD A101 or concurrent enrollment or industry experience.

Grading Mode: Pass/No Pass
Transfer Credit: CSU.

Weld testing for mastery of level I in Gas Tungsten Arc Welding process. A Welder Qualification Certification will be issued. When completed, may lead to Certificate of Specialization. Enroll only when ready to test. Fee charged for qualification test. Offered on a pass-no pass basis only. Lab.

WELD A105 **0.5 Units (27 lab hours)**
Weld Testing Basic
Prerequisite(s): WELD A100 or WELD A101 or concurrent enrollment or industry experience.

Grading Mode: Pass/No Pass
Transfer Credit: CSU.

Weld testing for mastery of levels I, II, III or IV in Shielded Metal Arc Welding process. A Welder Qualification Certification will be issued. When completed, may lead to Certificate of Specialization. Enroll only when ready to test. Fee charged for qualification test. Offered on a pass-no pass basis only. Lab.

WELD A106 **0.5 Units (27 lab hours)**
Weld Testing Intermediate
Prerequisite(s): WELD A100 or WELD A101 or concurrent enrollment or industry experience.

Grading Mode: Pass/No Pass
Transfer Credit: CSU.

Weld testing for mastery of levels V and/or VI in the Shielded Metal Arc Welding process. A Welder Qualification Certification will be issued. When completed, may lead to a Certificate of Specialization. Enroll only when ready to test. Fee charged for qualification test. Offered on a pass-no pass basis only. Lab.

WELD A107 **0.5 Units (27 lab hours)**
Weld Testing Advanced 1
Prerequisite(s): WELD A100 or WELD A101 or concurrent enrollment or industry experience.

Grading Mode: Pass/No Pass
Transfer Credit: CSU.

Weld testing for mastery of levels VII, VIII, and/or IX in Shielded Metal Arc Welding. Enroll only when ready to test. A Welder Qualification Certification will be issued. Fee charged for qualification test. Offered on a pass-no pass basis only. Lab.

WELD A108 **0.5 Units (27 lab hours)**
Weld Testing Advanced 2
Prerequisite(s): WELD A100 or WELD A101 or concurrent enrollment or industry experience.

Grading Mode: Pass/No Pass
Transfer Credit: CSU.

Weld testing for mastery of levels I, II, III, and/or IV in Flux Cored Arc Welding. A Welder Qualification Certification will be issued. Enroll only when ready to test. Fee charged for qualification test. Offered on a pass-no pass basis only. Lab.

WELD A109 **0.5 Units (27 lab hours)**
Weld Testing FCAW 1
Prerequisite(s): WELD A100 or WELD A101 or concurrent enrollment or industry experience.

Grading Mode: Pass/No Pass
Transfer Credit: CSU.

Weld testing for mastery of levels V, VI, VII, VIII in Flux Cored Arc Welding. A Welder Qualification Certification will be issued. When completed, may lead to Certificate of Specialization. Enroll only when ready to test. Fee charged for qualification test. Offered on a pass-no pass basis only. Lab.

WELD A110 **0.5 Units (27 lab hours)**
Weld Testing FCAW 2
Prerequisite(s): WELD A100 or WELD A101 or concurrent enrollment or industry experience.

Grading Mode: Pass/No Pass
Transfer Credit: CSU.

Weld testing for mastery of levels IX in Flux Cored Arc Welding. A Welder Qualification Certification will be issued. When completed, may lead to Certificate of Specialization. Enroll only when ready to test. Fee charged for qualification test. Lab.

WELD A111 **0.5 Units (27 lab hours)**
Weld Testing Pipe
Prerequisite(s): WELD A100 or WELD A101 or concurrent enrollment or industry experience.

Grading Mode: Pass/No Pass
Transfer Credit: CSU.

Weld testing for mastery of levels I and/or II in the Pipe Welding process or Gas Tungsten Arc and Shielded Metal Arc Welding processes. A Welder Qualification Certification will be issued. Enroll only when ready to test. Fee charged for qualification test. Offered on a pass-no pass basis only. Lab.

WELD A115 **1-2 Units (54-108 lab hours)**
Arc and Oxy-acetylene Welding Practice Level 1
Prerequisite(s): WELD A100 or WELD A101 or concurrent enrollment.

Grading Mode: Standard Letter
Transfer Credit: CSU.

A laboratory class to develop skills in arc and oxy-acetylene welding.

WELD A116 **1-2 Units (54-108 lab hours)**
Arc and Oxyacetylene Welding Practice Level 2
Prerequisite(s): WELD A100 or WELD A101 or concurrent enrollment.

Grading Mode: Standard Letter
Transfer Credit: CSU.

A second-level laboratory class to develop skills in SMAW and oxy-acetylene welding.

WELD A117 **1-2 Units (54-108 lab hours)**
Arc and Oxyacetylene Welding Practice Level 3
Prerequisite(s): WELD A100 or WELD A101 or concurrent enrollment.

Grading Mode: Standard Letter
Transfer Credit: CSU.

A second-level laboratory class to develop skills in SMAW and oxy-acetylene welding.

WELD A118 **1-2 Units (54-108 lab hours)**
Arc and Oxyacetylene Welding Practice Level 4
Grading Mode: Standard Letter
Transfer Credit: CSU.

A level four laboratory class to develop skills in arc, oxy-acetylene, and GMAW welding. PREREQUISITE : WELD A100 or WELD A101 or concurrent enrollment.

WELD A120 **4 Units (54 lecture hours; 54 lab hours)**
Mathematics & Fabrication Layout for Welders
Advisory: TECH A040.

Grading Mode: Standard Letter
Transfer Credit: CSU.

The study of mathematics to prepare welders for job skills requiring fabrication layout.

WELD A130 **3 Units (36 lecture hours; 72 lab hours)**
Gas Tungsten Arc Welding Level 1
Prerequisite(s): WELD A100, WELD A101 or WELD A140.

Grading Mode: Standard Letter, Pass/No Pass
Transfer Credit: CSU.

GTAW (gas tungsten arc welding) theory and practice covering aluminum and stainless steels and qualification requirements. May be taken for grades or on a pass-no pass basis.

WELD A131 **3 Units (36 lecture hours; 72 lab hours)**
Gas Tungsten Arc Welding Level 2
Prerequisite(s): WELD A100 or WELD A101 or WELD A140.

Advisory: WELD A130.

Grading Mode: Standard Letter, Pass/No Pass
Transfer Credit: CSU.

GTAW (gas tungsten arc welding) Level 2 theory and practice covering aluminum and stainless steels and qualification requirements.

WELD A140 **1.5 Units (18 lecture hours; 36 lab hours)**
Occupational Welding Level 1
Grading Mode: Standard Letter
Transfer Credit: CSU.

A first-level beginning course in arc and oxy-acetylene welding covering safety practices, use of welding, brazing, thermal and mechanical cutting equipment operations on various types of metal.

WELD A141 **1.5 Units (18 lecture hours; 36 lab hours)**
Occupational Welding Level 2
Advisory: WELD A140.

Grading Mode: Standard Letter
Transfer Credit: CSU.

A second-level beginning course in arc and oxy-acetylene welding covering safety practices, use of welding, brazing, thermal and mechanical cutting equipment operations on various types of metal.

WELD A142 **1.5 Units (18 lecture hours; 36 lab hours)**
Occupational Welding Level 3
Advisory: WELD A141.

Grading Mode: Standard Letter
Transfer Credit: CSU.

A third-level beginning course in arc and oxy-acetylene welding covering safety practices, use of welding, brazing, thermal and mechanical cutting equipment operations on various types of metal.

WELD A143 **1.5 Units (18 lecture hours; 36 lab hours)**
Occupational Welding Level 4
Advisory: WELD A142.

Grading Mode: Standard Letter
Transfer Credit: CSU.

A fourth-level beginning course in arc and oxy-acetylene welding covering safety practices, use of welding, brazing, thermal and mechanical cutting equipment operations on various types of metal.

WELD A180 **2 Units (36 lecture hours; 18 lab hours)**
Blueprint Reading
Grading Mode: Standard Letter
Transfer Credit: CSU.

A basic course in the reading of blueprints associated with the welding fabrication industry.

WELD A200 **3 Units (36 lecture hours; 72 lab hours)**
Advanced Welding
Prerequisite(s): WELD A100, WELD A101, or WELD A120.

Grading Mode: Standard Letter
Transfer Credit: CSU.

Advanced welding theory and practice covering thermal cutting, oxy-acetylene and gas shielded arc welding processes, welding of ferrous and non-ferrous metals, qualification and certification requirements to Los Angeles City and American National Standards Institute, use of welding symbols. May also enroll in WELD A215 for additional laboratory units. Each 54 hours of laboratory time earns one unit. Will be given credit for the laboratory course appropriate for the number of hours worked.

WELD A201 **4 Units (36 lecture hours; 108 lab hours)**
Advanced Welding
Prerequisite(s): WELD A100 or WELD A101.

Grading Mode: Standard Letter
Transfer Credit: CSU.

Advanced welding theory and practice, covering thermal cutting, oxy-acetylene welding and welding of ferrous and non-ferrous metals, qualification and certification requirements to Los Angeles City and the American National Standards Institute. May also enroll in WELD A215 for additional laboratory units. Each 54 hours of laboratory time earns one unit. Will be given credit for the laboratory course appropriate for the number of hours worked. Same as WELD A200 but with added lab hours.

WELD A210 **4 Units (54 lecture hours; 54 lab hours)**
Welding Inspection and Testing
Grading Mode: Standard Letter
Transfer Credit: CSU.

This course covers physical tests, metallographic analysis, visual inspection, non-destructive examination of welds and chemical analysis of metals and alloys.

WELD A211 **1 Unit (9 lecture hours; 27 lab hours)**
Gas Metal Arc Welding Training Level 1
Prerequisite(s): WELD A100, WELD A101 or WELD A140.

Grading Mode: Standard Letter, Pass/No Pass
Transfer Credit: CSU.

This course teaches Gas Metal Arc Welding Theory and practice on ferrous and non-ferrous metals covering welding standards set by the American Welding Society, American National Standards Institute and I-CAR in preparation for qualification and certification requirements. Students may also enroll in WELD A115 or WELD A215 for additional laboratory units. Each 54 hours of laboratory time earns one unit. Students will be given credit for laboratory course appropriate for the number of hours worked.

WELD A212 1 Unit (9 lecture hours; 27 lab hours)
Gas Metal Arc Welding Training Level 2
Prerequisite(s): WELD A100, or WELD A101, or WELD A140.

Advisory: WELD A211.

Grading Mode: Standard Letter, Pass/No Pass
Transfer Credit: CSU.

This second level course teaches Gas Metal Arc Welding Theory and practice on ferrous and non-ferrous metals covering welding standards set by the American Welding Society, American National Standards Institute and I-CAR in preparation for qualification and certification requirements.

WELD A215 1-2 Units (54-108 lab hours)
Advanced Arc and Oxy-Acetylene Level 1
Prerequisite(s): WELD A200 or WELD A201 or WELD A223 or concurrent enrollment.

Grading Mode: Standard Letter
Transfer Credit: CSU.

A laboratory course to develop skills in arc, oxyacetylene, GTAW and GMAW welding.

WELD A216 1-2 Units (54-108 lab hours)
Arc and Oxyacetylene Lab Level 2
Prerequisite(s): WELD A200 or WELD A201 or WELD A223.

Advisory: WELD A215.

Grading Mode: Standard Letter
Transfer Credit: CSU.

A second-level advanced laboratory course to develop skills in oxyacetylene, SMAW, GTAW and GMAW welding.

WELD A217 1-2 Units (54-108 lab hours)
Arc and Oxyacetylene Lab Level 3
Prerequisite(s): WELD A200 or WELD A201 or WELD A223.

Advisory: WELD A216.

Grading Mode: Standard Letter
Transfer Credit: CSU

A third-level advanced laboratory course to develop skills in oxyacetylene, SMAW, GTAW, GMAW and FCAW welding.

WELD A218 1-2 Units (54-108 lab hours)
Arc and Oxyacetylene Welding Lab level 4
Prerequisite(s): WELD A200 or WELD A201 or WELD A223.

Advisory: WELD A217.

Grading Mode: Standard Letter
Transfer Credit: CSU.

A fourth level advanced laboratory course to develop skills in oxyacetylene, SMAW, GTAW, GMAW and FCAW welding.

WELD A220 2 Units (36 lecture hours)
Welding Specifications and Codes
Grading Mode: Standard Letter
Transfer Credit: CSU.

Codes and specifications used by governmental agencies and industry in control of products and production.

WELD A223 1.5 Units (18 lecture hours; 36 lab hours)
Advanced Welding Level 1
Prerequisite(s): WELD A100 or WELD A101 or WELD A140.

Grading Mode: Standard Letter
Transfer Credit: CSU.

An advanced welding course teaching the theory and practice of joining ferrous and non-ferrous metals. Includes certification requirements joint design and use of welding symbols. Lectures include preparation for Los Angeles City testing.

WELD A224 1.5 Units (18 lecture hours; 36 lab hours)
Advanced Welding Level 2
Prerequisite(s): WELD A100 or WELD A101 or WELD A140.

Advisory: WELD A223.

Grading Mode: Standard Letter
Transfer Credit: CSU.

A second-level advanced welding course teaching the theory and practice of joining ferrous and non-ferrous metals. Includes certification requirements joint design and use of welding symbols. Lectures include preparation for Los Angeles City testing.

WELD A225 1.5 Units (18 lecture hours; 36 lab hours)
Advanced Welding Level 3
Prerequisite(s): WELD A100 or WELD A101 or WELD A140.

Advisory: WELD A224.

Grading Mode: Standard Letter
Transfer Credit: CSU.

A third- level advanced welding course teaching the theory and practice of joining ferrous and non-ferrous metals. Includes certification requirements joint design and use of welding symbols. Lectures include preparation for Los Angeles City testing.

WELD A226 1.5 Units (18 lecture hours; 36 lab hours)
Advanced Welding Level 4
Prerequisite(s): WELD A100 or WELD A101 or WELD A140.

Advisory: WELD A225.

Grading Mode: Standard Letter
Transfer Credit: CSU.

A fourth-level advanced welding course teaching the theory and practice of joining ferrous and non-ferrous metals. Includes certification requirements joint design and use of welding symbols. Lectures include preparation for Los Angeles City testing.

WELD A230 **3 Units (54 lecture hours; 18 lab hours)**
Welding Metallurgy
Grading Mode: Standard Letter
Transfer Credit: CSU.

Basic metallurgy as applied to welding, metal structures, strength of material. Weld ability of metals, heat treatment, welding procedures, welding stresses and control.

WELD A250 **3 Units (36 lecture hours; 72 lab hours)**
Pipe Welding Level 1
Prerequisite(s): WELD A200, WELD A201, or WELD A226.

Grading Mode: Standard Letter
Transfer Credit: CSU.

Oxygen-Acetylene, Shielded Metal Arc, Gas metal Arc and Gas Tungsten Arc Welding of pipe for welder qualification to achieve American National Standards (ANSI) certification.

WELD A251 **3 Units (36 lecture hours; 72 lab hours)**
Pipe Welding Level 2
Prerequisite(s): WELD A200 or WELD A201 or WELD A226.

Advisory: WELD A250.

Grading Mode: Standard Letter
Transfer Credit: CSU.

Second-level course for Oxygen-Acetylene, Shielded Metal Arc, Gas Metal Arc and Gas Tungsten Arc Welding for pipe welder qualification to achieve American National Standards (ANSI) certification.

WELD A252 **3 Units (36 lecture hours; 72 lab hours)**
Pipe Welding Level 3
Prerequisite(s): WELD A200 or WELD A201 or WELD A226.

Advisory: WELD A251.

Grading Mode: Standard Letter
Transfer Credit: CSU.

Third-level course for Shielded Metal Arc, Gas Metal Arc Welding for pipe welder qualification to achieve American National Standards (ANSI) certification.

WELD A253 **3 Units (36 lecture hours; 72 lab hours)**
Pipe Welding Level 4
Prerequisite(s): WELD A200 or WELD A201 or WELD A226.

Advisory: WELD A252

Grading Mode: Standard Letter
Transfer Credit: CSU.

Fourth-level course for Shielded Metal Arc, Gas Tungsten Arc Welding for pipe welder qualification to achieve American National Standards (ANSI) certification.

WELD A255 **3 Units (36 lecture hours; 72 lab hours)**
Orbital Welding Level 1
Prerequisite(s): WELD A100 or WELD A101 or WELD A140.

Grading Mode: Standard Letter
Transfer Credit: CSU.

Advanced welding theory and practice covering the process of gas tungsten arc welding using an automatic orbital welding system. Instruction includes safety, equipment use, and certification requirements.

WELD A256 **3 Units (36 lecture hours; 72 lab hours)**
Orbital Welding Level 2
Prerequisite(s): WELD A100 or WELD A101 or WELD A140.

Advisory: WELD A255.

Grading Mode: Standard Letter
Transfer Credit: CSU.

Second-level advanced welding theory and practice covering the process of orbital gas tungsten arc welding, cleanroom procedures, piping blueprints and certification. Instruction includes safety, equipment use, and certification requirements.