

WELDING TECHNOLOGY

pcc.edu/programs/welding/

CAREER AND PROGRAM DESCRIPTION

Welding is a skill used by many trades: sheet metal workers, ironworkers, boilermakers, carpenters, steamfitters, glaziers and repair and maintenance personnel in applications ranging from the home hobbyist to heavy fabrication of bridges, ships and many other projects. A variety of welding processes are used to join units of metal.

The Welding Technology Program has been developed specifically as an open entry and open exit (OEOE) program. The program is designed to fit the needs of a student (take as few or as many courses as desired), and have the following characteristics: open entry (enter at any time during the term); self-paced (learn at your own pace); flexible (select your own attendance schedule); individualized (a program can be tailor-made to fit specific needs); and, open exit (leave the program when you have met your training goals/needs).

The program provides training in S.A.W. (Submerged Arc Welding), S.M.A.W. (shielded metal arc welding,) G.T.A.W. (gas tungsten arc welding,) G.M.A.W. (gas metal arc welding,) F.C.A.W. (flux-cored arc welding,) O.A.W. (oxy-acetylene welding,) O.A.C. (oxy-acetylene cutting,) C.A.C. (carbon arc cutting,) P.A.C. (plasma arc cutting,) and basic fabrication. Lecture portions of the program include blueprint reading, welding principles, and codes and standards.

Consult a program advisor through the department to help plan a course of study that will allow you to achieve your educational goals.

DEGREES AND CERTIFICATES OFFERED

ASSOCIATE OF APPLIED SCIENCE DEGREE

Welding Technology

LESS THAN ONE-YEAR CERTIFICATE: CAREER PATHWAY

- Flux Core Arc Welding Certification Preparation
- Gas Tungsten Arc Welding Certification Preparation
- Gas Tungsten Arc Welding Customized
- General Fabrication Preparation
- Metal Fabrication Customized
- Pipe Welding Certification Preparation
- Pipe Welding Customized
- Shielded Metal Arc Welding Certification Preparation
- Shielded Metal Arc Welding Customized
- Welding Certification Preparation Customized
- Welding Technology
- Wire Welding Certification Preparation
- Wire Welding Customized
- Wire and TIG Welding

Academic Prerequisites

- None

Academic Requirements

- None

Non-Academic Prerequisites

- Contact department for program advising.

Non-Academic Requirements

- None

WELDING TECHNOLOGY AAS DEGREE

Minimum 96 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science

Requirements. Students must complete a total of four courses of General Education. In addition to required courses in the program of study, students must satisfy MTH 58/65 competency. Students should consult with program/academic advisors for course planning.

Welding Degree Courses

Code	Title	Credits
WLD 101	Welding Processes & Applications	4
WLD 102	Blueprint Reading	4
WLD 111	Shielded Metal Arc Welding (E7024) and Oxy-acetylene Cutting	4
WLD 112	Shielded Metal Arc Welding: Mild Steel I (E7018)	4
WLD 113	Shielded Metal Arc Welding: Mild Steel II (E7018)	4
WLD 114	Shielded Metal Arc Welding: Mild Steel III (E6011)	4
WLD 131	Gas Metal Arc Welding	4
WLD 132	Gas Metal Arc Welding-Pulse	4
WLD 141	Flux-Cored Arc Welding I (Gas Shielded)	4
WLD 142	Flux-Cored Arc Welding II (Self Shielding)	4
WLD 151	SMAW Certification Practice: Unlimited Thickness Mild Steel	4
WLD 152	Flux Cored Arc Welding (Gas Shielded) Certification Practice	4
WLD 153	Flux Cored Arc Welding (Self shielding) Cert. Practice	4
WLD 203	Structural Steel Welding Code & Standards	4
WLD 221	Gas Tungsten Arc Welding Mild Steel	4
WLD 222	Gas Tungsten Arc Welding: Aluminum	4
WLD 223	Gas Tungsten Arc Welding: Stainless Steel	4
WLD 260	Beginning Fabrication	4
WLD 263	Welding Technology - Capstone	4
	Welding Program Electives	8
	General Education: 4 courses	
Total Credits		96

WELDING PROGRAM ELECTIVES

Code	Title	Credits
BA 101	Introduction to Business	4
BA 131	Introduction to Business Technology	4
BA 206	Management Fundamentals	3
CADD 126	Introduction to AutoCAD	3
CADD 160	Drafting Fundamentals	4
CG 100	College Survival and Success	3
CG 101	College Survival and Success: Personal Responsibility	1
CG 111A	Study Skills for College Learning	3
CG 114	Financial Survival for College Students	1
CG 140A	Career and Life Planning	3
CG 209	Job Finding Skills	1-2
MCH 100	Machine Tool Basics	1
MCH 245	Metallurgy	2.5
WLD 115	Shielded Metal Arc Welding: Mild Steel IV (E6011)	4
WLD 116A	Beginning Shielded Metal Arc Welding ¹	3
WLD 116B	Basic Welding Practice ¹	3

WLD 126A	Beginning Gas Tungsten Arc Welding (Heliarc) ¹	3
WLD 126B	Basic Gas Tungsten Arc Welding (Heliarc) ¹	3
WLD 136A	Beginning Wire Welding ¹	3
WLD 136B	Basic Wire Welding ¹	3
WLD 146A	Beginning Pipe Welding Practice ¹	3
WLD 146B	Basic Pipe Welding Practice ¹	3
WLD 156A	Beginning Oxy-Acetylene Welding Practice ¹	3
WLD 156B	Basic Oxy-Acetylene Welding Practice ¹	3
WLD 166A	Beginning Weld Practice Metal Sculpting ¹	3
WLD 166B	Basic Weld Practice Metal Sculpting ¹	3
WLD 176A	Beginning Fabrication Welding Practice ¹	3
WLD 176B	Basic Fabrication Welding Practice ¹	3
WLD 186A	Beginning Certification Welding Practice ¹	3
WLD 186B	Basic Certification Welding Practice ¹	3
WLD 190A	Beginning Welding Practice ¹	1
WLD 190B	Basic Welding Practice ¹	2
WLD 190C	Intermediate Welding Practice ¹	3
WLD 216	Miscellaneous Electrodes & Advanced Positions	4
WLD 216A	Intermediate Welding Practice ¹	3
WLD 216B	Advanced Metal Arc Welding ¹	3
WLD 224	Gas Tungsten Arc Welding: (Mild Steel) Pipe I	4
WLD 225	Gas Tungsten Arc Welding: (Mild Steel) Pipe II	4
WLD 226A	Intermediate Gas Tungsten Arc Welding (Heliarc) ¹	3
WLD 226B	Advanced Gas Tungsten Arc Welding (Heliarc) ¹	3
WLD 236A	Intermediate Wire Welding ¹	3
WLD 236B	Advanced Wire Welding ¹	3
WLD 246A	Intermediate Pipe Welding Practice ¹	3
WLD 246B	Advanced Pipe Welding Practice ¹	3
WLD 253	SMAW Certification Practice 3/8" Mild Steel (E6011)	4
WLD 254	SMAW Certification Practice 3/8" Mild Steel (E7018)	4
WLD 256	Preparation for Pipe Certification I	4
WLD 256A	Intermediate Oxy-Acetylene Welding Practice ¹	3
WLD 256B	Advanced Oxy-Acetylene Welding Practice ¹	3
WLD 257	Preparation for Pipe Certification II	4
WLD 258	Preparation for Downhill Pipe Certification I	4
WLD 259	Preparation for Downhill Pipe Certification II	4
WLD 261	Basic Fabrication	4
WLD 262	Intermediate Fabrication	4
WLD 266A	Intermediate Weld Practice Metal Sculpting ¹	3
WLD 266B	Advanced Weld Practice Metal Sculpting ¹	3
WLD 271	Oxy-acetylene Welding Projects	4
WLD 276A	Intermediate Fabrication Welding Practice ¹	3

WLD 276B	Advanced Fabrication Welding Practice ¹	3
WLD 280A	Cooperative Education: Welding ¹	4
WLD 280B	Cooperative Education: Welding - Seminar ¹	1
WLD 286A	Intermediate Certification Welding Practice ¹	3
WLD 286B	Advanced Certification Welding Practice ¹	3
WLD 290	Submerged Arc Welding	2
WR 227	Technical and Professional Writing 1	4

A maximum of 6 credits from courses with a letter designation after them (such as 126B, 136A) may be used towards completion of the 12 credit elective requirement. The Welding Department Chair may allow exceptions to this rule."

The above footnote needs to be deleted please.

LESS THAN ONE-YEAR CERTIFICATE: CAREER PATHWAY

- 1 Flux Core Arc Welding Certification Preparation (p. 2)
- 2 Gas Tungsten Arc Welding Certification Preparation (p. 2)
- 3 Gas Tungsten Arc Welding Customized (p. 3)
- 4 General Fabrication Preparation (p. 3)
- 4 Metal Fabrication Customized (p. 3)
- 3 Pipe Welding Certification Preparation (p. 3)
- 3 Pipe Welding Customized (p. 3)
- 3 Shielded Metal Arc Welding Certification Preparation (p. 3)
- 4 Shielded Metal Arc Welding Customized (p. 3)
- 4 Welding Certification Preparation Customized (p. 4)
- 4 Welding Technology (p. 4)
- 4 Wire Welding Certification Preparation (p. 4)
- 3 Wire Welding Customized (p. 4)
- 4 Wire and TIG Welding (p. 4)

FLUX CORE ARC WELDING CERTIFICATION PREPARATION CAREER PATHWAY CERTIFICATE

Minimum 14 credits. Students must meet all certificate requirements. The Fluxed Cored Arc Welding Certification Preparation Certificate is a Career Pathway. All courses are contained in the Welding AAS Degree.

Flux Core Arc Welding Certificate Courses

Code	Title	Credits
WLD 136A	Beginning Wire Welding	3
WLD 136B	Basic Wire Welding	3
WLD 141	Flux-Cored Arc Welding I (Gas Shielded)	4
WLD 142	Flux-Cored Arc Welding II (Self Shielding)	4
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Total Credits		14

GAS TUNGSTEN ARC WELDING CERTIFICATION PREPARATION CAREER PATHWAY CERTIFICATE

Minimum 12 credits. Students must meet all certificate requirements. The Gas Tungsten Arc Welding Certification Preparation Certificate is a Career Pathway. All courses are contained in the Welding AAS Degree.

Gas Tungsten Arc Welding Certification Preparation Certificate Courses

Code	Title	Credits
WLD 221	Gas Tungsten Arc Welding Mild Steel	4
WLD 222	Gas Tungsten Arc Welding: Aluminum	4
WLD 223	Gas Tungsten Arc Welding: Stainless Steel	4
Total Credits		12

GAS TUNGSTEN ARC WELDING CUSTOMIZED CAREER PATHWAY CERTIFICATE

Minimum 12 credits. Students must meet all certificate requirements. The Gas Tungsten Arc Welding Customized Certificate is a Career Pathway. All courses are contained in the Welding AAS Degree.

Gas Tungsten Arc Welding Customized Certificate Courses

Code	Title	Credits
WLD 126A	Beginning Gas Tungsten Arc Welding (Heliarc)	3
WLD 126B	Basic Gas Tungsten Arc Welding (Heliarc)	3
WLD 226A	Intermediate Gas Tungsten Arc Welding (Heliarc)	3
WLD 226B	Advanced Gas Tungsten Arc Welding (Heliarc)	3
Total Credits		12

GENERAL FABRICATION PREPARATION CAREER PATHWAY CERTIFICATE

Minimum 12 credits. Students must meet all certificate requirements. The General Fabrication Preparation Certificate is a Career Pathway. All courses are contained in the Welding AAS Degree.

General Fabrication Preparation Certificate Courses

Code	Title	Credits
WLD 260	Beginning Fabrication	4
WLD 261	Basic Fabrication	4
WLD 262	Intermediate Fabrication	4
Total Credits		12

METAL FABRICATION CUSTOMIZED CAREER PATHWAY CERTIFICATE

Minimum 12 credits. Students must meet all certificate requirements. The Metal Fabrication Customized Certificate is a Career Pathway. All courses are contained in the Welding AAS Degree.

Metal Fabrication Customized Certificate Courses

Code	Title	Credits
WLD 176A	Beginning Fabrication Welding Practice	3
WLD 176B	Basic Fabrication Welding Practice	3
WLD 276A	Intermediate Fabrication Welding Practice	3
WLD 276B	Advanced Fabrication Welding Practice	3
Total Credits		12

PIPE WELDING CERTIFICATION PREPARATION CAREER PATHWAY CERTIFICATE

Minimum 24 credits. Students must meet all certificate requirements. The Pipe Welding Certification Preparation Certificate is a Career Pathway. All courses are contained in the Welding AAS Degree.

Pipe Welding Certification Preparation Certificate Courses

Code	Title	Credits
WLD 224	Gas Tungsten Arc Welding: (Mild Steel) Pipe I	4
WLD 225	Gas Tungsten Arc Welding: (Mild Steel) Pipe II	4
WLD 256	Preparation for Pipe Certification I	4
WLD 257	Preparation for Pipe Certification II	4
WLD 258	Preparation for Downhill Pipe Certification I	4
WLD 259	Preparation for Downhill Pipe Certification II	4
Total Credits		24

PIPE WELDING CUSTOMIZED CAREER PATHWAY CERTIFICATE

Minimum 12 credits. Students must meet all certificate requirements. The Pipe Welding Customized Certificate is a Career Pathway. All courses are contained in the Welding AAS Degree.

Pipe Welding Customized Certificate Courses

Code	Title	Credits
WLD 146A	Beginning Pipe Welding Practice	3
WLD 146B	Basic Pipe Welding Practice	3
WLD 246A	Intermediate Pipe Welding Practice	3
WLD 246B	Advanced Pipe Welding Practice	3
Total Credits		12

SHIELDED METAL ARC WELDING CERTIFICATION PREPARATION CAREER PATHWAY CERTIFICATE

Minimum 16 credits. Students must meet all certificate requirements. The Shielded Metal Arc Welding Certification Preparation Certificate is a Career Pathway. All courses are contained in the Welding AAS Degree.

Shielded Metal Arc Welding Certification Preparation Certificate Courses

Code	Title	Credits
WLD 111	Shielded Metal Arc Welding (E7024) and Oxy-acetylene Cutting	4
WLD 112	Shielded Metal Arc Welding: Mild Steel I (E7018)	4
WLD 113	Shielded Metal Arc Welding: Mild Steel II (E7018)	4
WLD 151	SMAW Certification Practice: Unlimited Thickness Mild Steel	4
Total Credits		16

SHIELDED METAL ARC WELDING CUSTOMIZED CAREER PATHWAY CERTIFICATE

Minimum 12 credits. Students must meet all certificate requirements. The Shielded Metal Arc Welding Customized Certificate is a Career Pathway. All courses are contained in the Welding AAS Degree.

Shielded Metal Arc Welding Customized Certificate Courses

Code	Title	Credits
WLD 116A	Beginning Shielded Metal Arc Welding	3
WLD 116B	Basic Welding Practice	3
WLD 216A	Intermediate Welding Practice	3
WLD 216B	Advanced Metal Arc Welding	3
Total Credits		12

WELDING CERTIFICATION PREPARATION CUSTOMIZED CAREER PATHWAY CERTIFICATE

Minimum 12 credits. Students must meet all certificate requirements. The Welding Certification Preparation Customized Certificate is a Career Pathway. All courses are contained in the Welding AAS Degree.

Welding Certification Preparation Customized Certificate Courses

Code	Title	Credits
WLD 186A	Beginning Certification Welding Practice	3
WLD 186B	Basic Certification Welding Practice	3
WLD 286A	Intermediate Certification Welding Practice	3
WLD 286B	Advanced Certification Welding Practice	3
Total Credits		12

WELDING TECHNOLOGY CAREER PATHWAY CERTIFICATE

Minimum 44 credits. Students must meet all certificate requirements. The Welding Technology Certificate is a Career Pathway. All courses are contained in the Welding AAS Degree.

Welding Technology Certificate Courses

Code	Title	Credits
WLD 102	Blueprint Reading	4
WLD 111	Shielded Metal Arc Welding (E7024) and Oxy-acetylene Cutting	4
WLD 112	Shielded Metal Arc Welding: Mild Steel I (E7018)	4
WLD 113	Shielded Metal Arc Welding: Mild Steel II (E7018)	4
WLD 131	Gas Metal Arc Welding	4
WLD 132	Gas Metal Arc Welding-Pulse	4
WLD 141	Flux-Cored Arc Welding I (Gas Shielded)	4
WLD 142	Flux-Cored Arc Welding II (Self Shielding)	4
WLD 151	SMAW Certification Practice: Unlimited Thickness Mild Steel	4
WLD 152	Flux Cored Arc Welding (Gas Shielded) Certification Practice	4
WLD 153	Flux Cored Arc Welding (Self shielding) Cert. Practice	4
Total Credits		44

WIRE WELDING CERTIFICATION PREPARATION CAREER PATHWAY CERTIFICATE

Minimum 24 credits. Students must meet all certificate requirements. The Wire Welding Certification Preparation Certificate is a Career Pathway. All courses are contained in the Welding AAS Degree.

Wire Welding Certification Preparation Certificate Courses

Code	Title	Credits
WLD 131	Gas Metal Arc Welding	4
WLD 132	Gas Metal Arc Welding-Pulse	4
WLD 141	Flux-Cored Arc Welding I (Gas Shielded)	4
WLD 142	Flux-Cored Arc Welding II (Self Shielding)	4
WLD 152	Flux Cored Arc Welding (Gas Shielded) Certification Practice	4
WLD 153	Flux Cored Arc Welding (Self shielding) Cert. Practice	4
Total Credits		24

WIRE WELDING CUSTOMIZED CAREER PATHWAY CERTIFICATE

Minimum 12 credits. Students must meet all certificate requirements. The Wire Welding Customized Certificate is a Career Pathway. All courses are contained in the Welding AAS Degree.

Wire Welding Customized Preparation Certificate Courses

Code	Title	Credits
WLD 136A	Beginning Wire Welding	3
WLD 136B	Basic Wire Welding	3
WLD 236A	Intermediate Wire Welding	3
WLD 236B	Advanced Wire Welding	3
Total Credits		12

WIRE AND TIG WELDING CAREER PATHWAY CERTIFICATE

Minimum 44 credits. Students must meet all certificate requirements. The Wire and TIG Welding Pathway Certificate is a Career Pathway. All courses are contained in the Welding AAS Degree.

Wire and TIG Welding Pathway Certificate Courses

Code	Title	Credits
WLD 101	Welding Processes & Applications	4
WLD 102	Blueprint Reading	4
WLD 131	Gas Metal Arc Welding	4
WLD 132	Gas Metal Arc Welding-Pulse	4
WLD 141	Flux-Cored Arc Welding I (Gas Shielded)	4
WLD 142	Flux-Cored Arc Welding II (Self Shielding)	4
WLD 152	Flux Cored Arc Welding (Gas Shielded) Certification Practice	4
WLD 153	Flux Cored Arc Welding (Self shielding) Cert. Practice	4
WLD 221	Gas Tungsten Arc Welding Mild Steel	4
WLD 222	Gas Tungsten Arc Welding: Aluminum	4
WLD 223	Gas Tungsten Arc Welding: Stainless Steel	4
Total Credits		44

WLD 101. Welding Processes & Applications. 4 Credits.

Covers welding processes, safety, equipment, and essential variables of operation. Prerequisite: (RD 90 or IRW 90) and MTH 20. Prerequisite/concurrent: WR 90 or IRW 90. Audit available.

WLD 102. Blueprint Reading. 4 Credits.

Covers the language of blueprints including lines, views, dimensioning, print organization, welding symbols and structural shapes. Prerequisites: WR 80, MTH 20. Prerequisite/concurrent: RD 90 or IRW 90. Audit available.

WLD 111. Shielded Metal Arc Welding (E7024) and Oxy-acetylene Cutting. 4 Credits.

Covers uses, safety, nomenclature, equipment operation, set-up and shutdown procedures for SMAW and OAC. Prerequisite: Department permission required. Audit available.

WLD 112. Shielded Metal Arc Welding: Mild Steel I (E7018). 4 Credits.

Develops knowledge and skills in the use of E7018 mild steel electrodes when performing various welds in the flat, horizontal and vertical positions. Prerequisite: Department permission required. Audit available.

WLD 113. Shielded Metal Arc Welding: Mild Steel II (E7018). 4 Credits.

Develops knowledge and skills in the use of E7018 mild steel electrodes when performing various welds in the vertical and overhead positions. Prerequisite: Department permission required. Audit available.

WLD 114. Shielded Metal Arc Welding: Mild Steel III (E6011). 4 Credits.

Develops knowledge and skills in the use of E6011 mild steel electrodes when performing various welds in the flat, horizontal and vertical positions. Prerequisite: Department approval required. Audit available.

WLD 115. Shielded Metal Arc Welding: Mild Steel IV (E6011). 4 Credits.

Develops knowledge and skills in the use of E6011 mild steel electrodes when performing welds in the vertical and overhead positions. Prerequisite: Department permission required. Audit available.

WLD 116A. Beginning Shielded Metal Arc Welding. 3 Credits.

Introduces intermediate shielded metal arc welding process on mild steel plate in accordance with AWS D1.1 Structural Steel welding codes and to industry standards. Introduces welding in the 1F and 2F positions. First class in a four course sequence. Audit available.

WLD 116B. Basic Welding Practice. 3 Credits.

Introduces intermediate shielded metal arc welding practice on mild steel plate in accordance with AWS D1.1 Structural Steel welding codes and to industry standards. Introduces welding in the 3F and 4F positions. Second class in a four course sequence. Audit available.

WLD 126A. Beginning Gas Tungsten Arc Welding (Heliarc). 3 Credits.

Introduces gas tungsten arc welding and industry standards. Weld common joint configurations in the 1F and 2F positions. Develops foundational skills required for advancement in future course work. First class in a four course sequence. Audit available.

WLD 126B. Basic Gas Tungsten Arc Welding (Heliarc). 3 Credits.

Introduces gas tungsten arc welding and industry standards. Weld common joint configurations in the 3F and 4F positions. Develops foundational skills required for advancement in future course work. Second class in a four course sequence. Audit available.

WLD 131. Gas Metal Arc Welding. 4 Credits.

Develops knowledge and skills welding with GMAW on ferrous materials using short circuit and axial spray transfers in common welding positions. Prerequisite: Department permission required. Audit available.

WLD 132. Gas Metal Arc Welding-Pulse. 4 Credits.

Develops knowledge and skills using the gas metal arc welding - pulse transfer process on common mild steel and aluminum joints in all positions. Prerequisite: Department permission required. Audit available.

WLD 136A. Beginning Wire Welding. 3 Credits.

Introduces common weld joint in the 1F and 2F positions. Develops foundational skills required for advancement in future coursework. First class in a four course sequence. Audit available.

WLD 136B. Basic Wire Welding. 3 Credits.

Develops basic welding skills and industry standards as they apply to the wire welding process. Introduces common weld joints in the 2F and 3F positions. Develops foundational skills required for advancement in future coursework. Second class in a four course sequence. Audit available.

WLD 141. Flux-Cored Arc Welding I (Gas Shielded). 4 Credits.

Develops knowledge and skills in the gas shielded flux-cored arc welding process in the flat, vertical, horizontal and overhead positions. Prerequisite: Department permission required. Audit available.

WLD 142. Flux-Cored Arc Welding II (Self Shielding). 4 Credits.

Develops knowledge skills in the self-shielded flux cored arc welding process in the flat, vertical, horizontal and overhead positions. Prerequisite: Department permission required. Audit available.

WLD 146A. Beginning Pipe Welding Practice. 3 Credits.

Introduces joining pipe per ASME Section IX and industry standards. First class in a four course sequence. Audit available.

WLD 146B. Basic Pipe Welding Practice. 3 Credits.

Introduces joining pipe in the 2G position per ASME Section IX Welding Code. Second class in a four course sequence. Audit available.

WLD 151. SMAW Certification Practice: Unlimited Thickness Mild Steel. 4 Credits.

Covers safety, welding technique, and qualification procedures in compliance with AWS D1.1 Structural Welding Test with the E7018 electrode. Prerequisite: Department permission required. Audit available.

WLD 152. Flux Cored Arc Welding (Gas Shielded) Certification Practice. 4 Credits.

Covers safety, welding technique, and qualification procedures in compliance with AWS D1.1 structural test. Prerequisite: Department permission required. Audit available.

WLD 153. Flux Cored Arc Welding (Self shielding) Cert. Practice. 4 Credits.

Covers safety, welding technique, and qualification procedures in compliance with AWS D1.1 structural test. Prerequisite: Department permission required. Audit available.

WLD 156A. Beginning Oxy-Acetylene Welding Practice. 3 Credits.

Introduces the joining of plate using oxy-fuel welding. First class in a four course sequence. Audit available.

WLD 156B. Basic Oxy-Acetylene Welding Practice. 3 Credits.

Introduces the joining of plate using oxy-fuel welding. Second class in a four course sequence. Audit available.

WLD 166A. Beginning Weld Practice Metal Sculpting. 3 Credits.

Introduces welding processes and weld shop safety. Safety and operation of the oxy-acetylene cutting process as well as an overview of multiple weld processes and their essential variables as related to the fabrication of metal sculpture. First class in a four course sequence. Audit available.

WLD 166B. Basic Weld Practice Metal Sculpting. 3 Credits.

Reviews, incorporates and builds upon material presented in WLD 166A. Introduces common weld joints as they apply to the fabrication of metal sculpture. Second class in a four course sequence. Audit available.

WLD 176A. Beginning Fabrication Welding Practice. 3 Credits.

Introduces beginning fabrication of welded structures. First class in a four course sequence. Audit available.

WLD 176B. Basic Fabrication Welding Practice. 3 Credits.

Introduction to basic fabrication of welded structures. Develops foundational skills required for advancement. Second class in a three course sequence. Audit available.

WLD 186A. Beginning Certification Welding Practice. 3 Credits.

Introduces preparing and joining plates for certification as per AWS D1.1 Structural Steel Welding codes. First class in a four course sequence. Audit available.

WLD 186B. Basic Certification Welding Practice. 3 Credits.

Introduces preparing and joining plates in the 2G position for certification as per AWS D1.1 Structural Steel Welding codes. Second class in a four course sequence. Audit available.

WLD 190A. Beginning Welding Practice. 1 Credit.

Introduces welding and industry standards. Develops foundational skills required for advancement in future coursework. First class in a three course sequence. Audit available.

WLD 190B. Basic Welding Practice. 2 Credits.

Develops basic knowledge and practice with a welding process and perform welding in accordance with industry standards. Develops foundational skills required for advancement in future coursework. Second class in a three course sequence. Audit available.

WLD 190C. Intermediate Welding Practice. 3 Credits.

Introduction to the fillet weld in the 3F and 4F position to build the skills required to successfully certify in accordance with AWS D1.1 Welding Code. This class in a three course sequence. Audit available.

WLD 203. Structural Steel Welding Code & Standards. 4 Credits.

Develops technical knowledge necessary for the reading and understanding of the AWS Structural Steel Welding Code, D1.1. Enables the use of a systematic method in the application and understanding of the Structural Steel Welding Code. Prerequisite: MTH 20. Prerequisite/concurrent: (WR 90 or IRW 90) and (RD 115 or IRW 115). Audit available.

WLD 210. Aviation Welding. 2 Credits.

Develop knowledge and manipulative skills with oxy-acetylene welding, torch brazing, and gas tungsten arc welding processes on steel and aluminum when performing various welds. Training will conform to current FAA 14CFR Part 147 requirements. Prerequisites: Placement into RD 90 or higher; placement into WR 90 or higher; MTH 60 or higher; AMT 101 with a "C" or higher. Audit available.

WLD 211. Auto Collision Repair Welding Aluminum. 2 Credits.

Develops knowledge and manipulative skills using the Gas Metal Arc Welding-Pulse transfer process on aluminum performing various welds to I-CAR industry standards. Covers safety, uses, nomenclature, equipment operation and set up and shut down procedures. Audit available.

WLD 216. Miscellaneous Electrodes & Advanced Positions. 4 Credits.

Develops knowledge and skills in the use of a variety of welding electrodes when welding complex joints in advanced positions. Prerequisites: WLD 114, WLD 151, WLD 152, and department permission required. Audit available.

WLD 216A. Intermediate Welding Practice. 3 Credits.

Introduces intermediate shielded metal arc welding process in accordance with AWS D1.1 Structural Steel Welding Codes, and to industry standards. Weld mild steel in the 3F and 4F positions. Third class in a four course sequence. Audit available.

WLD 216B. Advanced Metal Arc Welding. 3 Credits.

Introduces intermediate shielded metal arc welding, in accordance with AWS D1.1 Structural Steel Welding Codes, and to industry standards. Weld mild steel in the 3G and 4G positions. Fourth class in a four course sequence. Audit available.

WLD 217. Diesel Welding. 3 Credits.

Develops knowledge and skills in welding required of a diesel mechanic. Focuses on maintenance and repair applications using FCAW, GMAW, SMAW, CAC-A, OAW, TB, PAC and OAC processes. Prerequisite: Department permission required. Audit available.

WLD 221. Gas Tungsten Arc Welding Mild Steel. 4 Credits.

Develops knowledge and skills welding common joints in all positions on mild steel using the Gas Tungsten Arc Welding (GTAW) process. Prerequisite: Department permission required. Audit available.

WLD 222. Gas Tungsten Arc Welding: Aluminum. 4 Credits.

Develops knowledge and skills required to weld common joints in all positions on aluminum using the gas tungsten arc welding (GTAW) process. Prerequisite: Department permission required. Audit available.

WLD 223. Gas Tungsten Arc Welding: Stainless Steel. 4 Credits.

Develops knowledge and skills in the selection and use of layout tools and equipment to assemble a beginning fabrication project from given specifications. Prerequisite: Department permission required. Audit available.

WLD 224. Gas Tungsten Arc Welding: (Mild Steel) Pipe I. 4 Credits.

Develops knowledge and skills required to weld mild steel pipe in all positions using the gas tungsten arc welding (GTAW) process. Prerequisite: Department permission required. Audit available.

WLD 225. Gas Tungsten Arc Welding: (Mild Steel) Pipe II. 4 Credits.

Develops knowledge and skills required to weld two-inch diameter schedule 80 mild steel pipe in the 5G and 6G positions using the gas tungsten arc welding (GTAW) process. Prerequisite: Department permission required. Audit available.

WLD 226A. Intermediate Gas Tungsten Arc Welding (Heliarc). 3 Credits.

Introduces gas tungsten arc welding on Aluminum to industry standards. Weld common joint configurations. Develops foundational skills required for advancement in future course work. Third class in a four course sequence. Audit available.

WLD 226B. Advanced Gas Tungsten Arc Welding (Heliarc). 3 Credits.

Introduces gas tungsten arc welding on Stainless Steel to industry standards. Weld common joint configurations. Develops foundational skills required for advancement in future course work. Fourth class in a four course sequence. Audit available.

WLD 236A. Intermediate Wire Welding. 3 Credits.

Introduces welding in the 3F and 3G positions and weld quality as it applies to industry standards in the wire welding process. Develops foundational skills required for advancement in future coursework. Third class in a four course sequence. Audit available.

WLD 236B. Advanced Wire Welding. 3 Credits.

Introduces welding in 4F and 4G positions. Puddle and heat control in the overhead position. Knowledge of weld quality as it applies to the wire welding process. Develops foundational skills required for "out of position welding." Fourth class in a four course sequence. Audit available.

WLD 246A. Intermediate Pipe Welding Practice. 3 Credits.

Introduces joining pipe in the 6G position per ASME Section IX Welding Code. Third class in a four course sequence. Audit available.

WLD 246B. Advanced Pipe Welding Practice. 3 Credits.

Introduces joining pipe in the 5G position per ASME Section IX Welding Code. Fourth class in a four course sequence. Audit available.

WLD 253. SMAW Certification Practice 3/8" Mild Steel (E6011). 4 Credits.

Provides an opportunity to practice for the American Welding Society Mild Steel Welding Certification tests using SMAW mild steel electrodes in the horizontal, vertical and overhead positions. Prerequisite: Department permission required. Audit available.

WLD 254. SMAW Certification Practice 3/8" Mild Steel (E7018). 4 Credits.

Provides an opportunity to practice for the American Welding Society Mild Steel Welding Certification tests using SMAW low hydrogen electrodes in the vertical, horizontal and overhead positions. Prerequisite: Department permission required. Audit available.

WLD 256. Preparation for Pipe Certification I. 4 Credits.

Develops knowledge and skills in the use of melt-through procedures in preparation for pipe welding with the shielded metal arc process. Prerequisite: Department permission required. Audit available.

WLD 256A. Intermediate Oxy-Acetylene Welding Practice. 3 Credits.

Introduces the joining of plate using oxy-fuel welding. Third class in a four course sequence. Audit available.

WLD 256B. Advanced Oxy-Acetylene Welding Practice. 3 Credits.

Introduces the advanced joining techniques of plate using oxy-fuel welding. Fourth class in a four course sequence. Audit available.

WLD 257. Preparation for Pipe Certification II. 4 Credits.

Provides practice for pipe certification using the SMAW process to weld pipes in all positions. Prerequisite: Department permission required. Audit available.

WLD 258. Preparation for Downhill Pipe Certification I. 4 Credits.

Provides an opportunity to practice using the downhill SMAW process to weld pipes in the basic position (2G) for pipe certification. Prerequisite: Department permission required. Audit available.

WLD 259. Preparation for Downhill Pipe Certification II. 4 Credits.

Provides an opportunity to practice using the downhill SMAW process to weld pipes in the advanced positions (5G and 6G) for pipe certification. Prerequisite: Department permission required. Audit available.

WLD 260. Beginning Fabrication. 4 Credits.

Develops knowledge and skills in the selection and use of layout tools and equipment to assemble a beginning fabrication project from given specifications. Prerequisite: Department approval required. Audit available.

WLD 261. Basic Fabrication. 4 Credits.

Develops knowledge and skills in the selection and use of layout tools and equipment to assemble a basic fabrication project from given specifications. Prerequisite: Department permission required. Audit available.

WLD 262. Intermediate Fabrication. 4 Credits.

Develops knowledge and skills in the proper selection and safe use of hand tools and machinery while working on specific fabrication projects. Prerequisite: Department permission required. Audit available.

WLD 263. Welding Technology - Capstone. 4 Credits.

Provides an opportunity to demonstrate readiness for welding employment through the development and performance of a comprehensive welding project and the successful completion of an industry-based written assessment. Requires: Completion of One-Year Certificate in Welding Technology. Prerequisite/concurrent: WLD 260 or WLD 261. Audit available.

WLD 266A. Intermediate Weld Practice Metal Sculpting. 3 Credits.

Focuses on producing code quality welds as they apply to the fabrication of metal sculpture. Introduces AWS D1.1 welding code and visual inspection techniques. Third class in a four course sequence. Audit available.

WLD 266B. Advanced Weld Practice Metal Sculpting. 3 Credits.

Review, practice and strengthen previously learned welding techniques in the fabrication of welded metal sculpture. Fourth class in a four course sequence. Audit available.

WLD 271. Oxy-acetylene Welding Projects. 4 Credits.

Develops knowledge and skills for welding and brazing common joints in all positions using the oxy-acetylene process. Prerequisites: Department permission required. Audit available.

WLD 276A. Intermediate Fabrication Welding Practice. 3 Credits.

Introduces intermediate fabrication of welded structures. Develops advanced skills as required for industry. Third class in a four course sequence. Audit available.

WLD 276B. Advanced Fabrication Welding Practice. 3 Credits.

Introduces advanced fabrication of welded structures. Develops advanced skills as required for industry. Fourth class in a four course sequence. Audit available.

WLD 280A. Cooperative Education: Welding. 1-4 Credit.

On-the-job experiences which allow for the application and development of knowledge and skills acquired in the on-campus program. Work experiences are offered for variable credit up to a maximum of four credits. Department permission required. Audit available.

WLD 280B. Cooperative Education: Welding - Seminar. 1 Credit.

Share experiences with other students and the on-campus instructor in order to develop strategies for successful cooperative work experiences and future employment. Department permission required. Audit available.

WLD 286A. Intermediate Certification Welding Practice. 3 Credits.

Introduces preparing and joining plates in the 3G position for certification as per AWS D1.1 Structural Steel Welding codes. Third class in a four course sequence. Audit available.

WLD 286B. Advanced Certification Welding Practice. 3 Credits.

Introduces preparing and joining plates in the 4G position for certification as per AWS D1.1 Structural Steel Welding codes. Fourth class in a four course sequence. Audit available.

WLD 290. Submerged Arc Welding. 2 Credits.

Develops knowledge and skills with the submerged arc welding process. Department permission required. Audit available.