

# WELDING (WLD)

---

## **WLD 101: Welding Processes-Apps (4)**

Covers welding processes, safety, equipment, and essential variables of operation. This is an outcome based course utilizing a lecture/lab format. This course includes, but is not limited to: classroom discussions, multimedia presentations, and lab demonstrations covering technical skills

**Terms Typically Offered:** Fall, Winter, Spring

## **WLD 111: Shielded Metal Arc Welding (4)**

Covers uses, safety, nomenclature, equipment operation, set-up and shutdown procedures and welding related math and science for SMAW, OFW, OFC, PAC, and ACAC. This is an outcome-based course utilizing a lecture/lab format. This course includes, but is not limited to: classroom discussions, multimedia presentations, and lab demonstrations covering technical skills.

**Registration-Enforced Prerequisite/Corequisite:** WLD 101.

**Terms Typically Offered:** Fall

## **WLD 112: Shld Metal Arc Wldg:Mild Steel (3)**

Develops knowledge and manipulative skills in the use of E7018, E6011, and other mild steel electrodes when performing carious welds in the flat and horizontal positions. This is an outcome-based course utilizing a lecture/lab format. This course includes, but is not limited to: classroom discussions, multimedia presentations, and lab demonstrations covering technical skills.

**Registration-Enforced Prerequisite/Corequisite:** WLD 101.

**Terms Typically Offered:** Winter

## **WLD 113: Shld Metal Arc Wldg;Mld Stl II (3)**

Develops knowledge and manipulative skills in the use of E7018, E6011, and other mild steel electrodes when performing various welds in the vertical and overhead positions. This is an outcome based course utilizing a lecture/ lab format. This course includes, but is not limited to: classroom discussions, multimedia presentations, and lab demonstrations covering technical skills.

**Registration-Enforced Prerequisite/Corequisite:** WLD 101.

**Terms Typically Offered:** Winter

## **WLD 114: Shld Metal Arc Wldg;MldStl III (3)**

Develops knowledge and manipulative skills in the use of E7018, E6011, and other mild steel electrodes when performing carious welds in all positions e.g. flat, horizontal, vertical, and overhead. This is an outcome based course utilizing a lecture/ lab format. This course includes, but is not limited to: classroom discussions, multimedia presentations, and lab demonstrations covering technical skills.

**Registration-Enforced Prerequisite/Corequisite:** WLD 101.

**Terms Typically Offered:** Winter

## **WLD 121: Gas Metal Arc Welding (3)**

Develops knowledge and manipulative skills welding with solid wire on ferrous and non-ferrous materials using short circuit, globular, and spray transfer modes in the flat, horizontal, vertical, and overhead positions. This is an outcome based course utilizing a lecture/ lab format. This course includes, but is not limited to: classroom discussions, multimedia presentations, and lab demonstrations covering technical skills.

**Registration-Enforced Prerequisite/Corequisite:** WLD 101.

**Terms Typically Offered:** Spring

## **WLD 122: Gas Metal Arc Welding-Pulse (3)**

Develops knowledge and manipulative skills using the Gas Metal Arc Welding-Pulse transfer process on common mild steel, aluminum, and stainless steel in all positions flat, horizontal, vertical, and overhead. The course covers safety, users, nomenclature, equipment operation, set-up and shut down procedures. This is an outcome based course utilizing a lecture/ lab format. This course includes, but is not limited to: classroom discussions, multimedia presentations, and lab demonstrations covering technical skills.

**Registration-Enforced Prerequisite/Corequisite:** WLD 101.

**Terms Typically Offered:** Spring

## **WLD 123: Advanced Welding III (3)**

Designed to provide the advanced welding student additional lab time to develop welding skills and techniques. The use of shop prints will be encouraged.

**Registration-Enforced Prerequisite:** WLD 142 or Instructor approval.

**Terms Typically Offered:** Fall, Winter, Spring

## **WLD 124: Advanced Welding IV (3)**

Designed to provide the advanced welding student additional lab time to develop welding skills and techniques. The use of shop prints will be encouraged.

**Registration-Enforced Prerequisite:** WLD 142 or Instructor approval.

**Terms Typically Offered:** Fall, Winter, Spring

## **WLD 131: Basic Metallurgy (3)**

Covers the principles related to metals, their structure and physical properties. The testing of various metals, their uses and the results of heat treating are explored. Laboratory time is provided for experiments and demonstrations to correlate with classroom activities.

**Registration-Enforced Prerequisite/Corequisite:** WLD 101 or APR 140.

**Terms Typically Offered:** Fall

## **WLD 140: Blueprint Reading (3)**

A basic course in sketching and reading of shop drawings. A study is made of three-view drawings, pictorial drawings, dimensioning, tolerancing, lines, note and symbol interpretation. Laboratory time is provided for drawing and demonstrations to correlate with classroom activities

**Terms Typically Offered:** Winter

## **WLD 141: Flux-Core Arc Wldg(Gas Shld) (3)**

Develops knowledge and manipulative skills in the gas shielded flux-cored arc welding process in all positions flat, horizontal, vertical, and overhead. The course covers safety, users, nomenclature, equipment operation, set-up and shut down procedures. This is an outcome based course utilizing a lecture/ lab format. This course includes, but is not limited to: classroom discussions, multimedia presentations, and lab demonstrations covering technical skills.

**Registration-Enforced Prerequisite/Corequisite:** WLD 101.

**Terms Typically Offered:** Spring

## **WLD 142: Flux-Core Arc Wldg II Sif Shld (3)**

Develops knowledge and manipulative skills in the self-shielded flux-cored arc welding process in all positions flat, horizontal, vertical, and overhead. The course covers safety, users, nomenclature, equipment operation, set-up and shut down procedures. This is an outcome based course utilizing a lecture/ lab format. This course includes, but is not limited to: classroom discussions, multimedia presentations, and lab demonstrations covering technical skills.

**Registration-Enforced Prerequisite/Corequisite:** WLD 101.

**Terms Typically Offered:** Spring

**WLD 150: GTAW I (3)**

Develops knowledge and manipulative skills using the Gas Tungsten Arc Welding process on mild steel, stainless steel, and aluminum. This class will cover AWS code requirements for structural and mechanical type joint configurations. This class will cover all joint configurations and all positions, as well as, cover safety, suers, nomenclature, equipment, operation, setup, and shut down procedures. This is an outcome based course utilizing a lecture/lab format. This course includes classroom discussions, video, and lab demonstrations in the development of technical skills.

**Registration-Enforced Prerequisite:** WLD 101.

**Terms Typically Offered:** Spring

**WLD 160: Aluminum Arc Welding I (3)**

Develops knowledge and manipulative skills in the use of layout techniques, material handling, and identification of Aluminum and Aluminum alloys. Develops knowledge and skills in electrode selection and application when performing various welds in the flat and horizontal positions. This is an outcome based course utilizing a lecture/ lab format. This course includes, but is not limited to: classroom discussions, multimedia presentations, and lab demonstrations covering technical skills.

**Registration-Enforced Prerequisite/Corequisite:** WLD 101.

**Terms Typically Offered:** Spring

**WLD 161: Welding Problems (4)**

A review and application of the welding, layout, and fabrication processes covered during the year. A study and practice of production welding methods, electrode consumption, and method selection is included. Fabrication and assembly projects are selected to present typical layout and pattern development in fabrication and production problems.

**Prerequisite:** Satisfactory completion of first and second terms.

**Registration-Enforced Prerequisite:** WLD 142 or Instructor approval.

**Terms Typically Offered:** Spring

**WLD 222: Pipe Welding-Fitting I (3)**

Develops knowledge and manipulative skills utilizing multiple welding processes and electrodes on mild steel, stainless steel and aluminum. This class is designed to better prepare the entry level welder for pipe welding. This class will cover API 1104 and ASME Section IX Pipe welding standards and code requirements for high pressure vessel type joint configurations. Weld manipulation and techniques will cover all positions on both pipe and plate applications. This course will build upon topics covered in the first year of welding instruction. This is an outcome based course utilizing the lecture/lab format. The course includes classroom discussions, video and lab demonstrations in the development of technical skills.

**Registration-Enforced Prerequisite:** WLD 142.

**Terms Typically Offered:** Winter

**WLD 223: Pipe Welding-Fitting II (3)**

Develops knowledge and manipulative skills utilizing multiple welding processes and electrodes on mild steel, stainless steel and aluminum. This class is designed to better prepare the entry level welder for pipe welding. This class will cover API 1104 and ASME Section IX Pipe welding standards and code requirements for high pressure vessel type joint configurations. Weld manipulation and techniques will cover all positions on both pipe and plate applications. This course will build upon topics covered in the first year of welding instruction. This is an outcome based course utilizing the lecture/lab format. The course includes classroom discussions, video and lab demonstrations in the development of technical skills.

**Registration-Enforced Prerequisite:** WLD 222.

**Terms Typically Offered:** Spring

**WLD 240: Blueprint Reading - II (3)**

Develops knowledge and manipulative skills utilizing advanced print reading and sketching. Reading and interpretation of shop drawings, piping, hydraulic and numeric lines, valves, gates and electrical symbols will be studied as will as welding symbols, line types and notation. This class will cover API 1104 and ASME Section IX Pipe welding standards and code requirements for high pressure vessels. This is an outcome based course utilizing the lecture/lab format. The course includes classroom discussions, video and lab demonstrations in the development of technical skills.

**Registration-Enforced Prerequisite:** WLD 140.

**Terms Typically Offered:** Spring

**WLD 251: Gas Tungsten Arc Weld II (3)**

Develops knowledge and manipulative skills using the Gas Tungsten Arc Welding process on mild steel, stainless steel and aluminum. This class will cover API 1104 and ASME Section IX Pipe welding standards and code requirements for high pressure vessel type joint configurations. Weld manipulation and techniques will cover all positions on both pipe and plate applications. This is an outcome based course utilizing the lecture/lab format. The course includes classroom discussions, video and lab demonstrations in the development of technical skills.

**Registration-Enforced Prerequisite:** WLD 150.

**Terms Typically Offered:** Fall

**WLD 252: Gas Tungsten Arc Weld III (3)**

Develops knowledge and manipulative skills using the Gas Tungsten Arc Welding process on mild steel, stainless steel and aluminum. This class will cover API 1104 and ASME Section IX Boiler and Pressure Vessel Code requirements and joint configurations. Weld manipulation and techniques will cover all positions on both pipe and plate applications. This is an outcome based course utilizing the lecture/lab format. The course includes classroom discussions, video and lab demonstrations in the development of technical skills.

**Registration-Enforced Prerequisite:** WLD 251.

**Terms Typically Offered:** Winter

**WLD 261: Aluminum Arc Welding II (3)**

Develops knowledge and manipulative skills in the use of traditional and advanced welding techniques for Aluminum and Aluminum alloys. Develops knowledge and skills in electrode selection and application when performing various welds in the Horizontal, Vertical and Over Head positions. This is an outcome-based course utilizing a lecture/lab format. This course includes, but is not limited to: Classroom discussions, multimedia presentations, and lab demonstrations covering technical skills.

**Registration-Enforced Prerequisite/Corequisite:** WLD 160.

**Terms Typically Offered:** Fall

**WLD 262: Aluminum Arc Welding III (3)**

Develops knowledge and manipulative skills in the use of traditional and advanced welding techniques for Aluminum and Aluminum alloys. This class is designed to better prepare the entry level welder for Aluminum welding. This class will cover AWS D1.2 Structural welding code standards for aluminum welding code requirements. Weld manipulation and techniques will cover all positions on both pipe and plate applications. This is an outcome based course utilizing a lecture/ lab format. This course includes, but is not limited to: classroom discussions, multimedia presentations, and lab demonstrations covering technical skills.

**Registration-Enforced Prerequisite/Corequisite:** WLD 261.

**Terms Typically Offered:** Winter

**WLD 280: CWE: Welding (1-13)**

Qualified students work at training sites that provide experience appropriate to their major. These experiences will provide the opportunity for students to gain knowledge of various tasks performed in their career field. A student may take any number of CWE credits per term, not to exceed 13 credits per year.

**Registration-Enforced Prerequisite:** Instructor approval.

**Terms Typically Offered:** Fall, Winter, Spring, Summer