

# WELDING (WELD)

## WELD 50 3.5 units

### Introduction to Welding

#### 36 hours lecture, 90 hours laboratory

Grading: letter grade or pass/no pass.

This course is an introduction to the safe practices, setup, and operation of Shielded Metal Arc Welding, Gas Tungsten Arc Welding, Flux-Cored Arc Welding, and Gas Metal Arc Welding. Topics will include machine settings, basic electricity, welding symbols, and basic metallurgy.

This course is designed for students that are seeking basic welding knowledge and skills. This course must be taken prior to any other welding courses at LBCC.

Transferable to CSU Only

## WELD 211 2 units

### Oxy-fuel Welding and Cutting Technology

#### 18 hours lecture, 54 hours laboratory

Grading: letter grade or pass/no pass.

Materials Fee: \$25

This course is an introduction to welding and cutting processes, emphasizing oxy-acetylene welding, oxy-fuel cutting braze welding, plasma arc and carbon arc cutting. It is suitable for students majoring in other occupational areas, such as auto body repair, auto mechanics, machine tool or aircraft maintenance. Good health, manual dexterity and corrected or uncorrected 20/20 vision are necessary to be employable in the welding industry.

## WELD 212 3.5 units

### Introduction to Shielded Metal Arc Welding

#### 36 hours lecture, 90 hours laboratory

Grading: letter grade or pass/no pass.

This course is an introduction to the safe practices, setup, and operation of Shielded Metal Arc Welding. Topics will include machine settings, basic electricity, welding symbols, and basic metallurgy. This course is designed for students that are seeking beginning Shielded Metal Arc Welding knowledge and skills.

## WELD 213 3.5 units

### Introduction to Semi-Automatic Welding

#### 36 hours lecture, 90 hours laboratory

Prerequisite: WELD 212.

Recommended Preparation: WELD 50.

Grading: letter grade or pass/no pass.

This course is an introduction to the safe practices, setup, and operation of Flux-Cored Arc Welding (FCAW), and Gas Metal Arc Welding (GMAW). Topics will include machine settings, basic electricity, welding symbols, electrode selection, and Gas Metal Arc Welding transfer modes. This course is designed to prepare students for entry into an occupation using semi-automatic welding processes.

## WELD 214 3.5 units

### Introduction to Gas Tungsten Arc Welding

#### 36 hours lecture, 90 hours laboratory

Grading: letter grade or pass/no pass.

This course is an introduction to the safe practices, setup, and operation of Gas Tungsten Arc Welding. Topics will include machine settings, basic electricity, welding symbols, and basic metallurgy. This course is designed for students that are seeking basic Gas Tungsten Arc Welding knowledge and skills.

## WELD 221 3 units

### Arc Welding Structural Certification

#### 54 hours lecture

Recommended Preparation: WELD 212.

Grading: letter grade or pass/no pass.

This course reviews the practical applications and fundamental concepts to prepare students for the Los Angeles City Department of Building and Safety written structural welding certification test.

## WELD 400 2 units

### Welding (General)

#### 18 hours lecture, 54 hours laboratory

Grading: letter grade or pass/no pass.

This course is designed for entry level students seeking general welding skills and knowledge. This course covers Oxy-fuel Welding (OFW), Shielded Metal Arc Welding (SMAW), Gas Metal Arc Welding (GMAW), Flux Cored Arc Welding (FCAW), and Gas Tungsten Arc Welding (GTAW).

## WELD 410 2 units

### Welding (ARC)

#### 108 hours laboratory

Prerequisite: WELD 50 or WELD 212.

Grading: letter grade or pass/no pass.

This course covers the techniques of arc welding of steels, cast iron, aluminum, hard facing, cutting, safety practices and related information.

## WELD 411 1 units

### Welding (ARC)

#### 54 hours laboratory

Prerequisite: WELD 50 or WELD 212 or WELD 400 or WELD 600.

Grading: letter grade or pass/no pass.

This course provides practice in arc welding procedures on various types of metal and the opportunity to learn safety practices.

## WELD 413 2 units

### SMAW Flat/Horz Groove Welds with Backing

#### 108 hours laboratory

Prerequisite: WELD 50 or WELD 212.

Grading: letter grade or pass/no pass.

This is an intermediate course in SMAW (Shielded Metal Arc Welding) fundamentals with emphasis on structural welds in the flat and horizontal positions. This class prepares students to take the AWS certification test in structural steel and to advance their knowledge and skills in the SMAW process. It also includes correct equipment setup, safety practices, general related information, introduction to code specifications, blueprint reading, inspection procedures, and basic welding metallurgy. Good health, manual dexterity and corrected or uncorrected 20/20 vision are necessary to be employed in the welding industry.

## WELD 414 2 units

### SMAW Vert & OV/HD Grv Welds w/ Backing

#### 108 hours laboratory

Prerequisite: WELD 50 or WELD 212.

Grading: letter grade or pass/no pass.

This is an advanced course in SMAW (Shielded Metal Arc Welding) fundamentals with emphasis on structural welds in the vertical and overhead positions. This class prepares students to take the AWS certification test in structural steel and to advance their knowledge and skills in the SMAW process. It also includes correct equipment setup, safety practices, general related information, introduction to code specifications, blueprint reading, inspection procedures, and basic welding metallurgy. Good health, manual dexterity and corrected or uncorrected 20/20 vision are necessary to be employed in the welding industry.

**WELD 415 2 units****SMAW Flat/Horz Open Root Groove Welds****108 hours laboratory**

Prerequisite: WELD 50 or WELD 212.

Grading: letter grade or pass/no pass.

This is an advance course in SMAW (Shielded Metal Arc Welding) fundamentals with emphasis on open root groove welds in the flat and horizontal positions. This class prepares students to take the AWS certification test in structural steel and to advance their knowledge and skills in the SMAW process. It also includes correct equipment setup, safety practices, general related information, introduction to code specifications, blueprint reading, inspection procedures, and basic welding metallurgy. Good health, manual dexterity and corrected or uncorrected 20/20 vision are necessary to be successful in the program.

**WELD 416 2 units****SMAW Vert & O/H Open Root Groove Welds****108 hours laboratory**

Prerequisite: WELD 50 or WELD 212.

Grading: letter grade or pass/no pass.

This is an advance course in SMAW (Shielded Metal Arc Welding) fundamentals with emphasis on open root groove welds in the vertical and overhead positions. This class prepares students to take the AWS certification test in structural steel and to advance their knowledge and skills in the SMAW process. It also includes correct equipment setup, safety practices, general related information, introduction to code specifications, blueprint reading, inspection procedures, and basic welding metallurgy. Good health, manual dexterity and corrected or uncorrected 20/20 vision are necessary to be successful in the program.

**WELD 461 1 units****Oxygen Acetylene Welding****54 hours laboratory**

Prerequisite: WELD 50 or WELD 211 or WELD 400 or WELD 600.

Grading: letter grade or pass/no pass.

Formerly WELD 461AD. This course is a study of the techniques of oxy-acetylene gas welding of steels and aluminum, hard facing, flame cutting brazing, oxy-hydrogen welding and safety practices.

**WELD 471 1 units****Semi-Automatic Welding (GMAW and FCAW)****54 hours laboratory**

Prerequisite: WELD 50 or WELD 212 or WELD 400 or WELD 600.

Grading: letter grade or pass/no pass.

This course will address the techniques of Gas Metal Arc Welding (GMAW) and Flux Core Arc Welding (FCAW) of steels, aluminum, and stainless steel. It also covers correct equipment setup and safety practices.

**WELD 472 2 units****Gas Metal Arc Welding****108 hours laboratory**

Prerequisite: WELD 213.

Grading: letter grade or pass/no pass.

This course is a study of the techniques of Gas Metal Arc Welding (GMAW) of steels, aluminum and stainless steel. It also covers correct equipment setup and safety practices.

Transferable to CSU Only

**WELD 480 2 units****Welding (Inert Gas)****108 hours laboratory**

Prerequisite: WELD 214.

Grading: letter grade or pass/no pass.

This course provides the study and practice with inert gas welding skills, including GTAW (TIG-heliarc) welding of carbon steel, stainless steel, aluminum, and GMAW (MIG) of steel, aluminum and intershield welding (FCAW). The student can learn the skills necessary for a career as an aerospace industry worker. Course instruction also covers correct equipment setup and safety practices.

**WELD 481 1 units****Welding (Inert Gas)****54 hours laboratory**

Prerequisite: WELD 50 or WELD 214 or WELD 400 or WELD 600.

Grading: letter grade or pass/no pass.

Formerly WELD 481AD. This course provides practice in the techniques of metallic and tungsten inert gas welding, welding of steels, aluminum, magnesium, cast iron and safety practices.

**WELD 482 2 units****Gas Tungsten Arc Welding Basic Joints****108 hours laboratory**

Prerequisite: WELD 214.

Grading: letter grade or pass/no pass.

This course will address the techniques of Gas Tungsten Arc Welding (GTAW) of steels, cast iron, aluminum, hard facing, and cutting. It also covers correct equipment setup and safety practices.

**WELD 483 2 units****Gas Metal Arc/Flux Core Arc Welding****108 hours laboratory**

Prerequisite: WELD 213.

Grading: letter grade or pass/no pass.

This course will address the techniques of Gas Metal Arc Welding (GMAW) and Flux Core Arc Welding (FCAW) of steels, cast iron, aluminum, hard facing, and cutting. It also covers correct equipment setup and safety practices.

**WELD 600 0 units****Welding (General)****18 hours lecture, 54 hours laboratory**

Grading: non graded.

This course is designed for entry level students seeking general welding skills and knowledge. This course covers Oxy-Fuel Welding (OFW), Shielded Metal Arc Welding (SMAW), Gas Metal Arc Welding (GMAW), Flux Cored Arc Welding (FCAW), and Gas Tungsten Arc Welding (GTAW).

**WELD 601 0 units****Exploring Welding****9 hours lecture, 18 hours laboratory**

Grading: non graded.

This course is an introduction to welding. This course will allow the student to explore the basic safety requirements and welding processes found in industry.

**WELD 611 0 units****Welding (ARC)****54 hours laboratory**

Prerequisite: WELD 50 or WELD 212 or WELD 400 or WELD 600.

Grading: non graded.

This course provides practice in arc welding procedures on various types of metal and the opportunity to learn safety practices.

**WELD 661 0 units****Oxygen Acetylene Welding****54 hours laboratory**

Prerequisite: WELD 50 or WELD 211 or WELD 400 or WELD 600.

Grading: non graded.

This course is a study of the techniques of oxy-acetylene gas welding of steels, hard facing, flame cutting brazing, and safety practices.

**WELD 671 0 units****Semi-Automatic Welding (GMAW and FCAW)****54 hours laboratory**

Prerequisite: WELD 50 or WELD 212 or WELD 400 or WELD 600.

Grading: non graded.

This course will address the techniques of Gas Metal Arc Welding (GMAW) and Flux Core Arc Welding (FCAW) of steels, aluminum, and stainless steel. It also covers correct equipment setup and safety practices.

**WELD 681 0 units****Welding (Inert Gas)****54 hours laboratory**

Prerequisite: WELD 50 or WELD 214 or WELD 400 or WELD 600.

Grading: non graded.

This course provides practice in the techniques of metallic and tungsten inert gas welding, welding of steels, aluminum, magnesium, cast iron and safety practices.