



WLD 22 - Oxyacetylene Welding and Flame Cutting

Catalog Description

Transfer Status: CSU
Prerequisite: WLD 21 and NCCER Level I Welding Qualification
Unit(s): 2.00
Lecture: 17.00 Contact hours/34.00 Out of class hours/51.00 Total hours/1.00 Unit(s)
Lab: 51.00 Contact hours/0.00 Out of class hours/51.00 Total hours/1.00 Unit(s)
Total: 68.00 Contact hours/34.00 Out of class hours/102.00 Total hours/2.00 Unit(s)
Course Description: This course includes the techniques used for oxyacetylene welding (OAW) in all positions (flat, vertical, horizontal and overhead) and uses a variety of freehand and automatic burning equipment on different metals.

Objectives

- Upon successful completion of this course, the student should be able to:
- 1. Demonstrate the proper use and set up of the OAW and oxy-fuel cutting(OFC) units in a safe manner.
 - 2. Demonstrate the proper use and set up of the plasma arc cutting (PAC) unit in a safe manner.
 - 3. Demonstrate the proper use of the air carbon arc cutting and gouging (CAC-A) unit in a safe manner.
 - 4. Demonstrate proper use of the OAW process in all positions.
 - 5. Demonstrate proper OAW on various joint details.
 - 6. Identify and use the American Welding Society (AWS) classification for the selection of the correct filler materials for the job.

Course Content

Topic Titles / Suggested Time Topic	
<u>Lecture</u>	
<u>Topics</u>	<u>Lec Hrs</u>
Introduction and safety	2.00
Set up and operation of flame cutting equipment	1.50
Freehand/guided cutting	1.00
OAW in all positions	1.00
Base metal preparation	0.50
Joint fit-up and alignment	0.50
Bronze welding	1.00
Weld quality	1.00
Machine flame cutting	1.00
Flame cutting	1.00
Different gases used for flame cutting	1.00
Set up and operation of CAC-A equipment	1.50
Set up and operation of PAC equipment	1.50
Plasma cutting	1.50
Other related cutting processes	1.00
Total Hours: 17.00	
<u>Lab</u>	
<u>Topics</u>	<u>Lab Hrs</u>
Flame cutting	3.00
Freehand/guided cutting	6.00
OAW in all positions	16.00
Base metal preparation	1.00
Joint fit-up and alignment	0.50
Bronze welding	4.00
Weld quality	1.00
Machine flame cutting	6.00
Introduction and safety	2.00
Set up and operation of flame cutting equipment	1.50

Topics	Lab Hrs
Different gases used for flame cutting	3.00
Plasma cutting	2.00
Other related cutting processes	1.00
Set up and operation of CAC-A equipment	2.00
Set up and operation of PAC equipment	2.00
Total Hours: 51.00	

Methods of Instruction

- A. Discussion
- B. Homework: Students are required to complete two hours of outside-of-class homework for each hour of lecture
- C. Instructor Demonstrations
- D. Laboratory Experiments
- E. Lecture

Methods of Evaluation

- A. Exams/Tests
- B. Homework
- C. Lab Projects
- D. Lab Final/Mid-term Project

Examples of Assignments

Reading Assignments

1. Read assigned AWS journal article and be prepared to discuss in class.
2. Review OAW safety handbook and be prepared to discuss in class.

Writing Assignments

1. Write the steps to properly light, properly adjust flame and shut down an OFC torch system.
2. Write the proper steps for setting up and the operation of a PAC system.

Out-of-Class Assignments

1. Answer review questions for module 2.
2. Research the proper process for setting up OAW equipment using manufactures publication.

Recommended Materials of Instruction

National Center for Construction Education and Research (NCCER). (2023). Welding Level One. *Pearson, 6th*. 9780137924530.
 National Center for Construction Education and Research (NCCER). (2025). Welding Level Two. *Pearson, 6th*. 9780138216160.

Other Learning Materials

All tools listed in the Full-Time Welding Program Semester 1 tool list on the Butte College Welding Technology website.

Minimum Qualifications

Welding

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