

Barstow College Course Outline - Course - SLO, Objectives, Methods of Instruction

WELD 53

Dept & Nbr: WELD 53

Abbrev Title: SOLDERING BRAZ WELD

Full Title:

Soldering, Brazing and Braze Welding

Title 5 Category:

Associate Degree Applicable

Certificate:

Yes

Units

Max: 3.00

Min: 3.00

Course Hours Per Week

Lecture 2

Lab 3

Number of Weeks

18.0

Course Hours Total

Lecture 36.00

Lab 54.00

Methods of Delivery

Selected Topic

No

Grading

Graded Option (ABCDEF) and Pass/No Pass (P/NP)

Repeat Code

Non Repeatable/Non Activity Course (May be repeated two times with a grade of less than "P" or "C")

Basic Skills

Course is not a basic skills course.

Prerequisites

WELD 50

or

equivalent

Corequisites

Recommended Preparation

Catalog Description

Special welding processes and applications.

Course Content

- I. Soldering, brazing and braze welding safety
- II. Types of flames
- III. Advantages of soldering and brazing
- IV. Physical properties of the joint
- V. Fluxes
- VI. Soldering and brazing methods
- VII. Filler metals
- VIII. Joint design
- IX. Soldering alloys
- X. Brazed joints on light metal
- XI. Brazed joints on heavy metal
- XII. Soldering sheet metal
- XIII. Soldering copper pipe
- XIV. Testing procedures

Methods of Instruction

- 1. Lecture presentations and class discussion.
(Satisfies objectives 3, 4, 5, 6)
- 2. Video viewing and class discussion.
(Satisfies objectives 3, 4, 5, 6)
- 3. Instructor demonstration followed by student demonstration and instructor critique.
(Satisfies objectives 1, 2, 4, 5, 6, 7, 8)
- 4. Homework, both reading and writing, assigned by instructor. .
(Satisfies objectives 3, 4, 5, 6)

Course Objectives

A. Define Course Objectives

- 1. Demonstrate soldering brazing and braze welding safety principles.
- 2. Demonstrate soldering, brazing and braze welding fabrication principles.
- 3. Read soldering, brazing, and braze welding symbols.
- 4. Utilize basic metallurgy in selecting soldering, brazing, and braze welding joints design.
- 5. Selecting the correct soldering, brazing, or braze welding methods.
- 6. Selecting the correct fluxes and filler metals.
- 7. Produce sound soldered, brazed and braze welded joints.
- 8. Demonstrate destructive and non-destructive tests

B. Critical Thinking Tasks/Assignments

Critical thinking assignments include (but are not limited to) the following:

Substantial Writing Assignments Including:

Computational or Non-Computational Problem Solving Demonstrations Including:
Exam(s)
Quizzes

Skill Demonstration Including

Objective Examinations Including

C. Methods of Evaluation

Substantial Writing Assignments	None
Computational or Non-Computational Problem Solving Demonstrations	Exam(s) Quizzes
Skill Demonstration	Class Performance(s) Performance Exam(s)
Objective Examinations	Multiple Choice True/False Matching Completion
Other Additional assessment information (optional).	Attendance/Participation CLASS PARTICIPATION

Basis for Grades

Problem Solving Demonstrations	15.0%
Objective Examinations	65.0%
Other Category	20.0%

Required Reading, Writing and Other Outside of Class Assignments

Required Reading:

Required Writing:

Other Out of Class Assignments:

Texts/Materials

Textbooks

1. Bonhart. *Welding*, 4th ed. MCG, 2011, ISBN: 9780073373713.
2. Sacks. *Welding (Workbook)*, 4th ed. MCG, 2011, ISBN: 9780077475079.

Manuals

You have no manuals defined.

Periodicals

You have no periodicals defined.

Software

You have no software defined.

Other

1. Sample Textbook: Koellhoffer, Manz, and Hornburger. WELDING PROCESSES AND PRACTICES.

Student Learning Outcomes

1. Student will exercise the safety precautions necessary to avoid injury to self or property when performing shielded metal arc welding operations.
 - o Core Competency: Communication and Critical Thinking and Personal/Professional Development
 - o Assessment Methods: Multiple Choice, Demonstration, Observation by instructors.
 - o Rubric:
2. Student will be capable of properly setting up, adjusting, operating and shutting down shielded metal arc welding equipment.
 - o Core Competency: Communication and Critical Thinking and Personal/Professional Development
 - o Assessment Methods: Project or Presentation, Multiple Choice, Demonstration, Observation by instructors.
 - o Rubric:
3. Student will produce sound shielded metal arc welded joints.
 - o Core Competency: Communication and Critical Thinking and Personal/Professional Development
 - o Assessment Methods: Project or Presentation, Multiple Choice, Demonstration, Instructor performed visual, non-destructive, and/or destructive tests.
 - o Rubric:

Curriculum Committee Approval Date: 01/10/1990

Last Outline Revision Date: 01/01/2013