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

WELD 54

Dept & Nbr: WELD 54 **Abbrv Title:** Gas Metal-Arc Weld

Full Title:
Gas Metal-Arc 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 51
and
WELD 52
or

equivalent

Corequisites

Recommended Preparation

Catalog Description

Special welding processes and applications. Ferrous and non-ferrous metals and position welding.

Course Content

I. Gas Metal Arc Welding (GMAW) Safety
II. Electrode melt rates
III. Metal transfer
IV. Shielding gases
V. Power sources
VI. Variables
VII. Short arc GMAW
VIII. Spray GMAW
IX. Position GMAW
X. GMAW welding symbols
XI. Destructive testing

Methods of Instruction

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

Course Objectives

A. Define Course Objectives

1. Demonstrate safety principles
2. Recognize and draw GMAW symbols
3. Demonstrate basic metallurgy in the selection of GMAW processes
4. Set-up GMAW equipment
5. Demonstrate fabrication principles in construction of a product using GMAW destructive testing processes.
6. Produce sound short arc GMAW welds in all positions
7. Produce sound spray transfer GMAW welds in all positions
8. Demonstrate destructive testing processes.

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	Attendance/Participation
Additional assessment information (optional).	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

You have no other defined.

Student Learning Outcomes

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

Curriculum Committee Approval Date: 01/10/1990 **Last Outline Revision Date:** 01/01/2013