BUTTE COLLEGE
COURSE OUTLINE

I. **CATALOG DESCRIPTION**

WLD 156 - Shop Practices for Welders II **1 - 2 Unit(s)**

Prerequisite(s): WLD 22, WLD 24, WLD 25, WLD 26, WLD 40, WLD 50, WLD 154 and NCCER Level II Welding Qualification
Co-requisite(s): WLD 28, WLD 30, WLD 32, WLD 34, WLD 36, WLD 42, WLD 56
Recommended Prep: Reading Level III; English Level II; Math Level II
Transfer Status: NT
51 - 102 hours Lab

This is a supervised lab experience for second semester welding program students. Students will practice skills in gas metal arc welding (GMAW), gas tungsten arc welding (GTAW), flux cored arc welding (FCAW), and shielded metal arc welding (SMAW) on a variety of materials in the flat, vertical, horizontal, and overhead positions. Students may enroll in this course up to 2 unit(s) to complete the entire curriculum of the course. Pass/No Pass Only. Open Entry/Open Exit.

II. **OBJECTIVES**

Upon successful completion of this course, the student will be able to:

A. Follow proper safety protocols when operating welding and cutting equipment.
B. Operate GMAW equipment to weld in the flat, horizontal, vertical and overhead positions.
C. Operate FCAW equipment to weld in the flat, horizontal, vertical and overhead positions.
D. Operate GTAW equipment to weld in the flat, horizontal, vertical and overhead positions.
E. Operate SMAW equipment to weld in the flat, horizontal, vertical and overhead positions.
F. Operate SMAW and FCAW equipment to weld heavy plate.
G. Weld pipe and tube in 2G, 5G and 6G position using SMAW, GMAW, GTAW, and FCAW processes.
H. Demonstrate welding skills at a level appropriate for a second semester welding program student.

III. **COURSE CONTENT**

A. **Unit Titles/Suggested Time Schedule**

Lab

Topics		Hours
1.	Introduction and safety	1.50
2.	GMAW	8.25 - 16.75
3.	FCAW	8.25 - 16.75
4.	GTAW	8.25 - 16.75
5.	SMAW	8.25 - 16.75
6.	Heavy plate welding	8.25 - 16.75
7.	Pipe and tube welding	8.25 - 16.75
Total Hours		51 - 102

IV. **METHODS OF INSTRUCTION**

A. Demonstrations
B. Laboratory Experiments

V. **METHODS OF EVALUATION**

A. Class participation
B. Practical Evaluations

VI. **EXAMPLES OF ASSIGNMENTS**

A. Reading Assignments
   1. Read the manual for the GTAW equipment and describe the steps for proper setup to the instructor.
   2. Read the Society of Mechanical Engineers (ASME) section IX regarding weld acceptance criteria and explain to the instructor what an acceptable weld is.

B. Writing Assignments
   1. Maintain a written log of your daily welding activities
   2. Prepare a written description of the order of operations for GTAW setup of a single V open groove (SVOG) pipe welding joint.

C. Out-of-Class Assignments
   1. Not applicable

VII. **RECOMMENDED MATERIALS OF INSTRUCTION**

Materials Other Than Textbooks:

A. All tools listed in the Butte College Welding Technology Program Guide.
B. A full list of tools can be found at www.butte.edu./departments/careertech/welding/tools.html

Created/Revised by: Donald Robinson
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