BUTTE COLLEGE
COURSE OUTLINE

I. **CATALOG DESCRIPTION**

WLD 164 - Welding Recertification Practices **0.25 - 1 Unit(s)**

Prerequisite(s): WLD 160 or WLD 162
Recommended Prep: Reading Level III; English Level II; Math Level II
Transfer Status: NT
12.75 - 51 hours Lab

This is a supervised lab experience to help students recertify to meet the required standard for qualification papers in welding codes using American Welding Society (AWS), American Petroleum Institute (API) 1104, and American Society of Mechanical Engineers (ASME) Section IX. Students will practice skills in shielded metal arc welding (SMAW), gas metal arc welding (GMAW), flux core arc welding (FCAW), gas tungsten arc welding (GTAW), oxyacetylene welding (OAW) processes on plate and several piping systems in preparation for weld performance tests with certified welding inspectors (CWI) or contractors. Students may enroll in this course up to 1 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. Cut, prepare, and weld various plate and pipe joint designs.
C. Perform at code level welds on open groove plate and pipe joints.
D. Demonstrate destructive testing of welds in accordance with the AWS, API, and ASME codes
E. Follow procedures using the SMAW, GMAW, FCAW, GTAW, and OAW processes meeting AWS, API, and ASME specifications for qualification.

III. **COURSE CONTENT**

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

	Lab Hours
Topics	
1. Introduction and safety	1.50
2. Cutting and welding of heavy plate and large diameter pipe	1.50 - 7.00
3. Welding the root, hot pass, fill passes, and cover passes	1.50 - 7.00
4. Welding pipe to AWS, API, and ASME codes	1.25 - 7.00
5. Welding pipe in all positions related to AWS, API, and ASME codes	1.75 - 7.00
6. Welding plate in all positions related to AWS, API, and ASME codes	1.75 - 7.00
7. Welding in complicated plate and pipe position to AWS,API and ASME codes	1.75 - 7.00
8. Destructive testing methods for AWS, API, and ASME codes	1.75 - 7.50
Total Hours	12.75 - 51

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 FCAW equipment and describe the steps for proper setup to the instructor.
   2. Read the American Petroleum Institute (API) 1104 code book for proper GMAW procedures and discuss with instructor.

B. Writing Assignments
   1. Maintain a written log of your daily welding activities.
   2. Write a summary of the American Petroleum Institute (API) 1104 requirements for certification.

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

VII. **RECOMMENDED MATERIALS OF INSTRUCTION**

Materials Other Than Textbooks:

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

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