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WLDG 280.01: Welding Testing Certification and Codes

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**THE UNIVERSITY OF MONTANA
MISSOULA COLLEGE
INDUSTRIAL TECHNOLOGY DEPARTMENT**

COURSE SYLLABUS

COURSE NUMBER AND TITLE: WLDG 280 Welding Certification and Codes

DATE REVISED: Spring 2016

SEMESTER CREDITS: 2

PREREQUISITES: WLDG 180 Shielded Metal Arc Welding & WLDG 187 Flux Cored Arc Welding

Instructor: Zachary Reddig

E-Mail: Zachary.reddig@umontana.edu

(According to new Federal and UM policies I cannot answer any email that does not come from an official UM email address; no Hotmail, AOL, yahoo, gmail, etc.)

Phone: 243-7644

Office: Welding Lab Office

Office Hours: By appointment or as posted on Faculty office door.

RELATIONSHIP TO PROGRAM(S):

Welding codes and certification contributes to the objectives of the Welding Technology Program by increasing the students' knowledge of welding codes, correct welding procedures with an overall view of AWS (American Welding Society) and ASME (American Society of Mechanical Engineers) requirements.

COURSE DESCRIPTION:

Students learn fundamental concepts and requirements of the ASME and AWS are examined. These concepts and requirements are provided through laboratory experience with opportunities to qualify (certify) under codes mentioned above.

STUDENT PERFORMANCE OUTCOMES:

Occupational Performance Objectives

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

1. Interpret welding codes and their use.
2. Develop welding skills for qualification (certification).
3. Understand procedure and performance welding qualification.

STUDENT PERFORMANCE ASSESSMENT METHODS AND GRADING PROCEDURES:

Grading Scale:

A= 100%- 90%

B= 89%- 80%

C= 79%- 70%

D= 69%- 60%

F= 59%- 0%

NOTE: Courses must be passed with a 'C minus (C-)' or greater to count toward degree/certificate requirements.

Grading Breakdown:

Lab Work	45%
Exams	35%
Quizzes	10%
Notebook	5%
Professionalism	5%

Practical Welding Tests: Upon successful completion of lab assignments a hands on welding test derived from written specifications and graphics (drawings) will be administered. It will be graded based upon execution i.e: fit-up, weld profile, workmanship- as prescribed by AWS/ASME standards.

Written Exams: Codes tests are derived from reading assignments, notes from class lectures, and presentations. **No make-up exams will be allowed.**

Quizzes: Short impromptu tests given on reading assignments, demonstrations, lectures. Composed of student name/date and three questions. Name and date are worth 25%. Each question is worth 25%. To receive credit for questions the question must be written out and answered correctly. Quizzes may be given at anytime during the course scheduled meeting time. **No make-up quizzes will be allowed.**

Notebook: Compilation of class notes and handouts. To receive the full 5% credit, the notebook must be neat and organized. It must also be contained or be found contiguous within a three ring binder.

Professionalism: Defined as a combination of attitude, motivation, participation, organization and work area cleanliness as demonstrated on a daily basis in the lab and classroom.

POLICIES:

- **Safety is required to be practiced at all times. Disregarding safety practices, endangering yourself or others may result in your being denied access to the lab areas.**
- **Eye protection is mandatory at all times in the lab area.**
- **“Make up” exams or quizzes are not given for any reason**
- **Assignments will be docked 10% for each day it is turned in late after the due date.**
- **Cell phones are to be turned off during class time: no texting, calculations, or calls are to be done during class time.**
- **Any forms of cheating during exams or quizzes are an automatic 0.**
- **Students are expected and required to learn how access and navigate Moodle by the end of first week of instruction. These function as supplements to the course.**
- **Attendance is not taken, although you are required to be in attendance to successfully complete the course.**

REQUIRED TEXTBOOKS:

Welding Principles and Practices, 4th Edition; Sachs and Bohnart, McGraw Hill.

SUGGESTED REFERENCE MATERIALS:

American Welding Society Structural Welding Code; published monthly by AWS

REQUIRED SUPPLIES:

1. Welding Helmet with #10 or #11 lens

2. Lightweight Welding Gloves (GTAW)
3. Eye Protection
4. Pliers with wire-cutting capabilities
5. Full size "pipe" hand brush (has tapered grouping of bristles)
6. 4" or 4 1/2" right angle handheld grinder
7. Tape Measure
8. Striker
9. Upper body protection, leathers, coveralls or equivalent
10. Lock for locker
11. Chipping hammer

ACADEMIC INTEGRITY: All students must practice academic honesty. Academic misconduct is subject to an academic penalty by the course instructor and/or a disciplinary sanction by the University. All students need to be familiar with the Student Conduct Code. The Code is available for review online at <http://www.umd.edu/SA/VP/SA/index.cfm/page/1321>.

DISABILITY ACCOMMODATION: Eligible students with disabilities will receive appropriate accommodations in this course when requested in a timely way. Please contact me after class or in my office. Please be prepared to provide a letter from your DSS Coordinator. For more information, visit the Disability Services website at <http://www.umd.edu/dss/> or call 406.243.2243 (Voice/Text).

COURSE OUTLINE

1. General philosophy of welding codes.
2. Workmanship standards
3. Procedure Qualification
4. Performance Qualification
5. Preparation of materials for plate and pipe qualification
6. Plate qualification- AWS
7. Pipe certification-AWS/ASME as they relate
8. Practical Welding experience
9. Non-destructive testing of welds

NOTE: Faculty reserves the right to modify syllabi and assignments as needed based on faculty, student, and/or environmental circumstances.