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### WLDG 280.01: Weld Testing Certification

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**MISSOULA COLLEGE  
UNIVERSITY OF MONTANA  
INDUSTRIAL TECHNOLOGY DEPARTMENT  
WELDING PROGRAM**

**COURSE SYLLABUS**

**COURSE NUMBER AND TITLE:** WLDG 280 Welding Certification and Codes

**DATE REVISED:** Spring 2015

**SEMESTER CREDITS:** 2

**PREREQUISITES:** WLDG 180 Shielded Metal Arc Welding, WLDG 187 Flux Core Arc Welding

**FACULTY:** Mark Raymond

**E-Mail:** mark.raymond@mso.umt.edu

**Phone:** 406-243-7647

**Office:** West Campus Welding Lab

**Office Hours:** 12:00noon to 1:00p.m. or by appointment

**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 A.W.S. certification and ASME requirements.

**COURSE DESCRIPTION:**

Fundamental concepts and requirements of the American Society of Mechanical Engineers (ASME) and American Welding Society (AWS) are examined. Through laboratory experience students are provided the opportunity to qualify (certify) under the two 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 certification.
3. Understand procedure and performance welding qualification

**STUDENT PERFORMANCE ASSESSMENT METHODS AND GRADING PROCEDURES:**

**Grading Scale:**

93 - 100 A

82 - 92 B

70 - 81 C

60 - 69 D

0 - 59 F

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

**Grading Breakdown:**

Practical Hands-on welding exams	45%
Written exams/assignments	35%
Quizzes	10%
Notebook	5%
Professionalism	5%

**Practical Hands on 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, etc. as prescribed by AWS/ASME standards.

**Written tests:** these tests are derived from reading assignments given in class (homework), notes from class lectures, video presentations, etc.

**Quizzes** are composed of student name/date and three questions. Name and date are worth 25%. Each question is worth 25%. To receive credit for questions they must be written out and correctly answered. Quizzes may be given at any time during the course scheduled meeting time.

**Completed Notebook** is a compilation of class notes and handouts. To receive the full 5% credit, the notebook must be neat, organized, contained or be found contiguous within a three-ring binder.

**Professionalism** is defined as a combination of one's attitude, motivation, participation, organization and work area cleanliness.

**ATTENDANCE POLICY:**

Attendance is not taken, although you are required to be in attendance to successfully complete the course.

**OTHER POLICIES:**

1. **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.
2. **Eye protection** is mandatory at all times in the lab area.
3. **Cell Phones** are not allowed in the classroom or lab.
4. **Official eMail for the University of Montana** must be used for communication by eMail.

**REQUIRED TEXTBOOKS:**

Numerous handouts per instructor.

**SUGGESTED REFERENCES:**

American Welding Society Structural Welding Code – Steel D1.1

**REQUIRED SUPPLIES:**

1. Welding helmet
2. Lightweight welding gloves (GTAW)
3. SMA, FCAW, GMAW welding gloves

4. Eye protection
5. Pliers with wire cutting capabilities
6. Wire hand brush
7. Chipping hammer
8. Coveralls or equivalent
9. Tape measure (12' Min)
10. Lock for locker
11. Calculator
12. Individual hand held grinder required.

**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.umt.edu/SA/VPSA/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.umt.edu/dss/> or call 406.243.2243 (Voice/Text).

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

**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