

**CASPER COLLEGE
COURSE SYLLABUS**

COURSE NUMBER AND TITLE: WELD 2510-01 PIPE WELDING I
SEMESTER/YEAR: Fall 2015

LECTURE HOURS: 2 **LABORATORY HOURS:** 4 **CREDITS:** 3.5

CLASS TIME: 3:00-4:50 p.m. **TWTH** **ROOM:** WT 128/141

INSTRUCTOR'S NAME: Darin Miller

INSTRUCTOR'S CONTACT INFORMATION:

Office Location: WT 129A
Office Phone: 268-2278
EMAIL: dmiller@caspercollege.edu

OFFICE HOURS: As Posted

COURSE DESCRIPTION: An introduction to pipe fabrication. Emphasis on joint preparation, formulas used in pipe layout, uphill and downhill techniques. Welding will be done on carbon steel using the Shielded Metal Arc Welding (SMAW) process with qualification testing in accordance with API and ASME codes.

STATEMENT OF PREREQUISITES: WELD 1755, 1710, 1780 or concurrent enrollment.

GOAL: Training is provided to develop skills necessary to produce quality welds on mild steel pipe in all positions using both low and high pressure techniques for plant and cross country piping applications. To develop skills using the 6010 and 7018 electrodes for pipe application. Pass code required testing in various positions.

OUTCOMES: For the student to develop the ability, knowledge, and understanding of Shielded Metal Arc Welding Pipe, properly lay out, & cut pipe, safety, power sources, weld size and profile, electrode classification and selection, weld preparation and testing, joint geometry, welding positions, and multiple pass open root groove welds in all positions. Demonstrate effective oral and written communication. Solve problems using critical thinking and creativity. Use appropriate technology and information to conduct research.

METHODOLOGY: Course will consist of two lecture hour and four lab hours per week for 16 weeks.

EVALUATION CRITERIA: The student will be evaluated on quizzes, tests and lab projects. The quizzes may be either written, practical or virtual. Satisfactory completion of plate tests 2G, 3G, 4G, required to pass class. **3/8 Plate tests to be satisfactorily completed prior to welding pipe.**

Grading Scale

100 - 90 = A
89 - 80 = B
79 - 70 = C
69 - 60 = D
59 - Below = F

Attendance Policy: *Attendance is of utmost importance. Unexcused absences in the excess of 4 will result in the loss of one letter grade. Due to the consideration of the instructors and students, you **must** be present at the designated starting class time or you will not be allowed to participate unless prior arrangements with the instructor have been made.*

Tool Use: Misuse of shop tools will result in the loss of tool privileges.

REQUIRED TEXTS, READINGS, AND MATERIALS:

CLASS POLICIES:

Last Date to Change to Audit Status: See current Casper College catalog.

Last Date to Withdraw with a W Grade: See current Casper College catalog.

No cell phones or other electronic devices are allowed in the classroom or laboratories.

SAFETY: Personal and equipment safety standards will be strictly enforced. It is the individual's responsibility to develop and use a safe work attitude.

STUDENT RIGHTS AND RESPONSIBILITIES: Please refer to the Casper College Student Conduct and Judicial Code for information concerning your rights and responsibilities as a Casper College Student.

Chain of Command: If you have any problems with this class, you should first contact the instructor in order to solve the problem. If you are not satisfied with the solution offered by the instructor, you should then take your problem through the appropriate chain of command starting with the department head, then the Dean, and lastly the vice president for academic affairs.

Academic Dishonesty - Cheating & Plagiarism: Casper College demands intellectual honesty. Proven plagiarism or any form of dishonesty associated with the academic process can result in the offender failing the course in which the offense was committed or expulsion from school. See the Casper College Student Code of Conduct.

Official Means of Communication: Casper College faculty and staff will employ the student's assigned Casper College email account as a primary method of communication. Students are responsible to check their account regularly.

ADA Accommodations Policy: If you need academic accommodations because of a disability, please inform me as soon as possible. See me privately after class, or during my office hours. To request academic accommodations, students must first consult with the college's Disability Services Counselor located in the Gateway Building, Room 344, (307) 268-2557, bheuer@caspercollege.edu. The Disability Services Counselor is responsible for reviewing documentation provided by students requesting accommodations, determining eligibility for accommodations, and helping students request and use appropriate accommodations.

CALENDAR OR SCHEDULE INDICATION COURSE CONTENT:

Topical Outline:

1. Basic Shapes and Pipefitter Terminology
2. Basic Mathematic Calculations, Decimals and Geometric Calculations
- *3. Groove Weld open root - Horizontal 2G position (guided bend)
4. Angles and Angular Layout
- *5. Groove Weld open root – Vertical up 3G position (Guided bend)
Test # 1
- *6. Groove Weld open root - overhead 4G position (Guided bend)
7. Calculated Welded Offsets
- *8. Groove Weld open root- Vertical down 3G (guided bend)
9. Layout Offsets other than 45 & 90 degree, Welded offsets and Multi Turn Layouts
Test #2
- *10. Single Vee Groove Weld - 3G E6010,E7010 (VRTEX) 80% or higher required
- *11. Single Vee Groove Weld – 3G E6010,E7018 (VRTEX) 80% or higher required
- *12. Single Vee Groove Weld – 4G E6010,E7018 (VRTEX) 80% or higher required

*Graded Lab projects

() Testing Method

