COURSE NUMBER AND TITLE: WELD 1780-01 GAS TUNGSTEN ARC WELDING

SEMESTER/YEAR: Spring 2016

LECTURE HOURS: 2 LABORATORY HOURS: 6 CREDITS: 4.5

CLASS TIME: 8:00-11:50 a.m. TTH ROOM: WT 128/141

INSTRUCTOR’S NAME: Darin Miller

OFFICE HOURS: See current schedule posted on office door.

COURSE DESCRIPTION: Provides the student with the knowledge and understanding of the Gas Tungsten Arc Welding (GTAW) process, welding safety and arc characteristics. Students should develop skills necessary to produce quality fillet and open groove welds on mild steel, stainless steel, and aluminum.

Extended description: GTAW is demonstrated and performed on mild steel in all position fillet and butt joints. Information and practical experience is also included on pipe joints with root penetration and filler passes according to applicable codes. Coverage of equipment set-up and maintenance along with technical concepts as they apply to the welding process is also covered.

STATEMENT OF PREREQUISITES: WELD 1700 or concurrent with WELD 1780

GOAL: To understand proper set-up and adjustment of TIG machines while performing fillet and butt joints in all positions on mild steel and aluminum.

OUTCOMES: To properly perform TIG welds using multiple joint configurations in a variety of positions. Students will be introduced to the applications involved in joining nonferrous metals as well as understanding how to evaluate welds.

METHODOLOGY: Two (2) lecture hours per week and a six (6) hour lab for 16 weeks. Students will be evaluated on the quality of assigned laboratory exercises as well as quizzes and tests covering classroom lecture material. There will also be eight (3) written tests to be given at approximately equally spaced times throughout the semester. The final test is comprehensive of the semester.

EVALUATION CRITERIA: The student will be evaluated on quizzes, tests and lab projects. The quizzes may be either written or practical.

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 instructor 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:      Welding Principals &  
Applications, 7th Edition, Jeffus

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’S 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 and 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 form 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 INDICATING COURSE CONTENT:  

TOPICAL OUTLINE: 
1. Introduction to GTAW 
2. Safety and Health of Welders/Equipment setup 
3. Fillet Weld Lap & Tee Joint - 2F, 3F, 4F position (VIS) 
4. Pulse GTAW (VIS) 
5. GTAW tubing (VIS) 

Test #1 
6. Single vee groove weld - Horizontal 2F position (guided bend) 
7. Aluminum – (VIS) 
8. Weld Quality Inspection 
9. Weld Joint Design 
10. Single Vee Groove Weld – Vertical 3G (guided bend) 

Test #2 
11. Electrode Classification and Selection 
12. Troubleshooting Common Equipment Failure 

Graded Lab projects

( ) Testing Method 

Final Exam