

CASPER COLLEGE
COURSE SYLLABUS

COURSE NUMBER & TITLE: WELD 1820-01 GMAW & GTAW Welding
SEMESTER/YEAR: Fall 2015

LECTURE HOURS: 1 LABORATORY HOURS: 3 CREDITS: 2.5

CLASS TIME: 1:00 - 2:50 p.m. MW 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: Provides basic instruction in the Gas Tungsten Arc Welding (GTAW) and Gas Metal Arc Welding (GMAW) processes. Emphasis on safety, machine set-up and trouble-shooting, and power sources. Students should develop skills necessary to produce quality welds on mild steel, aluminum, and stainless steel joints utilizing both processes.

STATEMENT OF PREREQUISITES: *FOR AUTO BODY PROGRAM MAJORS ONLY*

GOAL: Emphasis will be placed on safety, machine set-up and troubleshooting, and power sources. The student will develop skills necessary to produce good quality welds on mild steel, aluminum, and stainless steel joints utilizing both processes.

OUTCOMES: For the student to acquire an understanding of safety in MIG and TIG welding, proper set-up and adjustment of machines, troubleshooting machines, electrode identification, and to develop skills necessary to produce quality welds using both processes. Demonstrate effective oral and written communication.

Solve problems using critical thinking and creativity.

Use appropriate technology and information to conduct research.

METHODOLOGY: Lecture, lab projects.

EVALUATION CRITERIA: The student will be evaluated on quizzes, tests and lab projects. The quizzes and tests may be written or practical. The final exam will be comprehensive and count 30% of the final grade.

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:

Basic TIG & MIG Welding, 3rd Edition; Griffin, Roden, Briggs

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/Program Director, the Academic 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 INDICATING COURSE CONTENT:

TOPICAL OUTLINE:

<u>Week</u>		<u>Topic</u>	<u>Chapter</u>
1	(1)	The GTAW Process	1
2		Equipment for Manual TIG Welding	2
3	(2)	TIG Welding Stainless and Mild Steel	15
4		The Welding of Aluminum	4
5	(3)	The Water Cooled TIG Welding Torch	3
6		The Action In and Around the ARC	5
		Fundamentals of TIG Welding	6
7	(4)	Starting an ARC and Stringer Beads On	7
8		Aluminum Test # 1 MIDTERM	
9	(5)	The GMAW Process	18
10		Equipment for GMAW	19
		Establishing the Arc and Welding	21
11	(6)	GMAW Variables	20
12		Procedure Variables	23
		FCAW Process	27
		TEST #2	
13	(7)	MIG Welding the Basic Joints	22
14		MIG Welding Aluminum	24
15	(8)	FINAL TEST	
16			

REQUIRED WELDMENTS:

TIG:	Butt Joint	1G, 2G, 3G	MIG: SHORT ARC:	Tee Joint	2F
	Lap Joint	2F, 3F		Lap Joint	2F
	Tee Joint	2F, 3F	GLOBULAR:	Tee Joint	2F
	Aluminum Lap Joint	2F		Lap Joint	2F
	Aluminum Tee Joint	2F		SPRAY ARC:	Tee Joint
		Lap Joint	2F		
			FLUX CORE:	Tee Joint	2F
				Lap Joint	2F