



WLDG-1430
Introduction to Gas Metal Arc Welding
Fall 2020
TTH 8:30am-11:50am

Instructor: Dwight Miller, dmiller@com.edu, 409-933-8454

Communicating with your instructor: It is the students' responsibility to check his or her COM email. ALL electronic communication with the instructor must be through your COM email. Due to FERPA restrictions, faculty cannot share any information about performance in the class through other electronic means.

Student hours and location: MTWTH-7:30am-8:30am,
MW-12:00pm-1:30pm, T-12:00pm-12:30pm, Welding Technology Office

Required Textbook:

Welding Principles and Applications (Larry Jeffus)
(ISBN-13: 978-1-305-49469-5) (ISBN-10: 1-305-49469-5)
(ISBN-13: 978-1-305-49470-1) (ISBN-10: 305-49470-9)
The Hard back and Lab book is required.

Textbook Purchasing Statement: A student attending College of the Mainland is not under any obligation to purchase a textbook from the college-affiliated bookstore. The same textbook may also be available from an independent retailer, including an online retailer.

Course Description

Principles of gas metal arc welding, setup and use of Gas Metal Arc Welding (GMAW) equipment, and safe use of tools/equipment. Instruction in various joint designs.

Determination of Course Grade/Detailed Grading Formula

1. The student must meet AWS standards on all workmanship qualifications.
2. 25% of the grade is homework, all homework must be completed to take the exam or it is a 0 on exam, 25% written exams, and 50% is skills test

Grade Appeal Process: Concerns about the accuracy of grades should first be discussed with the instructor. A request for a change of grade is a formal request and must be made within six months of the grade assignment. Directions for filing an appeal can be found in the student handbook. <https://build.com.edu/uploads/sitecontent/files/student-services/Student_Handbook_2019-2020v5.pdf.
An appeal will not be considered because of general dissatisfaction with a grade, penalty, or outcome of a course. Disagreement with the instructor's professional judgment of the quality of the student's work and performance is also not an admissible basis for a grade appeal.
https://build.com.edu/uploads/sitecontent/files/student-services/Student_Handbook_2019-2020v5.pdf

Student Learner Outcome	Maps to Competency	Assessed Via This Assignment
Describe welding positions with various joint designs on plate.	Critical thinking	Homework, Written Exams, Lab Manual Assignment 10-1,
Describe the effects of welding parameters in GMAW, apply safety rules.	Critical thinking	Homework, Written Exams, Lab Manual Assignments 11-1,11-2, 11-3,
Troubleshoot equipment used, perform inspection.	Critical thinking	Homework, Written Exams, Lab Manual Assignment 15-13
Weld various types of structural material, diagnose welding problems.	Critical thinking	Homework, Written Exams, Lab Manual Assignments 15-14, 15-15

General Education Core Objectives: Students successfully completing this course will demonstrate competency in the following Core Objectives:

Critical Thinking Skills: Students will demonstrate creative thinking, innovation, and the ability to analyze, evaluate, and synthesize information.

Attendance Policy: Attendance and Tardiness will be taken each class period.

Withdrawal Policy: In order to receive a letter grade of “W” the student must withdraw before the official withdrawal date for the semester.

FN Grading: The FN grade is issued in cases of *failure due to a lack of attendance*, as determined by the instructor. The FN grade may be issued for cases in which the student ceases or fails to attend class, submit assignments, or participate in required capacities, and for which the student has failed to withdraw. The issuing of the FN grade is at the discretion of the instructor.

ADA Statement: College of the Mainland adheres to all applicable federal, state and local laws, regulations and guidelines with respect to providing accommodations to students with disabilities. If you have a disability and are in need of special accommodation, the instructor will work with you to provide a reasonable accommodation to ensure that you have a fair opportunity to perform in this class. Any student with a documented disability needing academic accommodations is requested to contact Holly Bankston 409) 933-8520 or hbankston@com.edu. The Office of Services for Students with Disabilities is located in the Student Success Center. Appropriate steps will then be taken to assist you in your needs.

<http://www.com.edu/student-services/counseling.php>

Counseling Statement: Any student that is needing counseling services is requested to please contact Holly Bankston in the student success center at 409-933-8520 or hbankston@com.edu.
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Counseling services are available on campus in the student center for free and students can also email counseling@com.edu to setup their appointment. Appointments are strongly encouraged; however some concerns may be addressed on a walk-in basis

COVID-19 Statement: All students, faculty and staff are expected to familiarize themselves with materials and information contained on the College of the Mainland's Coronavirus Information site at www.com.edu/coronavirus.. Students are required to watch a training [video](#), complete the [self-screening](#), and acknowledge the safety guidance at: www.com.edu/selfscreen. In addition, students, faculty, and staff must perform a [self-screening](#) prior to each campus visit. Finally, students, faculty, or staff which have had symptoms of COVID-19, received a positive test for COVID-19, or have had close contact with an individual infected with COVID-19 must complete the [self-report tool](#)

Early Warning Program: The Counseling Center at College of the Mainland has implemented an Early Warning Program. I have been asked to refer students to the program throughout the semester if they are having difficulty completing assignments or have poor attendance. If you are referred to the Early Warning Program you will be contacted by someone in the Counseling Department. As student success and retention is very important to us, someone from the Counseling Department will schedule a meeting with you to see what assistance they can offer in order for you to meet your academic goals.

Classroom Conduct Policy: College of the Mainland requires that students enrolled at COM be familiar with the Standards of Student Conduct, which can be found in the on-line Student Handbook. <http://www.com.edu/student-services/student-handbook.php> . Students should act in a professional manner at all times. Disruptive students will be held accountable according to college policy. Any violations of the Code of Conduct will result in a referral to the Office for student Conduct and may result in dismissal from this class.

Academic Dishonesty: Any incident of academic policy will be dealt with in accordance with college policy and the Student Handbook. Academic dishonesty – such as cheating on exams is an extremely serious offense and will result in a **grade of zero** on that exam and the student will be referred to the Office of Student Conduct for the appropriate discipline action.

Plagiarism: Plagiarism is using someone else's words or ideas and claiming them as your own. Plagiarism is a very serious offense. Plagiarism includes paraphrasing someone else's words without giving proper citation, copying directly from a website and pasting it into your paper, using someone else's words without quotation marks. Any assignment containing any plagiarized material will receive a **grade of zero** and the student will be referred to the Office of Student Conduct for the appropriate discipline action.

www.plagiarism.org

Make-Up Policy:

Make-up exams must be scheduled with your professor but must be scheduled within 7 days of the original test date or you will receive a zero for the test. Make-up exams may score no higher than

90% unless the make-up exam was scheduled prior to the original exam date. At the instructor's discretion, make up exams may be in a different format from the scheduled exam. Labs and homework not turned in on the due date will be scored at 80% of the maximum. All homework assignments are to be done outside of class time.

Grading Scale:

- 65-69 Plus student must complete Lab Objectives 1-8 =D
- 70-79 Plus student must complete Lab Objectives 1-9 =C
- 80-89 Plus student must complete Lab Objectives 1-10=B
- 90-100 Plus student must complete Lab Objectives 1-11=A

Student Concerns: If you have any questions or concerns about any aspect of this course, please contact me using the contact information previously provided. If, after discussing your concern with me, you continue to have questions, please contact Welding Coordinator vwoods@com.edu 409-993-8380/409-933-8123.

Course outline 3G GMAW Checklist

	Needs Improvement	Standards Met
Root Pass		
Root Penetration – no more than 1/16 penetration		
Weld porosity- – no pin holes in weld		
Weld Tie In (Restarts) – uniform with no undercuts		
Shield Gas setting-Proper gas flow settings		
Cover Pass		
Size – weld size no less than 1/16, no more than 1/8 height		
Width no more than 1/16 outside the bevel		
Weld Undercut – no undercuts (if there are undercuts the weld is being made too fast or with too much heat)		
Weld Porosity – no pin holes in weld		
Continuous Welding Bead – straight uniform bead		
Cold Lap – need to run at proper temperature		

Course outline

Week#	Day/Date	Topic	Reading Assignments & Homework Due Dates
1	T 8-25-20	Run, Hide, Fight Intro + Syllabus + Expectations + Explain Grading % + Welding Safety Rules and Welding Equipment	Chapter 10
	Th 8-27-20	Welding Lecture-Simulator 2 hours Lab	Chapter 10 key terms 1 thru 4

2	T 9-1-20	Welding Lecture-Simulator 2 hours Lab	Chapter 10 key terms 5 thru 10
	TH 9-3-20	Class Review and Quiz # 1 2 hours lab	45 minutes time limit on quiz. No make-up on quiz
3	T 9-8-20	Welding Lecture-Simulator 2 hours lab	Chapter 10 review questions 1 thru 10
	Th 9-10-20	Welding Lecture-Simulator 2 hours lab	Chapter 10 review questions 11 thru 20
4	T 9-15-20	Welding Lecture-Simulator 2 hours lab	Chapter 10 review questions 21 thru 27
	Th 9-17-20	Class Review and Exam Chapter 10 30 minutes-lab	3-hour time limit on exam
5	T 9-22-20	Welding Lecture-Simulator 2 hours lab	Chapter 11 key terms 1 thru 4
	TH 9-24-20	Welding Lecture-Simulator 2 hours lab	Chapter 11 key terms 5 thru 8
6	T 9-29-20	Class review and Quiz # 2 2 hours lab	45 minutes time limit on quiz. No make-up on quiz
	TH 10-1-20	Welding Lecture-Simulator 2 hours lab	Chapter 11 review questions 1 thru 5
7	T 10-6-20	Welding Lecture-Simulator 2 hours lab	Chapter 11 review question 5 thru 10
	Th 10-8-20	Welding Lecture-Simulator 2 hours lab	Chapter 11 review questions 11 thru 14
8	T 10-13-20	Welding Lecture-Simulator 2 hours lab	Chapter 11 review questions 11 thru 14
	Th 10-15-20	Welding Lecture-Simulator 2 hours lab	Chapter 11 review questions 11 thru 14
9	T 10-20-20	Welding Lecture-Simulator 2 hours lab	Chapter 11 review questions 15 thru 19
	Th 10-22-20	Welding Lecture-Simulator 2 hours lab	Chapter 11 review question 20 thru 22
10	T 10-27-20	Welding Lecture-Simulator 2 hours lab	Chapter 11 review questions 23 thru 25
	Th 10-29-20	Welding Lecture-Simulator 2 hours lab	Chapter 11 v-groove welds
11	T 11-3-20	Welding Lecture-Simulator 2 hours lab	Chapter 11 bevel groove welds
	Th 11-5-20	Welding Lecture-Simulator 2 hours lab	Chapter 11 review
12	T 11-10-20	Welding Lecture-Simulator 2 hours lab	Chapter 11 review on overhead and out of position welds

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	Th 11-12-20	Class review and Exam on Chapter 13 30 minutes - lab	3-hour time limit on exam
13	T 11-17-20	Welding Lecture-Simulator 2 hours lab	Chapter 15 key terms 1 thru 2
	Th 11-19-20	Welding Lecture-Simulator 2 hours lab	Chapter 15 key terms 3 thru 6
14	T 11-24-20	Class review and Quiz # 3 2 hours lab	45-minute time limit on quiz. No make-up on quiz
	Th 11-26-20	Welding Lecture-Simulator 2 hours lab	Chapter 15 review questions 1 thru 8
15	T 12-1-20	Welding Lecture-Simulator 2-hour lab	Chapter 15 review questions 9 thru 21
	Th 12-3-20	Class review and Exam on Chapter 15 30 minutes - lab	3-hour time limit on exam
16	T 12-8-20	Last class for make- up Exam-Final Grades	Make -up exam and discussions
	Th 12-10-20	Last day of class	

The lab assignments are a major part of the course outline each student will progress at their own pace. However, each student must pass at least number 8 lab assignment to pass the class at a minimum requirement to A.W.S. Standards. Any student below lab assignment 8 is an automatic F for the class. Any student not passing assignment 8 by week 8 will meet with the instructor about dropping the class, due to lack of progress. The student and instructor will discuss any issue and/or distractions causing the problem. Faculty may, at their discretion withdraw a student due to an inability to maintain the prescribe minimum rate of progress stated in the course syllabi, or behavior detrimental to the learning process of the student or class.

Course requirements

Lab Assignments	Performance Rating	Date Completed	Instructor=s Initials	Trainee=s Initials
Gas Metal Arc Welding				
1. Describe welding positions with various joint designs on plate				
2 Describe the effects of welding parameters in GMAW, apply safety rules.				
3. Troubleshoot equipment used, perform inspection.				
4. Weld various types of structural material, diagnose welding problems.				
5. Make 2F fillet weld on plain carbon steel				
6. Make 3F fillet weld on plain carbon steel				
7. Make a 4F fillet weld on plain carbon steel				
8. Make 1G groove weld on plain carbon steel				
9. Make a 3G groove weld on plain carbon steel				
10. Make a 2G groove weld on carbon steel pipe 6”				
11. Make a 5G groove weld on carbon steel pipe 6”				

SYLLABUS CHANGES:

The instructor reserves the right to make changes to this syllabus during the semester as needed to facilitate instruction and/or course needs. The Speaking, Reading and Writing Center provides free tutoring services to students, staff and faculty seeking assistance for writing, reading and oral presentations for academic and non-academic assignments/projects. Located in the Technical Vocational Building 1306, the center provides face to face and online tutoring sessions in a welcoming environment. Appointments can be made in person, or on the center scheduler at com.mywconline.com, or by clicking the SRWC icon on the COM website.

Run, Hide, Fight *

<https://www.youtube.com/watch?v=5VcSwejU2D0>

Last Resort ACTIVE SHOOTER SURVIVAL Measures by Alon Stivi

<https://www.youtube.com/watch?v=r2fIeRUbRHw>

Surviving an Active Shooter Event - Civilian Response to Active Shooter

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<https://www.youtube.com/watch?v=j0It68YxLQQ>

Make the Call *

<https://www.youtube.com/watch?v=AWaPp-8k2p0>

Welding Safety Rules

- 1. No Horseplay of any kind**
- 2. No lighters or matches in the weld lab**
- 3. Safety glasses(Z87) or prescription glasses with Z87 frame and lens MUST be worn at all times in labs and outside when students are working, sun glasses are NOT acceptable**
- 4. Shaded cutting goggles or shaded cutting face shield must be worn when cutting with safety glasses**
- 5. Never use machinery or equipment unless instructed by faculty instructor or lab assistant**
- 6. Proper fitting clothing must be worn at all times in the lab (100% cotton, FRC)**
- 7. Report all accidents immediately**
- 8. Grinding shields must be worn when grinding with safety glasses**
- 9. No tobacco of any type in the welding building**
- 10.No spitting anywhere in the welding labs**
- 11.Welding hood with a shade of 9,10,11 or 12 must be worn while welding**

12. Tool rest for tungsten grinder must be maintained at 1/16 distance from wheel

13. Gloves are required while welding, cutting and handling metal in the weld lab

14. FAILURE TO FOLLOW SAFETY RULES WILL RESULT BEING REMOVED FROM CLAS