



**WLDG-1412 -102CL**  
**Introduction to Flux Core Welding**  
**Spring- 2024**

**T-TH-8:30am-11:50am**

**Instructor:** Dwight Miller [dmiller@com.edu](mailto:dmiller@com.edu) 409-933-8454

**Student hours and location:** M-T-W-TH-7:30am-8:30am M-W-12:00pm-1:30pm-T-12:00pm-12:30pm-Welding Technology Office

**Required Textbook:**

Welding Principles and Applications (Larry Jeffus)  
(ISBN-13: 978-0-3573-7765-9)  
(ISBN-13: 978-0-357-377769-7)  
The Hard back and Lab book are required.

**Course Description:** Principles of gas metal arc welding, setup, and use of Flux Core Arc Welding (FCAW) equipment, and safe use of tools/equipment. Instruction in various joint designs

Lab Assignments	Performance Rating	Date Completed	Instructor Initials	Trainee Initials
1. Make a 2F fillet weld on 3/16" carbon steel plate.				
2. Make a 3F fillet weld on 3/16" carbon steel plate.				
3. Make a 4F fillet weld on 3/16" carbon steel plate.				
4. Make a 1G groove weld on 3/8" carbon steel plate.				
5. Make a 3G groove weld on 3/8" carbon steel plate.				

6. Make a 4G groove weld on 3/8" carbon steel plate.				
7. Make a 2G groove weld on 6" carbon steel pipe fixed position				

**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
3. Student must have a 65-70 on Exams and complete Lab Objectives 1 thru 4=D
4. Student must 71 thru 80 on Exams and complete Lab Objectives 1 thru 5=C
5. Student must 81 thru 90 on Exams and complete Lab Objectives 1 thru 6=B
6. Student must 91 thru 100 on Exams and complete Lab Objectives 1 thru 7=A

**Late Work, Make-Up, and Extra -Credit 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

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

**Communicating with your instructor:** 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. (Faculty may add additional statement requiring monitoring and communication expectations via D2L or other LMS)

<b>Student Learner Outcome</b>	<b>Maps to Core Objective</b>	<b>Assessed Via This Assignment</b>
Demonstrate equipment safety checks	Critical thinking	Homework, Chapter 12 Written Exams, Lab Manual Assignments 12-1and 12-2
Identify Flux Core Arc Welding (FCAW) equipment parts.	Critical thinking	Homework, Chapter 13 Written Exams, Lab assignments.13-5 and 13-6
Demonstrate the procedures for welding a butt joint, a T-joint, in a flat, horizontal, and overhead position.	Critical thinking	Homework, Chapter 14 Written Exams, Lab assignments 14-13
Demonstrate the procedures for making an open butt v-groove weld	Critical thinking	Homework, Chapter 14 Written Exams, Lab assignments 14-14,14-14

**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.

**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 Derrick Lewis, Department Chair, 409-933-8321/409-933-8380 at [dlewis22@com.edu](mailto:dlewis22@com.edu).

**Course outline:**

<b>Week#</b>	<b>Day/Date</b>	<b>Topic</b>	<b>Reading Assignments &amp; Homework Due Dates</b>
1	T 1-16-24	Intro + Syllabus + Expectations + Explain Grading % + Welding Safety Rules + Welding Equipment	Chapter 12
	Th 1-18-24	Welding Lecture-Simulator 2-hours lab	Chapter 12 key terms 1 thru 4
2	T 1-22-24	Welding Lecture-Simulator 2-hours lab	Chapter 12 key terms 5 thru 10

	TH 1-24-24	Welding Lecture-Simulator 2-hours lab	Chapter 12 key terms 11 thru 14
3	T 1-30-24	Welding Lecture-Simulator 2-hours lab	Chapter 12 review question 1 thru 3
	TH 2-1-24	Welding Lecture-Simulator 2-hours lab	Chapter 12 review question 4 thru 5
4	T 2-6-24	Welding Lecture-Simulator 2-hours lab	Chapter 12 review question 6 thru 10
	TH 2-8-24	Welding Lecture-Simulator 2-hours lab	Chapter 12 review questions 11 thru 15
5	T 2-13-24	Welding Lecture-Simulator 2-hours lab	Chapter 12 review questions 16 thru 20
	TH 2-15-24	Welding Lecture-Simulator 2-hours lab	Chapter 12 review questions 21 thru 25
6	T 2-20-24	Welding Lecture-Simulator 2-hours lab	Chapter 12 review questions 26 thru 32
	TH 2-22-24	Class review and Exam on Chapter 12 Students have 7 DAYS to make-up test.	EXAM DUE
7	T 2-27-24	Welding Lecture-Simulator 2-hours lab	Chapter 13 key terms 1 thru 4
	TH 2-29-24	Welding Lecture-Simulator 2-hours lab	Chapter 13 key terms 5 thru 8
8	T 3-5-24	Welding Lecture-Simulator 2-hours lab	Chapter 13 key terms 9 thru 12
	TH 3-7-24	Welding Lecture-Simulator 2-hours lab	Chapter 13 review questions 1 thru 10
	T 3-11-24	Spring Break	
	TH	Spring Break	
9	T 3-19-24	Welding Lecture-Simulator 2-hours lab	Chapter 13 review questions 11 thru 21
	TH 3-21-24	Welding Lecture-Simulator 2-hours lab	<b>Chapter 13 review questions 21 thru 26</b>
10	T 3-26-24	Class review and Exam on Chapter 13 Students have 7 DAYS to make-up test.	EXAM DUE
	TH 3-28-24	Welding Lecture-Simulator 2-hours lab	Chapter 14 key terms 1 thru 4
11	T 4-2-24	Welding Lecture-Simulator 2-hours lab	Chapter 14 key terms 5 thru 12
	TH 4-4-24	Welding Lecture-Simulator 2-hours lab	Chapter 14 review questions 1 thru 5
12	T 4-9-24	Welding Lecture-Simulator 2-hours lab	Chapter 14 review questions 6 thru 10
	TH 4-11-24	Class review and Exam on Chapter 15 Students have 7 DAYS to make-up test.	Chapter 14 review questions 11 thru 15
13	T 4-16-24	Welding Lecture-Simulator 2-hours lab	Chapter 14 review questions 16 thru 20
	TH 4-18-24	Class review and Exam on Chapter 14 Students have 7 DAYS to make-up test.	EXAM DUE
14	T 4-23-24	Welding Lecture-Simulator 2-hours lab	Lab
	TH 4-25-24	Welding Lecture-Simulator 2-hours lab	Lab / Make up Exams

15	T 4-30-24	Welding Lecture-Simulator 2-hours lab	Lab
15	TH 5-2-24	Welding Lecture-Simulator 2-hours lab	Lab
16	T 5-7-24	Welding Lecture-Simulator 2-hours lab	Lab
16	Th 5-9-24	Last Day of Class	Lab

**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://www.com.edu/student-services/docs/Student\\_Handbook\\_2023-2024\\_v2.pdf](https://www.com.edu/student-services/docs/Student_Handbook_2023-2024_v2.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.*

**Academic Success & Support Services:** College of the Mainland is committed to providing students support and tools for success in their college careers. Support is offered through our Tutoring Services, Library, Counseling, and through Student Services. Please discuss any concerns with your faculty or an advisor.

**ADA Statement:** Any student with a documented disability needing academic accommodations is requested to contact Kimberly Lachney at 409-933-8919 or [klachney@com.edu](mailto:klachney@com.edu). The Office of Services for Students with Disabilities is located in the Student Success Center

**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.

**Withdrawal Policy:** Students may withdraw from this course for any reason prior to the last eligible day for a "W" grade. Before withdrawing students should speak with the instructor and consult an adviser. Students are permitted to withdraw only six times during their college career by state law. The last date to withdraw from the 16-week session is April 22<sup>th</sup>.

**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. The last date of attendance should be documented for submission of an FN grade.

**Early Alert Program:** The student Success Center at College of the Mainland has implemented an Early Alert Program because student success and retention are very important to us. 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 Alert Program you will be contacted by someone in the Student Success Center who will schedule a meeting with you to see what assistance they can offer for you to meet your academic goals.

**Resources to Help with Stress:**

If you are experiencing stress or anxiety about your daily living needs including food, housing or just feel you could benefit from free resources to help you through a difficult time, please click here <https://www.com.edu/community-resource-center/>. College of the Mainland has partnered with free community resources to help you stay on track with your schoolwork, by addressing life issues that get in the way of doing your best in school. All services are private and confidential. You may also contact the Dean of Students office at [deanofstudents@com.edu](mailto:deanofstudents@com.edu) or [communityresources@com.edu](mailto:communityresources@com.edu).

**4G GMAW Checklist**

WLDG 1412	Needs Improvement	Standards Met
<b>Root Pass</b>		
Root Penetration – 1/16 – 3/32 penetration		
Weld Undercut – no undercuts (if there are undercuts the weld is being made too fast or with too much heat)		
Weld Tie In (Restarts) – uniform with no undercuts		
<b>Cover Pass</b>		
Size – each weld bead should not exceed AWS standards for the size of the Welding Wire		
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		

## **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.**

## **Welding Safety Rules**

- 1. No Horseplay of any kind**
- 2. No lighters or matches in the welding lab.**
- 3. Safety glasses(Z87) or prescription glasses with Z87 frame and lens MUST be always worn in labs and outside when students are working, sunglasses 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 always worn 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 hoods 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 welding lab.**

**14.FAILED TO FOLLOW SAFETY RULES WILL RESULT BEING  
REMOVED FROM CLASS**