



WLDG-1412-102CL
Introduction to Flux Core Welding
Fall- 2022
T-Th- 8:30am-11:50am

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

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.

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.

Course requirements:

Lab Assignments	Performance Rating	Date Completed	Instructor=s Initials	Trainee=s Initials
Flux Core Arc Welding				
1. Make 2F fillet weld on plain carbon steel				
2 Make 3F fillet weld on plain carbon steel				
3 Make 4F fillet weld on plain carbon steel				
4 Make a 2G groove weld on plain carbon steel plate				
5 Make a weld using the Sub-Arc welding machine				
6 Make a 3G groove weld on plain carbon steel plate				
7. Make a 4G groove weld on carbon steel plate				
8. Make a fixed 2G groove weld on plain carbon steel 6" pipe				

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, homework must be done outside of class. Any student doing homework in class will have 25 points taken off their exam. 25% written exams, and 50% is skills test

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. All homework assignments are to be done outside of class time.

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 Blackboard or other LMS)

Student Learner Outcome	Maps to Core Objective	Assessed Via This Assignment
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 14-12
Demonstrate the procedures for making an open butt v-groove weld	Critical thinking	Homework, Chapter 14 Written Exams, Lab assignments 14-13,14-14

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

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

Course outline

Week#	Day/Date	Topic	Reading Assignments & Homework Due Dates
1	T 8-23-22	Run, Hide, Fight Intro + Syllabus + Expectations + Explain Grading % + Welding Safety Rules and Welding Equipment	Chapter 12
	Th 8-25-22	Welding Lecture-Simulator 2 hours Lab	Chapter 12 key terms 1 thru 4

2	T 8-30-22	Welding Lecture-Simulator 2 hours Lab	Chapter 12 key terms 5 thru 10
	TH 9-1-22	Welding Lecture-Simulator 2 hours Lab	Chapter 12 key terms 5 thru 10
3	T 9-6-22	Welding Lecture-Simulator 2 hours lab	Chapter 12 review questions 1 thru 5
	Th 9-8-22	Welding Lecture-Simulator 2 hours lab	Chapter 12 review questions 6 thru 14
4	T 9-13-22	Welding Lecture-Simulator 2 hours lab	Chapter 12 review questions 15 thru 20
	Th 9-15-22	Welding Lecture-Simulator 2 hours lab	Chapter 12 key terms 21 thru 26
5	T 9-20-22	Welding Lecture-Simulator 2 hours lab	Chapter 12 key terms 27 thru 32
	TH 9-22-22	Class review and Exam on Chapter 12- Students have 7 DAYS to make-up test.	EXAM DUE
6	T 9-27-22	Welding Lecture-Simulator 2 hours lab	Chapter 13 key terms 1 thru 4
	TH 9-29-22	Welding Lecture-Simulator 2 hours lab	Chapter 13 key terms 5 thru 9
7	T 10-4-22	Welding Lecture-Simulator 2 hours lab	Chapter 13 key terms 10 thru 12
	Th 10-6-22	Welding Lecture-Simulator 2 hours lab	Chapter 13 review questions 1 thru 8
8	T 10-11-22	Welding Lecture-Simulator 2 hours lab	Chapter 13 review questions 9 thru 14
	Th 10-13-22	Welding Lecture-Simulator 2 hours lab	Chapter 13 review questions 15 thru 20
9	T 10-18-22	Class review and Exam on Chapter 13- Students have 7 DAYS to make-up test.	EXAM DUE
	Th 10-20-22	Welding Lecture-Simulator 2 hours lab	Chapter 14 key terms 1 thru 4
10	T 10-25-22	Welding Lecture-Simulator 2 hours lab	Chapter 14 key terms 5 thru 8
	Th 10-27-22	Welding Lecture-Simulator 2 hours lab	Chapter 14 key terms 9 thru 10
11	T 11-1-22	Welding Lecture-Simulator 2 hours lab	Chapter 14 review questions 1 thru 4
	Th 11-3-22	Welding Lecture-Simulator 2 hours lab	Chapter 14 review questions 5 thru 12
12	T 11-8-22	Welding Lecture-Simulator 2 hours lab	Chapter 14 review questions 13 thru 15
	Th 11-10-22	Welding Lecture-Simulator 2 hours lab	Chapter 14 review questions 16 thru 17

13	T 11-15-22	Welding Lecture-Simulator 2 hours lab	Chapter 14 review questions 18 thru 21
	Th 11-17-22	Class review and Exam on Chapter 13- Students have 7 DAYS to make-up test.	EXAM DUE
14	T 11-22-22	Welding Lecture-Simulator 2 hours lab	Lab work
	Th 11-24-21	Closed Thanksgiving Holiday	
15	T 11-29-22	Welding Lecture-Simulator 2 hours lab	Lab work
	Th 12-1-22	Welding Lecture-Simulator 2 hours lab	Lab work
16	T 12-6-22	Welding Lecture-Simulator 2-hour lab	Lab work
	Th 12-8-22	Welding Lecture-Simulator 2 hours lab	Lab work

Institutional Policies and Guidelines

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

Academic Success& Support Services: College of the Mainland is committed to providing students the necessary 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 Michelle Brezina (409) 933- 8124 or mvaldes@com.edu. The Office of Services for Students with Disabilities is 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: In order to receive a letter grade of “W” the student must withdraw before the official withdrawal date for the semester. Before withdrawing students should speak with the instructor and consult an advisor. Students are only permitted to withdraw six times during their college career by State law. The last day to withdraw is November -18- 2022.

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 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 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 or communityresources@com.edu.

Grading Scale:

65-69 Plus student must complete Lab Objectives 1-5=D

70-79 Plus student must complete Lab Objectives 1-6=C

80-89 Plus student must complete Lab Objectives 1-7=B

90-100 Plus student must complete Lab Objectives 1-8=A

Course outline 2G FCAW 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 – 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		

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 5 lab assignment to pass the class at a minimum requirement to A.W.S. Standards. Any student below lab assignment 4 is an automatic F for the class. Any student not passing assignment 5 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.

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 weld 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 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**