



WLDG-1412
Introduction to Flux Core Welding
Spring- 2022

T-TH-8:30am-11:45am

Instructor: Dwight Miller 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

Course requirements:

Lab Assignments	Performance Rating	Date Completed	Instructor's Initials	Trainee's 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				
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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

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 14-13
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.

Course outline:

Week#	Day/Date	Topic	Reading Assignments & Homework Due Dates
1	T 1-18-22	Intro + Syllabus + Expectations + Explain Grading % + Welding Safety Rules + Welding Equipment	Chapter 12
	Th 1-20-22	Welding Lecture-Simulator 2-hours lab	Chapter 12 key terms 1 thru 4
2	T 1-25-22	Welding Lecture-Simulator 2-hours lab	Chapter 12 key terms 5 thru 10
	TH 1-27-22	Welding Lecture-Simulator 2-hours lab	Chapter 12 key terms 11 thru 14

3	T 2-1-22	Welding Lecture-Simulator 2-hours lab	Chapter 12 review question 1 thru 3
	TH 2-3-22	Welding Lecture-Simulator 2-hours lab	Chapter 12 review question 4 thru 5
4	T 2-8-22	Welding Lecture-Simulator 2-hours lab	Chapter 12 review question 6 thru 10
	TH 2-10-22	Welding Lecture-Simulator 2-hours lab	Chapter 12 review questions 11 thru 15
5	T 2-15-22	Welding Lecture-Simulator 2-hours lab	Chapter 12 review questions 16 thru 20
	TH 2-17-22	Welding Lecture-Simulator 2-hours lab	Chapter 12 review questions 21 thru 25
6	T 2-22-22	Welding Lecture-Simulator 2-hours lab	Chapter 12 review questions 26 thru 32
	TH 2-24-22	Class review and Exam on Chapter 12 Students have 7 DAYS to make-up test.	EXAM DUE
7	T 3-1-22	Welding Lecture-Simulator 2-hours lab	Chapter 13 key terms 1 thru 4
	TH 3-3-22	Welding Lecture-Simulator 2-hours lab	Chapter 13 key terms 5 thru 8
8	T 3-8-22	Welding Lecture-Simulator 2-hours lab	Chapter 13 key terms 9 thru 12
	TH 3-10-22	Welding Lecture-Simulator 2-hours lab	Chapter 13 review questions 1 thru 10
	T 3-15-22	Spring Break	
	TH 3-17-22	Spring Break	
9	T 3-22-22	Welding Lecture-Simulator 2-hours lab	Chapter 13 review questions 11 thru 21
	TH 3-24-22	Welding Lecture-Simulator 2-hours lab	Chapter 13 review questions 21 thru 26
10	T 3-29-22	Class review and Exam on Chapter 13 Students have 7 DAYS to make-up test.	EXAM DUE
	TH 3-30-22	Welding Lecture-Simulator 2-hours lab	Chapter 14 key terms 1 thru 4
11	T 4-5-22	Welding Lecture-Simulator 2-hours lab	Chapter 14 key terms 5 thru 12
	TH 4-7-22	Welding Lecture-Simulator 2-hours lab	Chapter 14 review questions 1 thru 5
12	T 4-12-22	Welding Lecture-Simulator 2-hours lab	Chapter 14 review questions 6 thru 10
	TH 4-14-22	Class review and Exam on Chapter 15 Students have 7 DAYS to make-up test.	Chapter 14 review questions 11 thru 15
13	T 4-19-22	Welding Lecture-Simulator 2-hours lab	Chapter 14 review questions 16 thru 20
	TH 4-21-22	Class review and Exam on Chapter 14 Students have 7 DAYS to make-up test.	EXAM DUE
14	T 4-26-22	Welding Lecture-Simulator 2-hours lab	Lab
	TH 4-26-22	Welding Lecture-Simulator 2-hours lab	Lab / Make up Exams
15	T 5-2-22	Welding Lecture-Simulator 2-hours lab	Lab

15	TH 5-7-22	Welding Lecture-Simulator 2-hours lab	Lab
16	5-10-22	Welding Lecture-Simulator 2-hours lab	Lab
16	5-12-22	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://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 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 with a documented disability needing academic accommodations is requested to contact Holly Bankston at 409-933-8520 or hbankston@com.edu. The Office of Services for Students with Disabilities is located in the Student Success Center.

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. 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

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 25th .

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.

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.

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. In compliance with Governor Abbott's May 18 Executive Order, face coverings/masks will no longer be required on COM campus. Protocols and college signage are being updated. We will no longer enforce any COM protocol that requires face coverings. We continue to encourage all members of the COM community to distance, when possible, use hygiene measures, and get vaccinated to protect against COVID-19. Please visit com.edu/coronavirus for future updates.

4G GMAW Checklist

WLDG 1412	Needs Improvement	Standards Met
Root Pass		
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		
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 6 lab assignment to pass the class at a minimum requirement to A.W.S. Standards. Student must demonstrate 3 Vee-Butt welds complete and consecutively meeting AWS standards. Any student not passed assignment 6 by (W-day) will meet with instructor about their academic 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.

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=r2tIeRUbRHw>

Surviving an Active Shooter Event - Civilian Response to Active Shooter

<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 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 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 CLASS**