College of the Mainland

WLDG-1412
Introduction to Flux Core Welding
Summer- 2021
MTW 1:00pm-4:50pm

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: MTW-7:30am-8:00am,
MT-12:00pm-1:00pm, 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 Flux Core Arc Welding (FCAW) 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, 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

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
Demonstrate equipment safety checks	Critical thinking	Homework, Chapter 12 Written Exams, Lab Manual Assignment welding quiz
Identify Flux Cored Arc Welding (FCAW) equipment parts.	Critical thinking	Homework, Chapter 13 Written Exams, Lab Manual Assignments welding quiz
Demonstrate the procedures for welding a butt joint, a T-joint, in the flat, horizontal, and overhead positions.	Critical thinking	Homework, Chapter 14 Written Exams, Lab Manual Assignment 14-8,14-21
Demonstrate the procedures for making an open butt v-groove weld.	Critical thinking	Homework, Chapter 14 Written Exams, Lab Manual Assignments welding quiz

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. 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 8-2- 2021.

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 need 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 in the Student Success Center. Appropriate steps will then be taken to assist you in your needs.

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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. 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. 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.

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

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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 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 – 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	M 6-7-21	Run, Hide, Fight Intro + Syllabus + Expectations + Explain Grading % + Welding Safety Rules and Welding Equipment	Chapter 12

	T 6-8-21	Welding Lecture-Simulator 2 hours Lab	Chapter 12 key terms 1 thru 4
	W 6-9-21	Welding Lecture-Simulator 2 hours Lab	Chapter 12 key terms 5 thru 10
2	M 6--14-21	Welding Lecture-Simulator 2 hours Lab	Chapter 12 review questions 1 thru 5
	T 6-15-21	Welding Lecture-Simulator 2 hours Lab	Chapter 12 review questions 1 thru 5
	W 6-16-21	Welding Lecture-Simulator 2 hours Lab	Chapter 12 review questions 6 thru 14
3	M 6-21-21	Welding Lecture-Simulator 2 hours lab	Chapter 12 review questions 15 thru 20
	T 6-22-21	Welding Lecture-Simulator 2 hours Lab	Chapter 12 key terms 21 thru 32
	W 6-23-21	Class review and Exam on Chapter 12- Students have 7 DAYS to make-up test.	Exam Ch-12
4	M 6-28-21	Welding Lecture-Simulator 2 hours lab	Chapter 13 key terms 1 thru 4
	T 6-29-21	Welding Lecture-Simulator 2 hours lab	Chapter 13 key terms 1 thru 4
	W 6-30-21	Welding Lecture-Simulator 2 hours lab	Chapter 13 key terms 5 thru 12
5	M 7-5-21	College Closed- Independence Day Observed	
	T 7-6-21	Welding Lecture-Simulator 2 hours Lab	Chapter 13 review questions 1 thru 8
	W 7-7-21	Class review and Exam on Chapter 12- Students have 7 DAYS to make-up test.	Chapter 13 review questions 9 thru 12
6	M 7-12-21	Welding Lecture-Simulator 2 hours lab	Chapter 13 review questions 13 thru 16
	T 7-13-21	Welding Lecture-Simulator 2 hours Lab	Chapter 13 key terms 17 thru 20
	W 7-14-21	Class review and Exam on Chapter 13- Students have 7 DAYS to make-up test.	Exam Ch-13
7	M 7-19-21	Welding Lecture-Simulator 2 hours lab	Chapter 14 key terms 1 thru 10
	T 7-20-21	Welding Lecture-Simulator 2 hours Lab	Chapter 14 review questions 1 thru 8
	W 7-21-21	Welding Lecture-Simulator 2 hours lab	Chapter 14 review questions 9 thru 15
8	M 7-26	Welding Lecture-Simulator 2 hours lab	Chapter 14 review questions 16 thru 21
	T 7-27-21	Class review and Exam on Chapter 14- Students have 7 DAYS to make-up test.	Exam Ch-14
	W 7-28-21	Students will work on lab work	
9	M 8-2-21	Students will work on lab work	

	T 8-3-21	Students will work on lab work	
	W 8-4-21	Students will work on lab work	
10	M 8-10-21	Students will work on lab work	
	T 8-12-21	Students will work on lab work	
	W 8-13-21	Students will work on lab work	

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**
Flux Core Arc Welding				
1. Demonstrate equipment safety check				
2 Identify Flux Core equipment parts.				
3. Demonstrate the procedures for welding a butt joint,				

in the flat, horizonal, and overhead positions.				
4. Demonstrate the procedures for making an open butt v-grov weld.				
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 2G groove weld on plain carbon steel plate				
9. Make a 3G groove weld on plain carbon steel plate				
10. Make a 4G groove weld on carbon steel plate				
11. Make a 2G 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=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 worn at all times in labs and outside when students are working, sun glasses are NOT acceptable**
4. **Shaded cutting googles 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 warned 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. **FAILUE TO FOLLOW SAFETY RULES WILL RESULT BEING REMOVED FROM CLAS**

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