



WLDG-1457-214CL
Intermediate Shielded Metal Arc Welding S.M.A.W.
MON-WED.- 5:30 PM-9:15 PM

Instructor: Marissa Fisher, mfisher9@com.edu, 409-933-8380

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,4:00PM-5:30PM ; Welding Technology Office

Required Textbook: Welding Principles and Applications (Larry Jeffus)
(ISBN-13: 978-1-111-03918-9) (ISBN-10: 1-111-03918-6)
(ISBN-13: 978-1-111-03917-2) (ISBN-10: 1-111-03917-8)
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

A study of the production of various fillets and groove welds. Preparation of specimens for testing in various positions.

Student Learner Outcomes: Upon successful completion of this course, students will:

- 1.. The student will be able to describe principles of arc welding.
2. The student will be able to arc welding operations of fillet and groove joints.
3. The student will be able to explain heat treatments of low alloy steels.
4. The student will be able to explain weld size and profiles.
5. The student will be able to prepare test plates.
6. The student will be able to perform fillet welds in the overhead position.
7. The student will be able to perform air carbon arc weld removal.
8. The student will be able to perform bevel groove welds with backing plates in various positions.
9. The student will be able to demonstrate use of tools and equipment.

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

1. **Critical thinking:** Explain weld size and profiles

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Student Learner Outcome	Maps To Competency	Assessed Via This Assignment
The student will be able to identify principles of arc welding.	Critical thinking	Homework, Chapter 4 Written Exams, Lab Manual Assignments 4-18 and 6-2 SPOL
The student will be able to describe arc welding operations of fillet and groove joints.	Critical thinking	Homework, Chapter 4 Written Exams, Lab assignments. SPOL
The student will be able to explain heat treatments of low alloy steels.	Critical thinking	Homework, Chapter 4 Written Exams, Lab assignments. SPOL
The student will be able to explain weld size and profiles.	Critical thinking	Homework, Chapter 21 Written Exams, Lab assignments. SPOL
The student will be able to prepare test plates.	Critical thinking	Homework, Chapter 21 Written Exams, Lab assignments. SPOL
The student will be able perform fillet welds in the overhead position.	Critical thinking	Homework, Chapter Written Exams, Lab Assignments, SPOL
The student will be able to perform air carbon arc weld removal.	Critical thinking	Lab assignments, SPOL
The student will be able to perform bevel groove welds with backing plate in various positions.	Critical thinking	Homework, Chapter 21 Written Exams, Lab Manual Assignment 8-6. Students will properly cut, grind and weld test plates to meet AWS Standards. SPOL
The student will be able to demonstrate use of tools and equipment.	Critical thinking	Homework, Chapter 25 Written Exams, Lab Manual Assignment 6-5. SPOL

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. August 2nd 2021 is withdrawal day..

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

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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.

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 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. Appointments are strongly encouraged; however, some concerns may be addressed on a walk-in basis.
<http://www.com.edu/student-services/counseling.php>

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 exam dates are specified in the course outline schedule below, it is the student obligation to make sure he or she arranges for a make up exam.

Grading Scale:

65-69 Plus student must complete Lab Objectives 1-7 =D

70-79 Plus student must complete Lab Objectives 1-8 =C

80-89 Plus student must complete Lab Objectives 1-9=B

90-100 Plus student must complete Lab Objectives 1-10=A

Concerns/Questions Statement: 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 Victor Woods, Department Coordinator, 409-933-8321/409-933-8380 at vwoods@com.edu.

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

Course outline:

Week#	Day/Date	Topic	Reading Assignments & Homework Due Dates
1	Mon 6-07-21	Run, Hide, Fight Intro + Syllabus + Expectations + Explain Grading % + Welding Safety Rules and Welding Equipment	Chapter 4 Key Terms
	Tue 6-08-21	Welding Lecture 2-hours lab	Chapter 4 Review Questions
	Wed 6-09-21	Welding Lecture 2-hours lab	Chapter 4 Quiz
2	Mon 6-14-21	Chapter 4 Exam Due 2-hours lab	All Chapter 4 Homework and Exam Due
	Tue 6-15-21	Chapter 4 Exam Due 2-hours lab	All Chapter 4 Homework and Exam Due
	Wed 6-16-21	Chapter 4 Exam Due 2-hours lab	All Chapter 4 Homework and Exam Due
3	Mon 6-21-21	Welding Lecture 2-hours lab	Chapter 21 Key Terms
	Tue 6-22-21	Welding Lecture 2-hours lab	Chapter 21 Review Questions
	Wed 6-23-21	Welding Lecture 2-hours lab	Chapter 21 Quiz
4	Mon 6-28-21	Chapter 21 Exam Due 2-hours lab	All Chapter 21 Homework and Exam Due

	Tue 6-29-21	Chapter 21 Exam Due 2-hours lab	All Chapter 21 Homework and Exam Due
	Wed 6-30-21	Chapter 21 Exam Due 2-hours lab	All Chapter 21 Homework and Exam Due
5	Mon 7-05-21	Welding Lecture 2-hours lab	Chapter 25 Key Terms
	Tue 7-06-21	Welding Lecture 2-hours lab	Chapter 25 Review Questions
	Wed 7-07-21	Welding Lecture 2-hours lab	Chapter 25 Quiz
6	Mon 7-12-21	Chapter 25 Exam Due 2-hours lab	All Chapter 25 Homework and Exam Due
	Tue 7-13-21	Chapter 25 Exam Due 2-hours lab	All Chapter 25 Homework and Exam Due
	Wed 7-14-21	Chapter 25 Exam Due 2-hours lab	All Chapter 25 Homework and Exam Due
7	Mon 7-19-21	OPEN LAB CONTEXTUALIZED LAB LECTURE	
	Tue 7-20-21	OPEN LAB CONTEXTUALIZED LAB LECTURE	
	Wed 7-21-21	OPEN LAB CONTEXTUALIZED LAB LECTURE	
8	Mon 7-26-21	OPEN LAB CONTEXTUALIZED LAB LECTURE	
	Tue 7-27-21	OPEN LAB CONTEXTUALIZED LAB LECTURE	
	Wed 7-28-21	OPEN LAB CONTEXTUALIZED LAB LECTURE	
9	Mon 8-02-21	OPEN LAB CONTEXTUALIZED LAB LECTURE	
	Tue 8-03-21	OPEN LAB CONTEXTUALIZED LAB LECTURE	
	Wed 8-04-21	OPEN LAB CONTEXTUALIZED LAB LECTURE	
10	Mon 8-09-21	OPEN LAB CONTEXTUALIZED LAB LECTURE	
	Tue 8-10-21	OPEN LAB CONTEXTUALIZED LAB LECTURE	
	Wed 8-11-21	OPEN LAB CONTEXTUALIZED LAB LECTURE	

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. All Grades and Lab Assignments will be Posted on Blackboard.
- 4.

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 9 lab assignment to pass the class at a minimum requirement to A.W.S. Standards. A student is expected to complete 4 Vee-Butt bevel plates in each class period. Student must demonstrate 3 Vee-Butt welds completely and consecutively meeting AWS standards before being checked with Dye Penetrant Minimum standard is 2 pipes welded completely each class period. Student must demonstrate 3 pipes welded completely and consecutively meeting AWS standards before being checked with Dye Penetrant. Any student not passed assignment 9 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.

4G SMAW Checklist

WLDG 1457	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 twice the size of the welding rod		
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		

1457 Lab Assignments	Performance Rating	Date Completed	Instructor =s Initials	Trainee= s Initials

1. Perform safety inspections of equipment and accessories.				
2. Explain weld size and profiles.				
3. Describe arc welding operations of fillet and groove joints.				
4. Demonstrate use of tools and equipment.				
5. Operate Shield Arc Welding Equipment				
6. Make a 2G vee-groove weld on plain carbon steel plate with E60105P 1/8" root pass and hot pass, and E7018 3/32" filler and cap.				
7. Make a 3G vee-groove weld on plain carbon steel with E6010P5+ 1/8" root and hot pass, filler and cap with E7018 3/32" filler and cap.				
8. Make a 4G vee-groove weld on plain carbon steel with E6010 1/8" root pass, hot pass, and E7018 3/32" filler pass, and cap				
9. Perform 2G non fixed weld on plain carbon steel pipe 6" using E60105P+ 1/8" diameter root and hot pass,				
10. Make a 2G vee groove weld on plain carbon steel pipe 6" with E6010 1/8" Electrodes and E7018 3/32" Electrodes filler and cover passes.				

Core competencies Assessments

Critical thinking	Identify principles of arc welding
Critical thinking	Describe welding operations
Critical thinking	Explain heat treatments of low alloy steels
Critical thinking	Explain weld size and profiles

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Critical thinking	Prepare test plates
Critical thinking	Fillet welds in overhead position
Critical thinking	Air arc weld removal
Critical thinking	Bevel groove welds with back plates
Critical thinking	Use of tools and equipment

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 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**