



**WLDG-1457-ALL**  
**Intermediate Shielded Metal Arc Welding S.M.A.W.**  
**FALL 2022**  
**TTH 6:00PM - 9:20PM**

**Instructor:** Rico Brown, [rbrown@com.edu](mailto:rbrown@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** Mon-Th 11:00 am-1:00 pm 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.

**Course Description**

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

**Course requirements:**

<b>WLDG 1457 Lab Assignments</b>	<b>Performance Rating</b>	<b>Date Completed</b>	<b>Instructor =s Initials</b>	<b>Trainee=s Initials</b>
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-grove 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.				

**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 7=D
4. Student must 71 thru 80 on Exams and complete Lab Objectives 1 thru 8=C
5. Student must 81 thru 90 on Exams and complete Lab Objectives 1 thru 9=B
6. Student must 91 thru 100 on Exams and complete Lab Objectives 1 thru 10=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.

**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

<b>Student Learner Outcome</b>	<b>Maps To Competency</b>	<b>Assessed Via This Assignment</b>
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 6 Written Exams, Lab assignments. SPOL
The student will be able to prepare test plates.	Critical thinking	Homework, Chapter 6 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 6 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

**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 409-933-8607 [dlewis22@com.edu](mailto:dlewis22@com.edu)

## Course outline

Week#	Day/Date	Topic	Reading Assignments & Homework Due Dates
1	T 8-23-22	Intro + Syllabus + Expectations + Explain Grading % + Welding Safety Rules and Welding Equipment	
	Th 8-25-22	Welding Lecture-Simulator 2 hours Lab	
2	T 8-30-22	Welding Lecture-Simulator 2 hours Lab	Chapter 4 key terms 1 thru 14
	TH 9-1-22	Welding Lecture-Simulator 2 hours Lab	Chapter 4 review questions 1 thru 11
3	T 9-6-22	Welding Lecture-Simulator 2 hours lab	
	Th 9-8-22	Welding Lecture-Simulator 2 hours lab	Chapter 4 review questions 12 thru 25
4	T 9-13-22	Welding Lecture-Simulator 2 hours lab	Chapter 4 quiz #1
	Th 9-15-22	Welding Lecture-Simulator 2 hours lab	Chapter 4 quiz #2
5	T 9-20-22	Welding Lecture-Simulator 2 hours lab	Chapter 4 quiz #3
	TH 9-22-22	Class Exam Chapter 4	
6	T 9-27-22	Welding Lecture-Simulator 2 hours lab	Chapter 6 key terms 1 thru 16
	TH 9-29-22	Welding Lecture-Simulator 2 hours lab	Chapter 6 review questions 1 thru 18
7	T 10-4-22	Welding Lecture-Simulator 2 hours lab	Chapter 6 quiz #1
	Th 10-6-22	Welding Lecture-Simulator 2 hours lab	Chapter 6 quiz #2
8	T 10-11-22	Welding Lecture-Simulator 2 hours lab	Chapter 6 quiz #3
	Th 10-13-22	Welding Lecture-Simulator 2 hours lab	Chapter 6 quiz #4
9	T 10-18-22	Class Exam Chapter 6	
	Th 10-20-22	Welding Lecture-Simulator 2 hours lab	Chapter 25 key terms
10	T 10-25-22	Welding Lecture-Simulator 2 hours lab	Chapter 25 review questions 1 thru 20
	Th 10-27-22	Welding Lecture-Simulator 2 hours lab	Chapter 25 review questions 21 thru 40

11	T 11-1-22	Welding Lecture-Simulator 2 hours lab	Chapter 25 quiz #1
	Th 11-3-22	Welding Lecture-Simulator 2 hours lab	Chapter 25 quiz #2
12	T 11-8-22	Welding Lecture-Simulator 2 hours lab	Chapter 25 quiz #3
	Th 11-10-22	Welding Lecture-Simulator 2 hours lab	Chapter 25 quiz #4
13	T 11-15-22	FINAL WEEK FOR MAKE UP EXAMS & ASSIGNMENTS	Chapter 25 quiz #5
	Th 11-17-22	Ch. 25 exam	
14	T 11-22-22	FINAL WEEK FOR MAKE UP EXAMS & ASSIGNMENTS	
	Th 11-24-21	Closed Thanksgiving Holiday	
15	T 11-29-22	OPEN LAB	
	Th 12-1-22	OPEN LAB	
16	T 12-6-22	OPEN LAB	
	Th 12-8-22	LAST DAY OF CLASS	

**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](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](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 at 409-933-8124 or [mvaldes1@com.edu](mailto:mvaldes1@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 advisor. Students are permitted to withdraw only six times during their college career by state law. The last date to withdraw from the 1<sup>st</sup> 8-week session is October 5. The last date to withdraw from the 16-week session is November 18. The last date to withdraw for the 2<sup>nd</sup> 8-week session is December 1.

**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 in order 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).

**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 makeup exam.

**Grading Scale:**

65-69 Plus student must complete Lab Objectives 1-6 =D

70-79 Plus student must complete Lab Objectives 7 =C

80-89 Plus student must complete Lab Objectives 8=B

90-100 Plus student must complete Lab Objectives 9=A

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**4G SMAW Checklist**

WLDG 1457	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 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		

### 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](http://com.mywconline.com), or by clicking the SRWC icon on the COM website.

## 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**