



**WLDG-2453-146CL**  
**Advanced Pipe Welding**  
**THUR. 8 AM-4:20 PM**  
**FRI. 8 AM-12 PM**

**Instructor:** Danny Aguilera, [daguilera@com.edu](mailto:daguilera@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,4:30PM-5:30PM ;THUR,FRI 7AM-8AM, 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**

Advanced topics involving welding of pipe using the shielded metal arc welding (SMAW) process. Topics include electrode selection, equipment setup, and safe shop practices. Emphasis on weld positions 5G and 6G using various electrodes. This is a capstone course for the Associate of Applied Science in Welding Technology.

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

1. Advanced topics involving welding of pipe using the shield metal arc welding (SMAW) process.
2. Topics include electrode selection, equipment setup.
3. Safe shop practices.
4. Emphasis on weld positions 5G and 6G using various electrodes.

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

1. **Critical Thinking Skills:** Students will demonstrate creative thinking, innovation, and the ability to analyze, evaluate, and synthesize information.

Student Learner Outcome	Maps To Competency	Assessed Via This Assignment
Advanced topics involving welding of pipe using the shielded metal arc welding (SMAW) process.	Critical thinking	Homework, Written Exams, Lab
Topics include electrode selection, equipment setup.	Critical thinking	Homework, Written Exams, Lab Manual Assignment. 28-Welding Quiz.
Safe shop practices.	Critical thinking	Homework, Written Exams, Lab Manual Assignment -Welding Quiz.
Emphasis on weld positions 5G and 6G using various electrodes.	Critical thinking	Homework, Written Exams, Lab Manual Assignments, and Welding Quiz.

**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)

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**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](http://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](http://com.edu/coronavirus) for future updates.

**Attendance Policy:** Attendance 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 2<sup>nd</sup> 2021 is withdrawal day.

**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 with a documented disability needing academic accommodations is requested to contact Holly Bankston at 409-933-8520 or [hbankston@com.edu](mailto:hbankston@com.edu). The Office of Services for Students with Disabilities is located in Student Success Center. Appropriate steps will then be taken to assist you in your needs.

**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](mailto: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](http://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 1-6 =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

**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 Welding Coordinator [409-933-8321/vwoods@com.edu](mailto:vwoods@com.edu).

## 6G SMAW Checklist

	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 beads		
Cold Lap – need to run at proper temperature		

## Course outline:

Week#	Day/Date	Topic	Reading Assignments & Homework Due Dates
1	TH 6-10-21	Run, Hide, Fight Intro + Syllabus + Expectations + Explain Grading % + Welding Safety Rules + Welding Equipment	
	FRI 6-11-21	Welding Lecture 2-hours lab	
2	TH 6-17-21	Welding Lecture 4-hours lab	Chapter 9 Key Terms & Review Questions
	FRI 6-18-21	Welding Lecture/ 2-hours lab	Chapter 9 Quiz

3	TH 6-24-21	Chapter 9 Exam Due 4-hours lab	All Chapter 9 Homework and Exam Due
	FRI 6-25-21	Chapter 9 Exam Due 2-hours lab	All Chapter 9 Homework and Exam Due
4	TH 7-01-21	Welding Lecture 4-hours lab	Chapter 20 Key Terms & Review Questions
	FRI 7-02-21	Welding Lecture/ 2-hours lab	Chapter 20 Quiz
5	TH 7-08-21	Chapter 20 Exam Due 4-hours lab	All Chapter 20 Homework and Exam Due
	FRI 7-09-21	Chapter 20 Exam Due 2-hours lab	All Chapter 20 Homework and Exam Due
6	TH 7-15-21	Welding Lecture 4-hours lab	Chapter 22 Key Terms & Review Questions
	FRI 7-16-21	Welding Lecture/ 2-hours lab	Chapter 22 Quiz
7	TH 7-22-21	Chapter 22 Exam Due 4-hours lab	All Chapter 22 Homework and Exam Due
	FRI 7-23-21	Chapter 22 Exam Due 2-hours lab	All Chapter 22 Homework and Exam Due
8	TH 7-29-21	OPEN LAB CONTEXTUALIZED LAB LECTURE	
	FRI 7-30-21	OPEN LAB CONTEXTUALIZED LAB LECTURE	
9	TH 8-05-21	OPEN LAB CONTEXTUALIZED LAB LECTURE	
	FRI 8-06-21	OPEN LAB CONTEXTUALIZED LAB LECTURE	
10	TH 8-12-21	OPEN LAB CONTEXTUALIZED LAB LECTURE	
	FRI 8-13-21	OPEN LAB CONTEXTUALIZED LAB LECTURE	

Student Learner Outcomes	Performan ce Rating	Date	Instructor initials	Student Initials
1. Advance topics involving welding of pipe using the shielded metal arc welding (SMAW) process. SPOL				
2. Topics include electrode selection, equipment setup. SPOL				
3. Safe shop practices. SPOL				
4. Emphasis on weld positions 5G and 6G using various electrodes.				

SPOL				
5. Make a 5G on 4-10" pipe E6010 1/8" diameter root pass, hot pass, E7018 1/8 diameter filler pass and cap				
6. Make a 5G on 4-10" pipe E6010 1/8" electrode root pass, hot pass, filler pass and cap( <b>Downhill</b> )				
7. Make a 6G on 4-10" pipe using SMAW. E6010 1/8" diameter electrode on Root Pass, Hot Pas, E7018 1/8" on Filler Pass, and Cap				
8. Make a 6G on 4-10" pipe using SMAW. E6010 1/8" diameter electrode on Root Pass, Hot Pas, Filler Pass, and Cap( <b>Downhill</b> )				
9. Make a 6G on 6" pipe using GTAW. ER309 -1/8" diameter filler rod on Root Pass, Hot Pas, Filler Pass, and Cap				

### Core competencies Assessments

<b>Critical thinking</b>	The student will identify topics of pipe using the shield metal arc welding (SMAW) process.
<b>Critical thinking</b>	The student will identify topics include electrode selection, equipment setup.
<b>Critical thinking</b>	The student will demonstrate safe shop practices.
<b>Creativity</b>	The student will demonstrate with an emphasis on weld positions 5G and 6G using various electrodes.

### 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.**  
**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**