



WLDG-1430-113CL
Gas Metal Arc Welding G.M.A.W.
Spring- 2024
M-W- 1:30pm-4:50pm

Instructor: Dwight Miller, dmiller@com.edu, 409-933-8454

Student hours and location: MTWTh-7:30am-8:30am,
 MW-12:00pm-1:30pm, T- 12:00pm-12:30pm 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.

Course Description

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

Course requirements:

| Lab Assignments | Performance Rating | Date Completed | Instructor=s Initials | Trainee=s Initials |
|--|--------------------|----------------|-----------------------|--------------------|
| Gas Metal Arc Welding | | | | |
| 1. Make 2F fillet weld on plain carbon steel | | | | |
| 2 Make 3F fillet weld on plain carbon steel | | | | |
| 3 Make 4F fillet weld on plain carbon steel | | | | |
| 4 Make 2G groove weld on plain carbon steel plate | | | | |
| 5 Make 3G groove weld on plain carbon steel plate | | | | |
| 6 Make a fixed 2G groove weld on carbon steel pipe 6" | | | | |
| 7. Make a fixed 5G groove weld on carbon steel pipe 6" | | | | |

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

Grading Scale:

65-69 Plus student must complete Lab Objectives 1-4=D

70-79 Plus student must complete Lab Objectives 1-5=C

80-89 Plus student must complete Lab Objectives 1-6=B

90-100 Plus student must complete Lab Objectives 1-7=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. All homework assignments are to be done outside of class time

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. (Faculty may add additional statement requiring monitoring and communication expectations via Blackboard or other LMS)

| Student Learner Outcome | Maps to Core Objective | Assessed Via This Assignment |
|---|-------------------------------|---|
| Describe welding positions with various joint designs on plate. | Critical thinking | Homework, Chapter 10 Written Exams, Lab Manual Assignments 10-1and 10-2 |
| Describe the effects of welding parameters in GMAW, apply safety rules. | Critical thinking | Homework, Chapter 11 Written Exams, Lab assignments.11-5 and 11-6 |
| Troubleshoot equipment used, perform inspection. | Critical thinking | Homework, Chapter 15 Written Exams, Lab assignments 15-13 |
| Weld various types of structural material, diagnose welding problems. | Critical thinking | Homework, Chapter 15 Written Exams, Lab assignments 15-14,15-14 |

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 | M 1-15-24 | Closed Martin L. King Observed | |
| | W 1-17-24 | Intro + Syllabus + Expectations + Explain Grading % + Welding Safety Rules + Welding Equipment | Chapter 10 key terms 1 thru 4 |
| 2 | M 1-22-24 | Welding Lecture 2 hours lab | Chapter 10 key terms 5 thru 10 |

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|----|--------------|--|---|
| | W 1-24-24 | Welding Lecture 2 hours lab | Chapter 10 review questions 1 thru 4 |
| 3 | M 1-29-23 | Welding Lecture 2 hours lab | Chapter 10 review questions 5 thru 10 |
| | W 1-31-24 | Welding Lecture 2 hours lab | Chapter 10 review questions 11 thru 14 |
| 4 | M 2-5-24 | Welding Lecture 2-hour lab | Chapter 10 review questions 15 thru 18 |
| | W 2-7-24 | Welding Lecture 2-hour lab | Chapter 10 review questions 19 thru 27 |
| 5 | M 2-12-24 | Class review and Exam on Chapter 10 Students have 7 days to make-up test or it will be a O on EXAM | EXAM-10 |
| | W 2-14-24 | Welding Lecture 2-hour lab | Chapter 11 key terms 1 thru 4 |
| 6 | M 2-19-24 | Welding Lecture 2-hour lab | Chapter 11 key terms 5 thru 10 |
| | W 2-21-24 | Welding Lecture 2-hour lab | Chapter 11 key terms 11 thru 14 |
| 7 | M 2-26-24 | Welding Lecture 2-hour lab | Chapter 11 review questions 15 thru 19 |
| | W 2-28-24 | Welding Lecture 2-hour lab | Chapter 11 review questions 20 thru 26 |
| 8 | M 3-4-24 | Class review and Exam on Chapter 11 Students have 7 days to make-up test or it will be a O on EXAM | EXAM-11 |
| | W 3-6-24 | Welding Lecture 2 hours lab | Chapter 15 key terms 1 thru 6 |
| | 3-11-24 | Spring Break | |
| | | Spring Break | |
| 9 | M 3-18-24 | Welding Lecture 2 hours lab | Chapter 15 review questions 1 thru 9 |
| | W 3-20-24 | Welding Lecture 2 hours lab | Chapter 15 review questions 10 thru 18 |
| 10 | M 3-25-24 | Welding Lecture 2-hour lab | |
| | W 3-27-24 | Class review and Exam on Chapter 15 Students have 7 days to make-up test or it will be a O on EXAM | EXAM-15 |
| 11 | M 4-1-24 | Lab Work | Lab Work |
| | W 4-3-24 | Lab Work | Lab Work |
| 12 | M 4-8-24 | Lab Work | Lab Work |
| | W 4-10-24 | Lab Work | Lab Work |
| 13 | M 4-15-24 | Lab Work | Lab Work |

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| | | | |
|----|--------------|-------------------|----------|
| | W 4-17-24 | Lab Work | Lab Work |
| 14 | M 4-22-24 | Lab Work | Lab Work |
| | W 4-24-24 | Lab Work | Lab Work |
| 15 | M 4-29-24 | Lab Work | Lab Work |
| | W 5-1-24 | Lab Work | Lab Work |
| 16 | M 5-6-24 | Lab Work | Lab Work |
| | W 5-8-24 | Last day of class | Lab Work |

Institutional Policies and Guidelines

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://www.com.edu/student-services/docs/Student_Handbook_2023-2024_v2.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*

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 Kimberly Lachney at 409-933-8919 or klachney@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: 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 April -22-

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 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 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 or communityresources@com.edu.

Course outline 2G GMAW 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 – 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 | | |

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.

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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 always worn 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**

