



WLDG-1457-ALL
Intermediate Shielded Metal Arc Welding S.M.A.W.
Spring 2022
Tues/Thurs-6:00pm-9:20pm

Instructor: Kirth Phillip, kphillip2306@com.edu, 409-933-8380

Student hours and location MTWTH -5:15PM – 6:00PM, 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:

| WLDG 1457 Lab Assignments | Performance Rating | Date Completed | Instructor Initials | Trainee 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. | | | | |

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. Labs and homework not turned in on the due date will be scored at 80% of the maximum

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

| 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 |

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

Course outline:

| Week# | Day/Date | Topic | Reading Assignments & Homework Due Dates |
|-------|---------------|---|--|
| 1 | T 1-18-22 | | |
| | TH 1-20-22 | Intro + Syllabus + Expectations + Explain Grading % + Welding Safety Rules + Welding Equipment | |
| 2 | T 1-25-22 | Welding Lecture-Simulator 2-hours lab | Chapter 4 key terms 1 thru 6 |
| | TH 1-27-22 | Welding Lecture-Simulator 2-hours lab | Chapter 4 key terms 7 thru 11 |
| 3 | T 2-01-22 | Welding Lecture-Simulator 2-hours lab | Chapter 4 key terms 12 thru 14 |
| | TH 2-03-22 | Welding Lecture-Simulator 2-hours lab | |
| 4 | T 2-08-22 | Welding Lecture-Simulator 2-hours lab | Chapter 4 review question 1 thru 10 |
| | TH 2-10-22 | Welding Lecture-Simulator 2-hours lab | Chapter 4 review questions 11 thru 18 |
| 5 | T 2-15-22 | Welding Lecture-Simulator 2-hours lab | Chapter 4 review questions 19 thru 25 |
| | TH 2-17-22 | Exam on Chapter 4 2-hours lab | EXAM DUE |
| 6 | T 2-22-22 | Welding Lecture-Simulator 2-hours lab | Chapter 6 key terms 1 thru 16 |
| | TH 2-24-22 | 2-hours lab | Chapter 6 review questions 1 thru 9 |
| 7 | T 3-01-22 | Welding Lecture-Simulator 2-hours lab | Chapter 6 review questions 10 thru 18 |
| | TH 3-03-22 | Exam on Chapter 6 2-hours lab | EXAM DUE |
| 8 | T 3-08-22 | MAKE UP EXAMS | |
| | TH 3-10-22 | MAKE UP EXAMS | |
| 9 | T 3-15-22 | Spring Break | Chapter 25 key terms 1 thru 13 |
| | TH 3-17-22 | Spring Break | Chapter 25 review question 1 thru 10 |
| 10 | T 3-22-22 | Welding Lecture-Simulator 2-hours lab | Chapter 25 review question 11 thru 20 |
| | TH 3-24-22 | Welding Lecture-Simulator 2-hours lab | Chapter 25 review question 21 thru 30 |
| 11 | T 3-29-22 | Welding Lecture-Simulator 2-hours lab | Chapter 25 review question 21 thru 30 |
| | TH 3-31-22 | Exam on Chapter 6 2-hours lab | EXAM DUE |

| | | | |
|----|---------------|---------------|--|
| 12 | T 4-05-22 | MAKE UP EXAMS | |
| | TH 4-07-22 | MAKE UP EXAMS | |
| 13 | T 4-12-22 | OPEN LAB | |
| | TH 4-14-22 | OPEN LAB | |
| 14 | T 4-19-22 | OPEN LAB | |
| | TH 4-21-22 | OPEN LAB | |
| 15 | T 4-26-22 | OPEN LAB | |
| | TH 4-28-22 | OPEN LAB | |
| 16 | T 5-03-22 | OPEN LAB | |
| | TH 5-05-22 | LAST DAY | |

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

Academic Success & Support Services: College of the Mainland is committed to providing students 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: 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 at 409-933-8520 or 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. 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

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 1st 8-week session is March 2. The last date to withdraw from the 16-week session is April 25. The last date to withdraw for the 2nd 8-week session is May 4.

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

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 for you to meet your academic goals.

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.

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

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 | | |

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 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.FAILUE TO FOLLOW SAFETY RULES WILL RESULT BEING REMOVED FROM CLASS**