

# Introduction to Shielded Metal Arc Welding

## WLDG 1428

### **INSTRUCTOR CONTACT INFORMATION**

Instructor: Robert Fancher

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Office Location: Jasper Higher Ed. Center Rm. 305

Office Hours: Monday-Friday 7:40 AM - 4:00 PM

### **Credit**

4 semester credit hours (2 hours lecture, 6 Hour Lab)

### **MODE OF INSTRUCTION**

In person

### **Prerequisite/Co-requisite:**

None

### **Course Description**

An introduction to shielded metal arc welding process. Emphasis placed on power sources, electrode selection, oxy-fuel cutting, and various joint designs.

### **Course Objectives**

Upon completion of this course, the student will be able to:

1. Select electrodes and amperage setting for various thicknesses of metal and welding positions.
2. Define principles of arc welding
3. Explain electrode classification.
4. Perform SMAW operations in various positions using selected electrodes and different joint designs.

### **Required Textbook and Materials**

1. *Modern Welding* by Althouse, Turnquist, Bowditch
2. Personal Tool List (approximately \$200-\$250).
  1. Hood
  2. Welder's cap
  3. Shade 10 or 11 lens
  4. Clear lens (10)
  5. Long sleeve 100% cotton shirt or leather sleeves or leather jacket

6. Long 100% cotton work pants (jeans)
7. High top leather boots (steel toe)
8. Leather gloves
9. Chipping hammer
10. Wire brush
11. Safety glasses
12. Channel Lock Pliers
13. Flashlight
14. 4 1/2" or 5" grinder

**Students will not be allowed in class without the proper equipment and clothing**

#### **Grade Scale**

90 – 100 80 – 59  
 – 89 70 – A B C D F  
 79 60 – 69

#### **Attendance Policy**

I. Students are allowed to miss two days without penalty; each additional day will result in the student's grade being dropped by a letter grade.

Example: 1 days absent = If student has an A average no penalty 2

days absent = A drops to a B

3 days absent = B drops to a C

4 days absent = C drops to a D (student must retake class)

5 days absent = D drops to a F (student must retake class) II.

Absences are counted for unexcused, excused and coming to class late.

III. 2 tardies = 1 absence

A. Tardy- arriving within 15 minutes after class begins or leaving before the end of class.

B. More than 15 minutes late you will be counted absent.

C. If you go to sleep in class you will be counted absent.

IV. **Excused absences.** Only given to allow students to make up missed work.

A. Will be given for documented Injury or Illness. Doctor's excuse required showing proof. Will count toward total days

missed.

B. Will be given for documented Death in immediate family. Will count toward total days missed.

C. Approved LIT school functions; E.g. SkillsUSA, SGA etc. Will not count toward total days missed

D. It is the student's responsibility to obtain from the instructor any handouts or assignments for classes missed. Lectures will not be repeated.

### Drop Policy

If you wish to drop, you are responsible for the drop process. I will not initiate the drop, no matter how many absences or zeroes you have; that is, if you stop coming to class and do not drop, you will earn an "F" in the course. Students are only allowed to drop 6 times in their college career.

### Course Schedule

|                         | Week | Topic                        | Reference                        |
|-------------------------|------|------------------------------|----------------------------------|
|                         |      | policies                     | metal                            |
| 1 - 4                   |      | Shop orientation and safety  | Welding Vertical Fillet Welds    |
|                         |      | procedures                   | Cutting torch with 6010 and 7018 |
|                         |      | safety and procedures        | Electrodes                       |
|                         |      | Measuring and Lay-out tools  | Ch 6 Assignment                  |
|                         |      | Use the Oxyfuel torch to cut | Ch 6 Quiz                        |
|                         |      | metal                        | Visual test of weld beads        |
|                         |      | Self-Introduction            | Syllabi                          |
|                         |      | Ch 3 Assignment              |                                  |
|                         |      | Ch 3 Quiz                    | Instructor                       |
|                         |      | Striking an Arc              | Demonstration/                   |
|                         |      | Running a Bead               | Supervision                      |
|                         |      | Welding a Pad                |                                  |
|                         |      | Visual test of weld beads    |                                  |
|                         |      | LECTURE/LAB                  |                                  |
| 5 - 9                   |      | Use the Oxyfuel torch to cut |                                  |
|                         |      | metal                        |                                  |
|                         |      | Welding Horizontal Fillet    |                                  |
|                         |      | Welds with 6010 and 7018     |                                  |
|                         |      | Electrodes                   |                                  |
|                         |      | Discussion                   | Instructor                       |
|                         |      | Ch 5 Assignment              | Demonstration/                   |
|                         |      | Ch 5 Quiz                    | Supervision                      |
|                         |      | Visual test of weld beads    |                                  |
| 10-14                   |      | LECTURE/LAB                  |                                  |
| Course introduction and |      | Use the Oxyfuel torch to cut |                                  |

Demonstration/  
Supervision

Instructor

Visual test of weld beads

 LECTURE/LAB

15-17

 LECTURE/LAB

Use the Oxyfuel torch to cut  
metal

Welding Overhead Fillet

Welds with 6010 and 7018 Instructor

Electrodes Demonstration/

Ch 15 Assignment Supervision

Ch 15 Quiz

### Course Evaluation

Final grades will be calculated according to the following criteria:

Assignments 30%

TEST 70%

Late Penalties will be assessed on all work turned in late. 5 points per day.

Average a grade on all test and assignments of at least 70%.

### ACADEMIC DISHONESTY

Students found to be committing academic dishonesty (cheating, plagiarism, or collusion) may receive disciplinary action. Students need to familiarize themselves with the institution's Academic Dishonesty Policy available in the Student Catalog & Handbook at <http://catalog.lit.edu/content.php?catoid=3&navoid=80#academic-dishonesty>.

### TECHNICAL REQUIREMENTS

The latest technical requirements, including hardware, compatible browsers, operating systems, etc. can be online at <https://lit.edu/online-learning/online-learning-minimum-computer-requirements>. A functional broadband internet connection, such as DSL, cable, or WiFi is necessary to maximize the use of online technology and resources.

## **DISABILITIES STATEMENT**

The Americans with Disabilities Act of 1990 and Section 504 of the Rehabilitation Act of 1973 are federal anti-discrimination statutes that provide comprehensive civil rights for persons with disabilities. LIT provides reasonable accommodations as defined in the Rehabilitation Act of 1973, Section 504 and the Americans with Disabilities Act of 1990, to students with a diagnosed disability. The Special Populations Office is located in the Eagles' Nest Room 129 and helps foster a supportive and inclusive educational environment by maintaining partnerships with faculty and staff, as well as promoting awareness among all members of the Lamar

Institute of Technology community. If you believe you have a disability requiring an accommodation, please contact the Special Populations Coordinator at (409)-951-5708 or email [specialpopulations@lit.edu](mailto:specialpopulations@lit.edu). You may also visit the online resource at Special Populations - Lamar Institute of Technology ([lit.edu](http://lit.edu)).

## **STUDENT CODE OF CONDUCT STATEMENT**

It is the responsibility of all registered Lamar Institute of Technology students to access, read, understand and abide by all published policies, regulations, and procedures listed in the LIT Catalog and Student Handbook. The LIT Catalog and Student Handbook may be accessed at [www.lit.edu](http://www.lit.edu). Please note that the online version of the LIT Catalog and Student Handbook supersedes all other versions of the same document.

## **STARFISH**

LIT utilizes an early alert system called Starfish. Throughout the semester, you may receive emails from Starfish regarding your course grades, attendance, or academic performance. Faculty members record student attendance, raise flags and kudos to express concern or give praise, and you can make an appointment with faculty and staff all through the Starfish home page. You can also login to Blackboard or MyLIT and click on the Starfish link to view academic alerts and detailed information. It is the responsibility of the student to pay attention to these emails and information in Starfish and consider taking the recommended actions. Starfish is used to help you be a successful student at LIT.

## **ADDITIONAL COURSE POLICIES/INFORMATION**

1. No electronic devices of any kind (cell phones, I-pod, headphone, ect.) will be tolerated in the classrooms or labs. If you are seen using any electronic device you will be asked to leave the class for the day.
2. No food or drink will be allowed in the classroom.

3. No derogatory or foul language will be tolerated.
4. We have a zero tolerance policy for sexual harassment.
5. We have a zero tolerance policy of racial or ethnic discrimination.
6. Be considerate of others in the classroom. Remember they paid for the class just like you.